



(REVIEW ARTICLE)



## PROJECT CONECT (create open-source networks to empower classes using technology): An overview of guro nasians' perspective in safeguarding continuous learning thru free and digitalized learning resources

EMYROSE B. TIRAÑA \*

*Schools division of Rizal, Binangonan Sub-Office, Guronasyon Foundation Incorporated National High School, Binangonan, Rizal.*

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### Abstract

As Guronasyon Foundation Incorporated National High School (GFINHS) adheres to promoting resiliency as stipulated in DepEd Order no. 12, s. 2020 or the Adoption of the Basic Education Learning Continuity Plan for School Year 2020 – 2021 In light of the COVID -19 Public Health Emergency, Project CONECT (Create Open- Source Networks to Empower Classes using Technology) was instituted during Second Quarter of School 2021–2022. The project aimed to digitize education using open sources or free platforms to empower the teaching-learning experience. Further, it intended on bridging the digital divide caused by limited connectivity.

For this study, an evaluation was created to conclude the acceptability and improvement of the project itself. Quantitative- descriptive research design was utilized and purposive sampling technique was used to determine and monitor 30 participants. A modified survey questionnaire was provided to gauge respondents perspective on the efficacy of project, quality of learning resources, and ease for the platform used. Also, feedbacks were collected for further improvement.

In result, respondents rated Project CONECT as Very Much Acceptable on all aspects (average ratings exceeded 4.0 on a 5-point scale). To add, most of them envisioned to continue project implementation. Acceptability ratings explained that the project is very much acceptable in terms of quality of learning resources and efficacy of implementation. Thus, despite evidence that the project is effective, the intervention could be more robust by increasing the supposed free usage per week, expanding to areas of connection, uploading other supplemental learning resources, and a more appealing platform.

Once the Project CONECT expands, it can further support self- paced learning. It may also address the breadth of learning needs during the pandemic by supporting continuity of competency development and making each students life- long learners.

**Keywords:** Self- paced learning; Project implementation; Learning resources; competency development; teaching-learning experience

\* Corresponding author: EMYROSE B. TIRAÑA

Schools division of Rizal, Binangonan Sub-Office, Guronasyon Foundation Incorporated National High School, Binangonan, Rizal.

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## 1. Context and Rationale

COVID-19 has wreaked havoc on education systems worldwide, impacting over 1.6 billion students in over 190 nations on all continents. School and other learning space closures have affected 94 percent of the world's student population, up to 99 percent in low- and lower-middle-income nations (UN.org, 2020).

Thus, in the Philippines, the Department of Education under DepEd Order no. 12, s. 2020 or the Adoption of the Basic Education Learning Continuity Plan for School Year 2020 – 2021 In light of the COVID-19 Public Health Emergency provides clear guidance stipulating a package of education interventions that respond to the challenges brought by the pandemic. It also ensures the health, safety, and well-being of learners, teaching, and personnel and safeguarding continuous learning of the K12 Curriculum.

However, despite the effort made by the department it is obvious that digital divide is prevalent among the learners. In accordance McElroy (2021) stated that during the entire year of 2020, the effects of the digital divide, in particular on the educational system, became even more starkly apparent. Many students struggled as their schools transitioned to an online learning model, not just because they struggled academically, but also because they lacked access to the internet and/or to a device that was adequate for their needs. Even though 87% of households have at least one device that can connect to the internet, this indicates that more than one student out of every ten probably does not have access to the technology required to accomplish the daily schoolwork and assignments assigned to them.

Further as observed, being the researcher is also a teacher, this issue has been pressing the students thus having a profound effect on students' overall growth, safety and well-being — including the opportunity to achieve success, both now and if persist in the future. Students cannot be successful today, particularly during in the advent of crisis, if they do not have access to various electronic gadgets and a connection that can be relied on. Nevertheless, the school together with the member of the community must be able to develop and maintain an egalitarian educational framework that gives all children the opportunity to achieve if they place a high priority on education and investigate a wide variety of technical options.

Having this, GFINHS adheres to promoting resiliency and continuity through Project CONECT (Create Open- Source Networks to Empower Classes using Technology). The researcher intends to ease and initiate evidence-based practices that may aid in bridging the digital divide caused by limited internet connectivity. It is also aimed at providing strategies and practices that can bridge the digital gap among learners by safeguarding continuous learning through free and digitalized learning resources, making them life-long and independent learners. Also, GFINHS, through this research, can deliver quality educational services among learners, especially those who are experiencing the worst during this rough time.

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## 2. Innovation, Intervention, and Strategy

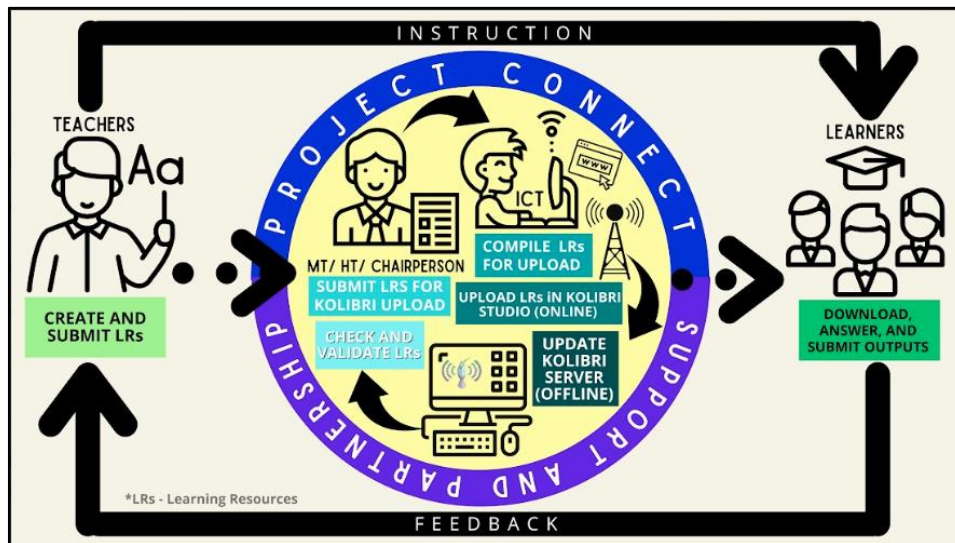
Many community and educational leaders are exploring ways of addressing the issue of unbiased and effective learning opportunities. Although there are many technological solutions that can positively impact the issue, there are still instances which calls for support as technology keeps on transforming the way we do everything. In the same way that there are always two sides to a coin, the application of technology in the field of education has its own unique set of obstacles (Pokhrel and Chhetri, 2021).

As cited from Subedi et. al. (2020), digital divided means the gap between those with internet access and those without — is not new. Hence, the gap precedes the current crisis since between the 'have' and 'have-nots' of digital access means to learn.

In light, Project CONECT (Create Open-Source Networks to Empower Classes using Technology) utilized Kolibri. Developed by Learning Equality, it is a flexible collection of open solutions explicitly designed to assist learning even without internet connection. To add, it is a curriculum tool, a library of free educational resources, and toolkit of resources that built around an offline-first learning platform (Learning Equality, 2021).

Addressing the equity gap in learning is at the core of Project CONECT. With Kolibri, it is a flexible solution designed to meet wide range of educational requirements found in current education settings. The project, itself, offers support to enable customized and differentiated learning that are usually only accessible in online learning environments.

As some students and their family finds it costly to provide internet connectivity, they may benefit greatly from implementing Project CONECT. Using Kolibri as application, it can be use to build an offline server so that users can access high-quality educational content even without the cost of paying internet or data connection. Students just need to find the nearest GFINHS Learning Kiosk in their neighborhood and access Kolibri to download their learning materials. For uploading their accomplished tasks, they are being provided with 30 minutes free internet every week courtesy also of our Community Learning Partners.



**Figure 1** GFINHS KOLIBRI Process Flow

As part of the objective of this project, it also supports self- paced learning since it will provide free digitalized learning resources such as learning activity sheets, self- learning modules, audio, and video lessons which are can all be downloaded thru Kolibri. Also, the project is committed in enabling every student to realize their right to a quality education; support the creation, adaptation and distribution of open educational resources; provide supportive tools for free and accessible innovative pedagogy; enable the delivery of digital education among diverse learners; bridge gaps in digital- divide; and se technology in empowering education resiliency using open educational resources in varied blended learning environments. Through it, CONECT may address the breadth of learning needs during the pandemic and support continuity of learning and making each students life- long learners.

### 3. Action Research Questions

This study aimed to determine the extent of acceptability for Project CONECT (Create Open-Source Networks to Empower Classes using Technology) in safeguarding continuous learning thru free and digitalized learning resources among selected students of Guronasyon Foundation Incorporated National High School for school year 2021- 2022.

Specifically, this research sought to answer the following guide questions

- What is the level of acceptability for Project CONECT in terms of
  - Efficacy of implementation
  - Ensuring health and safety
  - Quality of learning resources
  - Support of internal and external stakeholders?
- What are the suggestions of respondents to further improve Project CONECT in safeguarding continuous learning thru free and digitalized learning resources?

## 4. Action Research Methods

### 4.1. Participants and/or other sources of data and information

This study determined the extent of acceptability for Project CONECT (Create Open-Source Networks to Empower Classes using Technology) in safeguarding continuous learning thru free and digitalized learning resources among selected students of Guronasyon Foundation Incorporated National High School for school year 2021- 2022.

Through purposive sampling, respondents were 30 modular distance learning students who reside in Sto. Nino, +Bilibiran, Binangonan, Rizal. They are considered as students at-risk based on the 1<sup>st</sup> quarter evaluation. They need additional support and engagement for they are in the verge of failing or dropping from class due to poor attendance, low academic achievement, and negative attitudes toward school.

Thus, as part of the project's action plan, an orientation was given for both students and parents. Since respondents are minor, their parent/guardians' consent were sought with a vow to protect the dignity, rights and welfare of research participants.

### 4.2. Data gathering method

The proponents used mixed method research design focusing on determining the extent of acceptability for Project CONECT (Create Open-Source Networks to Empower Classes using Technology) in safeguarding continuous learning thru free and digitalized learning resources among selected students of Guronasyon Foundation Incorporated National High School during the school year 2021- 2022. Quantitative approach was used to determine the assessment of each study variable while qualitative was used to determine the suggestions of respondents to further improve Project CONECT.

To gather necessary data, a researcher made survey questionnaire was used as the main instrument in gathering sufficient data needed for the study. It determined the respondents' perspective on various variables related to this study.

The researchers-made questionnaire-checklist was content validated by experts knowledgeable in the field of research, Head Teachers, Master Teachers, and Department Chairpersons. Their comments, suggestions, and recommendations will be incorporated into the questionnaire-checklist. For the level of acceptability, 5-point Likert scale with the following interpretation was used:

**Table 1** Level of Acceptability Likert Scale

Scale	Range	Verbal Interpretation
5	4.50-5.00	Very Much Acceptable
4	3:50-4.49	Very Much Acceptable
3	2.50-3.49	Much Acceptable
2	1.50-2.49	Acceptable
1	1.00-1.49	Not Acceptable

Gantt Chart of Activities will be followed in the conduct of the study. As experts validated the researchers-made questionnaire-checklist, administration of it will be done among student- respondents through Google survey form. Once done, data will be retrieved, encoded, and processed using the computer application known as Statistical Package for the Social Sciences (SPSS). Data processing and analysis will be done. The researcher shall strongly observe government health protocols against COVID-19 during the conduct of this study.

## 5. Discussion

This part discusses the analysis, interpretation, and implications of the statistical results on the stated problems of the study.

**Table 2** The level of acceptability for Project CONECT

Variables	Weighted Mean	Verbal Interpretation	Rank
Efficacy of implementation	4.55	Very Much Acceptable	2
Ensuring health and safety	4.50	Very Much Acceptable	3
Quality of learning resources	4.80	Very Much Acceptable	1
Support of internal and external stakeholders	4.45	Very Much Acceptable	4
Composite Mean	4.56	Very Much Acceptable	

The table above displayed the level of acceptability for Project CONECT with composite mean of 4.56 and verbal interpretation on Very Much Acceptable. Specifically, it can be seen that Quality of learning resources has a mean of 4.55, followed by Efficacy of implementation ( $x=4.55$ ); Ensuring health and safety ( $x=4.50$ ), and Support of internal and external stakeholders ( $x=4.45$ ) wherein all variables are gauged as Very Much Acceptable.

Acceptability ratings explained that the project thru Kolibri provide quality educational learning materials even of free of download and access. It can also be said that CONECT is paving a way for the development of helpful tools that may assist teachers in the classroom and making it easier to teach students of all different skill levels on safe and motivating environment adaptable among diverse learners. Furthermore, activities and opportunities are created with consideration of stakeholders to engage and connect with school. Also, parents and members of the community productively supports the project because without their help no learning kiosks will not be created which will lead to failure of the project.

In light, Lee (2020) stated that one of the key goals in favor of bringing the amount of time and money spent on technology adds on building stronger linkages students, the school, and the community. In using technology that will enable students to learn, teach, create, and share on their own terms can ultimately impact the choices they will make in the future.

**Table 3** Suggestions of respondents to further improve Project CONECT in safeguarding continuous learning thru free and digitalized learning resources

Suggestions of respondents	Instructed meaning	Extracted theme
Need for additional Learning Kiosks and increasing the free usage per week. (Respondents 1, 5, 6,7,8,9, 11, 13, 14, 16, 17, 20, 22, 23, 25, 26, 27, 28, and 30)	To cater more students, LR Kioks should be put up. Also, instead of just 30minutes time frame, they wish for additional time limit so they may have ample time uploading their outputs.	Additional Learning Kiosks
Use creative and learner-friendly interface (Respondents 2, 3, 5, 7, 10, 11, 12, 18, 24, 26, and 29)	A modification could be made to make the interface more appealing and inviting on the eyes of the learners	Modified interface
Provide clear, mother tongue-based, and user-friendly instructional purpose (Respondents 4, 7, 13, 15, 17, 21, 24, 25, 26, 27and 30)	Provide a detailed guideline on the objectives, purpose, and use of learning platforms and the project itself.	Comprehensive Instructional purpose
Add supplemental learning materials (Respondents 6,7,18,19, 24, and 28)	To cater a wider learning purpose, supplemental learning materials can also be uploaded on the platform which the students may use to further learn the lesson.	Rotation model

The table above showcased the summary of responses of learners on further improve Project CONECT in safeguarding continuous learning thru free and digitalized learning resources. Based on the data gathered, most respondents claimed that additional learning kioks must be put cater more students in need. Respondent 1 said, *"Sana magkaroon ng mas madaming Learning Kiosks para mas madami po kaming pwedeng maconnectan ng Kolibri."* It was seconded by Respondent 8 who claimed, *"Sana po sa street naming magkaron po ng LR Kiosks para mas malapit at mas accessible po saming magkakapatid."* Aside from expanding the Kiosk coverage, Respondent 28 said, *"Tumagal pa po sana ung free*

*time limit per week para mas mahabang oras po kami makapagupload.*” Also, Respondent 23 mentioned, *“Mas maataagal pa pong oras sa paguupload para mas happy.”* Following that, several participants also wish for a more user-friendly and inviting learning platform. Respondent 5 mentioned, *“Sana po mas light ung color ng Kolibri para mas mukang pambata.”* while, Respondent 18 stated, *“Gamitan ng mas magandang color combination para mas mukang cute.”* Other suggestions gave included provide clear, mother tongue-based, and user-friendly instructional purpose. Wherein, Respondents 17 said, *“May tagalog po sana na directions para mas madaling maintindihan.”* Respondent 21 also claimed, *“Sana po kahit taglish para mas masundan po ung instruction ng gagawin sa Kolibri.”* Further, some said that additional supplemental learning materials should be included for more varieties of learning resources to choose from. Respondents 6 and 18 similarly claimed, *“Bukod po sa module at audio lesson sana meron din pong video lesson.”* Respondent 28 even added, *“Nakakatuwa po na kumpleto ng module pero sana may kasama ding video para mapanood din naming ung explanation.”*

Data gathered suggested that despite evidence of the project’s effectivity, the intervention could be more robust. Specifically, the study recommends that LR Kioks must be installed widely to accommodate a greater number of students. In addition, rather than having the usual 30 minutes, they desire for an additional time limit so that they may have sufficient period to upload their outputs. If possible the user interface may use some tweaking to make it more visually appealing and inviting to the eyes of the students. In addition, it would be helpful if objectives, purpose, and use of learning platforms as well as the project itself could be explained comprehensively using a language suited and appropriate for them. Relatively, learning materials, which students may utilize to deepen their understanding of the content being taught, can be additionally put to the platform so the students may use it to supplement their understanding of the lesson.

In congruence, Mahto (2020) stated that the use of technology has turned into an indispensable component of 21st-century. And in doing so, it also given rise to a myriad of obstacles and opportunities. Therefore, it is essential for students to become comfortable using the internet and other forms of technology. They will be better able to face the challenges of the world and make their future better if they do this. The primary objective of today’s educational leaders is to aid on eliminating obstacles that have an influence on both students and instructors’ educational methods. On top of, wider community around the world has a responsibility in providing alternative solutions that are cost-effective and affordable for people.

**Table 4** Action Plan

Activities	Sept 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2022	Feb 2022
Conduct school-based review on problems encountered by MDL and OLD Classes						
Objectify a focus area found on the results of the school-based review.						
Gather related literature and studies.						
Develop and validate research instrument.						
Administer research instrument to the selected respondents.						
Make a quantitative analysis of data.						
Report and discuss the research findings.						
Utilize the results of the study.						
Make adjustment and incorporate based on the results of the study.						
Develop an Enhanced School Intervention Program.						

**Table 5** Financial Report

Activity	Eligible expenditures	Quantity	Cost
Bond Papers	Supplies	1 ream	₱ 200.00
Other necessary school supplies	Supplies	30 Students	₱ 500.00
Printed Infographics and certificates for students and LR Kiosks	Reproduction, and printing costs	35 person	₱ 500.00
Load and Data Connection of Teachers	Communication expenses	5 Teachers	₱ 300.00
Home Visitation Travel Expenses	Domestic travel expenses	5 LR Pasabay	₱ 500.00
Maintenance of Community LR Kiosks	Materials	5 LR Kiosks	₱ 1, 000.00
TOTAL			₱ 3, 000.00

*Recommendation*

- The findings of this study have made it abundantly evident to the educational institutions that participation in utilizing cost efficient and user-friendly educational platform is essential for their pupils to have access in quality education thus being well-versed in the use of technology.
- With data highlighted above, it recommends the need for students to have further exposure on the Project and letting them realize its full potential in helping them to develop autonomy in learning and being responsive to their own needs in learning.
- For teachers, they may developed quality assured learning resource and to continue their diligence in uploading such in the Kolibri platform for the consumption of learners.
- On parents, they must continue supporting their child, opening educational opportunities, and helping them be prepared to succeed by encouraging them to look for flexible and technologically-based solutions.
- Likewise, school and community must develop harmonious ties in order to better prepare students for the rising digital economy and fulfilling the right of learners to quality education.
- Lastly, this study also wishes in encouraging the production, modification, and dissemination of open educational materials and by developing technologies that are helpful for the implementation of innovative pedagogy.

**6. Conclusion**

Acceptability ratings explained that the project thru Kolibri provide quality educational learning materials even of free of download and access. It can also be said that CONECT is paving a way for the development of helpful tools that may assist teachers in the classroom and making it easier to teach students of all different skill levels on safe and motivating environment adaptable among diverse learners. Furthermore, activities and opportunities are created with consideration of stakeholders to engage and connect with school. Also, parents and members of the community productively supports the project because without their help no learning kiosks will not be created which will lead to failure of the project.

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## Compliance with ethical standards

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