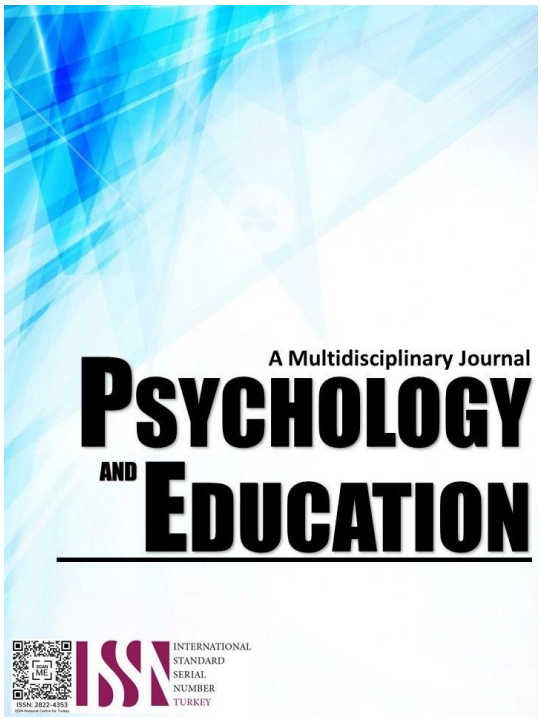
THE LEVEL OF EFFECTIVENESS OF BLENDED LEARNING AMONG PUBLIC SECONDARY SCHOOLS IN THE DIVISION OF QUEZON



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Research Article

The Level of Effectiveness of Blended Learning Among Public Secondary Schools in the Division of Quezon

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Abstract

This study determined the level of effectiveness of blended learning among the public secondary schools in the Division of Quezon, School Year 2020-2021 along with the Lesson Delivery, Learner's Engagement, Learner's Achievement, and Learner's Assessment; the problems encountered; the coping strategies employed; and the generated Policy Recommendations towards quality education.The descriptive-evaluative-correlational method was employed while survey-questionnaire was used in the data gathering.The following findings have surfaced; the effectiveness of blended learning among public secondary schools were Learner's Achievement, (3.73); and Learner Assessment, (3.69), while Lesson Delivery, (3.370); and Learner's Engagement (3.34) were considered effective. On the problems encountered; Teachers need customizable instructional delivery models, (3.72); Creating an Effective Self- Paced Learning Environment, (3.72); and a Comprehensive Learning Management System which offers flexibility and ease of use (3.71) were rated much serious. On the Coping Strategies; Positivity despite hardships, (4.05).This study was delimited to its respondents who were public secondary (JHS) teachers in the Division of Quezon that employed blended learning delivery modality.The sudden onset of pandemic had brought profound significant challenges in the education system. With all the substantial and reliable information that blended learning is not only necessary to survival in the academe during crisis but an essential delivery method for long-term success. Whereas the Policy Recommendation generated in this study could be a valuable foundation for a foreseeable future of blended learning delivery modality.

Keywords: *effectiveness, blended learning, delivery*

Introduction

The sudden onset of COVID-19 pandemic had dramatically recreated the world of education. The response to fight the containment of the virus had brought profound significant educational challenges among schools, teachers, learners, and its stakeholders. As UNESCO, (2020) reported that approximately more than 1.5 billion students and youth across the planet are or have been affected by school and university closures. With the sudden and unprecedented shuttering, educators had faced the most jarring and rapid shift from the traditional classroom set-up to a virtual learning environment, which most are a novice in this digital learning endeavor. Now, there is a growing recognition that education must happen both online and offline, in school and at home.

Enkindled with this hope and aspirations, the Philippines under a state of calamity, under a Presidential Proclamation No. 929 s. 2020 due to an emerging global emergency in public health, had not ceased to bring forth quality education amidst educational challenges brought about by the sudden effects of the Covid-19 pandemic. Through the Bayanihan to Heal As One Act or Republic Act No. 11469 which promotes and protects the collective interests of all Filipinos in these challenging times, the Department of Education (DepEd) under Secretary Leonor Briones had strategically calculated how public schools mobilize their safe operation through the Basic Education Learning Continuity Plan (BE-LCP) under DepEd Order No. 12, s. 2020 or the Adoption of Basic Education Learning Continuity Plan for School Year 2020-2021 in Light of Covid-19 Public Health Emergency. This complies with Resolution No. 29 of Inter-Agency Task Force (IATF), dated April 27, 2020, as well as the Department of Health (DOH) Guidelines on the Risk-based Public Health Standards for Covid-19 Mitigation.

The BE-LCP stands with the principles to link DepEd's pivot to quality and into the future of education, under the framework of Sulong Edukalidad. This is also in response to the DepEd's 2022 Vision which looks forward to providing the delivery of quality, accessible, relevant, and liberating K to 12 Program by a modern, professional, pro-active, nimble, trusted, and nurturing DepEd.

As such, DepEd Secretary Leonor Briones said that blended learning is a major component of learning delivery for the school year 2020-2021 wherein the combination of the various learning modalities such as printed modules, offline digital modules, online, and TV and Radio-based instruction will be used by students and teachers when classes formally start. Blended learning means lessons will be delivered

outside the traditional face-to-face setup. It has three learning modalities: Modular Distance Learning uses self-learning modules that are printed or in digital format; Online Distance Learning uses the Internet in downloading learning materials and uploading homework; and Radio/TV-based Instructions to those who have no Internet connectivity. Put simply, blended learning refers to a mix of online distance learning, modular distance learning, and TV/Radio-based Instruction.

The use of blended learning is education's new changing face, but it is a great opportunity for education providers to fully embrace modern best practices and new technologies, even if this means breaking out of the comfort zone.

Some of the related studies which supports the present study were conducted by Graham, (2013) on Blended learning or the integration of face-to-face and online instruction is widely adopted across higher education with some scholars referring to it as the "new normal" in course delivery by Norberg et. Al, (2011); Centre for Digital Education's (2015) showed that blended learning improved student engagement increased by 69%; student retention rates rose by 39%; test scores improved by 28%; grade rates up by 22%, and attendance increased by 22%; Kenney and Newcombe (2011) on blended learning had a higher average score than the non-blended learning environment. Additionally, Gyamfi and Gyaase (2015) found that when considering the quality of the content, learning, communication and the level of engagement experienced, students' perceptions of the blended-learning environment were positive. While their findings were positive in that student learning increased due to the blended learning environment, the researchers warn that there should be more research done in the arena. Hence, the present study is an auxiliary investigation that would add up to the body of knowledge regarding blended learning, to address some research gaps identified along the study.

Coming up with all this substantial and reliable information, the researcher believes that blended learning is not only necessary to survival in the academe but an essential delivery method for long-term success. This prompted the researcher to study the effectiveness of blended learning among public secondary schools in the Division of Quezon for the school year 2020-2021. So whatever will be the result of this work could be a valuable foundation for a foreseeable future in blended learning delivery modality.

Research Questions

This study determined the level of effectiveness of blended learning among public secondary schools in the Division of Quezon for the school year 2020-2021.Specifically, it sought answers to the following questions:

1. To what extent is the level of effectiveness of blended learning among public secondary schools along:
   1.1 Lesson delivery;
   1.2 Learner's Engagement;
   1.3 Learner's Achievement; and
   1.4 Learner's Assessment?
2. How significant is the agreement on the rank orders of the extent of the level of effectiveness of blended learning among public secondary teachers along the aforementioned aspects?
3. What problems were encountered by the respondents in the delivery of blended learning?
4. How significant is the agreement on the rank orders of the problems encountered by the respondents in the delivery of blended learning?
5. What coping strategies were employed by the respondents in the delivery of blended learning?
6. How significant is the agreement on the rank orders of the coping strategies employed by the respondents in the delivery of blended learning?
7. What Policy Recommendations can be generated based on the findings of the study?

Literature Review

This part contains the presentation of the review of related literature and studies which has become the strong backbone for the demand of this study as well as the development of insights leading to the design of the theoretical and conceptual framework, with their corresponding paradigm.The topics on Blended Learning, Coping Strategies, Problems Encountered, and Policy Recommendations were derived from previously conducted studies, journals, books, published theses and dissertations, and websites.

Blended Learning

Blended learning (BL), or the integration of face-to-face and online instruction is widely adopted across higher education with some scholars referring to it as the "new traditional model" or the "new normal" in course delivery.

The term blended learning involves technology in the

classroom. More specifically, it refers to the use of online sites and apps to deliver a portion of the curriculum while the teacher facilitates instruction.In an Article by Malindog-Uy (2020), she stated that according to Sec. Briones, “blended learning” is not as novel as the novel coronavirus in the Philippines. Such a form of learning is already offered in some schools and universities in the country. "Blended learning" or “hybrid learning” from the standpoint of the DepEd is a fusion of “online distant learning” and “in-person” delivery of printed materials to the homes of the learners through the barangays (villages) for those who do not have internet access and interactive facilities in the comfort of their homes. In localities where this is not possible, the DepEd will use television and radio-based instructions. Radios and televisions across the country will be used to broadcast lessons, materials, and instructions to those who don't have access to a computer or the internet. “Blended learning” is “differentiated instruction”, where there’s a combination of online and in-person delivery. The online portion effectively replaces some of the face-to-face contact time rather than supplementing it.

Malindog-Uy cited blended learning which is not “new” as the Coronavirus but is used by different universities already. He had also cited blended learning from the standpoint of DepEd, which makes it relevant and alike with the present study. The difference lies in the source because his was an article, but the present study is a research paper.According to (Powell et al. 2015), blended learning is a combination of traditional face-to-face schooling and online instruction, but the online component must deliver personalized, differentiated instruction for a group of learners.

Powell et. Al, also defined blended learning, giving foundational meaning on the present study.Alijani, Kwun, and Yu, (2014) examined the cognitive processes, relevant factors, and benefits of using blended-learning models within KIPP (Knowledge is Power Program) in New Orleans, Louisiana. They surveyed 186 teachers at nine schools and showed that 48% of the respondents agreed that they believed blended learning was more effective than traditional face-to-face instruction. Moreover, they found that 94% of the respondents believed that blended learning increases a school’s academic success. The results of this study also indicated that the transition to a blended-learning model benefitted students by allowing them to learn at their paces, and teachers by allowing them to provide increased individual attention when needed. This study supports the use of blended-learning models in schools, providing tools to improve student achievement and teacher effectiveness.

The study of Alijani, Kwun, and Yu focused on the cognitive processes, relevant factors, and benefits of using blended-learning models within KIPP in New Orleans, Louisiana, while the present study deals with the effectiveness of blended learning in public secondary schools in the Division of Quezon. Similarity lies on the study of blended learning.Dziuban et. Al, (2018), contended that blended learning coalesces around access, success, and student's perception of their learning environments. Success and withdrawal rates for face-to-face and online courses are compared to those for BL as they interact with minority status. Investigation of student perception about course excellence revealed the existence of robust if-then decision rules for determining how students evaluate their educational experiences. Those rules were independent of course modality, perceived content relevance, and expected grade. The authors concluded that although blended learning preceded modern instructional technologies, its evolution will be inextricably bound to contemporary information communication technologies that are approximating some aspects of human thought processes. The study of Dziuban et. Al contended that blended learning around access, success, and student's perception of their learning environments. The similarity lied in the discussion about blended learning. Its differences were seen in the scope, respondents, objectives, etc.

The study by Kintu and Zhu, (2016) investigated the possibility of blended learning in a Ugandan University and examined whether student characteristics (such as self-regulation, attitudes towards blended learning, computer competence) and student background (such as family support, social support, and management of workload) were significant factors in learner outcomes (such as motivation, satisfaction, knowledge construction and performance). The characteristics and background factors were studied along with blended learning design features such as technology quality, learner interactions, and Moodle with its tools and resources. The findings from that study indicated that learner attitudes towards blended learning were significant factors to learner satisfaction and motivation while workload management was a significant factor to learner satisfaction and knowledge construction. Among the blended learning design features, only learner interaction was a significant factor in learner satisfaction and knowledge construction. Kintu and Zhu’s study investigated the possibility of blended

learning in a Ugandan University and examined whether student characteristics and student background were significant factors in learner outcomes which made it different from the present study. They are alike in the sense that they focused on blended learning.

Kintu et. Al, (2017), investigated the effectiveness of a blended learning environment by analyzing the relationship between student characteristics/background, design features (as independent variables), and learning outcomes (as dependent variables). A survey was administered to 238 respondents to gather data on student characteristics/background, design features, and learning outcomes. Multiple regression analysis results showed that blended learning design features (technology quality, online tools, and face- to-face support) and student characteristics (attitudes and self-regulation) predicted student satisfaction as an outcome. The results indicate that some of the student characteristics/backgrounds and design features are significant predictors for student learning outcomes in blended learning.

The study of Kintu et. Al. is similar to the present study since it investigated the effectiveness of a blended but differs on analyzing the relationship between student characteristics/background, design features, and learning outcomes. Studies comparing blended learning with traditional face-to-face have indicated that learners perform equally well in blended learning and their performance is unaffected by the delivery method (Kwak, Menezes, & Sherwood, 2013). A study by Naaj et. Al, (2012), indicated that technology and learner interactions, among other factors, influenced learner satisfaction in blended learning. The studies by Kwak, Menezes, & Sherwood, and Naaj et. Al, all supported the present study as it elaborated blended learning. Curwood and Cowell, (2011), explored how implementing a blended learning unit into their curriculum would impact their students. While they had no control group, they did compare the results of blended learning to previous years of student observations and felt that students were more engaged in the blended learning environment than they had been in a traditional setting.

Curwood and Cowell's showed similarities with the present study as it explored how the implementation of blended learning. However, the studies were not actually the same, they differed on the content and locale of the study. Jacobs (2014) looked at schools that had implemented blended learning to determine what made that implementation successful, but they both found that student engagement increased, which helped with the overall success of blended learning. The study of Jacobs determined the level of implementation of blended learning among schools, which in a way is likened to the present study. But again, it differed in many ways such as its scope, respondents, etc.

Camahalan and Ruley, (2014) used observations of students as one measure of the effect of blended learning on students in an English classroom. They focused their research on writing at the middle school level and used a relatively small sample size of only sixteen students in one school. The students were divided into a control and treatment group, and the lessons focused on grammar. Overall, the treatment lasted two weeks. The researchers observed that students in the treatment group appeared to be more engaged in their tasks. Because of the smallness of the sample size, it is difficult to generalize these findings. Camahalan and Ruley's study used observations of students to measure the effect of blended learning, but the present study asked the perceptions of teachers to measure the effectiveness of blended learning in the Division of Quezon.

Huang and Hong (2016) had a slightly larger sample size in their study of Taiwanese tenth-grade English students. In their study, 40 students were placed in the control group and 37 in the experimental group for a twelve-week long study. Huang and Hong were looking specifically at whether or not blended learning increased English reading comprehension and Information and Communication Technology (ICT) skills. At the end of the twelve-week experiment, they found that students in the experimental group, who had participated in blended learning, had shown a significantly larger increase in their ICT and English reading comprehension skills than those in the control group. The researchers argued that this increase in skills was because students were more actively engaged in using the technology. Because this study had a larger sample size and lasted for a significant amount of time, it is easier to generalize the findings and argues that blended learning caused a sustained increase in engagement for the students involved in this study.

The study of Huang and Hong is an experimental study while the present study is a descriptive research. Its respondents were Taiwanese tenth-grade English students, but the present study focuses on secondary teachers. Both studies blended learning. Ahn et al. (2016), also found out that blended learning can be successful for lower-level skill achievement. They

found that time in the program was important for lower-achieving students, who had much higher gains in their achievement than students who were already high achieving. The program focused on basic, rote drills, and the researchers determined that it was very effective for lower-achieving students who may be missing some of the basic skills that the program focused on. They argued that even twenty hours of rote math drills using FIM per school year could improve scores for lower-achieving students and is worth the time and investment for the district. In both studies, basic skills were enhanced through the use of blended learning.

Both the present study and the study of Ahn et. al. focused on blended learning but they differed in its research delivery. The naturalistic, quasi-experimental study of Hiett (2017), examined the effect of the rotation model of blended learning at the middle school level on students' language arts performance to determine how the rotation model of blended learning compares to the traditional model of learning. Data analysis consisted of both stepwise multiple regression and two-way ANOVA. The study found no significant difference in the academic achievement of special education or regular education students. However, gifted students who participated in the blended model of instruction performed at a lower level than those who participated in the traditional model of instruction. Educational stakeholders may use this study, and others like it, to make decisions on the adoption of educational models at the middle school level that are beneficial, as well as to avoid models for subgroups that might be harmful.

The study of Hiett is a naturalistic, quasi-experimental study of blended learning at the middle school level which used both stepwise multiple regression and two-way ANOVA. In comparison, the present study deals with blended learning, however, it is a descriptive study, focusing on teachers as its respondents, and Kendall as its statistical treatment. Thelal Iqab Owei (2018), investigated the effect of blended learning on the achievement and motivation to learn English of German Jordanian University students. The study sample comprised 34 students who were selected purposefully and distributed into experimental and control groups. The experimental group studied English through a computerized program melded with the traditional method, whereas the control group was taught solely by the latter. The analysis of covariance (ANCOVA) revealed statistically significant differences in achievement between the two groups, indicating that the experimental group performed better than the control group. Significant differences were also found in the respective groups' motivation to learn English.

Similarly, the study of Thelal Iqab Owei investigated the effect of blended learning, while the present study investigated not on the achievement and motivation to learn English of German Jordanian University students, using the experimental method. The present study dealt with the effectiveness of blended learning in public secondary schools in the Division of Quezon. Rabacal (2018), provided a discussion of the various potential of blended learning in the context of one ASEAN classroom setting. The present study used a pre-test post-test quasi-experimental design to determine the effect of the blended learning approach among graduate students' academic performance. Findings revealed that the graduate students' academic performance was greatly influenced by the use of the blended learning approach. Evidence is provided to suggest that blended learning is potentially meaningful when utilized as a medium of instruction to enhance both the viability and productivity of significant learning outcomes. This study recommends the use of a blended learning approach in teaching among graduate school students.

Additionally, the study of Rabacal provided a discussion of blended learning, similar to the present study, but its context differed. Robles (2012) found out the effect of the blended learning approach on the students' performance in education subjects. the following conclusions were made: 1. There is no significant difference in the performance between the control group and the experimental group before the experiment was conducted.2. Students who did not undergo blended learning did not show significant improvement in Ed 103; 3. Students who undergo blended learning show significant improvement in Ed 103; 4. There is a significant difference between the performances of the control and experimental group in Ed 103 after the conduct of the experiment. It is recommended that blended learning be utilized by faculty members in teaching education subjects. However, despite its importance, this study's limitations are apparent. BL needs effective planning and upgrading for educators to address critical issues such as establishing appropriate assessments and rubrics. Equally important is the technological expertise of both teachers and students. This innovation recommends that teachers must learn how to effectively design their BL activities. With this, the author highly recommends further research along this type of innovation.

Robles studies focused on the effect of the blended

learning, on the other hand the present study dealt with its effectiveness. Peralta & Salazar (2016) concluded that a blended learning course was beneficial to students learning. The horizontal course syllabus, videos, online learning sites, and slide presentations were very helpful teaching tools to diverse students. A limited amount of classroom time and the students' difficulty to absorb the lessons immediately contributed to dissatisfaction to some students. Computer skills and access to the Internet were necessary for blended learning. Recommendations included: To improve this blended learning course: There should be a brief slide presentation for each module. The Computer Laboratory should be used every meeting to hone the ICT skills of the students. Activity sheets and the checklist of requirements should be prepared for the students.

The study of Peralta & Salazar is similar with the present study as it delved into blended learning. Differences were on its research objectives, the scope of the study. Aguinaldo (2013) implemented blended learning in an impoverished academic institution using a Bricolage approach model. The study resulted in a high acceptability rate of e-learning usage despite the socio-economic profile of the student's parents, unavailability of internet connection, and inadequacy of technological resources of Isabela State University San Mateo Campus. This implies that blended learning can be implemented successfully using the right blend of online learning and face-to-face learning following the Bricolage approach model.The study of Aguinaldo is also similar to the present study as it focused on blended learning but differed on some aspects.

Coping Strategies

Motivation is seen here as an outcome because, much as cognitive factors such as course grades are used in measuring learning outcomes, affective factors like intrinsic motivation may also be used to indicate outcomes of learning.Murphy (2017), on the Role of the Principal in Implementing Blended Learning in Algebra I Courses in South Carolina Public Schools resulted in the findings that there are two primary roles for the principal emerged: Principal as Technology Leader and Principal as Manager. The primary behaviors were creating and communicating a strong vision as well as creating a plan to sustain the vision. Lastly, the major goals of the principals were to improve student achievement and to provide differentiation for struggling students.Murphy identified the roles of the Principal in Implementing Blended Learning in Algebra I Courses in South Carolina Public Schools, which can obviously dictate the discrepancy between the former and the present study.

Wilichowski & Cobo (2020), stated that to avert the damage brought on by the coronavirus (COVID-19) pandemic, schools must take aggressive education policy response, which involves: i) coping during the crisis to reduce learning loss while schools are closed, ii) managing continuity of learning to promote learning recovery as schools reopen safely, and iii) using the crisis as an opportunity to improve and accelerate, making education systems stronger and more equitable than they were before.

Farah (2020), offered four tips for teachers shifting to teaching online: Remember that simplicity is key. As remote instruction offers little time for clarifications, assignment instructions should be simple and direct, offering no more than two resources. Leverage a single digital platform as a home base for students. This digital platform should be the one place students can find the most up-to-date information related to their course. Incorporate longer, student-driven assignments into your lesson plan. This will allow you more time for planning future units while offering students greater autonomy. Make an effort to stay connected with students on an individual basis through email, phone, or video. These interactions will help students stay engaged and motivated.

Manalo & De Villa (2020) explored the lived experiences of secondary teachers in the Division of San Pablo City in the pre-implementation of distance learning in the new normal. Results identified three core themes related to preparation such as gathering resources and establishing practices, profiling learners, and capacity building for continuous learning and development; three core themes related to challenges such as complexity of assessment, difficulty in instructional delivery, and the digital divide; and five core themes related to coping mechanisms which include positive well-being, time management, openness to change, peer mentoring, and collaboration. Findings revealed that as education migrates to a New Normal, teachers make necessary preparations to equip themselves with distance learning. Though they face challenges that may hamper their work, they still manage to cope with the new normal to continue their tasks. The higher offices and school authorities should work with teachers at the pre-implementation of distance learning to address their needs in resources and training to effectively facilitate the delivery of quality education for students.

Problems Encountered

According to Tuominen and Leponiemi (2020), "The ongoing Covid-19 crisis has been and will continue to be, both a massive challenge and a learning experience for the global education community. Practically no one saw (or wanted to believe) something like this coming." The situation has been described as 'emergency online homeschooling'. Among teachers, burnout has been a prominent concern (Bottiani et. al, 2019; Herman et. al, 2020). Stress-related outcomes can contribute to increased maladaptive behaviors such as denial, withdrawal, alcohol or substance abuse, anger, and aggression, (Carver & Connor- Smith, 2010). Teacher coping is particularly important given the potential for teacher stress to negatively affect students, or so-called stress-contagion, (Oberle & Schonert-Reichl, 2016).

Petrie (2020), identified additional stressors for educators that included among others: 1) Teachers without resources to discuss pandemics and uncertainties with their learners and who are scrambling to go digital without much support and training; 2) Learners who are highly anxious and lonely, unable to focus and worried about having an unnatural closure to the academic year; 3) Parents who are overwhelmed and unprepared to coach their kids about digital tools and innovative educational practices, also trying to balance work and homeschooling; and 4) The relationships among all these players, including the maintenance of positive student-teacher-parent rapport and encouraging collaborative learning and socialization that is so challenging online.

The report by Oxford Group (2013), cited that some learners (16%) had negative attitudes to blended learning while 26% were concerned that learners would not complete study in blended learning. Islam (2014) posted that, users may be dissatisfied with an information system due to ease of use. Siko (2014), found out that while many students appreciated the flexibility that went with blended learning, they struggled with the ability to self-pace. Both students and parents acknowledged that learning to self-pace was an important skill, but they worried that it might prevent some students from being successful in a blended learning course.

Methodology

Research Design

The descriptive-evaluative-correlational method was employed in this study. Descriptive and evaluative in the sense that it described and evaluated the level of effectiveness of blended learning among public secondary schools in the Division of Quezon for the school year 2020-2021 along Lesson delivery, Leaner's Engagement, Learner's Achievement and Learner's Assessment; the problems encountered and coping strategies of the respondents in the implementation of the blended learning; and its output or Policy Recommendations.On the other hand, a correlational method was used to determine the significant agreement on the level of effectiveness of blended learning on the aforementioned aspects; the test of significant agreement on the problems encountered in the delivery of blended learning and also on the coping strategies employed by the respondents in the implementation of blended learning. Statistical tools were used to obtain relationships. Survey-questionnaire was the research instrument in gathering the data. Purposive sampling was employed in getting the sample respondents. Then, slovin's foumula was computed.

Participants

The respondents of the study were composed of public secondary school teachers in the Division of Quezon, Quezon Province, Region IV-A, CALABARZON.

Instruments of the Study

This study made use of a survey questionnaire as the main instrument in gathering the data needed in the study. The questionnaire with a researcher-made rating scale (Likert Scale) was used as the main instrument or data-gathering tool to determine the level of effectiveness of blended learning among public secondary schools in the Division of Quezon. The Kendall Coefficient of Concordance W was used to determine the significance of agreement in the rank orders on the level of effectiveness of blended learning among public secondary schools in the Division of Quezon on the aforementioned aspects and on the coping strategies of the respondents in the implementation of blended learning.

Procedure

The researcher used both descriptive and inferential statistics to analyze the data. The frequency counts, percentage techniques, total score, weighted mean, were used to describe the level of effectiveness of blended learning among public secondary schools in the Division of Quezon, problems encountered and the coping strategies in the implementation of blended learning.

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The Kendall Coefficient of Concordance W was used to determine the significance of agreement in the rank orders on the level of effectiveness of blended learning among public secondary schools in the Division of Quezon on the aforementioned aspects and on the coping strategies of the respondents in the implementation of blended learning.

Ethical Considerations

Permissions and consent are secured by the researchers to ensure ethical conduct of the study. From the supervisors down to participants themselves. Participants' name and identity, personal insights, and relevant information are kept with confidentiality.

Results

The Level of Effectiveness of Blended Learning Among Public Secondary Schools in the Division of Quezon

Blended Learning refers to a learning delivery that combines face-to-face with any or a mix of online distance learning, modular distance learning, and TV/Radio-based Instruction. From the standpoint of DepEd, "blended learning" is a fusion of online learning and in-person delivery of printed materials to the homes of the learners for those who do not have internet access and interactive facilities. In this part, the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along lesson delivery, Learner's engagement, Learner's achievement, and learner's assessment was tabularly and graphically presented below.

Lesson Delivery. Lesson delivery refers to ways of lesson planning and how content or lessons are delivered to the students in this blended learning delivery modality. Table 3 presents the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Lesson Delivery.

Table 1 *Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Lesson Delivery*

	District 1			*District 2*		
Indicators	*WX*	*I*	*R*	*WX*	*I*	*R*
Establish a positive virtual environment	3.68	ME	1	3.52	ME	1
Lessons are delivered like in the traditional set-up	3.35	E	6	3.32	ME	6
Student's attentuon is sustained	3.21	E	7	3.20	E	7
Demonstrate command of the subject matter	3.53	ME	3	3.49	E	2
Receptive to learners opinions, behaviors	3.45	E	4	3.37	E	4.5
Make a smooth transition into next subject	3.40	E	5	3.37	E	4.5
Internet connection does not interfere with the lesson delivery	2.99	E	8	2.92	E	8
Provide options for students of different learning styles	3.55	ME	2	3.48	E	3
Average WX	3.40	E		3.34	E	

	District 3			*District 4*			*Average*		
Indicators	*WX*	*I*	*R*	*WX*	*I*	*R*	*WX*	*I*	*R*
Establish a positive virtual environment	3.70	ME	1.5	3.45	E	1	3.59	ME	1
Lessons are delivered like in the traditional set-up	3.48	E	7	3.15	E	6	3.32	E	6
Student's attentuon is sustained	3.52	ME	5.5	3.12	E	7	3.26	E	7
Demonstrate command of the subject matter	3.67	ME	3	3.37	E	2	3.51	ME	2
Receptive to learners opinions, behaviors	3.64	ME	4	3.28	E	3.5	3.43	E	4
Make a smooth transition into next subject	3.52	ME	5.5	3.21	E	5	3.37	E	5
Internet connection does not interfere with the lesson delivery	3.09	E	8	2.71	E	8	2.93	E	8
Provide options for students of different learning styles	3.70	ME	1.5	3.28	E	3.5	3.50	ME	3
Average WX	3.54	ME		3.20	E		3.37	E	

It can be gleaned from the table that the Level of Effectiveness of Blended Learning among Public Secondary Schools in Infanta District along Lesson Delivery on District 1 was 3.40 (Evident), District 2 was 3.34 (Evident), District 3 was 3.54 (Much Evident), and District 4 was 3.20 (Evident). Consolidating the result, indicators rated as Much Evident were: Establish a positive virtual environment, (3.59); Demonstrates command of the subject matter, (3.51); and Provide options for students of different learning styles, (3.50). On the other hand, the indicators rated as Effective were Receptive to learners' opinions, behaviors (3.43); Make a smooth transition into next subject, (3.37); Lessons are delivered in traditional set-up, (3.32); Student's attention is sustained, (3.26); and Internet connection does not interfere with the lesson delivery, (2.93).

Therefore, the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Lesson Delivery was 3.37 or Effective.

Based on the findings of the study, public secondary teachers teaching assessed the lesson delivery using blended learning as effective. It ranked highest on its effectivity by establishing a positive virtual environment and the lowest in rank is perceived on the Internet connection does not interfere with the lesson delivery. Blended learning is a major component of learning delivery for the school year 2020-2021 wherein the combination of the various learning modalities such as printed modules, offline digital modules, online, and TV and Radio-based instruction will be used by students and teachers when classes formally start. Blended learning means lessons will be delivered outside the traditional face-to-face setup. It has three learning modalities: Modular Distance Learning uses self-learning modules that are printed or in digital format; Online Distance Learning uses the Internet in downloading learning materials and uploading homework; and Radio/TV-based Instructions to those who have no Internet connectivity. Put simply, blended learning refers to a mix of online distance learning, modular distance learning, and TV/Radio-based Instruction.

Blended learning (BL), or the integration of face-to-face and online instruction (Graham 2013), is widely adopted across higher education with some scholars referring to it as the "new normal" in course delivery (Norberg et al. 2011).

In the study of Gyamfi and Gyaase (2015), students' perceptions of the blended-learning environment is positive when considering the "quality of the content, learning, communication and the level of engagement experienced. This validates the effectiveness of blended learning on the side of the student, while the present study focuses on teacher's appraisal.

While these findings were found effective or positive in that student learning increased due to the blended learning environment, the researcher warns that there should be more research done in the area. Hence, the present study is an auxiliary investigation that would add up to the body of knowledge regarding blended learning.

Faculty training is critical for quality online education. Not every faculty member has the knowledge, skills, and attitudes to teach a technology-based learning course and in many cases does not receive the necessary pedagogical and technical training. They often must seek out assistance on their own and at their own cost. It is recommended that not only should schools offer training to faculty, but also provide faculty with the opportunity to experience online instruction first-hand and have a peer mentor as they design and implement an online course. The adoption of blended learning must be a "collegial process" and it is recommended that schools must establish "venues" for faculty to share their experiences with using technology. In addition to faculty training, giving faculty time to learn new technologies and for course preparation, providing financial support through grants, incentives, and workload reduction, and ensuring the reliability of the technologies used for teaching were also mentioned by faculty as important factors influencing their adoption of new technological approaches to instruction. In this way, learning delivery in blended learning will be well-facilitated.

Learner's Engagement. Student Engagement refers to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught in blended learning. Table presents the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Learner's Engagement. The data revealed that the indicators rated as Much Effective were Develop positive teacher/student relationships, (3.59); and Students' participation is encouraged, (3.56). Indicators rated as Effective were Student's motivation is persistent, (3.43); Vary who and how students are called, (3.38); Correct misbehaviors and have consequences of disruptive behavior, (3.33); Individual and group activities are performed, (3.24);

All students are paying attention, (3.16); and All distractions are removed, (3.01). Looking closely, the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Divison of Quezon along Student Engagement was Much Effective on District 3 (3.52), while found effective on District 1 (3.36), District 2 (3.30), and District 4 (3.16). Thus, the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Learner's Engagement was 3.34, verbally interpreted as Effective.

The result shows that blended learning is much effective along student engagement in developing positive teacher/student relationships since there is a virtual contact and learning that takes place between the teacher and the students, which is not possible in modular distance learning. Similar findings were found on the survey conducted by the Centre for Digital Education's (CDE) 2015 which showed that blended learning increased Student engagement by 69%.

This was explained in the study of Nortvig, Petersen, and Balle, (2018) on the factors Influencing E-Learning and Blended Learning in Relation to Learning Outcome, Student Satisfaction and Engagement was educator's presence in online settings, interactions between students, teachers, and content, and designed connections between online and offline activities as well as between campus-related and practice- related activities.

To elaborate student engagement, several factors were discussed by Baxter and Haycock, (2014) stating that students' sense of belonging to a meaningful learning community in online and blended learning environments creates students' experience of their own learner identity. The formation of learner identity is bound up with agency and feelings of being in control resulting from feelings of belonging to a learning community. They further claim that the development of "a strong and salient online identity" plays an important role in student retention and motivation in online learning programs. For the same reason, their study looks into how successful online learning forums contribute to social and academic integration as a means of consolidating students' learner identities.

Table 2. *Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Learner's Engagement*

	District 1			*District 2*		
Indicators	*WX*	*I*	*R*	*WX*	*I*	*R*
Student's motivation is persistent	3.46	E	3	3.39	E	3
Students participation is encouraged	3.58	ME	2	3.51	ME	2
Individual and group activities are performed	3.29	E	6	3.25	E	6
Develop positive teacher/student relationships	3.63	ME	1	3.54	ME	1
Correct misbehaviors and have consequences of disruptive behavior	3.35	E	5	3.29	E	5
Vary who and how students are called	3.43	E	4	3.34	E	4
All students are paying attention	3.18	E	7	3.10	E	7
All distractions are removed	3.02	E	8	3.02	E	8
Average WX	3.36	E		3.30	E	

	District 3			*District 4*			*Average*		
Indicators	*WX*	*I*	*R*	*WX*	*I*	*R*	*WX*	*I*	*R*
Student's motivation is persistent	3.61	ME	3	3.27	E	3	3.43	E	3
Students participation is encouraged	3.76	ME	2	3.41	E	2	3.56	ME	2
Individual and group activities are performed	3.39	E	6.5	3.04	E	6	3.24	E	6
Develop positive teacher/student relationships	3.79	ME	1	3.43	E	1	3.59	ME	1
Correct misbehaviors and have consequences of disruptive behavior	3.52	ME	4	3.17	E	5	3.33	E	5
Vary who and how students are called	3.48	E	5	3.26	E	4	3.38	E	4
All students are paying attention	3.39	E	5	3.26	E	4	3.16	E	7
All distractions are removed	3.24	E	8	2.76	E	8	3.01	E	8
Average WX	3.52	ME		3.16	E		3.34	E	

Their findings reveal that students' prior experience with social media sites such as Facebook tended to be transferred to the academic online learning forum and thus to impact both negatively and positively on their learner confidence and agency. For instance, the public

nature of the online forum made some students feel their postings assume an air of authority and expertise, which, on the other hand, led other students to refrain from posting due to feelings of lacking knowledgeability. Finally, lack of peer response or teacher moderation seemed to be detrimental to students' learner identity because they felt isolated from and peripheral to the academic community of the forum.

In conclusion, the effectiveness of blended learning along Learner's engagement is affected by different factors which teachers can consider to maximize the virtual learning environment, thus promoting motivation and learner engagement.

Learner's Achievement refers to the extent to which a learner has attained their short or long-term educational goals. The Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Learner's Achievement is disclosed in Table 3.

Table 3. *Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Learner's Achievement*

Indicators	*Average (District 1,2,3, & 4)*		
	Wx	*I*	*R*
1. Reinforcement studen effforts with praise	3.86	ME	2
2. Monitor student Progress	3.90	ME	1
3. Synchronus and Asynchronus scheduling is allowed	3.74	ME	4
4. Quality of the content learning, communication and the level of engagement experienced	3.63	ME	7
5. Individual Differences are considered	3.71	ME	5
6. Innovative modalities for teaching anf learning are tested to fit learning styles	3.70	ME	6
7. Application of critical thinking skills	3.75	ME	3
8. Demonstration of eeffective research skills	3.57	ME	8
Average Wx	3.73	ME	

Based on the data obtained, all indicators were rated as Much Effective along Learner's achievement presented in descending order, Monitors student progress, (3.90); Reinforcement student efforts with praise, (3.86); Application of critical thinking skills, (3.75); Synchronous and Asynchronous scheduling is allowed, (3.74); Individual differences are considered, (3.71); Innovative modalities for teaching and learning are tested to fit learning styles, (3.70); Quality of the content, learning, communication, and the level of engagement experienced,(3.63); and Demonstration of effective research skills, (3.57).

In summing up, the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Learner's Achievement was 3.73 or Much Evident. The findings suggest that students can achieve more on blended learning, given the fact that two learning modalities are used in the school learning continuity plan. This was agreed upon by teacher-respondents in all districts.

This is similar to the study of Laura (2017) whose reviewed research indicated that student engagement, student achievement, and positive student perceptions of learning increased when blended learning was used. Students also developed additional skills through the use of blended learning, such as the ability to self-pace and self-direct.

Huang and Hong, (2016) found that students in the experimental group, who had participated in blended learning, had shown a significantly larger increase in their ICT and English reading comprehension skills than those in the control group. The researchers argued that this increase in skills was because students were more actively engaged in using the technology. Because this study had a larger sample size and lasted for a significant amount of time, it is easier to generalize the findings and argues that blended learning caused a sustained increase in engagement and achievement for the students involved in this study. On the contrary, Cheung and Slavin (2013), found that blended learning produced a small but positive effect on student achievement in mathematics with a slightly higher effect on elementary school students as compared to secondary students.

What leads to a better learning outcome among students in online and blended learning programs is, however, a question that is not answered in the same way by all the studies mentioned. Bernard et al. (2014) concluded that the element of technology integration in blended learning courses seems to lead to very low, though significant improvement in student achievement – particularly when technology yields cognitive support (e.g., simulations) or facilitates student interaction (i.e., with other students, content, and teachers). In González Gómez et. Al's study (2016), it is the adoption of a flipped classroom model of blended learning in a general science course that results in higher grades among teacher training students when compared with those achieved by students following a traditional classroom setting.

Given this fact, it can be deduced that student achievement in blended learning is affected by several factors which was mentioned above and which may suggest further studies on this matter.

Learner's Assessment. Table 4 presents the data on the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Learner's Assessment, with indicators rated as Much Effective as follows: Lessons are given with clear instructions, (3.92); Pre-test and post-test are administered, (3.92); Describe expectations, activities, and evaluation procedures, (3.74); Start with a highly motivating activity, (3.70); Provide assessments for students of different learning styles, (3.64); Results to Data-Informed Report, (3.63); and Students can follow through with the lessons, (3.51). Indicator rated as Effective was Assessment or evaluation is done through online platforms, (3.43).

Table 4. *Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Learner's Assessment*

Indicators	*Average (District 1, 2, 3, & 4)*		
	Wx	*I*	*R*
1. Lessons are given with clear instructions	3.92	ME	1.5
2. Describe expectation, activities, and evaluation procedures	3.74	ME	3
3. Start with highly motivating activity	3.70	ME	4
4. Pre-test and post-test are administered	3.92	ME	1.5
5. Assessment of evaluation is done through online platforms	3.43	ME	8
6. Students can follow through with the lessons	3.51	ME	7
7. Provide asssessments for students of different learning styles	3.64	ME	5
8. Results to Data-Informed Reports	3.63	ME	6
Average Wx	3.69		

Thus, the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along Learner's Assessment was 3.69 or Much Effective.

The result of the study is similar to the survey conducted by the Centre for Digital Education's (CDE) 2015 which showed that blended learning improved the student retention rates rose by 39%; Test scores improved by 28%; Grade rates up by 22%, and attendance increased by 22%. Kenney and Newcombe, (2011) also did their comparison to establish effectiveness in view of grades and found that blended learning had a higher average score than the non-blended learning environment.

Though no specific predictor is mentioned by Israel (2015) or Potter (2015), the former still observe modest positive impacts on students' learning outcomes resulting from the adoption of the blended format, while the latter records grades "significantly higher in the hybrid option than for the traditional face-to-face format".

Taken as a whole, these results provide a possible explanation on the effectiveness of blended learning along learner's assessment.

Summary of Results on the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon

The Summary of Results on the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon

Table 5. *Summary of Results on the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon*

Indicators	*Average (District 1, 2, 3, & 4)*		
	Wx	*I*	*R*
1. Lesson Content	3.37	E	3
2. Learner's Engagement	3.34	E	4
3. Learner's Achievement	3.73	ME	1
4. Learner's Assessment	3.69	ME	2
Average Wx	3.53	ME	

Considering the results per dimension, a presentation of the Summary of Results on the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon.

Looking closely, the effectiveness of blended learning among public secondary schools was found Much effective on Student Achievement, (3.73) and Learner Assessment, (3.69), while Effective on Lesson Content, (3.37) and Student Engagement, (3.34). The Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon resulted in Much Effective with an average mean of 3.53. This implies that teachers benefit from the blended learning modality. Blended learning approaches may be an effective means of optimizing student learning and improving student performance. However, it must be noted that further studies must be pursued. It also

implies that teachers must accomplish the multiple roles needed in the new normal education. The tasks include re-examining course goals; developing online and face-to-face activities that are integrated and aligned with the goals; finding ways to assess students' understanding and mastery of the course material; and creating ways for students to interact. In this way, teachers become guides and facilitators of learning rather than "information suppliers".

Test of Significant Agreement on the Rank Orders on the Extent of the Level of Effectiveness of Blended Learning Among Public Secondary Teachers along the Aforementioned Aspects

The Test of Significant Agreement on the Rank Orders on the Extent of the Level of Effectiveness of Blended Learning Among Public Secondary Teachers along the Aforementioned Aspects which was statistically computed using Kendall Coefficient of Concordance W and its corresponding chi-square.

The indicators or different aspects, the summation of the Squared Deviation from the Mean, Kendall Coefficient of Concordance W, Computed Chi-square x2, Degrees of Freedom, Tabular x2, and Decision on Null Hypothesis are shown in Table 8. It can be discerned from the table that the Concordance W and computed x2 yielded to Lesson Content, 0.946 and 26.488 ($p < 0.001$); Learner's Engagement, 0.986 and 27.608 ($p < 0.001$); Learner's Achievement 0.948 and 26.544 ($p < 0.001$); and Learner Assessment, 0.931 and 26.068 ($p < 0.001$).

The data revealed that the computed chi-square for all indicators did not only exceed the tabular chi-square values at a 0.05 level of significance but even at 0.001 level. Thus, guided the researcher to reject the null hypothesis and concluded that there is a highly significant agreement among the rank order of the level of effectiveness of blended learning evident groups of respondents value is greater than the chi-square critical value, then reject the null hypothesis. If the chi-square calculated value is less than the chi-square critical value, then you accept your null hypothesis. Taking into account this consideration on determining the correlation of variables, it had guided the researcher to reject the null hypothesis, concluding that there is significant agreement on the rank orders on the extent of the level of effectiveness of blended learning among public secondary teachers along the aforementioned aspects. This connotes that the respondents are similar in their appraisal of the effectiveness of blended learning.

Table 6. *Test of Significant Agreement on the Rank Orders on the Extent of the Level of Effectiveness of Blended Learning among Public Secondary Teachers along the Aforementioned Aspects*

Indicators	*Aspects*			
	Lesson Content	*Learner's Engagement*	*Learner's Achievement*	*Learner's Assessment*
Summation of the squared deviation from the Mean	635.50	662.50	337.00	625.50
No. of groups	4	4	4	4
No. of cases of items	8	8	8	8
Coefficient of concordance	0.946	0.986	0.948	0.931
Computed Chi-Square	26.488	27.608	26.544	26.068
Degree of Freedom	7	7	7	7
Tabular x2				
0.05	14.067	14.067	14.067	14.067
0.025	16.013	16.013	16.013	16.013
0.01	18.475	18.475	18.475	18.475
0.005	20.276	20.278	20.278	20.278
0.001	24.322	24.322	24.322	24.322
Decision on Null Hypothesis	Rejected	Rejected	Rejected	Rejected
Significance of Agreement	0.001	0.001	0.001	0.001

Further, the significant agreement implies that they have blended learning, although new to public schools, is found to enhance student learning and mode of instruction. Based on the findings, it is recommended that blended learning may be adopted to teach students. If properly implemented, it is a promising alternative learning approach compared to conventional and e-learning approaches and can improve student success, satisfaction, and retention. As Graham, (2013) argued that blended learning will replace the traditional approach in education because it maximized the best advantages of face-to-face and e-learning approaches.

Problems Encountered by the Respondents in the Delivery of Blended Learning

It shows that all the indicators were rated as Much Serious as evident by the following: Teachers need customizable instructional delivery models, (3.72); Creating an Effective Self-Paced Learning Environment, (3.72); A Comprehensive Learning Management System which offers flexibility, ease of use, and unhindered accessibility, (3.71); Proper teacher training to facilitate optimal learning, (3.70); Effective communication between the teacher and students to achieve improved learning outcomes in a blended learning program (3.68); Building Student Authentic Mastery, (3.68); A Well-Defined Course Outline, course content, and structure and the tools to be employed for instruction, (3.67); Clear Learning Objectives before start creating content, (3.66); and The basic structure and layout of the LMS are

consistent with adequate visual and graphic elements to aid understanding, (3.59). Therefore, the problems encountered by the respondents in the delivery of blended learning from Districts 1-4 was 3.86 or Much Serious.

Table 7. *Problems Encountered by the Respondent in the Delivery of Blended Learning among Public Secondary School*

Indicators	*Average (District 1,2,3, & 4)*		
	Wx	*I*	*R*
1. A Comprehensive Learning Management System which offers flexibility, ease of use, and unhindered accessibility.	3.71	MS	3
2. A Well-Defined Courese Outline, course content, and structure and the tools to be employed for instruction.	3.67	MS	7
3. Clear Learning Objectives before start creating content.	3.66	MS	8
4. The Basic Structure and layout of the LMS are consistent with adequete visual and graphic elements to aid understanding.	3.59	MS	9
5. Effective communication between the teacher and student to achieve improves learning outcomes in a blended learning program.	3.68	MS	5.5
6. Proper teacher training to facilitate optimal learning	3.70	MS	4
7. Teachers need customizable instructiona delivery models.	3.72	MS	1.5
8. Creating an Effective Self-Paced Learning Environment	3.72	MS	1.5
9. Building Student Authentic Mastery	3.68	MS	5.5
Average Wx	3.68	MS	

This problems seriously encountered by the respondents is evident on the study on existing stressors for teachers identified by Petrie, (2020) which included among others, Teachers without resources to discuss pandemics and uncertainties with their learners and who are scrambling to go digital without much support and training; Learners who are highly anxious and lonely, unable to focus and worried about having an unnatural closure to the academic year; Parents who are overwhelmed and unprepared to coach their kids about digital tools and innovative educational practices, also trying to balance work and homeschooling; and The relationships among all these players, including the maintenance of positive student-teacher-parent rapport and encouraging collaborative learning and socialization that is so challenging online. Hofmann, (2014) added that one big challenge is how users can successfully use the technology and ensuring participants' commitment given the individual learner characteristics and encounters with technology.

In a report by Oxford Group (2013), some learners (16%) had negative attitudes to blended learning while 26% were concerned that learners would not complete study in blended learning. Moreover, Islam (2014) puts it, users may be dissatisfied with an information system due to ease of use. Similarly, Siko (2014), found out that while many students appreciated the flexibility that went with blended learning, they struggled with the ability to self-pace. Both students and parents acknowledged that learning to self-pace was an important skill, but they worried that it might prevent some students from being successful in a blended learning course.

The major challenge was finding the time for training, and to re-design and administer the course unit. The online portion of the unit also required more time than anticipated for grading and providing feedback. Another challenge was getting the students on board with the new format. Some students were skeptical about the new approach and not used to taking responsibility for their own learning. Others had issues with time management and using technology for learning. Effective blended learning requires rethinking the challenges of how classroom instruction is structured, how time is spent, and how limited resources are used. Current trends show that online education is the future, and blended learning can be a great way to prepare educators and institutions for making the transition to online teaching.

Test of Significant Agreement on the Rank Orders of the Problems Encountered by the Respondents in the Delivery of Blended Learning

The test of significant agreement on the rank orders on the problems encountered by the respondents in the delivery of blended learning. Kendall Coefficient of Concordance W and its corresponding chi- square, was statistically computed.

The indicators or different aspects, the summation of the Squared Deviation from the Mean, Kendall Coefficient of Concordance W, Computed Chi-square x2, Degrees of Freedom, Tabular x2, and Decision on Null Hypothesis are shown in Table 8. It can be discerned from the table that the Concordance W and computed x2 on problem encountered yielded: 0.631 and 20.192 ($p < 0.01$). The data revealed that the computed chi-square exceeded the tabular chi-square

values not only at a 0.05 level of significance but even at 0.01 level. This guided the researcher to reject the null hypothesis,in failure of the alternative hypothesis concluding that there is a significant agreement on the Rank Orders of the Problems Encountered by the Respondents in the Delivery of Blended Learning. This suggests that the respondents have an agreement or, concession in their assessments on the problems encountered in the delivery of blended learning.

Table 8. *Test of Significant Agreement on the Rank Orders on the Problems Encountered by the Respondent in the Delivery of Blended Learning*

Indicators	*Aspects Lesson Content*
Summation of the squared deviation from the Mean	605.50
No. of groups	4
No. of cases of items	9
Coefficient of concordance	0.631
Computed Chi-Square	20.192
Degree of Freedom	8
Tabular x2	
0.05	15.507
0.025	17.535
0.01	20.090
0.005	21.955
0.001	26.124
Decision on Null Hypothesis	Rejected
Significance of Agreement	0.01

Coping Strategies Employed by the Respondents in the Delivery of Blended Learning

To manage the problems encountered in the delivery of blended learning, teachers need to use coping strategies.

Evidently, the indicators were rated as Much Evident included the following: Positivity despite hardships, (4.05); Constant communication with parents and teachers, (4.01); Monitoring student's progress regularly, (4.00); Learning to adapt and adjust to the new normal, (3.98); Preparing and Organizing paper works, (3.92); Mentorship /coaching with colleagues and school heads, (3.87); Managing time well, (3.86); Familiarizing the learning management system, (3.85); and Improve basic computer/digital skills, (3.80). Therefore, the Coping Strategies Employed by the Respondents in the Delivery of Blended Learning was 3.93, Much Evident. Correspondingly, the work of Manalo and De Villa (2020) adhered with the findings of the study as they found five core themes related to coping mechanisms which include positive well-being, time management, openness to change, peer mentoring, and collaboration.

Amid an unprecedented closing of schools, education systems have responded by developing remote learning plans, which rely on multichannel strategies that combine different technologies (print materials, radio, TV, Internet, and/or mobile) and incorporate synchronous and asynchronous learning. Given these new modes of delivery, it is not surprising that many teachers are finding it difficult to navigate this new reality. Often, they are burdened with having to quickly adapt lesson content they designed to deliver in a physical setting to an online or remote format. The ability to instruct effectively depends on several factors, such as having the appropriate skills and capacity to adapt to the new context, while continuing to interact and effectively engage with learners and caregivers.

For teachers to take advantage of remote learning tools, it takes much more preparation, materials, and thought than education systems can prepare in a few days or weeks. With these limitations in mind, it's important to think beyond how to support teachers and consider how the crisis can be an opportunity to enhance teachers' skills before they return to the classroom. Educational systems should build back stronger and become more equitable.

Table 9. *Coping Strategies Employed by the Delivery of Blended Learning*

Indicators	*Average (District 1, 2, 3, & 4)*		
	Wx	*I*	*R*
1. Improve basic computer/ digital skills	3.80	ME	9
2. Mentorship/ coaching with colleagues and school heads	3.87	ME	6
3. Learning to adapt and adjust to the new normal	3.98	ME	4
4. Positivity despite hardship	4.05	ME	1
5. Constant communication with parents and teachers	4.01	ME	2
6. Managing time well	3.86	ME	7
7. Preparing and organizing paper works	3.92	ME	5
8. Familiarizing the learnig management system	3.85	ME	8
9. Monitoring student's progress regularly	4.00	ME	3
Average Wx	3.93		

Test of Significant Agreement on the Rank Orders on the Coping Strategies Employed by the Respondents in the Delivery of Blended Learning

Table 10. *Test of Significant Agreement on the Rank Orders on the Extent of the Coping Strategies Employed by the Respondents in the Delivery of Blended Learning*

Indicators	*Aspects Coping*
Summation of the squared deviation from the Mean	831.50
No. of groups	4
No. of cases of items	9
Coefficient of concordance	0.866
Computed Chi-Square	27.712
Degree of Freedom	8
Tabular x2	
0.05	15.507
0.025	17.535
0.01	20.090
0.005	21.955
0.001	26.124
Decision on Null Hypothesis	Rejected
Significance of Agreement	0.001

The test of significant agreement on the rank orders of the coping strategies employed by the respondents in the delivery of blended learning was computed using Kendall Coefficient of Concordance W and its corresponding chi-square. It appeared that the indicators or different aspects, the summation of the Squared Deviation from the Mean, Kendall Coefficient of Concordance W, Computed Chi-square x2, Degrees of Freedom, Tabular x2, and Decision on Null Hypothesis are shown in Table 12. It can be discerned from the table that the Concordance W and computed x2 on coping strategies yielded to: 0.866 and 27.712 ($p < 0.001$). The data revealed that the computed chi-square does not only exceed the tabular chi-square values at a 0.05 level of significance but even at 0.001 level. This guided the researcher to reject the null hypothesis, concluding that there is significant agreement of the Rank Orders on the Coping Strategies Employed by the Respondents in the Delivery of Blended Learning. This suggests that the respondents have an agreement or, concession in their assessments on the coping strategies does not vary.

Policy Recommendations based on the findings of the study

Based on the findings of the study, the following Policy Recommendations were put forward to improve the effectiveness of Blended Learning among Public Secondary Teachers in the Division of Quezon.

1. The National Government should increase the Department of Education fund/budget for the procurement of the facilities and resources needed in the implementation of school's learning continuity plan, such as blended learning.
2. The Department of Education must weigh the needs, strengths and areas of improvement to have a more improved implementation of blended learning and assist teachers, learners, parents, and other stakeholders in carrying out its educational objectives.
3. The Department of Education must design a blended classroom curriculum to determine how much of the course will be interactive and incorporate the e-learning experience to the course and use the internet to reach students wherever they are.
4. The Learning Resources Management and Development System (LRMDS) should initialize course curriculum and other instructional materials needed in the implementation of blended learning to support increased distribution and access to learning, teaching and professional development resources at the Region, Division and School/Cluster levels of DepEd.
5. Administrators need to provide clear direction on ensuring additional team support to increase program development for the implementation of blended learning and in providing information on the existing technical skills. Change management strategies be required, such as establishing a sense of urgency, forming a powerful guiding coalition and creating a vision.
6. Teachers should stay caring, committed, and dedicated to his role in the Department of Education despite the challenges and problems encountered in the delivery of blended learning modalities.
7. Teachers should have professional development in instructional technology.
8. Parents and Students should have Wi-Fi and equal access of technological resources for all.
9. Teachers must provide demonstration videos must be provided to students to make it easier for the students to handle a difficult topic.
10. For a blended classroom to be effective, interaction

and engagement must be fostered by teachers not just enough that the student and teacher interact, it is also vital that the students interact with each other, to sustain student's attention, motivation and interest.

Discussion

From the gathered data the following findings have surfaced: (1) The effectiveness of blended learning among public secondary schools was found to be Much effective were: Learner's Achievement, (3.73) and Learner Assessment, (3.69), while Lesson Delivery, (3.37) and Learner's Engagement, (3.34) were considered effective. (2) On the Significant Agreement on the Rank Orders of the Extent of the Level of Effectiveness of Blended Learning Among Public Secondary Teachers along the Aforementioned Aspects, the Concordance W and x2 computed yielded to Lesson Content, 0.946 and 26.488 ($p < 0.001$); Learner's Engagement, 0.986 and 27.608 ($p < 0.001$); Learner's Achievement 0.948 and 26.544 ($p < 0.001$); and Learner (3) On the problems encountered by the respondents in the delivery of blended learning, indicators rated as Much Serious were: Teachers need customizable instructional delivery models, (3.72); Creating an Effective Self-Paced Learning Environment, (3.72); A Comprehensive Learning Management System which offers flexibility, ease of use, and unhindered accessibility, (3.71); Proper teacher training to facilitate optimal learning, (3.70); Effective communication between the teacher and students to achieve improved learning outcomes in a blended learning program, (3.68); Building Student Authentic Mastery, (3.68); A Well-Defined Course Outline, course content, and structure and the tools to be employed for instruction, (3.67); Clear Learning Objectives before start creating content, (3.66); and The basic structure and layout of the LMS are consistent with adequate visual and graphic elements to aid understanding, (3.59). (4) On the test of significant agreement on the rank orders on the problems encountered by the respondents in the delivery of blended learning. Kendall Coefficient of Concordance W and its corresponding chi-square was statically computed, the Concordance W and computed x2 yielded to, 0.631 and 20.192 ($p < 0.05$). Thus, null hypothesis was rejected. (5) On the Coping Strategies Employed by the Respondents in the Delivery of Blended Learning, indicators rated as Much Evident were: Positivity despite hardships, (4.05); Constant communication with parents and teachers, (4.01); Monitoring student's progress regularly, (4.00); Learning to adapt and adjust to the new normal, (3.98); Preparing and Organizing paper works, (3.92); Mentorship /coaching with colleagues and school heads, (3.87); Managing time well, (3.86); Familiarizing the learning management system, (3.85); and Improve basic computer/digital skills, (3.80). Therefore, the Coping Strategies Employed by the Respondents in the Delivery of Blended Learning was 3.93, Much Evident. (6)The significant agreement on the rank orders of the coping strategies employed by the respondents in the delivery of blended learning, the Concordance W and computed x2 yielded to, 0.866 and 27.712 ($p < 0.001$). Thus, the null hypothesis is rejected. Assessment, 0.931 and 26.068 ($p < 0.001$). thus, the null hypothesis was rejected. (7)The Policy Recommendations based on the findings of the study were: (7.1) The National Government should increase the Department of Education fund/budget for the procurement of the facilities and resources needed in the implementation of school's learning continuity plan, such as blended learning. (7.2) The Department of Education must weigh the needs, strengths and areas of improvement to better the implementation of blended learning and assist teachers, learners, parents and other stakeholders in carrying its educational objectives.m(7.3) The Department of Education must design a blended classroom curriculum to determine how much of the course will be interactive and incorporate the e-learning experience to the course and use the internet to reach students wherever they are. (7.4) The Learning Resources Management and Development System (LRMDS) should initialize course curriculum and other instructional materials needed in the implementation of blended learning to support increased distribution and access to learning, teaching and professional development resources at the Region, Division and School/Cluster levels of DepEd. (7.5) Administrators need to provide clear direction on ensuring additional team support to increase program development for the implementation of blended learning and in providing information on the existing technical skills. Change management strategies be required, such as establishing a sense of urgency, forming a powerful guiding coalition and creating a vision. (7.6) Teachers should stay caring, committed, and dedicated to his role in the Department of Education despite the challenges and problems encountered in the delivery of blended learning modalities. (7.7) Teachers should have professional development in instructional technology. (7.8) Parents and Students should have Wi-fi and equal access of technological resources for all. (7.9) Teachers must provide demonstration videos to students to make it easier for them to handle a difficult topic. (7.10) For a blended classroom to be effective, interaction and engagement must be fostered by teachers not just enough that the student and teacher interact, it is also

vital that the students interact with each other, to sustain student's attention, motivation and interest.

Conclusion

In the light of the findings, the following conclusions were drawn, the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon is Much Effective. There is a significant agreement on the rank orders on the Level of Effectiveness of Blended Learning among Public Secondary Schools in the Division of Quezon along the aspects mentioned. The Problems encountered by the respondents in the delivery of blended learning is Much Serious. There is significant agreement on the rank orders on the problems encountered by the respondents in the delivery of blended learning. While the Coping Strategies employed by the respondents in the Delivery of Blended Learning is Much Evident. There is a significant agreement on the rank orders on the coping strategies employed by the respondents in the delivery of blended learning. The Policy Recommendations are generated based on the findings of the study to improve the effectiveness of blended learning in public secondary schools as a valuable foundation for a foreseeable future of blended learning delivery modality.

In the light of the findings and conclusions, the following recommendations were formulated: (1) Implementation of blended learning among public secondary schools must be considered so that teachers can assist or follow-up student performance and learning process.(2) The Department of Education must give proactive response to the problems encountered in the implementation of blended learning.(3) The government must listen to the teachers' woes and requests so that the quality of education must be proactively addressed.(4) Teachers must learn to embrace the new normal and strategize using coping strategies to lighten up the burdens they are experiencing in the delivery of blended learning. (5) Administrators must devote change management strategies to problems and solutions, such as establishing a sense of urgency, forming a powerful guiding coalition and creating a vision in the school. (6) Parents as learning facilitators and stakeholders must help the school in carrying its objectives. (7) The Policy Recommendations generated must be adopted. Recommendations for Further Research. The following are recommended for further research. (7.1) A replicated study can be conducted to test the validity and reliability of the gathered data. (7.2) Other variables can also be considered that is related to Blended learning. (7.3) Teachers' Beliefs and Practices on the implementation of blended learning. (7.4) The Role of Parents in the Blended Learning Modality

References

Backstorm, C.H., & Hursh - Cesar, G. (1999). Survey Research. New York: John Wtley and Bernard, H.R. (2002). Research Methods in Anthropology: Qualitative and Quantitative Methods, 3rd Edition.Altamira Press, Walnut Creek, CA.

Blake, Robert (2016). Brave New Digital Classroom. Georgetown University Press. Blokdyk, Gerardus (2020). Feasibility Study: A Complete Guide 2020. Goodreads Publishing. Bouwman, Harry (2012). Information and Communication Technology in Organizations:

Adoption, Implementation, Use and Effects. SAGE Publications Ltd

Broto, Antonio S. (2006). Statistics Made Simple 2nd Edition: National Bookstore.

Bruner, Jerome Seymour (1971) The Process of Education and Towards a Theory of Instruction Calayag, Eleanor H. and Valenzuela, Edwin E. (2019). Feasibility Study Guidelines forUndergraduate Courses. Amazon Book Clubs.

Campbell, William Giles, et.al (2003). Introduction to Statistics, Philippine Central Luzon State University.

Freund, John E. and Gary Simon (1997), Modern Elementary Statistics 9th Edition, Singapore; Simon Schute.

Graham, C. R. (2013). Emerging practice and research in blended learning. In M. G. Moore (Ed.), Handbook of distance education, (3rd ed., pp. 333–350). New York: Routledge.

Johnston, Tony (2007) OFF to Kindergarten Hardcover, Children's Books. Growing Up & Facts of Life.

Masanja, Ndalahwa (2020) - A Practical Guide to Writing a Feasibility Study. NMM Publishing.M. B.

Horn and H. Staker, (2011) The rise of K-12 Blended Learning, Innosight Institute, Switzerland Morgan, Robin K. (2010). Quick Hits for Teaching with Technology. jstorwww.jstor.org

Ross, B., & Gage, K. (2006). Global perspectives on blended learning: Insight from WebCT and our customers in higher education. In C. J. Bonk, & C. R. Graham (Eds.), Handbook of blended learning: Global perspectives, local designs, (pp. 155–168). San Francisco: Pfeiffer.

Siegel, Sydney, et.al (1988). Nonparametric Statistic for the Behavioral Sciences. 2nd Edition.
USA McGrow-Hill Company

Siegel, S. and Castellan, N. J. (1998). Statistics for Behavioral Sciences.

Webster II New Riverside University Dictionary (2001). Houghton Mifflin Company.

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