

EFFECTS OF FLEXIBLE LEARNING TRAINING ON TEACHERS' SELF-EFFICACY AND TECHNOLOGY INTEGRATION: BASIS FOR STRATEGIC FLEXIBLE LEARNING ACTION PLAN

MA. ARRA B. SANTOS

<https://orcid.org/0000-0002-5360-3273>

santos.mab@mpc.edu.ph

Marikina Polytechnic College

Sta. Elena, Marikina City, Philippines

DOI: <https://doi.org/10.54476/ioer-imrj/534612>

ABSTRACT

The flexible learning system has been fully implemented in Higher Education Institutions as a response to the global pandemic situation. To adapt to this system, several professional development programs related to enhancing teachers' digital knowledge and skills were offered to facilitate online education. In this study, a five-week Train-the-Trainer Flexible Learning Program was conducted among college instructors to capacitate them in implementing online courses. A mixed-method research design was used to examine the effects of the training on the instructors' self-efficacy and technology integration in their teaching practices. The beliefs and views of faculty on cognitive and social presence, academic integrity, and effective flexible learning were also determined. The instructors showed an increase in their level of confidence in implementing flexible online learning concerning communication, instruction, student engagement, assessment, and academic integrity after the training. It was also found that the instructors had an augmentation level. This implies the direct substitution of learning materials from print to digital format with the incorporation of some interactive digital applications and resources. With the results, there is still a need to provide technical support to upgrade and upskill the instructors in designing and implementing their flexible learning courses.

Keywords: Online Learning, Teachers' Professional Development, Self-Efficacy, Technology Integration, Training Evaluation

INTRODUCTION

The global pandemic situation has catalyzed various higher education institutions. This is seen in their response to continue providing education through a flexible learning system. This led to offering various learning modalities for students such as full online learning, blended learning, and modular-based learning. Although online learning has been practiced for several

years, it is only offered in some academic institutions to accommodate students who face constraints when it comes to time and location. Several studies have found that students engaged in online education are characterized as nontraditional learners who are full-time employees, married, and with children (Shea & Bidjerano, 2016; Wladis et al, 2016). Online education is now offered in higher education institutions as one alternative to face-to-face classes at the onset of the pandemic.

In the Philippines, colleges and universities were allowed to design and deliver programs and learning activities that suit the



institution, faculty, and students' level of technology, availability of resources, connectivity, and digital literacy. This allows the schools to assess their capability to offer a flexible learning modality suited for them. Flexible learning is defined as a "pedagogical approach allowing flexibility of time, place, and audience including, but not solely focused on the use of technology" (CMO no. 4 s 2020). It aims to provide an alternative system to overcome barriers to accessing quality education. Higher education institutions offer different learning modalities which include online learning courses.

To fully engage the students in online learning, the schools should be able to upgrade their facility and internet connectivity, adjust curriculum and instruction, and capacitate their teachers and staff. There are several professional development training programs given to faculty to upgrade their digital literacy and enhance their capability to implement flexible learning. Shen et al. (2013) discussed the need for teachers to create a social presence for online interactions and provide suitable orientation programs on how to use online learning platforms. Developing the knowledge and skills of teachers in implementing a flexible learning system is crucial to providing an effective teaching practice when it comes to instruction, assessment, and student engagement. One effort made by the Commission on Higher Education was to train the faculty of Higher Education Institutions in partnership with EducationUSA and the Texas International Education Consortium (TIEC). They provided a virtual Flexible Learning Training Program which aimed to improve the quality of flexible education to engage the students more in their learning tasks and become lifelong learners. The first phase of the program was about the flexible learning foundation coursework which tasked the faculty participants to plan and design a train-the-trainer session based on the provided program.

In this view, the researcher offered intervention training for the faculty on flexible learning after one semester of implementing a full online learning modality in the College. The purpose of the Train-the-Trainer Flexible Learning program was to address the needs of the faculty in designing and delivering flexible learning courses

by assessing their self-efficacy and technology integration. It also provided a venue for the faculty to share their best practices, experiences, and challenges encountered during the initial implementation of online learning at the College. The result of the research shall be the basis for developing a strategic flexible learning action plan to ensure sustainable quality online instruction.

OBJECTIVES OF THE STUDY

This study aimed to examine the effects of Flexible Learning Training on self-efficacy and technology integration of faculty members at Marikina Polytechnic College. Specifically, this study sought to answer the following objectives:

1. Assess whether there is a significant difference in faculty participants' pre- and post-survey mean scores on self-efficacy after the implementation of the Flexible Learning Training, focusing on a.) Communication; b.) Instruction; c.) Student Engagement; d.) Assessment; and e.) Academic Integrity.
2. Investigate the perspectives of faculty participants on fostering cognitive and social presence, academic integrity, and effective flexible online teaching and learning.
3. Determine the level of technology integration among faculty participants in their online courses.
4. Examine if there is a significant difference in faculty participants' pre- and post-survey mean scores on their level of technology integration after the implementation of the Flexible Learning Training.
5. Develop a strategic action plan to enhance the implementation of the Flexible Learning Program in the College.

METHODOLOGY

This study used an embedded mixed-method research design to investigate the effects of the flexible learning training program on the self-efficacy and technology integration of the faculty at Marikina Polytechnic College. Embedded mixed method research design uses both quantitative and qualitative data collection and analysis to answer the research questions. Creswell (2014) describes embedded research design as having qualitative data embedded either before, during, or after the quantitative intervention phase. The quantitative data is primarily collected to describe the result of the intervention and the qualitative data gives an in-depth explanation of the quantitative result and insight into the response of the participants (Creswell & Clark, 2018).

Participants. All faculty members of the College were invited to participate in the Flexible Learning Training. Out of 151 faculty members, there were 62 faculty who responded to the invitation from the different departments. Based on their participation, 37 active participants were able to accomplish more than three modules and attended online meeting discussions. There were 29 female and 8 male instructors with ages ranging from 25 to 54 years old. The remaining 25 participants were considered inactive participants as they only accomplished less than 2 modules and online meeting discussions. The participants who missed the modules and online meetings were due to the conflict in their teaching schedule. However, the participants could still access the training modules and recorded discussions in the Google Classroom. At the end of the training, only 30 responses were considered from the active participants who completed the five modules, and who accomplished and submitted the pre-survey and post-survey questionnaire.

Instrument. This study used a pre-survey and post-survey questionnaire to measure the participants' self-efficacy regarding flexible learning and technology integration in classroom practices. The survey questionnaire is adapted and modified from the TIEC training program on flexible learning. It is divided into six criteria: communication, instruction, student engagement, assessment, academic integrity, and technology integration. The first five criteria measure the level of confidence of the participants using the four-point Likert scale (1-not confident at all (NC); 2-not very confident (NVC); 3-somewhat confident (SC); 4-very confident (VC)). The technology integration added to the survey questionnaire was based on the SAMR model of Dr. Ruben Puentedura. It measures the level of how technology is being integrated into teaching practices. A five-point Likert scale (1-almost never (AN); 2-rarely (R); 3-seldom (S); 4-frequently (F); 5-always (A);) was used. Aside from the survey questionnaire, qualitative data was collected by posting open-ended questions in the discussion forum and having a focus group discussion with unstructured questions. The questions and FGD provided deeper insights into the knowledge, practices, and challenges the participants experienced during the implementation of flexible learning modes in college.

Data Gathering Procedure. The researcher invited ten members for the Flexible Learning core group who helped in planning and facilitating the implementation of the training. They were the deans, selected administrative directors, program heads, and ICT focal persons. After the collaborative planning with the core group members, the researcher invited all the faculty members to participate in the training through email in coordination with the deans and department heads. The Train-the-Trainer Flexible Learning Program was a five-week online training



to provide professional development support to faculty when it comes to the implementation of flexible learning in the College. It started from May to June 2021. Before the training program started, an orientation program was held to discuss the objectives, training activities, and expected output. The participants were invited to join the Google Classroom where the training materials, announcements, and discussion forums are posted. The participants were asked to answer the pre-survey questionnaire about their self-efficacy regarding flexible learning and technology integration in classroom practice.

The training was comprised of five modules based on the Flexible Learning Foundation Coursework provided by the TIEC trainers. All the training modules, learning resources, and prompt questions were posted and available in the Google Classroom at the beginning of the training. One module was assigned per week for the faculty to learn at their own pace. They were tasked to watch the recorded training video and answer the assessment task and prompt questions regarding the module. The researcher and core group members meet with the participants once a week to have a focus group discussion via Zoom meeting conference. During the FGD, the participants shared their insights about the module and how they can relate it to their teaching experiences. After the training, the post-survey questionnaire was administered. The quantitative data were analyzed using a paired sample t-test to determine if there was a difference in the pre-and post-survey rating on self-efficacy and technology integration at 0.05 level of significance. The qualitative data were coded and analyzed inductively to generate main themes and interpreted to triangulate the quantitative data.

RESULTS AND DISCUSSION

1. Teachers’ Self-efficacy in the Implementation of Flexible Learning

Table 1
Result for paired t-test for the Teachers’ Self-Efficacy on Flexible Learning

Criteria	Survey	Mean	SD	t	df	Sig (2-tailed)	Decision
A. Communication	Pre	3.380	0.373	-4.154	29	0.000	Significant Difference
	Post	3.642	0.325				
B. Instruction	Pre	3.520	0.392	-3.507	29	0.001	Significant Difference
	Post	3.807	0.405				
C. Student Engagement	Pre	3.417	0.437	-2.538	29	0.017	Significant Difference
	Post	3.633	0.449				
D. Assessment	Pre	3.293	0.492	-3.266	29	0.003	Significant Difference
	Post	3.660	0.449				
E. Academic Integrity	Pre	3.167	0.461	-2.804	29	0.009	Significant Difference
	Post	3.522	0.592				

It shows that they were able to establish their online presence and give proper communication to their students despite having no face-to-face classes. The faculty frequently use Messenger, Facebook, email, Google Meet, and Google Classroom as means to communicate with their students and to post the learning modules, activities, quizzes, and announcements. These applications are commonly used and readily accessible by the students. During the FGD, the faculty pointed out that the students have different capabilities and resources to engage in online learning. They have been resourceful and creative in providing various activities and assessments to engage students. These included sending modules via email, doing one-on-one demonstrations and consultations; and creating personalized lecture videos.

Instructors needed to inquire about the capability of students to engage in online classes and agree on how to communicate and participate in the learning process. They mentioned that they became more creative and resourceful in using various online teaching techniques and strategies to encourage their students to participate and utilize their available materials at home. They gave utmost consideration and guidance to students by discussing class policies and schedules. They also understood the value of providing class policies, expected schedules, deadlines, and expected learning activities and outcomes. The faculty ensured student engagement by offering several synchronous and asynchronous options for students. They also provided strategies for



collaborative learning, such as conducting online polls, facilitating small group discussions, and organizing games using different technological applications. They also constantly monitored their students' progress and reminded them of their schedules.

2. Teachers' Strategy on Fostering Cognitive and Social Presence in Flexible Online Course

Table 2

How the faculty foster cognitive and social presence in their online course

Themes	Description	Sample Quotes
Orientation on Guidelines about academic dishonesty and ways to ethical writing	This involves informing the students about the institution and class policy regarding cheating, plagiarism, and other academic dishonesty. It also includes being consistent in implementing policies; informing about the consequences; and teaching proper citation and paraphrasing.	<i>"I believe that the best intervention is to educate students on the consequences of plagiarism and to always emphasize the value of integrity even outside the classroom."</i> - VS <i>"And still, the best way is to inculcate to everyone the importance of copyrighting and giving attributions. Everyone can easily follow as long as they fully understand what the do's and don'ts are and also how to identify and create proper citations. We can also help them by showing easy tips on how to cite a site."</i> - AD
Use innovative strategies and technological applications	This involves the use of different plagiarism checker tools such as Turnitin and using techniques such as randomized questions, set timers, giving alternate questions, and open-ended questions.	<i>"Limit the time while taking quizzes, activities, and exams. Use quiz banks and randomize the questions and answers so that students have a more difficult time-sharing answer."</i> - AM <i>"There are different online tools and resources that can be used to promote academic honesty such as Copy leaks and PaperRater."</i> - MD
Give appropriate feedback and rubrics	This involves giving students feedback about their submitted work and rubrics are given which includes criteria on academic integrity.	<i>"During giving of instructions, I would emphasize the importance and how they would cite their sources in their paper. Once they submit, I will thoroughly read their compositions. Sadly, there are several instances when I would read similar blocks of paragraphs with five student works. I would point this out to inform them that they did not provide proper citation."</i> -LR <i>"I always encourage them to do the correct things and since it is part of my grade rubric it has always a consequence."</i> -LB

Table 2 shows the themes of how the faculty foster cognitive and social presence in their online courses. With regards to assessment, the faculty are very confident in using various online assessments with online and offline modes to develop higher-ordered thinking skills. It was emphasized in the FGD that learning goals should be aligned with the activities and assessments given to students. The faculty gave performance tasks and activities so that the students can showcase their skills like case analysis, demonstration videos, and portfolios which is graded using rubrics. Some faculty also provided quizzes and exams as a summative assessment. However, some faculty are concerned about cheating among students when providing objective-type tests. This is seen in Table 1 that

before the training the faculty are not as confident in ensuring academic integrity and preventing any dishonesty among students. Most of the problem is the "copy and paste" work of the submitted works and the exchanging of screenshots during the test.

3. Teachers' Perception of Being a Successful Online Teacher

With these challenges, the teachers were asked about their views on a successful online teacher as shown in Table 4.

Table 4

Perception of Being a Successful Online Teacher

Themes	Description	Sample Quotes
Achieve course objectives and learning outcomes	This pertains to the complete submission of course requirements and having good performance output on the given activities.	<i>"I would consider myself a successful teacher if the majority of my students completed and submitted their outputs on time and at their best even though not all of them can attend our online discussion, I still have trust in them that they can submit and comply with all my requirements and instructions I have set on them."</i> - EA <i>"Then I realized that as an online teacher, the indicator of success is when students are doing their assigned tasks online, absorbing any information or learning online, it is difficult to know person to person, at least I know that I am successful online when I am connected with my students."</i> - LB
Engage students in active participation and communication	This involves connecting to students through open communication, lively discussion, and online attendance.	<i>"It's not only the grades of the students that will determine if you are a successful online teacher. Learners can apply what they have learned in the course. The communication between our students is open and goes sometimes beyond sharing their personal lives."</i> - MD <i>"I also base my success on online teaching when students are very active in class discussions and queries about the lessons. The good attendance and eagerness to learn based on their facial expressions also give me the cue that I'm doing well in my online teaching."</i> - RU
Foster positive values and behavior among students	This includes developing students' self-directed learning, sense of belongingness, and motivation to continue their studies.	<i>"If I was able to teach them how to use their resources and how to teach them how to learn on their own. Bring out the best person they can be."</i> - RC <i>"To be a successful online teacher, I must be able to create a community where the learners will feel at ease in sharing their ideas while maintaining respect."</i> - VS
Design effective instructional materials and strategies for inclusive learning	This involves having clear learning goals, creating personalized video demonstrations of skills, and selecting appropriate learning resources and applications for students with different capabilities.	<i>"In today's learning setup, it is not just about achieving the objectives we have, it is also about setting up a learning environment that all of your students can access and learn from it taking note of their capabilities on how they can join, communicate, and participate in your class. As an online teacher, it is important that the students know and feel that they can still join and learn in your course even with the limited resources that they have."</i> - RB <i>"An Online Teacher can be said to have been successful in teaching her students online if she had done the following: made learning goals and paths clear to students; Used deliberate practice and mastery learning strategies; Provided prompt, constructive feedback; Provided a balance of challenge and support; Elicited active, critical reflection; and Link or answers inquiries to issues of high interest to the learners."</i> - AJ

This showed that most of the teachers value meeting their course objectives and that students should be able to submit the course requirements. This was followed by the active participation of students either during online discussions, attendance, or answering questions. But aside from academic performance, the teachers also value fostering positive and inclusive learning among their students. As much as



possible, the teachers encourage their students to finish their courses despite the challenges they might encounter. This is also supported by being able to design effective instructional material and provide resources and assessments that are suitable for students with different needs and resources.

4. Technology Integration on Online Teaching Practices

Table 5
Result for paired t-test for the Technology Integration in Teaching Practice

	Survey	Mean	SD	t	df	Sig (2-tailed)	Decision
	Technology Integration	Pre Post	3.938 3.992	0.701 0.948	-0.308	29	0.760

There was no significant difference in the score for technology integration (M=3.938, SD=0.701) before and after (M=3.992, SD=0.948) the training; t (29)=-0.308,p=0.760 as shown in Table 5. This suggested that there is a little transition in the stage of technology integration which is between augmentation and modification. The faculty frequently use applications such as Word and PowerPoint for lecture presentations and use Google Classroom to upload the course syllabus, learning modules, activities, and assessments.

The faculty seldom use real-time collaborations with students and co-faculty and provide digital feedback to students through additions and comment features. They also have limited use in creating their personalized lectures and demonstrations using applications like screen capture, video production, and editing. The faculty also have rarely created an online platform to publish students' output for an authentic audience and connect with other academic community.

5. Enhanced Professional Development Program on Flexible Learning

The Train-the-Trainer Flexible Learning Program should be able to provide more

professional development activities to capacitate the faculty in conducting Flexible Learning. The following strategic action plan may be conducted as shown in Table 6. This includes three objectives that aim to increase the capacity of the faculty to provide effective and efficient flexible learning for their students. It involves the development of training, guidelines, and assessment mechanism.

Table 6
Strategic Flexible Learning Action Objectives

Themes	Description	Sample Quotes
Achieve course objectives and learning outcomes	This pertains to the complete submission of course requirements and having good performance output on the given activities.	I would consider myself a successful online teacher if the majority of my students completed and submitted their outputs on time and at their best even though not all of them can attend our online discussion, I still have trust in them that they can submit and comply with all my requirements and instructions I have set on them. - EA Then I realized that as an online teacher, the indicator of success is when students are doing their assigned tasks online, according any information or learning online, it is difficult to know person to person, at least I know that I am successful online when I am connected with my students. - LB
Engage students in active participation and communication	This involves connecting to students through open communication, lively discussion, and online attendance.	It's not only the grades of the students that will determine if you are a successful online teacher. Learners can apply what they have learned in the course. The communication between our students is open and goes sometimes beyond sharing their personal lives. - MD I also base my success on online teaching when students are very active in class discussions and queries about the lessons. The good attendance and eagerness to learn based on their facial expressions also give me the cue that I'm doing well in my online teaching. - RU
Foster positive values and behavior among students	This includes developing students' self-directed learning, sense of belongingness, and motivation to continue their studies.	If I was able to teach them how to use their resources and how to teach them how to learn on their own. Bring out the best person they can be. - RC To be a successful online teacher, I must be able to create a community where the learners will feel at ease in sharing their ideas while maintaining respect. - VS
Design effective instructional materials and strategies for inclusive learning	This involves having clear learning goals, creating personalized video demonstrations of skills, and selecting appropriate learning resources and applications for students with different capabilities.	In today's learning setup, it is not just about achieving the objectives we have, it is also about setting up a learning environment that all of our students can access and learn from it taking note of their capabilities on how they can join, communicate, and participate in your class. As an online teacher, it is important that the students know and feel that they can still join and learn in your course even with the limited resources that they have. - RB An Online Teacher can be said to have been successful in teaching her students online if she had done the following: made learning goals and paths clear to students; Used deliberate practice and mastery learning strategies; Provided prompt, constructive feedback; Provided a balance of challenge and support; Elicited active, critical reflection; and Link or answers inquiries to issues of high interest to the learners. - AJ

CONCLUSIONS

This study has found that the train-the-trainer Flexible Learning Training Program has improved the teachers' self-efficacy in implementing their online courses. The teachers were able to provide various strategies and activities to engage students through open communication, interactive instruction, and authentic assessment. The teachers were able to encourage collaboration among students to connect lessons to students' experiences and build rapport. The teachers were able to emphasize the

importance of academic integrity by providing orientation on school policy about academic dishonesty and having discussions on ethical writing. The teachers perceived that being able to achieve the course objectives, engaging students in a positive learning environment, and designing effective teaching strategies define a successful online teacher.

RECOMMENDATIONS

This study recommends that the institutions should provide capacity-building programs and policies to strengthen the flexible learning system offered. The teachers should be able to integrate technology at modification and redefinition levels rather than substitution and augmentation. This may be done by providing training and workshops that would allow to upskill the teachers in creating learning materials for flexible learning. Furthermore, there should be continuous monitoring and evaluation of the policies and guidelines being implemented to improve the flexible learning system in the institution.

Acknowledgments

The author would like to thank the Commission on Higher Education, EducationUSA, and Texas International Education Consortium (TIEC) for the Continuity of Education Program - Training on Flexible Learning Foundations.

REFERENCES

- CHED Memorandum Order no. 04 series 2020. Guidelines on the implementation of flexible learning. *Commission on Higher Education*. Retrieved from <https://chedro3.ched.gov.ph/wp-content/uploads/2020/10/CMO-No.-4-s.-2020-Guidelines-on-the-Implementation-of-Flexible-Learning.pdf>
- Creswell, J.W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches*, 4th ed. USA: Sage Publication Inc.

- Creswell, J. W., Clark, V. L. P. (2018). *Designing and conducting mixed methods research*. USA: Sage Publication, Inc.
- Hamilton, E., Rosenberg, J., Akcaoglu, M. (2016). The substitution augmentation modification redefinition (SAMR) model: a critical review and suggestions for its use. *Tech Trends*, 60, 433-441. <http://dx.doi.org/10.1007/s11528-016-0091-y>
- Shea, P., Bidjerano, T. (2016). A national study of differences between distance and non-distance community college students in time to first associate degree attainment, transfer, and dropout. *Online Learning*, 20(3), 7-19.
- Shen, D., Cho, M.H., Tsai, C.L, Marra, R. (2013). Unpacking online learning experiences: online learning self-efficacy and learning satisfaction. *The Internet and Higher Education*, 19, 10-17. doi:10.1016/j.iheduc.2013.04.001
- Wladis, C., Conway, K.M., Hachey, A.C. (2016). Assessing readiness for online education – Research models for identifying students at risk. *Online Learning* 20(3), 97-109.

AUTHOR'S PROFILE

Ma. Arra B. Santos is a teacher at Marikina Polytechnic College for both undergraduate and graduate school science courses. She holds a degree on Bachelor of Science major in Biology from the University of the Philippines-Baguio. After having experience in teaching secondary education, she took her Continuing Professional Education Units and a Master's Degree in Science Education at Marikina Polytechnic College. She published an activity manual for Disaster Readiness and Risk Reduction. She takes part in several training and workshops relevant to environmental and occupational safety and health. She is taking her Doctor of Philosophy in Biology Education at the University of the Philippines-Diliman



COPYRIGHTS

Copyright of this article is retained by the author/s, with first publication rights granted to IIMRJ. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution – Noncommercial 4.0 International License (<http://creativecommons.org/licenses/by/4>).