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Results-based Monitoring of a Localized Project Intervention using Agile: Indicators for Short and Long-term Development Program Goals Phase 1

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ABSTRACT

The study aims to describe the performance of the research-based extension project of the BulSU CAL Department of English as a basis for the university's short and long-term development goals in research and extension. The proposed extension program focuses on capacitating teachers to write classroom-based research. Four indicators have been established to assess project impact: measurability, management, interactivity, and needs analysis. To ensure meaningful participation in the program, the study also sought to reveal gender and age variation across the indicators. Data were obtained from the 27 target recipients from a public national high school in Bulakan, Bulacan. This paper highlights that the proposed capacity program must be needs-based and participatory and promote a joint learning process. Significant gender differences were revealed in the following areas: management, interactivity, and needs analysis, while no age differences were found in all indicators.

KEYWORDS:
Results-based monitoring, Localized project intervention, Classroom-based research, Research-based extension, Participatory approach program, Needs-based capacity projects

Introduction

The United Nations (UN) 2030 Agenda on Sustainable Development Goal 17 regionalization identifies capacity-building to implement a cross-cutting tool results-based localized participatory approach to a sustainable district. From this standpoint, the UN recognizes higher education institutions as laboratories that enhance the capacity and improve the inventory of the locale as the preliminary step in designing a plan for a sustainable community [28]. Illustratively, this tool uses different approaches to customize outcomes based on the resources and needs. Presumably, when implementation combines key elements as suggested: models cross-cutting in the intersection between real-world practice and written law [8], describing results-based monitoring or RBM as a collaborative action that sets metrics and common indicators that measure results[7], and viewing localized and personalized approach in the local lens [23]; while the participatory approach for UNICEF as the involvement of stakeholders including the recipients in the evaluation process [10]; wherein, academic institutions are seen as centers of capacity-building through research and partnership [28]. Expectedly, implementations are only effective when *practical tools* and *peer learning* are used and whenever blocks are adequately monitored, thus strengthening the

district's capacity.

Notably, the implementation is dependent on the plans, which are identified as interventions or contingencies that are pre-formed and prepared for use. It is a common observation that the weakness in the implementation is in its monitoring and evaluation, resulting in ineffective implementation, discontinued projects, and poor results. Further, it has been observed that these are a few of the very reasons that inspire Monitoring and Evaluation or M&E to establish and advance the policies across accrediting systems on determining quality in processes and program implementations hence increase performance and accountability both public and private.

Seemingly, current practices do not meet the expectations of a sustainable district. This observation may mean that long-term goals may likely be compromised, thus affecting short and mid-term goals, which are critical steps to achieving institutional aims. It is evident that sustainability affects capacity and vice-versa; therefore complementary in its role. What is proposed in this study is that research-based extension project designs must be localized, and recipients are involved in the planning and implementation with agreed monitoring and evaluation instruments to sustain outcomes.

Moreover, localization personalized needs and customized outputs. In an organization where sustaining progressive educational outcomes and regulating standardized practices are its core functions, it can inarguably be assumed that localization could be the best approach to design a systematized process to produce predictable results, create interpretable patterns, and deliver countable behaviors, thereby producing desirable outputs. From the parameters of the system's thinking, making the system's processes effective and efficient is the aligning of habits and practices to objectives, wherein understanding the parts that make up the whole system and their functions allows the system's thinking to work to design an appropriate system for every purpose.

Similarly, as every Higher Education institution (HEI) fulfills its three primary functions of instruction, research, and extension services, engaging people in the management functions enjoined all units to perform *instruction*, *research*, and *extension* services periodically. The outputs of each unit in all its functions are indicators of success as they are the performance that meets the requirements of HEIs necessary for classification. Consequently, the collective performance of all units determines the agency's organizational outcome.

Furthermore, it can be noted that the university's performance is evaluated annually, which is necessary for incentivizing institutions and allocating budgets. Considering that it also serves as a benchmark standard for quality education as it caters to uniform instruction, collaborative research, and capacity-building extension services of the institution, the trilogic functions undeniably form the core of the university's vision. Seemingly challenging HEIs to aim for sustainable goals that will create sustainable institutions, therefore, it can be subsumed as the mandatory deliverable of higher education institutions, subject to evaluation. However, deliverables are not always measurable as they come as tangible or intangible, short-term or long-term, and target-recipient or university-goals oriented. These factors, when assessed, seem to outweigh the very essence of an extension services program, that it should begin with the needs of the community of experts to transfer knowledge and provide lifelong education to help the community meet with the developing community and bridge the gap between technological developments and the traditional practices of the people; otherwise, activities are not sustainable. From this standpoint, it can be inferred that to create meaningful outputs, project interventions should be localized so results can be measured based on the needs and purpose.

This study performed the localized project intervention phase one to determine the indicators to help design a results-based research-based extension in Taliptip National High School in Bulakan, Bulacan. The results were used to predict the need to capacitate faculty to write classroom-based research. Bulakan, the first encomienda of the Province of Bulacan, a coastal municipality in the Philippines, is designed to become an international gateway with a floating runway under construction. The town will become an entry point for the internationalization and localization of Bulacan customs. To indicate the timeline of the study, the previous and the present practices in the implementation of the extension projects of the College of Arts and Letters Department of English were compared. The stakeholders identified measurability, management, interactivity, and needs analysis as critical to

implementing extension projects. Since extension programs are implemented periodically, it is best to design systematic localized project interventions to produce viable results; hence, it is effective.

The study predicted the indicators and the design of a localized project intervention that promotes the capacity of public school teachers to write classroom-based research. Notably, the study answered the following questions: 1. What is the impact of the project *"Capacity Building of Public School Teachers Thru Writing Classroom-based Research?"* 2. How may the socio-demographic profile of the SHS teachers in Taliptip, Bulakan, and Bulacan be used as predictors of indicators of localized projects? , and 3. What localized practices may be documented as the basis for the following research-based extension projects?

Methodology

The study is grounded on the Exploratory Sequential Mixed Methods Design of Creswell, as introduced in 2014. The research process comprises a three-phase procedure- the *exploratory* or the instrument development and the instrumentation to target population. In this approach, the study began by exploring the qualitative data from the *Consultation-Data-Analysis*. The initial step also served as the coding stage. The coded responses were used to determine the predictor variables that outlined the researcher-developed questionnaire. Subsequently, the findings were used to initiate the pilot testing for consultation. The developed questionnaire was presented to the target recipients to assess the soundness of the items and their probable impact on the proposed intervention if implemented in their respective areas of discipline. After the data had been collected, they were tested and analyzed. After careful analysis of the results, they were immediately presented to the participants-respondents to validate the possible discrepancies in the results through a post-analysis consultation.

To initiate the explanatory sequential approach, the initial database will be created. The agile method will run and re-run the survey process to draft the secondary database- the *Surveys-Data Analysis*. This approach will validate the measures using an interview plan, and the results to be collected will prove generalizable to the sample population in the quantitative phase. The triangulation and integration process will be the final step. This phase of the study only focuses on the exploratory or the instrument development and administration [2].

Significantly, the test on significance was applied to measure the indicators that could impact projects for short-term and long-term development goals using the research-based extension program "Capacity Building of Public School Teachers Thru Writing Classroom-based Research." A 5-point Likert Scale instrument assessed the likelihood of a *very high impact, high impact, moderately high impact, low impact, and significantly low impact* in a scale with constant intervals. The indicators were validated, and the level of significance was also tested. Likewise, Cronbach's Alpha reported the validity and reliability score of the instrument for the pilot and the field testing; the two-tailed t-test tested the hypothesis and determined if the data collected would likely produce generalizable results. From the results collected, the localized project intervention using Agile was determined. Thereby, the initial data for the software development to run and re-run the process and increase the reliability of the validity of the probable indicators to increase productivity were identified. The software to be developed will then be used for monitoring and evaluation purposes in iterative and cyclical processes.

Setting, participants, and measures

The survey was carried out at Taliptip National High School in Bulakan, Bulacan. A total of 27 target training recipients participated in the study. Socio-demographic variables included gender, age, and job position. Initially, the ANOVA of program efficiency and program effectiveness of the previous extension project, *Mulat Sulat,* was tested. The evaluation was subjected to statistical testing to determine if the previous results were statistically significant. The results were used as the basis for the pilot testing of the instrument to measure the results-based localized project intervention. Significant results were drawn: When the data were subjected to ANOVA, it reported that the *Measurability* and *Training of recipients* have Sig. value of **.000** and *Interactivity* and *Needs analysis* have Sig. value of **.001**. This means that the Measurability and Training of Recipients are dependent; Interactivity and Needs Analysis are dependent. It can be gleaned from the table above that a Statistical result lower than the probability value critical at **α=.05** proved that the variables have predictive power therefore significant. There are practices in the previous implementation that may be adopted as key indicators in the

performance of a project.

Measurability is an indicator that is quantifiable and trackable regardless of values [6]. The recipients in training, on the other hand, need to be involved throughout the process and compliant with the timeline [15]; while interactivity is the driving agent in evolution [16], a needs analysis identifies gaps and solutions [19]. The predictive power of these variables would give a great kick to the proposed localized project. Interestingly, countable dense sets are measurable [3] depending on "new rules that affect recipients' access to education and training" equivalency and the number of participants needed to take [14]. While materials used showed a relatively low interaction and no statistical significance in combining such [12], the assessing time-based risks predicts production due to raw data [32].

On the other hand, the test of normality and reliability on the *level of efficiency* and *level of effectiveness,* having 12 and 8 items, respectively, posited reliability statistics of a normal distribution. This means that the results showed the normal test distribution with Cronbach's **Alpha** of **.805** and **.847,** that the instrument is reliable therefore, the results collected were valid. Subsequently, from the identified predictor variables, an instrument was drafted defining the parameters to measure the variable's measurability, training of recipients, interactivity, and needs analysis. Each of the indicators consists of five-item questions, and responses were given on a five-point scale where a rating of "1" corresponds to "significantly low impact" and a "5" indicates a "very high impact."

Measurability

Measurability is an indicator that is quantifiable and trackable regardless of values [6]. In writing classroom-based research, composing a sound research title, composing research questions related to the problem, writing a methodology appropriate for the problem, identifying an appropriate statistical tool for the methodology, and writing a research paper describing the metrics of measurability of a capacity program.

Management

Management domains need participants to be involved throughout the process and compliant with the timeline [15]. Classroom-based research writing can be achieved when the recipients take part in the needs analysis, the recipient suggests needs in teaching research, the recipients complete the training, the recipient evaluates the training, and the recipient gives input in designing the localized project.

Interactivity

Interactivity is the driving agent in evolution [16]. When developing classroom-based research, the recipient must take the initiative to upskill, set targets with their superiors, participate in peer tutoring, perform departmental goals, and collaborate with colleagues and trainers.

Needs Analysis

Needs Analysis identifies gaps and solutions [19]. Classroom-based research writing should consider the needs of the recipients are identified before the planning of the design of the project, the needs of the recipients are assessed depending on priorities, the needs of the recipients are consulted with the trainers before the training, the needs of the recipients are matched with the materials of the training and the needs of the recipients are met.

Statistical data analysis

The summary scores of the four indicators were obtained from the mean value of each of the items. Two sample t-tests were used to analyze the age and gender differences across the indicators. The reliability score was calculated for each of the dimensions using Cronbach's Alpha.

Results and Discussion

The data revealed the preference of the 27 respondents in a public national high school in Bulakan, Bulacan on

the likelihood that gender and age variations are going to impact the proposed capacity program across indicators in this study.

Table 1. Demographic profile (n=.

Sex	**Frequency**	**%**
Male	8	29.6
Female	19	70.4
Age group		
30 and below	2	7.4
31- 40	5	18.5
41- 50	12	44.4
51-60	7	25.9
Above 60	1	3.7
Position		
Teacher (I, II, III)	21	77.8
Master Teacher	3	11.1
Head Teacher	2	7.4
Guidance Counselor	1	3.7

Table 2 presents the data for the results for the "measurability" impact domain. As shown in the table, the samples reported *moderate impact* in the majority of the items, with an overall mean of 3.45. A lower mean score was recorded in their ability *to identify statistical tools* which is crucial in writing quantitative research.

Table 2. Mean and frequency distribution of the measurability domain

AREAS	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**MEAN**
The recipient can compose a sound research title.	0	3	15	1	8	3.52
The recipient can compose research questions related to the problem.	1	3	14	1	8	3.44
The recipient can write a methodology appropriate for the problem.	2	2	14	0	9	3.44
The recipient can identify an appropriate statistical tool for the methodology.	2	2	14	1	8	3.41
The recipient can write a research paper.	2	2	14	0	9	3.44
Grand Mean						**3.45**

Swedish school's organizational frameworks prioritized instrumentality and measurability, whereas, this design is likely to decompartmentalize the measurable since it prioritizes instrumental goals that promote holistic education [30]. On the other hand, the non-alignment of the current Norwegian reform in the curriculum in terms of understanding and measurability when negotiated policies are not based on comparative studies [18]. Contrarily, measurability is noted as one of the issues innovative projects face. Likewise, it is best to compare the relationship between the designer's workload and the design process when considering instructional design models. Its impact will likely identify the developments and opportunities the instructional model design produces [20].

Table 3. Mean and frequency distribution of the management domain

AREAS	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**MEAN**

The recipient takes part in the needs analysis.	0	4	12	3	8	3.56
The recipient suggests needs in teaching research.	1	1	14	3	8	3.59
The recipient completed the training.	1	2	13	3	8	3.56
The recipient evaluated the training.	2	3	11	3	8	3.44
The recipient gives input in designing the localized project.	1	2	13	2	9	3.59
Grand Mean						3.55

The summary statistics for the management domain are presented in Table 3. The table above shows that a lower mean score was observed in the area of training evaluation. Overall, the respondents' engagement in all areas of the capability training has a high impact on the project's success, with a 3.55 mean score.

Table 4. Mean and frequency distribution of the interactivity domain

AREAS	(1)	(2)	(3)	(4)	(5)	MEAN
The recipient takes the initiative to upskill.	1	1	14	3	8	3.59
The recipient sets targets with their superiors.	1	3	11	3	9	3.59
The recipient participates in peer tutoring.	0	2	13	4	8	3.67
The recipient performs departmental goals.	0	2	15	1	9	3.63
The recipient collaborates with colleagues and trainers.	0	2	14	3	8	3.63
Grand Mean						3.62

A study conducted in a classroom in Germany revealed that teacher training on heterogeneity should be stressed [29], while a report on the use of specialized research training given with limited geographic and disciplinary siloes [5] proved that evaluations must reveal deficiencies and errors in teacher training [1]. It is noteworthy that the high-impact results in all the capacity training areas proved the likelihood of the project's success should recipients engage. Hence, management domains are critical to the project's implementation. Scores on the interactivity domain are summarized in Table 4. Results showed that all items were perceived to have a high impact, with an overall mean of 3.62. Participants emphasized the *impact* of *peer tutoring.* Utilization is directly affected by interactivity and engagement, thus engaging dependence [9] and reported that peer tutoring is inclusive and resolves differences in practice [26], as well as the evinced passion, underpins engagement in a democratic project [22].

Table 5. Mean and frequency distribution of needs analysis domain

AREAS	(1)	(2)	3)	(4)	(5)	MEAN
The needs of the recipients are identified before the planning of the design of the project.	0	3	13	2	9	3.63
The needs of the recipients are assessed depending on priorities.	0	3	13	3	8	3.59
The needs of the recipients are consulted with the trainers before the training.	0	3	12	2	10	3.70
The needs of the recipients are matched with the materials of the training.	0	5	11	1	10	3.59
The needs of the recipients are met.	0	3	13	1	10	3.67

Grand Mean	3.64

Table 5 presents summary statistics for the "needs analysis" impact domain. As presented in the table above, the mean scores ranged from 3.59 to 3.70, and the results indicated that the planning and execution of the training were perceived to have a *high impact*. It can be further elucidated that high-impact results in the needs analysis domain can contribute significantly to the success of the project. It can be noted that a needs analysis promotes awareness [27], identifies areas for improvement, and offers evidence-based recommendations [21], as needs analysis creates contextualized programs [25].

Table 6. Gender differences in the four indicators

Indicator	Test statistic	P-value	Interpretation
Measurability	2.161	.051	Not significant
Management	2.531	.027	Significant
Interactivity	3.700	.002	Significant
Needs analysis	2.493	.024	Significant

Table 6 displays the results of a two-sample t-test that compares male and female samples' responses. It is clearly illustrated in the table above that significant differences were found in the following areas: management ($p<0.05$), interactivity ($p<0.05$), and needs analysis ($p<0.05$). It can be substantiated that gender poses a significant difference, except for measurability. Gender considerations and gender dynamics inspire the educational landscape [31], whereas it is proposed that gender be further explored to discover its potential to provide gender-balanced learning [24]. Meanwhile, gender reckoning is the last resource for researchers [17].

Table 7. Age group differences in the four *indicators*

Indicator	Test statistic	P-value	Interpretation
Measurability	1.053	.303	Not significant
Management	1.282	.212	Not Significant
Interactivity	1.785	.089	Not Significant
Needs analysis	1.649	.114	Not Significant

The samples were categorized according to two age groups (below and above 50 years) and mean responses were compared. No significant differences were found in the four indicators, and even though power shift changes as people age [11], there has been very limited evidence in terms of inhibition. The results point to age-invariance when leveraging knowledge, and when controlling knowledge, age differences are insignificant [4], whereas autonomy in learning varies depending on age [13].

Conclusion

Based on the results, the following decisions were drawn:

1. From the data collected, this research identified four key variables in the previous extension program *Mulat Sulat*. The ANOVA of measurability and management; interactivity, and needs analysis are statistically significant; therefore, the paired variables are dependent. Also, the highlighted results were: the majority of the respondents are female, either Millenials or Gen Xers, and mostly hold teacher rank positions; moderate impact on *measurability* and low impact on *identifying statistical tools;* while the management domain recorded a low mean score in the area of *training evaluation* and a high impact on engagement, interactivity emphasized the high impact of *peer tutoring*; and the respondents identified the high impact of *planning and execution of the training.*
2. Significant gender differences were revealed in the following areas: management, interactivity, and needs analysis, while no age differences were found in all indicators.
3. It is highly recommended that future capacity programs on research-based extension projects be needs-based and participatory and promote a joint learning process.

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