

Continuous Improvement (CI) Methodology: A Sustainability Mechanism in Schools

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Abstract

The institutionalization of continuous improvement highlights the need for personnel across all levels of governance, to accept change in program implementations. It must be embedded in the system to sustain the data-driven approach of identifying first the main cause of the problems, then testing for the best possible strategies for the life-long benefits of the solutions. This study dwelt on determining how the CI methodology can be sustained in different CI schools in DepEd Region V. The non-experimental quantitative research mode was used to capture the data that naturally exist in the completion and utilization of projects. The descriptive-evaluative survey method was used. It was noted as findings in this study that the training and coaching to teams have influenced them to work on interventions focusing on improving the teaching and learning processes. The CI projects became useful ideas in delivering blended learning modalities by making and using its new versions in Audio Lessons, Video Lessons, Self-Learning Modules, and Learning Activity sheets. Their focus is limited to the implementation and not to the application of CI Methodology in the system operations. It is recommended that calibrated measures of sustainability practices, focusing on promising sustainability procedures and emerging practices, are structured and designed.

Keywords:

Continuous Improvement Methodology, Toolkit, Life-long solutions, Sustainable practices , Iterative solutions

I. Introduction

Quality Management System (QMS), as mandated by the provisions of Executive Order No 605, s. 2007, sets the implementation guidelines and standards integrating into its internal systems and processes, upgrading personnel capacity, ensuring consistent delivery of quality service, and promoting continuous improvement in DepEd offices, schools, and CLCs. Continuous improvement (CI) is an ongoing method of making incremental improvements in service delivery and quality management system or breakthrough development over time. It is an “Improvement initiative that increases successes and reduces failures” as described by (Bhuiyan & Baghel 2005). It is Idowu (2013) that considers CI as an iterative way of undergoing improvements ending with favorable results. It requires the involved personnel’s determination and willingness to perform for improved conditions of systems and processes.

The certification program on CI was launched in DepEd in 2015 in partnership with Basic Education Sector Transformation (BEST). With a 7-month of CI Certification, CIP starts with a five-day basic training following the “Three A” learning cycle (Asses, Analyze and Act). At present, the program is being rolled out in schools. In Region V the program has already reached 247 schools in all 13 Divisions of the Region. The Department’s target is for CIP to be institutionalized in all schools and divisions in the Philippines with this lies the need to sustain the implementation of the program in schools and ensure that CI Methodology (CIM) is embedded in the school’s system as an iterative methodology to improve operational processes for a more efficient, and effective strategy to increase student outcomes. Cases of CIM success stories as well as challenges should therefore be collected and processed to be able to come up with better ways of sustaining the program. This research can aid educational leaders in coming up with contextualized policies to ensure that the program is continuously practiced in schools

even after it is first rolled out. This may also be a guide to school heads as well on how to make better the implementation and sustainability of other programs, projects, and activities in their respective schools.

II. Objectives

The research aimed to determine how CI methodology can be sustained in different CI schools in DepEd Region V. It specifically aims to address the foregoing questions:

1. What learning gaps were addressed by the CI projects in schools?
2. What is the perceived sustainable capacity of the CI projects in schools?
3. What sustainability plan can be recommended to improve CI practices in schools?
4. What sustainability toolkit design for CI can be proposed?

III. Literature Review

The literature review is divided into two segments: studies regarding the use of CI in Schools and assessing all factors relative to the sustainability of CI.

A. CI effectiveness in Schools

In the article written by Pat Greco and Kathy Oropallo (2023), they argued that most initiatives for improvement fail because they are outright reactions to issues and are isolated cases. In continuous improvement, data-driven interventions are implemented in a succession of recurring creative works for a better and more proactive approach to cater to the shifting needs of students.

The Learning Poverty Brief by the World Bank (2022), reports that 91 percent of primary learners in the Philippines are dependent readers, 90 percent are learning deprived and 5% are school deprived. With CIM these can be mitigated by referring back to the findings of Greco and Oropallo (2023) that continuous improvement consistently assesses and adjust learning initiatives to address the shifting needs of students.

Elgart (2022) noted that more than 34,000 schools in different countries have CI practices that have improved outcomes for schools and students with noticeably effective implementation outputs. The same observations were gathered in this research having all initiatives conducted with learning gaps addressed using CIM having 50% significant gains as shown in Table 1.

In the study of Ata & Edillo (2020), the CI project has alleviated the issue of having 60% of learners belonging to the reading recovery level of a national high school in San Isidro, Antipolo City. These findings also prove the statement of Elgart (2022) and this research on how continuous improvement improves the outcomes of students.

In the article “Building a culture of continuous improvement in the classroom”, Kirstin Yeado (2017) shared reflections of 17 teachers on what they learned about continuous improvement. Common reflections were: a) that Continuous improvement is NOT another initiative, it is a framework to monitor currently happening that uses data for improvements over time; b) CI is student-centered. When teachers track data of learners and assist them in understanding their progress, they are motivated and engaged in their learning and become self-directed; c) CI is adaptable, and practicing the process will strengthen it over time; d) It is a community of CI good practices for collaboration.

“Continuous improvement has been proven useful and effective in various industries, and schools and districts incorporating continuous improvement into their work have shown promising results” (Best & Dunlap 2014).

The article by Sandra Park and co-authors written last May 2013 has elaborated on how CI is referred to as the commitment to caliber team efforts for improvements in the school, district, and others. At the educational level, CI is referred to as the efforts driven by data in making decisions and performing actions for the improvement of service delivery. Even in the classroom set-up, CI is regarded as the on-time giving of feedback and immediate actions undertaken to address the gaps in meeting quality teaching and learning.

The article of AdvancEd (2011), highlighted the importance of root cause analysis, step 5 in CI methodology. It was noted that in school, evaluation reports are taken only from the very usual way of collecting data. The generated data are not required to be submitted in deep validation procedures. The initial story of data is based on the first level analysis which is not driven by deepening down the process of identifying underlying issues to symptoms. The problems are repeatedly being met even though

there are many interventions suggested to solve the issue. The data analysis must be driven by the CI operational procedure to target the main cause of problems for lasting solutions.

The use of CI in higher education institutions according to the study of Thalner (2005), revealed that efficiency at work, profit, and enhanced skills in teamwork and communication, Continuous Quality Improvement (CQI) have a great impact. It was also shared in the same study that respondents in the experiment have an overwhelming percentage of the inputs that were contributed by those who are still using CQI.

The literature discussed above showcased the usefulness, effectiveness, and impact of continuous improvement in different educational levels and structures. This supports the idea of this research to sustain a noteworthy methodology of assessing, and analyzing the enacting cycle in all programs, projects, and activities implemented in schools.

B. Sustainability of CI

The Vermont model of continuous improvement of the State of Vermont Agency of Education (2023) has a notion that it can give enhancements to processes and operational systems. It has provided supervisory support to schools and districts. The process improvement was focused on having a dashboard of data-driven needs assessment, that provides directions to perform actions based on identified priority improvement areas. Implementation participation of all concerns is guided by the plan and regular conduct of review for adjustments.

The discussion of continuous quality improvement (CQI) in an early childhood education article in 2021 enumerated the traits and qualities of organizations implementing it. An organization fully involved in CQI is regarded as proactive. It is considered a powerful stimulus in making decisions. It has a structured participative operational system that opens opportunities for everyone to be involved. The short- and long-term results of the programs are generated systematically. It produced accurate and reliable data.

The study conducted by Sanchez (2012), titled “Assessing Sustainability of CI through Enabling and Inhibiting Factors”, Introduced 4 main constructs to sustain the CI process: 1) Strategic Planning, this highly critical construct recommends that CI should be part of the Strategic Planning to ensure that all line items with funds to support the different programs, projects and activities are properly allocated and will be utilized appropriately 2) Change Management – in any organization it must be expected that a regular shift or change in the practices happens based on discussed needs that requires improvement. 3) Knowledge Management – the study prescribes the use of CI to ensure quality delivery of services and high performance at work.; and 4) Performance Management – this construct suggests making metric boards available to personnel. This will help the organization track the performance and accomplishment status.

The literature above helped the researchers develop connections to Why is there a need to sustain CI? What are the gains of CI? and What are the components of the CI Sustainability Plan? These provide opportunities for this study to have clear directions on how continuous improvement be sustained and integrated into the school system. These serve as the major component of this research that recommends a sustainability plan by which CI can be seamlessly practiced in different schools in the 13 divisions.

IV. Methods

This study considered the non-experimental quantitative research mode. The implementation stories that naturally exist in the completion and utilization of CI projects of school CI teams were observed. The descriptive-evaluative survey method was used by the researcher, with a validated questionnaire serving as the primary data collection instrument. According to Sevilla (2022), this method is intended to learn and explore the presence of the CI team members and the school community to which they belong. The data to be analyzed in this method are organized, classified, enumerated, and measured. Furthermore, descriptive research goes beyond simply gathering and tabulating data. A descriptive method was used to develop the profile of the respondents and their various sustainability practices. Answers to the questions refer to authentic scenarios. The researchers considered information on the practices used in the implementation of CI projects in the 13 divisions in DepEd Region V.

This study used the descriptive-evaluative survey to identify the learning gaps being addressed by the CI projects and implemented in schools. This also provided insights on the action steps made after CI completion as well as plans to continue the implementation of CI methodology in schools.

V. Data Collection

The online questionnaire checklist is used to gather data. The said questionnaires were answered by the 178 CI team leaders of schools in the 13 divisions as respondents of the study.

The instrument was subjected to a dry run to further improve its contents and determine whether it has the qualities of clarity, specificity of content that did not take too long to complete, singleness of purpose, freedom from assumption, and grammatical and numerical consistency. As a result of the dry run, some questions that did not meet the criteria were revised. The suggestions were carefully considered for the instrument's final revision. The researchers facilitated the dry run for the selected school CI team leaders recommended by the CI Masters.

The researchers requested from the Regional Director through the regional focal person of the CI program. The researchers administered the one-on-one interview and facilitated the FGD to gather stated needs and situations that can be used in the items in the survey tool. An online orientation was conducted to clearly explain the purpose and objective of the study so that the respondents have no inhibitions in answering the questionnaire. Using the online platform, the researchers distributed the link and collected the data via Google Spread Sheets download. Data collected were tallied, computed, analyzed, and quantitatively interpreted.

Frequency count and percentage techniques were used to analyze and interpret the generated information.

Frequency Count. The perceptions given by the target population are determined by percentages.

Percentage Technique. The respondents' profiles are used to determine the frequencies of occurrence of the characteristics under consideration. The application of this statistical treatment was based on the frequency through the percentage formula. In the formula below, P stands for percentage, f for frequency, and n for the total number of respondents.

$$P = \frac{F}{N} \times 100$$

VI. Results and Discussion

A. Learning gaps that were addressed by the CI projects in schools.

In DepEd Region V, schools were trained in CI starting in 2016. Since then, it has been noted that the assessment phase of CI methodology led to the identification of the different issues and gaps in teaching and learning processes that hinder the attainment of expected learning outcomes from schools, teachers, and learners. Even during the pandemic time, the needs were tracked and considered. It was evident that all possible ways were undertaken to ignore the hardship of the situation. Many of the CI projects were focused on the core learning areas. The learning gaps identified as priority improvement areas in the CI projects of the CI teams in schools from 2016 to 2022 are presented in table 1.

Table 1. The learning gaps being addressed in the CI projects completed.

Learning Gap/s Addressed	f	Percentage	Gains after CI Project Implementation (Average)
Classroom Management	4	2%	13.87
High Failure Rate	1	1%	9.80
Inappropriate Skills in Problem-Solving	10	6%	36.72
Increasing Number of Repeaters	1	1%	11.00
The issue on Drop Outs	1	1%	38.90
Lack of Learner Support Aides	4	2%	36.44
Limited Learning Resources	12	7%	54.87
Low Literacy Rate	2	1%	90.50
Low Performance in Araling Panlipunan	1	1%	80.00
Low Performance in English	27	15%	35.27
Low Performance in Mathematics	26	15%	48.79
Low Performance in Science	19	11%	42.52

Poor Reading Skills	65	37%	44.16
S/PARDOs	2	1%	28.50
Unliquidated MOOE	1	1%	5.70
Zero % passer in the National Certificate (NC)	1	1%	8.16

The data yielded having poor reading skills as the most popular response with 37% of the respondents providing this answer followed by Low Performance in English and Mathematics, Limited Learning Resources, and landing 5th in the survey Inappropriate Skills in Problem-Solving.

It was also noted in the table, that after implementation of the CI projects or innovations, 31% of the identified gaps addressed have 0 to 25% gains, 50% has 25% to 50% gains, 6% has 51% to 75% and 2 or 13% of the gaps being solved has gained of 76% to 100%.

The data gathered from the 178 CI school teams manifested that 87% of the CI projects completed were focused on creating intervention procedures and the rest were intervention materials. Indeed, the training received and the coaching/ technical assistance provided to the school teams influenced them to work on interventions focusing on improving the teaching and learning processes.

In DepEd Bicol, the CI schools considered the high usability of the projects in terms of easy facilitation of the learning materials and tools. Any teachers, learners, and stakeholders can execute lesson procedures and materials using the quality-assured CI projects completed. The CI projects have set the learning environment without using high-end technology. CI opened possibilities for schools to use simple workable innovations.

The CI Projects addressed the needs of learners during the pandemic. The struggle of teachers in meeting the new requirements of distance learning led to the creation of CI-designed E-Learning materials that were very useful in blended learning modalities. The experience in CI gave the teams ideas to use varied learning platforms and opportunities. The CI intervention procedures were used in facilitating a modular learning environment in Alternative Learning System (ALS). The CI projects became useful ideas in delivering blended learning modalities that opened doors to making and using its new versions in Audio Lessons, Video Lessons, Self-Learning Modules, and Learning Activity sheets.

CI is regarded as a great learning course that provided many opportunities to all concerned advocates. The teachers, principals, and schools of CI teams have enumerated the milestones they have undertaken because of the program. Some schools were awarded Best CI Project (division and regional levels), published in the Division Research Journal on Book of Abstracts on Researchers, contributed articles in the regional publication, and awarded Best in Brigada Pagbasa Implementation (division level), awarded Best Research Implementer, granted with BERF funds in CI project converted to research, awarded as the best SBM Practice (division and regional levels), granted P 150,000.00 by Cardno Emerging Markets (Australia) Pty Ltd (Cardno), through the Basic Education Sector Transformation Program (BEST), commended by the community, recognized as Most Outstanding Teacher/ Principal, and served as Radio-Based Instruction Demo-Teacher (process owner).

Indeed, Thalner (2005), is reliable in saying that efficiency at work, appropriate use of resources, and enhanced skills in teamwork and communication are guaranteed by Continuous Quality Improvement (CQI).

B. The perceived sustainable capacity of the CI projects in schools

In table 2, the survey on the perceived sustainable capacity of the CI projects presents data on undertakings implemented by schools after CI Graduation.

Table 2. The undertakings of school CI teams after graduation/presentation to regional symposia.

Undertakings of School CI Teams after Graduation/ Presentation to Regional Symposia	f	Percentage
Teacher Buy-In from co-teachers in the same station	138	78%
Teacher Buy-In from other schools	34	19%
Extend the CI Project to other learning areas	84	47%
Extend the CI project to other grade levels	121	68%

Transform the CI Project into Action or Basic Research approved by the Division Research Committee	52	29%
Publish CI Project Abstract to Journals	21	12%
CI Project is used in School-to-School Partnership	38	21%
Other schools request for adaptation of the CI project	30	17%
National Presentation of the CI Project	6	3%
International Level Presentation of the CI Project	3	2%
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n= 178		

The results showed that all 178 respondent schools have started sustainability undertakings with 138 of 178 or 78% having buy-ins from co-teachers, 121 of 178, or 68% having extended their projects to other grade levels, 84 of 178, or 47% rolled out in other learning areas, 52 of 178 or 29% were transformed to action researches, 38 of 178 or 21% were implemented as part of the school to school partnership, 34 of 178 or 19% have buy-ins from other schools, and 2 of 178 or 3% were presented in national and international fora.

It can be derived from the results that the easiest sustainability initiative is having buy-ins from co-teachers, other schools, and districts with high percentages as well as replicating the process in other grade levels and other subjects.

The results prove further that it is not difficult to sustain CI methodology and the possibility of having it embedded and integrated with different school activities is very likely to happen. This gives a positive possibility of imbibing the principles of continuous improvement as part of the sustainability routines of school personnel.

Sustainability plans may kick off from these existing initiatives and as continuous improvement is applied, it may further level up to replicating the methodology as an integral part of all undertakings to improve school performance as in the article written by Greco and Oropallo (2023). CI is noted to have a cyclic pattern of doing an assessment that will guide in planning and implementing actions. In between conduct of assessment leads to adjustment for improvement.

C. Recommended sustainability plan to improve CI practices in schools.

When asked about Plans for Sustainability, table 3 presents the retrieved answers from the respondents.

Table 3. The sustainability plans of the school CI teams.

Plans for Sustainability	f	Percentage
Continue the implementation and utilization of the same CI project	69	39%
Convert CI Project into Action or Basic Research	8	4%
Dissemination and extension of the CI Project to other schools within the district	8	4%
Dissemination and extension of the CI Project to other schools in all the districts in the division	11	6%
Integrate the CI methodology in the crafting of the school strategic plans (SIP, WFP, AIP, etc.), implementation, and evaluation for adjustment	4	2%
Application of the principle demonstrated by the finished CI project to more learning areas and grade levels	36	20%
Full implementation and utilization of the CI projects and methodology in the school	25	14%
Continuous provision of technical assistance (TA) focusing on needs assessment results generated through the use of CI methodology	17	10%

n=178

The data clearly illustrates the top 3 priorities for sustainability plan considerations of the respondents. There 69 of 178 or 39% preferred the continuous implementation of the same CI project, while 20% would like to try applying the CI principle to more learning areas and grade levels and 14% suggest full implementation and utilization of the CI projects and methodology in the school.

The result of the survey indicates that though school respondents are aware of the effectiveness of CI Methodology in improving school performance in various aspects, their sustainability plan is limited to the CI project implemented and not yet to the replication of the CI Methodology on other Programs, Projects and Activities (PPAs) or initiatives.

These findings therefore may be used to recommend sustainability plans that will focus on the replication of the methodology and not just on continuing the CI project started. Indeed, CI creates a mindset for effective and efficient management of the delivery of service in the workplace today. The TRACC Solution, 2022 has posted a challenge to all concerns that CI is institutionalized as a strategy to gain a life-long benefit.

D. What sustainability toolkit design for CI can be proposed?

This question reminded the researchers about the study conducted by Sanchez (2012) entitled “Assessing Sustainability of CI through Enabling and Inhibiting Factors”. Through its 1st construct, it has been proven that strategic planning is a highly critical construct that recommends CI should be part of strategic planning to ensure that resources are allocated and supported by the management staff.

By the foregoing, a curated Sustainability Toolkit must be designed to provide calibrated measures to CI practices in the 13 SDOs in DepEd Region V focusing on how to replicate promising sustainability procedures and emerging practices. The curated Sustainability Toolkit in CI refers to a manual/guideline pamphlet crafted through a process of analyzing resources and determining the measures which are most relevant and clearest on sustaining CI and presenting it in an accessible and meaningful way. The toolkit is to be anchored on the logical process framework structured in figure 1.

Figure 1 presents the underlying structure of a proposed Sustainability Toolkit in CI in DepEd Region V.

- a. The **Preliminary Consideration** part of figure 1 illustrates how the CI teams produced a quality output. They conduct situational analysis to assess the needs or gaps. They follow steps 1 to 4 of the CI methodology to identify the priority needs for improvement. They focused on the determined problem statements that through root-cause analysis, possible interventions are made. This manifests the necessity of giving importance to the undertaking of the proper steps in CI methodology to ensure the production of the expected deliverables which contribute to the sustainability measures of the program.

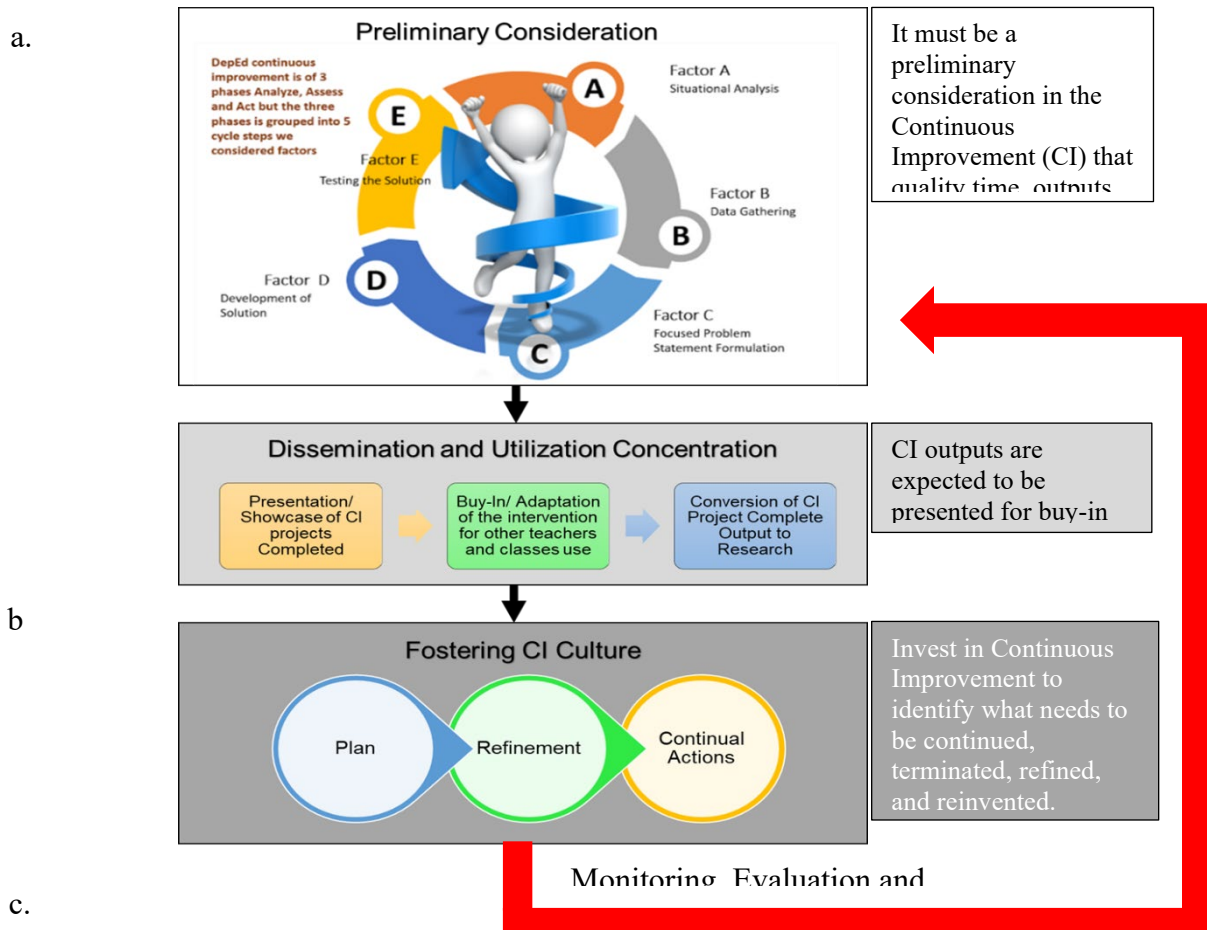


Figure 1. CI Methodology Sustainability Structure

- b. The **Dissemination and Utilization Concentration** part presents the predictable measures to sustain the CI practices after graduation. The usual way to disseminate CI is through presentation or showcasing of the CI projects at school, district, division, regional and national levels. This also refers to the adaptation of the interventions by others. The hardest thing to do, as regarded by most of the CI project completers, is to convert it to research outputs. Possible modes of verifications for sustainability undertakings can be measured through these.
- c. In the **Foster CI Culture** part of figure 1, it is emphatic that the preliminary consideration in the Continuous Improvement (CI) must guarantee quality time, outputs, and implementation efforts along every step to complete the CI certification program. Then, outputs are expected to be presented for buy-in /adaptation and converted into research. So that all can invest in CI. Interventions and practices under CI transformation can be determined to be continued, terminated, refined, and/or reinvented.

The M&E and TA provision loop in figure 1 serve as an opportunity to continuously track progress for replication, adaptation, and referral for benchmarking and also accept chances for better options leading to refinement, termination, or reinvention of the interventions.

This initiated the idea to have calibrated measures of sustainability practices through a toolkit in the 13 SDOs in DepEd Region V, focusing on promising sustainable procedures and emerging practices, structured and designed.

The sustainability toolkit in CI is a collection of viable practices anchored on the CIM structure and is designed in an online infographic format. It is created to offer guides on how to maintain or even improve processes. The toolkit highlights its major elements; the key audience, scope, strategy to get the basis for the inclusion of practices to be included, and advocacy.

In the CIM Sustainability Toolkit, the identified key audience or users are the school teams and coaches.

The scope of the graphical contents evolves in the credence and simple ways to sustain CI.

The best strategy to collect the information to be included in the kit must be anchored on the CIM structure presented in figure 1 which is all based on the needs of the current situation.

An effective way to encourage the target audience to use and advocate the content of the toolkit must be considered.

With the toolkit, the researchers believe that CI can shift direction to focus on the roads of executing workable procedures.

Conclusion and Recommendation

“Continuous improvement has been proven useful and effective in various industries, and schools and districts incorporating continuous improvement into their work have shown promising results” the findings of Jane Best and Allison Dunlap (2014)

Conclusion

The learning gaps as well as school concerns addressed by the completion and rollout of CI projects in schools proved that Continuous Improvement Methodology is at present the most effective means for schools to produce timely interventions that work and will alleviate our Learning Poverty issues.

The initial undertaking of schools to sustain CI gives the researcher a possibility that the methodology can be sustained if it will be communicated through standard guidelines and technical assistance mechanisms that practitioners may easily refer to for review or technical assistance provision.

The suggested sustainability plans provided in the survey can aid the researchers in a policy recommendation formulation to ensure that CIM is implemented and effectively practiced in all schools in the region.

CI has laid the most complex cognitive and technical activities in which concerned individuals became engaged, in making ideas to address the priority improvement areas doable and remarkable. It requires a concerted and collaborative effort by advocates, educators, researchers, and policymakers with a focus on long-term solutions as much as possible. The CI solutions are expected to be translated into practices and policies.

In a challenging world like the Department of Education, interventions or new solutions are imperative. Many activities are being delivered, many teams and organizations have been organized and many innovations are being introduced but still many fail to meet the expected learning outcomes. To ensure acquiring benefits in the school/organization, a very supportive, proactive, and open to new possibilities is required to limit the waste of effort, time, and resources. All actions are headed towards sustainable effects on the school community.

Recommendations

It is recommended to have an investigation on how the non-CI team members in the school community perceived the step-by-step completion undertakings of a CI project, what is their capacity to support the co-members of the school community who are directly involved in the CI team, and what are their misconceptions about the methodology of continuous improvement.

The Learning and Development (L&D) of the Department of Education is now a requirement in hiring and promotion which is now connected to Merit Selection Plan (MSP). The MSP highlights the inclusion of the application of L&D or intervention made by an applicant relevant to the position being applied for. This is a good starting point for another research journey dwelling on how the implementation requirements of the system directly influence the highest points to be credited in the equivalent pertinent documents for recruitment, assessment, and selection processes in the MSP.

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Biographies

Dr. Evangeline A. Saculo is a Chief Education Supervisor in DepEd Regional Office V assigned to Field Technical Assistance Division (FTAD). She is the regional focal person of the Continuous Improvement (CI) Projects. She spearheaded 3 batches of CI Masters in 2015, 2016, and 2018. Because of her, 100% of the divisions have certified master trainers and coaches. She has initiated the training and coaching of the 247 schools in the entire Bicol region from 2016 to the present. She has connected with De La Salle University (DLSU) through the former Basic Education Sector Transformation (BEST) coaches of CI now professors of the Department of Industrial and Systems Engineering (ISE), for a forged Memorandum of Agreement (MOA) between DepEd RO V and DLSU-ISE for capacity building programs to selected CI Masters to have research outputs accepted by international standards like IEOM. With the different sustainable activities that she designed for CI project implementation in DepEd Region V, she is noted to be one of the Best Regional Focal Persons for CI which made Bicol Region a benchmarking spot for CI project implementation by other DepEd regional offices.

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Speaker in CI. She has served as a member of the regional team for quality assurance of CI projects. She is a Microsoft Education Ambassador in South Luzon, Philippines. She is a proponent of contextualized procedures in critical division processes using CI technology. She has experience as a poster, oral, and virtual research presenter at regional, national, and international levels. She is a writer and contributor of articles to division, regional and international journals. She has served as a validator and is in charge of quality assurance to revisions of contextualized regional and division guidelines.

Dr. Joretze S. Carandang is an OIC- Public Schools District Supervisor in DepEd Region V, SDO Naga City. She is an M&E specialist, NEAP-QATAME associate, and a certified CI Master. She is a Microsoft Education Ambassador in South Luzon, Philippines. She is the division focal person of CI Projects. She has served as a member of the regional team for quality assurance of CI projects. She has presented research papers at the division, regional, national, and international conferences. As one of the pioneer CI advocates in their division, she is assigned as the division focal person in PRIME-HRM. She is a professor at Naga College Foundation, Inc. in undergraduate and postgraduate courses.