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PRODUCTIVE TEACHER-STUDENT INTERACTION IN THE TECHNOLOGY-BASED INSTRUCTION

Gregoria A. Flores
Education Consultant
The Interns Hub, Inc.
Mandaue City, Cebu, Philippines
Email: gregoria@gregoriaflores.com

ABSTRACT

The abrupt shift to online, blended, and modular learning during the COVID-19 pandemic made the integration of instructional technology central to classroom management. This research assessed the utilization of technology in the new normal classroom management of Intellisense Institute of Technology, Inc., Mandaue City, Cebu, for School Year 2022-2023 as a basis for an educational technology strategy. A quantitative, descriptive-correlational design was used. A questionnaire adapted from Sclater (2018) gathered data on the respondents' profile, the extent of utilization of technology in the teaching-learning process, the level of performance of learners in computer programming and graphic design, and the challenges and barriers experienced by teachers. Data were analyzed using simple percentage, weighted mean, and the chi-square test at the 0.05 level of significance. The teacher-respondents were mostly 31-40 years old, female, married, had earned units in a master's degree, had been with the institution for more than six years, had a very satisfactory performance rating, and had attended division and district trainings, seminars, and workshops. Teachers perceived all five indicators of technology utilization to be very well implemented (overall grand mean = 4.65). Most learners obtained a near mastery grade of 80-89 in incorporating multimedia into lessons and presentations in both subjects, while attained mastery was most frequent in practical demonstration in computer programming and in theory using PowerPoint in graphic design. The extent of utilization of technology was significantly related to the level of performance of the learners (chi-square = .015, p = .018), and the null hypothesis was rejected. Appropriate access to technical support, availability of infrastructure, policies, and time allocated to incorporate new technologies were the major challenges for teachers. The more teachers utilize technology in teaching, the higher the performance of learners in computer programming and graphic design tends to be. An educational technology strategy that strengthens teachers' ICT integration and addresses the identified challenges is proposed.

Keywords: *Development Education, Descriptive Method, Technology Utilization, Educational Technology Strategy, Mandaue City, Cebu, Philippines*

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INTRODUCTION

Background of the Study

Teacher-student interactions (TSI) refer to the way teachers and students interact in their classroom relationship (Englehart, 2019). TSI is closely related to the concept of emotional support in classrooms, which is guided by Attachment Theory (La Paro, Pianta, & Stuhlman, 2019). Classroom management, on the other hand, is the process by which teachers and schools create and maintain appropriate student behavior in classroom settings.

In December 2019, pneumonia of unknown origin was recognized in Wuhan, Hubei Province, China. The International Committee on Taxonomy of Viruses (ICTV) later determined that the disease was caused by the novel coronavirus SARS-CoV-2 (COVID-19). The epidemic spread quickly in China and across the world, and on March 12, 2020, the World Health Organization (WHO) declared it a pandemic. Since then, governments have taken numerous initiatives to fight the spread of the illness, including travel restrictions, forced travel quarantines, social distancing, prohibitions on public gatherings, school and university closures, corporate closures, self-isolation, work-from-home orders, curfews, and lockdowns. Authorities in several countries imposed lockdowns or curfews as a precaution against the rapid spread of the virus. These policies weakened businesses, education, health, and tourism around the world, and the pandemic had an especially large impact on education.

Based on the study of Dhawan (2020), during the second week of March 2020 Bhutan announced the closure of schools and institutions, as well as a reduction in business hours (Kuensel, 2020, 6 March). In research conducted by Palden (2020), the entire country was put on lockdown from August 1, 2020. The school closure affected more than 170,000 Bhutanese pupils in grades PP-XII. The ramifications were far-reaching and affected learning, and the challenge will continue in the days ahead.

A number of institutions, colleges, and universities have phased out face-to-face education. The COVID-19 epidemic has affected schooling at all levels: educational institutions in 192 nations either temporarily closed or imposed localized closures, affecting over 1.7 billion pupils. The abrupt and unplanned move to online teaching and learning has affected many, if not all, aspects of the lives of school, college, and university students throughout the world, and has largely affected students' well-being as they try to strike a balance between the psychological, social, emotional, economic, spiritual, and physical components of their lives. Schools used to provide structure and routine to students' lives – getting up at a certain time for school, going to classes at a specific time, and coming home at a certain time – granting a sense of normalcy.

The transition to online or hybrid modes of learning will become more common in colleges and universities around the world. COVID-19 has an impact on students in five domains: physical environment, social environment, psychological environment, economic environment, and spirituality. Consequently, students' perceptions of the completion of their degrees, as well as the role that university supports play in this relationship, have also been affected.

To aid in the investigation of this shift to the new normal in education, this research focuses on the influence of the epidemic on students in terms of their physical, social, psychological, economic, and spiritual environments, which have been determined to be as crucial to students' long-term performance as academic achievement. Students' well-being has been linked to their participation and performance in curricular, co-curricular, and extracurricular activities, as well as to intrinsic motivation, satisfaction, and mental health. Because the pandemic has likely affected many students' lives, if not all, many schools around the world have chosen to prioritize well-being as a strategic goal. Disruptions in academic procedures caused by the COVID-19 epidemic, for example, have raised student anxiety, particularly among those who lack enough social support. Other health hazards have been reported among German university students, including depression, alcohol and drug abuse, and eating disorder symptoms.

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Thus, Intellisense Institute of Technology, Inc. (IIT) offers various modes of instruction in this new normal: blended and modular learning. Because IIT is an institution of technology, it also uses advanced technology for productive interaction and for new normal classroom management. The researcher, who prioritizes the quality of education, proposes advanced technology to further the new normal classroom management.

Rationale of the Study

The role of technology in the world of education has been ever changing. Most recently, technology has become a phenomenon that helps motivate, differentiate, and allow students to achieve and excel in ways they have never been able to before. J. Harris et al. (2016) noted that computers and technology, if used correctly, can invoke dreams in the minds of visionary educators who saw endless potential for altering traditional notions of teaching and learning. The DepEd Computerization Program has been implemented, deploying computer packages to 5,409 public elementary and high schools to support the teaching and learning process. Rosnaini Mahmud and Mohd Arif (2008) define ICT integration as the process of determining where and how technology fits in the teaching and learning scenario. Through the internet, everyone can access websites from anywhere at any time to use free information. ICT helps teachers to interact with students, to prepare for their teaching, and to provide feedback. ICT also helps teachers access institutions and universities, NCERT, NAAC, NCTE, UGC, and others, and supports the effective use of ICT software and hardware in the teaching-learning process.

DepEd Order No. 95, s. 2010 sets the Guidelines on the Proper Use of Computer and Network Facilities in All DepEd Administrative Offices and Schools. The Department of Education (DepEd) has been involved in various programs and projects aimed at modernizing its operations and improving the teaching and learning process in schools.

DepEd Order No. 78, s. 2010, issued on June 10, 2010, sets the Guidelines on the Implementation of the DepEd Computerization Program (DCP). With the legal mandate of promoting the right of all citizens to take appropriate steps in making education accessible to all, DepEd is geared towards the transformation of education through the DCP. The DCP aims to provide public schools with appropriate technologies that would enhance the teaching-learning process and meet the challenges of the 21st century. The program responds to the computer backlog of public schools by providing them with hardware and software, and training on simple troubleshooting. Towards this end, DepEd needs to step up its Information and Communications Technology (ICT) efforts; specifically, it has to speed up the DCP and be prepared for any eventuality. The use of ICT in DepEd is anchored on four major areas of the digital rise.

Teachers want to improve student performance, and technology can help them accomplish this aim. To mitigate the challenges, administrators should help teachers gain the competencies needed to enhance student learning through technology. Technology in the classroom should also make teachers' jobs easier without adding extra time to their day. The teacher is responsible for creating the environment in the class and prepares learning opportunities that help students make use of communication technology. Consequently, it is crucial that all teachers be prepared to provide their students with these opportunities.

Technology provides students with easy-to-access information, accelerated learning, and fun opportunities to practice what they learn. It enables students to explore new subjects and deepen their understanding of difficult concepts, particularly in STEM. Through the use of technology inside and outside the classroom, students can gain the 21st-century technical skills necessary for future occupations. Still, children learn more effectively with direction. The World Economic Forum reports that while technology can help young students learn and acquire knowledge through play, evidence suggests that learning is more effective through guidance from an adult, such as a teacher.

Leaders and administrators should take stock of where their faculty are in terms of their understanding of online spaces. From lessons learned during this disruptive time, they can implement solutions now for the future. For example, administrators could give teachers a week or two to think carefully about how to teach courses not previously taught online. In addition to exploring solutions, flexibility during these trying times is of paramount importance.

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Theoretical Background and Related Literature

This research conceives of a Personal Learning Environment (PLE) as a virtual learning space connected with practice; its creation and use go hand in hand with a conscious decision of the learner to take education into their own hands. This can be useful both in institutional education and in less formalized approaches to teaching (Alharbi et al., 2013). The concept of the PLE is closely associated with self-organized learning, also referred to as self-directed learning, advocated by Malcolm Knowles.

The idea of self-organized learning, however, applies not only to andragogy but to education in general. For example, in his book *Freedom to Learn*, the American psychologist Peter Gray wrote that the desire for freedom is rooted in human nature. We want to take advantage of help, but on our own terms. From birth we have a desire to explore the world around us, but this desire, according to Gray, is destroyed by schooling, which convinces us that we are not competent, that our questions are irrelevant, and that the goal of our life is to obey those who govern us (Gray, 2022). Learning is an active process controlled by the learner and motivated by curiosity. What schools create, as Gray writes, are environments that prevent self-regulated play and exploration. What is most important is not what we learn in the classroom but what is learned by following our own interests and goals with deep passion. In this way we can discover what we enjoy most, which, according to Gray, is the first step to finding a satisfying career (Gray, 2022).

If school really destroys the desire for self-directed learning, Brookfield's skepticism would be understandable. If we build on the thesis that an adult cannot automatically assume the characteristics of a self-directed personality, then it seems clear that the efforts of teachers in leading the student to adopt such an approach will have played a role. Here lies the answer to the question of how much facilitation by the instructor is necessary in directing students towards self-directed learning and a self-directed personality. This brings us back to the vision of Malcolm Knowles, whose advantage we see precisely in the creation of a PLE. What does a PLE look like? Considered from afar, a PLE begins with opening a web browser, if not the computer itself. A PLE is not a specific piece of software or application; we see it rather as the space that the learner fills with different content based on their choice and judgment. It is filled by the path to the goal.

Information and Communication Technology (ICT) includes computers, the Internet, and electronic delivery systems such as radios, televisions, and projectors, among others, and is widely used in today's education field. Kent and Facer (2004) indicated that school is an important environment in which students participate in a wide range of computer activities, while the home serves as a complementary site for regular engagement in a narrower set of computer activities. Increasingly, ICT is being applied successfully in instruction, learning, and assessment, and is considered a powerful tool for educational change and reform. A number of previous studies have shown that an appropriate use of ICT can raise educational quality and connect learning to real-life situations (Lowther et al., 2018; Weert & Tatnall, 2015).

As Weert and Tatnall (2015) pointed out, learning is an ongoing lifelong activity in which learners change their expectations by seeking knowledge, which departs from traditional approaches. As time goes by, learners will have to expect and be willing to seek out new sources of knowledge, and skills in using ICT will be an indispensable prerequisite. ICT tends to expand access to education: learning can occur anytime and anywhere. Online course materials, for example, can be accessible 24 hours a day, seven days a week, and teleconferencing classrooms allow both learner and teacher to interact simultaneously with ease and convenience. Learning and teaching no longer depend exclusively on printed materials; multiple resources are abundant on the Internet, and knowledge can be acquired through video clips, audio, and visual presentations.

Current research has indicated that ICT assists in transforming a teaching environment into a learner-centered one (Castro Sánchez & Alemán, 2021). Since learners are actively involved in the learning processes in ICT classrooms, they are authorized by the teacher to make decisions, plans, and the like (Lu, Hou, & Huang, 2020). ICT therefore

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provides both learners and instructors with more educational affordances and possibilities. The merits of ICT in education have been extolled in the literature. The use of ICT has been found to:

- **Assist students in accessing digital information efficiently and effectively.** As Brush, Glazewski, and Hew (2018) stated, ICT is used as a tool for students to discover learning topics, solve problems, and provide solutions to problems in the learning process. ICT makes knowledge acquisition more accessible, and concepts in learning areas are understood while students engage in the application of ICT.

- **Support student-centered and self-directed learning.** Students are now more frequently engaged in the meaningful use of computers (Castro Sánchez & Alemán, 2021). They build new knowledge through accessing, selecting, organizing, and interpreting information and data. Based on learning through ICT, students are more capable of using information and data from various sources and critically assessing the quality of learning materials.

- **Produce a creative learning environment.** ICT develops students' new understanding in their areas of learning (Chai, Koh, & Tsai, 2020) and provides more creative solutions to different types of learning inquiries. For example, in a reading class, e-books are commonly used in read-aloud activities. Learners can access all types of texts, from beginning to advanced levels, with ease through computers, laptops, personal digital assistants (PDAs), or iPads. These e-books may come with reading applications that offer a read-aloud interface, relevant vocabulary-building activities, and games related to reading skills and vocabulary acquisition. ICT thus involves purpose-designed applications that provide innovative ways to meet a variety of learning needs.

- **Promote collaborative learning in a distance-learning environment.** Koc (2015) mentioned that using ICT enables students to communicate, share, and work collaboratively anywhere, any time. For instance, a teleconferencing classroom could invite students around the world to gather simultaneously for a topic discussion. They may have the opportunity to analyze problems, explore ideas, develop concepts, and further evaluate ICT learning solutions. Students not only acquire knowledge together but also share diverse learning experiences with one another in order to express themselves and reflect on their learning.

- **Offer more opportunities to develop critical (higher-order) thinking skills.** Based on a constructive learning approach, ICT helps students focus on higher-level concepts rather than less meaningful tasks (Levin & Wadmany, 2016). McMahon's (2019) study showed statistically significant correlations between studying with ICT and the acquisition of critical thinking skills, and a longer exposure to the ICT environment can foster higher critical thinking skills. Schools are thus strongly advised to integrate technology across all learning areas and levels, so that students are able to apply technology to the attainment of higher levels of cognition within specific learning contexts.

Lowther et al. (2018) stated that three characteristics are needed to develop good-quality teaching and learning with ICT: autonomy, capability, and creativity. Autonomy means that students take control of their learning through their use of ICT. In this way, they become more capable of working by themselves and with others, and teachers can also authorize students to complete certain tasks with peers or in groups. Through collaborative learning with ICT, students have more opportunities to build new knowledge onto their background knowledge, and become more confident to take risks and learn from their mistakes. Serhan (2019) further concluded that ICT fosters autonomy by allowing educators to create their own material, thus providing more control over course content than is possible in a traditional classroom setting.

With regard to capability, once students are more confident in learning processes, they can develop the capability to apply and transfer knowledge while using new technology with efficiency and effectiveness. For example, in an ESL listening and speaking class, students may be asked to practice their pronunciation using an online audio dictionary. They are required not only to listen to the native pronunciation but also to learn the definitions and examples of a new

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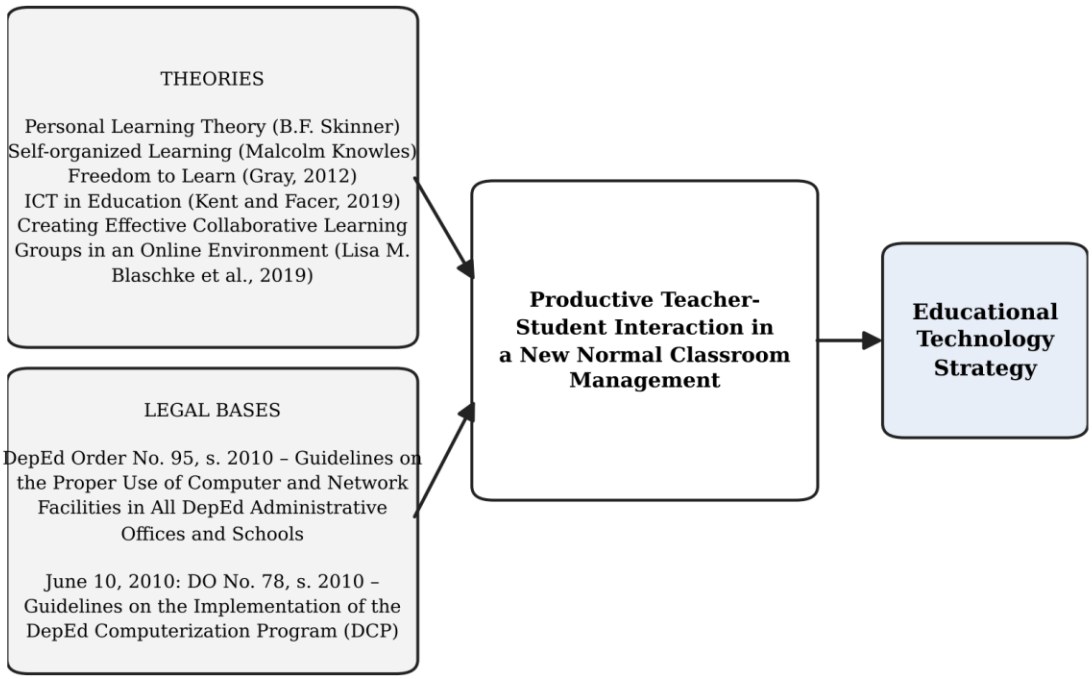
vocabulary item, make a recording of their own pronunciation, and provide examples of how the word is used in context. Before completing this task, they have to know which browser to use to search for a suitable online audio dictionary, browse several online dictionaries and select the one that best meets their learning needs, and find good software to record their voice. The whole learning process therefore enriches students' learning skills and broadens their knowledge beyond what they already know.

By using ICT, students' creativity can be optimized. They may discover new multimedia tools and create materials in the styles readily available to them through games (Gee, 2017, 2021), CDs, and television. With a combination of students' autonomy, capability, and creativity, the use of ICT can improve both teaching and learning quality. ICT also supports teaching by facilitating access to course content: Watts-Taffe et al. (2018) found that teachers can act as catalysts for the integration of technology through ICT. If encouragement, equipment, and necessary technological support are available to teachers from their institutions, developing an ICT class will be easier for them. The main responsibilities of these teachers will be changing their course format, creating and explaining new assignments, and arranging for the computer lab through their technology learning specialists or assistants.

In sum, as Reid (2002) indicated, ICT offers students more time to explore beyond the mechanics of course content, allowing them to better understand concepts. The use of ICT also changes the teaching and learning relationship. Based on the findings of Reid's study, teachers reported that the relationship between teacher and learner is sometimes reversed with regard to information technology, and this boosts students' confidence when they are able to help teachers with technical issues in the classroom. ICT therefore changes the traditional teacher-centered approach and requires teachers to be more creative in customizing and adapting their own material. While ICT is changing teaching and learning for the better in several ways, the existing literature has also identified some barriers, which can be classified into four categories based on the perspectives of students, teachers, administrators, and ICT infrastructure.

The theoretical and legal bases of the study and its conceptual framework are presented in Figure 1.

Figure 1. The Theoretical-Conceptual Framework



Statement of the Problem

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This research assessed the utilization of technology in the new normal classroom management at Intellisense Institute of Technology, Inc., Mandaue City, Cebu, during School Year 2022-2023 as a basis for an educational technology strategy. Specifically, this research answered the following questions:

1. What is the relevant information of the respondents, as to:
    1.1 teachers': age and gender; civil status; highest educational attainment; teaching experience; performance rating; and relevant trainings, seminars, and workshops attended; and
    1.2 learners': age and gender?
2. As perceived by the respondent groups, what is the extent of utilization of technology in the teaching-learning process, particularly in the strategies deployed by teachers in terms of learning objectives; class activities; professional development; learning assessment; and instructional approach?
3. What is the level of performance of the students, as assessed by the teacher, in the following classroom activities:
    3.1 Computer programming: incorporating multimedia into lessons and presentations; theory using PowerPoint; and practical demonstration; and
    3.2 Graphic design: incorporating multimedia into lessons and presentations; theory using PowerPoint; and practical demonstration?
4. Is there a significant relationship between the extent of utilization of technology in the teaching-learning process and the level of performance of students?
5. What are the issues and concerns experienced by the teacher-respondents in terms of the integration of instructional technology in teaching learners?
6. Based on the findings of this study, what technology-based learning exercises can be developed?

Null Hypothesis

Ho1. There is no significant relationship between the extent of utilization of technology in the teaching-learning process among teachers and the level of performance of students.

Significance of the Study

This research study aims to provide knowledge on the advanced use of technology in productive classroom management at Intellisense Institute of Technology, Inc. The results may benefit the following:

School Administrators. The results of the study may serve as an eye-opener for administrators to implement the advanced technology that the school has. Administrators will be adopting modern, high-technology ways of learning among the students.

Teachers. This study will help teachers use advanced technology in their classroom management for a productive interaction with the students.

Students. The results of the study will enhance the students' knowledge of the use of advanced technology in their studies.

Researchers. The researcher copes with a new technique in productive teacher-student interactions by using advanced technology.

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Future researchers. Future researchers may be guided by the findings of this research on how to properly use advanced technology.

Definition of Terms

To fully understand the terms used in this study, the conceptual terms that are integral and critical to this study are operationally defined.

Classroom management – the process by which teachers and schools create and maintain appropriate behavior of students in classroom settings.

Computer – a machine that can store and process information.

Curriculum – the subjects comprising a course of study in a school or college.

Department of Education – the executive department responsible for carrying out government education programs and policies.

Education – the process of receiving or giving systematic instruction, especially at a school or university.

Information and Communications Technology (ICT) – the convergence of computing, telecommunication, and governance policies for how information should be accessed, secured, processed, transmitted, and stored.

Learning – the act or experience of one that learns.

Personal Learning Environment (PLE) – a reflecting and graphic organizing activity that helps students identify information sources – whether tools or individuals – that may help their development and growth in the future.

Teacher-student interactions (TSI) – the way teachers and students interact in their classroom relationship.

Teaching – instruction or delivering a particular skill or subject.

Technology – the application of scientific knowledge to the practical aims of human life or, as it is sometimes phrased, to the change and manipulation of the human environment.

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METHODS

This section describes the research design, the flow of the study, the research environment, the respondents and sampling technique, the instrument, the data gathering procedure, and the statistical treatment and scoring procedures used in analyzing the data.

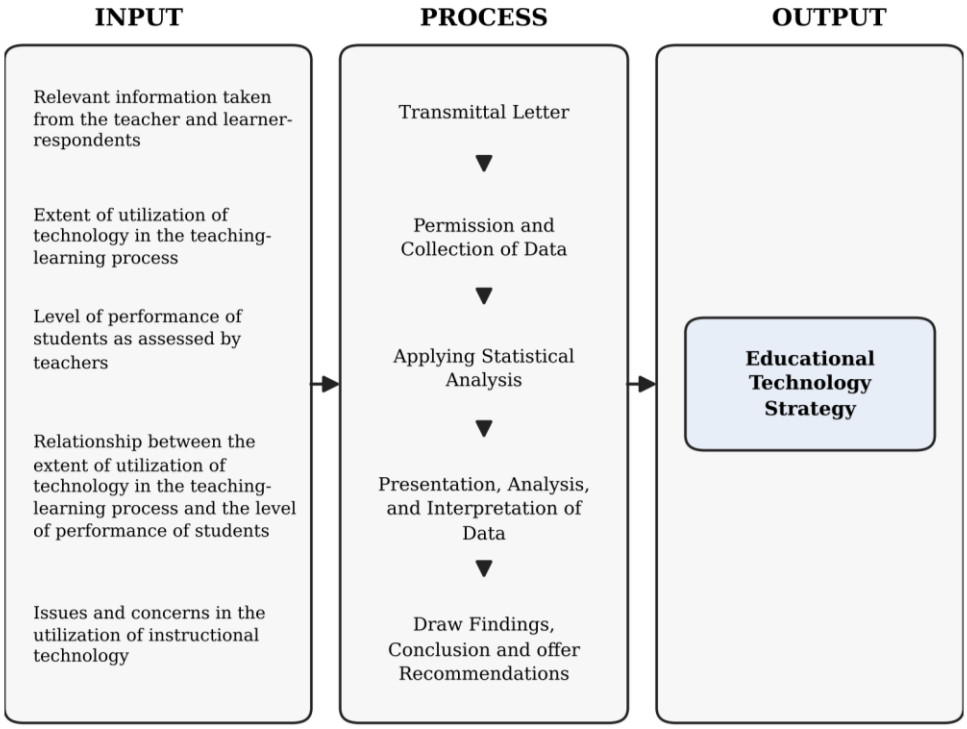
Research Design

This research study was designed as a quantitative study, and descriptive-correlational designs were used to describe the data. The theoretical background presented in the Introduction explains the benefits of ICT in the teaching-learning process. The teacher-respondents and a universal sample of the learners of Intellisense Institute of Technology, Inc. were engaged to determine productive teacher-student interaction in the new normal classroom management.

Flow of the Study

Figure 2 presents the process undertaken by the researcher to collect data, and the outcome of that process.

Figure 2. The Flow of the Study



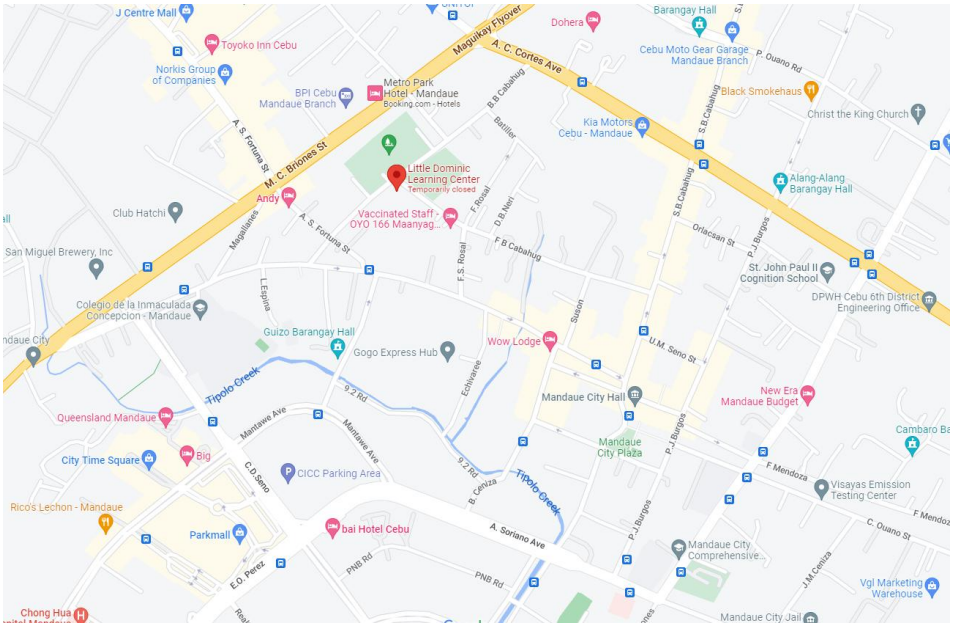
Research Environment

The study was conducted at Intellisense Institute of Technology, Inc. (IIT), located at the corner of F. B. Cabahug and B. B. Cabahug Streets, Guizo, Mandaue City, Cebu (Figure 3). IIT is registered and accredited by the Technical Education and Skills Development Authority (TESDA) and the Department of Education (DepEd) to offer skills training and senior high school, respectively.

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Figure 3. Location Map of the Study



Respondents

The respondents of this study comprised eight (8) teachers and a universal sample of the learners of Intellisense Institute of Technology, Inc. Under non-probability sampling, availability sampling was used. The researcher visited the school and distributed the set of questionnaires to the respondents, inquiring whether they were willing to participate in the study and in the collection of data. Table 1 shows the distribution of respondents.

Table 1. Distribution of Respondents

School	Teachers f	%	Learners f	%	Total f	%
Intellisense Institute of Technology, Inc.	8	16	42	84	50	100
Total	**8**	**16**	**42**	**84**	**50**	**100**

Instrument

This study used a set of questionnaires, that is, a set of orderly arranged questions carefully prepared to be answered by respondents and designed to collect facts and information (see Appendix B). The first part of the questionnaire solicited the relevant information of the respondents; the last part dealt with the main concern of the study.

The first part solicited information about the profile of the teachers as to their age, gender, civil status, highest educational attainment, length of service, performance rating, and relevant trainings, seminars, and workshops attended, as well as their access to gadgets and connectivity. It also covered the profile of the Grade I learners who served as respondents of this study, to determine their age and gender.

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The second part was a modified standardized questionnaire taken from the study of Sclater (2018) on "Technology Implementation." This tool dealt with the level of effectiveness of educational technology integration in the academic performance of the learners in terms of professional view and utilization, as perceived by the teacher-respondents. It was measured using a 4-point Likert scale: 4 for Well Implemented, 3 for Implemented, 2 for Less Implemented, and 1 for Not Implemented.

The third part presented the academic performance of students in computer programming and graphic design. The fourth and last part dealt with the challenges and barriers experienced by the teachers in navigating the school to a new education standard, in terms of the integration of educational technology.

Data Gathering Procedure

Before distributing the questionnaires, the researcher prepared a transmittal letter (Appendix A) addressed to the thesis adviser, Dr. Liberato A. Lauronilla, to be forwarded to the Dean of the Master of Arts in Education major in Administration and Supervision and to the University President, as well as to the Curriculum and Instruction in-charge of IIT, Mrs. Fairlane P. Rosello. In the letter, the researcher asked permission to use the teachers and learners of the said school as subjects and respondents of the study. After the approval of the letter, the researcher distributed the questionnaires to the respondents.

Statistical Treatment

This study is quantitative research, which focuses on the statistics acquired in the collection of data. The data collected may be used by future researchers on related studies. In the interpretation and analysis of data, the Statistical Package for the Social Sciences (SPSS) was used. The following statistical tools were applied:

Simple percentage. This determined the relevant information of the teachers' age, gender, civil status, highest educational attainment, number of years in service, performance rating, and number of appropriate trainings, seminars, and workshops attended, and the learners' age and gender.

Weighted mean. This determined how the use of advanced technology affected the engagement of learners of Intellisense Institute of Technology, Inc., as shown by their academic performance ratings, and described the extent of utilization of technology in the teaching-learning process.

Chi-square test. This was used to test the relationship between the extent of utilization of technology in the teaching-learning process and the level of performance of the learners, at the 0.05 level of significance.

Ranking. This was used to present the trainings, seminars, and workshops attended and the challenges and barriers experienced by the teachers.

Scoring Procedure

The Likert scale was used in this study. Each item was followed by an answer statement, and respondents chose the option that best corresponded with how they felt about the statement or question. Each option was given a point, and the scale ranged from 1 to 5, with 5 being the highest. The weighted means were interpreted using the following legend: 4.21-5.00, Very Well Implemented; 3.41-4.20, Well Implemented; 2.61-3.40, Fairly Implemented; 1.81-2.60, Less Implemented; and 1.00-1.80, Not Implemented. The level of performance of learners was classified as Attained Mastery (90-100), Near Mastery (80-89), Lack Mastery (75-79), and No Mastery (below 75).

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RESULTS

This section presents the data obtained from the respondents of the study. The research participants included 8 teachers and 42 learners, for a total of 50 respondents from Intellisense Institute of Technology, Inc. The section is organized according to the statement of the problem: first, the relevant information of the respondents; second, the extent of utilization of technology in the teaching-learning process in terms of learning objectives, class activities, professional development, learning assessment, and instructional approach; third, the level of performance of learners, as assessed by the teacher-respondents, in computer programming and graphic design; fourth, the test of the relationship between the extent of utilization of technology and the level of performance of students; and lastly, the challenges and barriers experienced by the teacher-respondents in integrating instructional technology in teaching learners.

Relevant Information of the Respondents

This section presents the relevant information of the respondent groups in terms of age, gender, civil status, highest educational attainment, teaching experience, performance rating, and relevant trainings, seminars, and workshops attended.

Age

Table 2 reveals the profile of the respondents in terms of age. Most of them belong to the age range of 31-40 years old, particularly five (5) or 50%. Respondents aged 41-50 comprise three (3) or 30% of the teachers, while only two (2) or 20% fall in the 21-30 age bracket.

Table 2. Age Profile of the Teacher-Respondents

Age	**n = 10**	**%**
51 years old and above	-	-
41-50 years old	3	30
31-40 years old	5	50
21-30 years old	2	20
Total	**10**	**100**

Gender

Table 3 shows the gender profile of the respondents. The female teacher-respondents outnumbered the males, with eight (8) or 80%, while only two (2) or 20% are male teachers.

Table 3. Gender Profile of the Teacher-Respondents

Gender	**n = 10**	**%**
Male	2	20
Female	8	80
Total	**10**	**100**

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Civil Status

Table 4 indicates the civil status of the respondents. Seven (7) or 70% of the teacher-respondents are married, while three (3) or 30% are single.

Table 4. Civil Status Profile of the Teacher-Respondents

Civil Status	n = 10	%
Single	3	30
Married	7	70
Widow/Widower	-	-
Total	**10**	**100**

Highest Educational Attainment

Table 5 presents the highest educational attainment of the respondents. Six (6) or 60% have obtained units in their master's degree. Two (2) or 20% are already master's degree holders, while one (1) or 10% each have units in a doctorate degree or are BSEEd/BSEEd graduates.

Table 5. Highest Educational Attainment of the Teacher-Respondents

Highest Educational Attainment	n = 10	%
Doctorate Degree	-	-
With units in Doctorate Degree	1	10
Master's Degree	2	20
With units in Master's Degree	6	60
BSEEd/BSEEd graduate	1	10
Total	**10**	**100**

Teaching Experience

Table 6 reveals the number of years in service of the respondents. Six (6) or 60% have been associated with the institution for more than six years, while two (2) or 20% each have been working as teachers for 1-3 years and 4-6 years.

Table 6. Teaching Experience of the Teacher-Respondents

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Teaching Experience	n = 10	%
More than 6 years	6	60
4-6 years	2	20
1-3 years	2	20
Less than a year	-	-
Total	**10**	**100**

Performance Rating

Table 7 shows the performance rating of the respondents. Seven (7) or 70% obtained a very satisfactory performance rating. Two (2) or 20% obtained a satisfactory rating, while one (1) or 10% obtained an outstanding rating.

Table 7. Performance Rating of the Teacher-Respondents

Performance Rating	n = 10	%
Outstanding	1	10
Very Satisfactory	7	70
Satisfactory	2	20
Unsatisfactory	-	-
Poor	-	-
Total	**10**	**100**

Appropriate Trainings, Seminars, and Workshops Attended

Table 8 indicates the number of appropriate trainings, seminars, and workshops attended by the respondents. All ten (10) or 100% of the respondents have attended division and district trainings and seminars. Six (6) or 60% have attended regional trainings, five (5) or 50% have joined national trainings, and three (3) or 30% have attended international trainings, seminars, and workshops.

Table 8. Appropriate Trainings, Seminars, and Workshops Attended by the Teacher-Respondents

Level of Training, Seminar, or Workshop	f	Rank
Division	10	1st
District	10	1st
Regional	6	2nd
National	5	3rd
International	3	4th

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Profile of the Learners

Table 9 presents the profile of the learner-respondents in terms of age and gender. Most of them are 6 years old (28 or 47%), closely followed by 24 (40%) who are 7 years old, while only eight (8) or 13% are 8 years old. Female learner-respondents outnumbered the males, with 34 or 56.6% against 26 or 43.3%.

Table 9. Age and Gender of the Learner-Respondents

Variables	Frequency (n = 60)	Percentage
Age		
8 years old	8	13.3
7 years old	24	40
6 years old	28	46.6
Gender		
Boy	26	43.3
Girl	34	56.6
Total	**60**	**100**

Extent of Utilization of Technology in the Teaching-Learning Process

The following tables present the extent of utilization of technology by the respondents in the teaching-learning process in terms of learning objectives, class activities, professional development, learning assessment, and instructional approach. Weighted means are interpreted using the legend: 4.21-5.00, Very Well Implemented; 3.41-4.20, Well Implemented; 2.61-3.40, Fairly Implemented; 1.81-2.60, Less Implemented; 1.00-1.80, Not Implemented.

Learning Objectives

Learning objectives are the way for teachers to structure, sequence, and plan out learning goals for a specific instructional period, typically to move students toward larger, longer-term educational goals such as meeting course learning expectations. As shown in Table 10, learning objectives obtained a grand mean of 4.70, which means that the respondents perceived this indicator to be highly considered and carried out in the integration of instructional technology in the chosen subject matters. The use of technology in the classroom improving student learning of critical concepts and ideas got the highest weighted mean of 4.84. This is followed by technology promoting the development of communication skills; increasing academic achievement; and promoting the development of students' interpersonal skills, with a mean score of 4.69 each. Technology usage in classroom instruction allowing students to also improve their ICT knowledge while improving their other skills got the lowest weighted mean of 4.63.

Table 10. Extent of Utilization of Technology in Terms of Learning Objectives

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Items	Weighted Mean	Interpretation
Using technology in the classroom promotes the development of communication skills (e.g., writing and presentation skills).	4.69	Very Well Implemented
The use of technology in the classroom increases academic achievement.	4.69	Very Well Implemented
Utilization of technology in the classroom promotes the development of students' interpersonal skills (e.g., ability to relate or work with others).	4.69	Very Well Implemented
Technology usage in classroom instruction allows students to also improve ICT knowledge while improving their other skills.	4.63	Very Well Implemented
The use of technology in the classroom improves student learning of critical concepts and ideas.	4.84	Very Well Implemented
GRAND MEAN	**4.70**	**Very Well Implemented**

Class Activities

Class activities are activities designed or deployed by the teacher to bring about or create the conditions for learning. As shown in Table 11, class activities gained a grand mean of 4.82, which means that the respondents perceived the integration of instructional technology in teaching computer programming and graphic design to be incorporated and considered in their selection and planning of class activities. Technology use being seen as helpful in computer programming and graphic design (skills acquisition) came first with the highest weighted mean of 5.00. Capitalizing on the fact that learners are adept with technology to make learning more motivating and fun came next with a mean of 4.84. Technology use making learning more engaging for students got 4.78, while the use of technology motivating students to get more involved in learning activities and a digital approach to teaching fit for digital learners fell last with a weighted mean of 4.75 each.

Table 11**. Extent of Utilization of Technology in Terms of Class Activities**

Items	Weighted Mean	Interpretation
The use of technology in the classroom motivates students to get more involved in learning activities.	4.75	Very Well Implemented
Technology use makes learning more engaging for students.	4.78	Very Well Implemented
Capitalizing on the fact that learners are adept with technology will make sure learning becomes more motivating and fun.	4.84	Very Well Implemented
A digital approach to teaching in class is fit for digital learners.	4.75	Very Well Implemented

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Technology use in the classroom is seen as helpful in computer programming and graphic design.	5.00	Very Well Implemented
GRAND MEAN	**4.82**	**Very Well Implemented**

Professional Development

Professional development pertains to the training given to teachers and people working in professions to increase their knowledge and skills; all employees are expected to undertake continuing professional development. As shown in Table 12, professional development accumulated a grand mean of 4.62, which means that the respondents perceived this indicator to be very well implemented in the integration of instructional technology in teaching computer programming and graphic design. The use of technology giving teachers the opportunity to be learning facilitators instead of information providers got the highest weighted mean of 4.90. Technology being a valuable instructional tool that makes teachers feel more competent as educators came next with 4.63, followed by technology promoting student collaboration (4.57) and easing the pressure on teachers (4.54). The use of technology enhancing professional development fell last with the lowest weighted mean of 4.48.

Table 12**. Extent of Utilization of Technology in Terms of Professional Development**

Items	**Weighted Mean**	**Interpretation**
The use of technology in the classroom enhances my professional development.	4.48	Very Well Implemented
The use of technology in the classroom promotes student collaboration.	4.57	Very Well Implemented
The use of technology in the classroom eases the pressure on me as a teacher.	4.54	Very Well Implemented
The use of technology in the classroom is a valuable instructional tool that makes teachers feel more competent as educators.	4.63	Very Well Implemented
The use of technology in the classroom gives teachers the opportunity to be learning facilitators instead of information providers.	4.90	Very Well Implemented
GRAND MEAN	**4.62**	**Very Well Implemented**

Learning Assessment

Learning assessment is designed to measure student achievement and gauge what students have learned. As shown in Table 13, learning assessment collected a grand mean of 4.43, which means that the respondents perceived this indicator to be well implemented in the integration of instructional technology in teaching computer programming and graphic design. Sending reading activities and assignments through Messenger came first with the highest weighted mean of 4.75. Making comprehension assessments engaging by asking students to practice in real-world situations, and making use of online resources to assess the performance of the students, came next with means of 4.69 and 4.66, respectively. Requiring projects, presentations, or speeches in the form of video uploaded online for

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the class to see got 4.63, while creating PowerPoint presentations as one of the requirements for class projects fell last with a weighted mean of 4.45.

Table 13. Extent of Utilization of Technology in Terms of Learning Assessment

Items	Weighted Mean	Interpretation
Require projects, presentations, or speeches in the form of video and upload online for the class to see.	4.63	Very Well Implemented
Make use of online resources to assess the performance of the students.	4.66	Very Well Implemented
Send reading activities and assignments through Messenger.	4.75	Very Well Implemented
Create PowerPoint presentations as one of the requirements for class projects.	4.45	Very Well Implemented
Make comprehension assessments engaging by asking students to practice in real-world situations.	4.69	Very Well Implemented
GRAND MEAN	**4.43**	**Very Well Implemented**

Instructional Approach

Instructional approaches are the approaches required if teachers are to meet the objectives of the Core Curriculum and the instructional needs of students. As shown in Table 14, instructional approach garnered a grand mean of 4.72, which means that the respondents perceived this indicator to be well implemented in the integration of instructional technology in teaching computer programming and graphic design. Generating charts or graphs for learners to visualize what they read, and maximizing social media platforms to engage learners in learning more, got the highest weighted means of 4.78 and 4.75, respectively. Utilizing visual learning software in teaching computer programming and graphic design closely followed with 4.72, while applying recorded storytelling as one of the pedagogical strategies and creating PowerPoint presentations for teaching learners fell last with a weighted mean of 4.69 each.

Table 14. Extent of Utilization of Technology in Terms of Instructional Approach

Items	Weighted Mean	Interpretation
Maximize social media platforms to engage my learners to learn more in the subject matter.	4.75	Very Well Implemented
Apply recorded storytelling as one of my pedagogical strategies in computer programming and graphic design.	4.69	Very Well Implemented
Create PowerPoint presentations to use in teaching my learners.	4.69	Very Well Implemented

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Generate charts or graphs for my learners to visualize what they read.	4.78	Very Well Implemented
Utilize visual learning software in teaching computer programming and graphic design to my learners.	4.72	Very Well Implemented
GRAND MEAN	**4.72**	**Very Well Implemented**

Summary of the Extent of Utilization of Technology

Table 15 summarizes the extent of utilization of technology in the teaching-learning process as perceived by the respondent groups. The overall grand mean of 4.65 means that the respondents perceived all indicators to be very well implemented in the integration of their instructional technology in teaching computer programming and graphic design. Of the five indicators, class activities came first with the highest weighted mean of 4.82. This is closely followed by instructional approach and learning objectives with means of 4.72 and 4.70, respectively. Professional development came next with 4.62, while learning assessment fell last with the lowest weighted mean among all indicators at 4.43.

Table 15**. Summary of the Extent of Utilization of Technology in the Teaching-Learning Process**

Indicators	**Weighted Mean**	**Interpretation**
Learning Objectives	4.70	Very Well Implemented
Class Activities	4.82	Very Well Implemented
Professional Development	4.62	Very Well Implemented
Learning Assessment	4.43	Very Well Implemented
Instructional Approach	4.72	Very Well Implemented
OVERALL GRAND MEAN	**4.65**	**Very Well Implemented**

Legend: 4.21-5.00 Very Well Implemented; 3.41-4.20 Well Implemented; 2.61-3.40 Fairly Implemented; 1.81-2.60 Less Implemented; 1.00-1.80 Not Implemented.

Level of Performance of Learners

Computer Programming

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Table 16 presents the level of performance of the students, as assessed by the teacher-respondents, in computer programming. In the first competency, incorporating multimedia into lessons and presentations, most learners obtained a near mastery grade of 80-89, specifically 38 or 63%. This is followed by 13 or 22% who attained mastery with a grade of 90-100, while 9 or 15% lack mastery with a grade of 75-79. In the second competency, theory using PowerPoint, 19 or 32% of the learner-respondents each attained mastery (90-100) and obtained a near mastery grade (80-89), while 12 or 20% lack mastery (75-79). In the third competency, practical demonstration, the majority of the learners attained a mastery grade of 90-100, particularly 28 or 47%. A near mastery grade of 80-89 was obtained by 13 or 22%, while 9 or 15% lack mastery with a grade of 75-79.

Table 16**. Level of Performance of Learners in Computer Programming**

Computer Programming	**Attained Mastery (90-100)**		**Near Mastery (80-89)**		**Lack Mastery (75-79)**		**No Mastery (Below 75)**	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Incorporating multimedia into lessons and presentations	13	21.6	38	63.3	9	15	-	-
Theory using PowerPoint	19	31.6	19	31.6	12	20	-	-
Practical demonstration	28	46.6	13	21.6	9	15	-	-

Graphic Design

Table 17 reveals the level of performance of the students, as assessed by the teacher-respondents, in graphic design. In the first competency, incorporating multimedia into lessons and presentations, most learners obtained a near mastery grade of 80-89, specifically 28 or 47%. This is followed by 23 or 38% who attained mastery with a grade of 90-100, while 9 or 15% lack mastery with a grade of 75-79. In the second competency, theory using PowerPoint, 29 or 48% of the learner-respondents attained mastery (90-100), while 19 or 32% obtained a near mastery grade of 80-89 and two (2) or 3% lack mastery with a grade of 75-79. In the third competency, practical demonstration, the majority of the learners obtained a near mastery grade of 80-89 (23 or 38%), 19 or 32% lack mastery under this competency, and 18 or 30% attained a mastery grade of 90-100.

Table 17**. Level of Performance of Learners in Graphic Design**

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Graphic Design	Attained Mastery (90-100)		Near Mastery (80-89)		Lack Mastery (75-79)		No Mastery (Below 75)	
	f	%	f	%	f	%	f	%
Incorporating multimedia into lessons and presentations	23	38.3	28	46.6	9	15	-	-
Theory using PowerPoint	29	48.3	19	31.6	2	3.33	-	-
Practical demonstration	18	30	23	38.3	19	31.6	-	-

Test of Relationship

Table 18 discloses the result of testing the relationship between the extent of utilization of technology and the level of performance of the learners. The extent of utilization of technology in the teaching-learning process and the level of performance of the learners yielded a significant relationship, with a p-value of .018 and a computed chi-square of .015 at the 0.05 level of significance. The null hypothesis was therefore rejected.

Table 18. Test of Relationship Between the Extent of Utilization of Technology and the Level of Performance of Learners

Variables	Computed Chi-square	p-value	Decision	Interpretation
Extent of Utilization of Technology and Level of Performance of Learners	0.015	0.018	Reject Ho	Significant

Note. Tested at the 0.05 level of significance.

Issues and Concerns

This section reveals the challenges and barriers experienced by the teacher-respondents in the integration of instructional technology in teaching learners. As shown in Table 19, the major challenge is the lack of adequate ICT support, infrastructure, or time: appropriate access to technical support (in the classroom and informally), availability of infrastructure (computer labs, software), policies (such as whether to administer digital homework), and time allocated to incorporate new technologies.

Table 19. Challenges and Barriers Experienced by the Teacher-Respondents

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Rank	Items
1st	Lack of adequate ICT support, infrastructure, or time
2nd	Teachers need more professional development
3rd	Easy for students to be distracted
4th	Differing device capabilities and instructions
5th	Introduced technology is not always preferred

This is followed by teachers needing more professional development to be able to implement and utilize these instructional technologies. They need access to ICT improvements for classroom implementation and to keep up with continuous technological advances, and this needs to be regular, scaffolded, and sustainable.

Teachers who believe that it is easy for students to be distracted came next. Students regularly use devices for social media, playing games, instant messaging, text messaging, and emailing rather than for class work.

Differing device capabilities and instructions. When students are required to bring their own device to school, there can be large differences in device capability, for example between what a cheap Android phone can do compared with an iPad. Students may have difficulty writing on small devices over long periods, and teachers may need to give multiple instructions for many different devices.

Introduced technology is not always preferred. Technology is not always the answer. Pre-service teachers have reflected on having preferences for manual writing (compared to typing) and on incidences of doubling up on time writing notes. Students can also prefer reading print, and teachers can disengage from introducing new technology when they do not feel it adds anything extra.

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DISCUSSION

This section summarizes the key findings of the study, interprets them in light of the related literature, presents the educational technology strategy developed from the findings, and acknowledges the limitations of the study.

Summary of Key Findings

This research assessed the utilization of technology in the new normal classroom management of Intellisense Institute of Technology, Inc., Mandaue City, Cebu, for School Year 2022-2023, using technology tools and equipment as bases for an educational technology strategy. It was designed as a quantitative study using a descriptive-correlational design, and the theoretical background explained the benefits of ICT in the teaching-learning process. The findings were as follows:

- **Respondent profile.** The teacher-respondents belonged to the age range of 31-40 years old and above, were mostly female and married, had obtained units in a master's degree, had been with the institution for more than six years, had a very satisfactory performance rating, and had attended division and district trainings, seminars, and workshops. They also reported owning mobile phones and laptops and using mobile data for internet connectivity.
- **Extent of utilization of technology.** The teacher-respondents perceived all indicators – learning objectives, class activities, professional development, learning assessment, and instructional approach – to be very well implemented in the integration of instructional technology in the teaching-learning process (overall grand mean = 4.65).
- **Level of performance of learners.** In computer programming and graphic design, near mastery (80-89) was the most frequent level in incorporating multimedia into lessons and presentations in both subjects, and in practical demonstration in graphic design; attained mastery (90-100) was the most frequent level in practical demonstration in computer programming and in theory using PowerPoint in graphic design; and learners were evenly split between attained and near mastery in theory using PowerPoint in computer programming. No learner fell below 75 in any competency.
- **Relationship.** The extent of utilization of technology and the level of performance of learners showed a significant relationship (chi-square = .015, p = .018), indicating that the status of teachers' integration of instructional technology is significantly related to learners' performance: the more teachers utilize technology in teaching, the higher the performance of learners in computer programming and graphic design.
- **Challenges and barriers.** Appropriate access to technical support, availability of infrastructure, policies, and time allocated to incorporate new technologies were the major challenges for teachers.

Interpretation of Findings in Light of the Literature

Respondent Profile

A teacher is a trained professional who prepares, organizes, and conducts group activities to assist students in developing their knowledge, talents, and attitudes in line with educational programs. Teachers can engage with students as a whole class, in small groups, or one-on-one, in and out of traditional classrooms. In the age indicator, teachers are compared on their average age and years of work experience; non-professional staff, such as teachers' aides and other paraprofessional workers who help instructors in delivering instruction, are not considered teachers. Previous research has found that teaching effectiveness varies with the instructor's age and personality traits. Murray (2016) studied the extent to which personality traits associated with teaching efficacy change concurrently with age, thereby moderating the age-teaching link, using a cross-sectional technique to collect peer ratings of 29 personality traits and archived student evaluations of instruction for 33 full-time psychology professors aged 33 to 64.

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According to census data, teaching is a predominantly female occupation in the Philippines, with female teachers outnumbering male teachers in both public elementary and secondary institutions, even though male administrators possess the highest professional levels and the highest-paying jobs. Chua (2017) reported that some physical qualities and attributes explain why women are perceived as less fit and appealing for various jobs or projects, and that female respondents had fewer traditional beliefs about gender roles than male respondents. Men and women have unique biological and psychological characteristics, which lead to sex-role stereotyping that hinders employment mobility.

Civil status is a major independent variable that determines whether the teacher is single, married, or a widow/widower. It evaluates these teachers' capacity to deal with obstacles and workload at school while also managing their time at home. Although much has been said about female teachers' marriage chances, few objective studies of actual marriage rates among teachers of various ages, or of teacher marriage rates in comparison to other occupational groups or the general population, have been done (Lazarte, 2015).

The educational attainment of teachers is a combination of their pre-service training and any further credentials received while on the job. The amount and quality of teachers' first education is undeniably important in shaping their work once they begin teaching in schools, and it should influence their subsequent education and training needs, as well as other aspects of their development. A lack of formal education, or one of poor quality, may increase teachers' need for professional development when they enter the workplace. Extensive formal education, on the other hand, may stimulate interest in further study and training to strengthen the talents obtained through it.

Job satisfaction is a critical aspect in deciding human capital and, as a result, worker productivity throughout the world. Most firms see workers' perspectives as a crucial influence on human capital management decisions, such as pay schemes, pension arrangements, and advancement opportunities, and workers' knowledge, abilities, and productivity are supposed to improve through time. Teacher experience is likely the most important factor in staff policies that affect current employees: it is a pillar of the traditional single-salary program, it supports policies for teacher transfer that prioritize seniority, and it is widely regarded as a major source of inequity among schools. The fundamental assumption is that experience enhances efficiency, and most people believe that teaching is a job that lasts a lifetime (Rey, 2017). The respondents' years of service suggest that their knowledge, abilities, and productivity have grown with time.

The respondents' performance ratings are consistent with Republic Act No. 7836, An Act to Strengthen the Regulation and Supervision of the Practice of Teaching in the Philippines, Establishing a Licensure Examination for Teachers, and for Other Purposes, known as the Philippine Teachers Professionalization Act of 1994, under which the state acknowledges the critical role of teachers in the formation of a responsible and literate population.

The Department is fully aware that everything hinges on teachers' capacity to put learning at the heart of every learner. Teachers' presence at seminars will aid in the creation of an effective learning environment, the improvement of teaching-learning circumstances, the upkeep of contemporary instructional gadgets, and the inspiration to become better instructors in the modern world. However, there is an issue with these kinds of events: they are not a replacement for actual learning. They give valuable information and may even motivate teachers, but only for a few days at a time (Grimmett & MacKinnon, 2012). Education Secretary Leonor M. Briones emphasized the need for suitable teacher training, stating that relevant training will provide educators with the knowledge and expertise to sharpen the minds of Filipino students, identify common and unique education problems and needs in Southeast Asian countries, and develop innovative and technology-based solutions to address these problems.

As to the learner-respondents, female students in the Philippines perform quite well in education. They outnumber male pupils in primary and secondary school enrollment and outperform them in cohort survival and completion rates at both levels, because male students drop out at a greater rate. Boys are more physically capable, so poor families may push them to work, and because males often perform worse in school it appears simpler for parents to have them stop and obtain a job. Furthermore, females value education more than boys do because they expect to have

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employment when they grow up, whereas boys frequently believe they will be able to work even without completing high school.

Extent of Utilization of Technology in the Teaching-Learning Process

Technology integration in the classroom has the potential to support important educational goals. It has been argued that technology helps change teacher-student relationships, encourages project-based learning styles, and supports the acquisition of skills such as higher-order thinking, analysis, and problem solving. As technology continues to infiltrate every area of our lives, the benefits of using it in the classroom can no longer be denied: mobile phones and tablets can replace bulky textbooks; smartphones allow quick research and access to educational apps; social media can provide an opportunity for increased parent-teacher communication and student activities; monitoring services can be used to track the usage of technology; and technology can be an important way for teachers to collect student data that can have a positive impact on learning outcomes. Several studies have uncovered the significant impact that technology can have on student learning outcomes. Technology has the unique opportunity to change the way that students learn and teachers teach, and the professional development of teachers has started to evolve to include ways to incorporate emerging technology and tools into classroom activities. When technology is embraced in the classroom, students are better positioned to be successful in their lives outside of school.

Technology provides instant accessibility to information, which is why its presence in the classroom is so vital. Smartphones, computers, and tablets are already an omnipresent element of everyday life for students and teachers alike, so it is only natural that technological devices be explored to create meaningful learning experiences for students of all ages, especially in subjects like computer programming and graphic design. Utilizing different types of technology in the classroom, including a virtual classroom, creates learners who are actively engaged with learning objectives, and it creates pathways for differentiated instruction to meet the unique needs of students as individual learners within a broader classroom climate. This is consistent with the high ratings for class activities, the highest-rated indicator in this study.

Technology has become a way of life for students. Even outside school, almost everything they do is connected to technology in some way, which has predisposed students to connect with technology in the classroom. It is much easier to connect with individualized lesson plans through technology than through reading a textbook or listening to a long lecture, and students are able to connect with the tools they need to be successful in the 21st century. These skills are essential: most jobs now include interactions with some level of technology, and education is not just about memorizing facts or expanding vocabularies but also about learning skills that prepare students to interact with the world and be successful in the workforce. Classrooms that focus on technology help ensure that students are prepared for a bright future in the rapidly growing digital economy. The very high rating for teachers acting as learning facilitators instead of information providers is likewise consistent with the facilitative role of the teacher discussed in the theoretical background.

The widespread availability of devices such as smartphones and tablets, the wealth of reading material available on them, and their affordances for writing, speaking, and listening have been reflected in a growing number of studies exploring the interplay of technology and literacy over recent decades. These studies variously see technology as a challenge to what has long been understood as literacy (reading or writing on paper), as a tool to support traditional concepts of literacy, or as a means to facilitate newer forms or definitions of literacy. It is therefore useful to consider not only how technology supports more traditional formats of reading and writing in the classroom but also to anticipate further debates as its affordances support newer concepts of literacy. Posting homework assignments online (via learning platforms such as Blackboard, Brightspace, and Moodle) is one way many teachers can begin to integrate technology in the classroom; assignments are easily accessible, which can increase student engagement and help students become more organized. In this study, sending reading activities and assignments through Messenger was the highest-rated assessment practice, although learning assessment was the lowest-rated indicator overall.

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Social media is a popular trend today. It is a collective of online communication channels dedicated to community-based input, interaction, content-sharing, and collaboration, and it is one of the factors that affect reading comprehension. Social media is growing as an excellent tool for increased student engagement and cooperative learning (McQuillan, 2011). Liz Strauss (2011) added that social media is any object or tool that connects people in dialogue or interaction – in person, in print, or online – and that in common usage it has come to mean a specific category of practices, technology, tools, and online sites that involve social relationships, participation, and user-generated content. Teachers can also implement many visual learning strategies in their classrooms to help visual learners thrive and to give students many opportunities for learning. These include using visual aids such as images, diagrams, and videos; grouping visual learners together during group projects so they can harness their strengths; allowing reflection time after lessons so visual learners can visualize their work; encouraging visual learners to color-code their notes; incorporating color into presentations and assignments; giving written instructions for assignments; and providing written feedback on assignments.

Integration of technology in education simply refers to the use of technology to enhance the student learning experience. There is a common misconception that technology integration is a financial burden for school districts, but students do not necessarily need their own tablets or laptops to succeed with technology. The use of technology during whole-class instruction can foster student engagement for auditory and visual learners, and simple technologies such as PowerPoint presentations, games, internet homework assignments, or online grading systems can be difference-makers in students' growth. Teachers often find success when they present the opportunity to use technology in the classroom. Some may argue that not all of the effects of technology are positive, since an infinite flow of information and entertainment available at any given time could be a distraction; but if technology is integrated into the classroom with routines in place that are monitored or assessed, the pros outweigh the cons. Technology has also become its own form of literacy because of how often it is used in everyday life: many careers use Microsoft Office or Google Drive daily – balancing budgets on spreadsheets, creating slide shows to be presented, or attaching documents to emails to communicate important information – and allowing students to learn and refine these skills prepares them for life beyond the classroom.

Level of Performance of Learners

The learners' performance profile shows that no learner fell below the passing mark of 75 in any of the six competencies assessed, and that most learners were at the near mastery or attained mastery levels. Performance was strongest in practical demonstration in computer programming and in theory using PowerPoint in graphic design, while the largest share of learners lacking mastery appeared in practical demonstration in graphic design (31.6%) and theory using PowerPoint in computer programming (20%). These areas may be given particular attention in the proposed strategy.

Relationship Between Technology Utilization and Learner Performance

The significant relationship found in this study is linked with the study of Bauer (2005), "The Relationship Between Technology Integration Reading Instruction and Reading Achievement in High-Performing Campuses." Bauer's findings revealed a positive relationship between teacher skill level and the level of technology integration in the classroom across all respondents, leading to the conclusion that districts are experiencing a developmental progression in teachers' acquisition of knowledge and fluency regarding technology skills and technology integration in the classroom.

The right technological tools can make a significant difference to students who struggle in school. Twenty-first-century readers must be able to comprehend many different types of texts, such as comic strips, fairy tales, news, and informational documents; some texts are similar in digital and print forms, but others are available only using technology. Digital texts greatly facilitate the task of differentiating instruction: students can use accessibility functions to customize their settings (font size, spacing, color contrast, bolding, and the like), which frees up cognitive

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load for comprehension, and most digital texts include features that help students better understand the texts. Teachers often find success when they present the opportunity to use technology in the classroom, and the pros of technology outweigh the cons when it is integrated with monitored or assessed routines.

Issues and Concerns

The challenges identified by the teachers mirror the barriers reported in the literature, which classify barriers according to the perspectives of students, teachers, administrators, and ICT infrastructure. The lack of adequate ICT support, infrastructure, and time, together with the need for regular, scaffolded, and sustainable professional development, points to institutional conditions that the school can address. Student distraction, differing device capabilities, and the fact that introduced technology is not always preferred indicate that technology integration must be accompanied by classroom routines, clear instructions for different devices, and a deliberate choice of when technology adds value.

Proposed Output: Educational Technology Strategy

Rationale

Technology is transforming education, changing how, when, and where students learn, and empowering them at every stage of their journey. For more than a decade, one of the most noticeable developments has been the increasing relevance of incorporating technology into the classroom and its implications for student reading comprehension ability. Although the integration of technology into the classroom and its impact on reading comprehension have been extensively researched in the independent literature, empirical investigations relating the two phenomena have primarily focused on data from industrialized nations.

On the path to personalizing learning, technology empowers students by giving them ownership of how they learn, making education relevant to their digital lives and preparing them for their futures. With technology and access to resources beyond classroom walls, students are inspired to become problem-solvers, critical thinkers, collaborators, and creators. Where technology has been successfully integrated into classrooms, students develop a lifelong love of learning. With this premise, the researcher proposes this educational technology strategy to enhance teachers' utilization and incorporation of instructional technology and improve the performance of learners in computer programming and graphic design.

Objectives

This educational technology strategy is intended:

1. To make sure teachers continue to effectively carry out their goal of improving the academic performance of the students in graphic design and computer programming during this new normal of education, with an improved level of technology integration; and
2. To address the pressing issues and concerns reported by the teachers that affect their technology integration practices and teaching performance.

Scheme of Implementation

The scheme of implementation (Table 20) was developed to enhance the utilization and integration of instructional technology by teachers and to improve the performance of students in computer programming and graphic design. It is hoped that it will address the issues and lapses discovered in this study.

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Table 20. Scheme of Implementation of the Educational Technology Strategy

Area of Concerns	Objectives	Strategies	Persons Involved	Budget	Budget Source	Time Frame	Evaluative Measures	Actual Accomplishment	Remarks
ICT Integration and Use in Teaching	To support teachers in the effective integration of ICT in the teaching-learning process	Presentation of the findings of this study in the research environment	Researcher, Teachers, and Principal	NA	NA	January 2023	Teachers with improved knowledge and skills in integrating ICT in class		
	To provide teachers with the necessary skills and knowledge in the effective integration of ICT in the teaching-learning process	ICT-Pedagogy Integration Sessions: Online Training for Computer Programming and Graphic Design Teachers	Teachers and Principal	5,000	School funds	Twice a year	Teachers with improved knowledge and skills in integrating ICT in class		
	To train teachers to gain necessary skills and knowledge in the effective integration of ICT in the teaching-learning process	In-House Skills Updating of Teachers in ICT Integration for Better Academic Outcomes	Teachers and Principal	1,000	School funds	Summer break	Teachers with improved knowledge and skills in integrating ICT in class		
Challenges in Technology Integration in Class	To address pressing concerns of teachers to effectively integrate	Lack of adequate ICT support, infrastructure: **Provide ICT support through available gadgets**	Teachers and Principal	NA	NA	January 2023	Challenges addressed in order to improve the students' performance in Computer		

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	technology in their class	**and connectivity within the campus**					Programming and Graphic Design		
	To address pressing concerns of teachers to effectively integrate technology in their class	Teachers need more professional development: **Conduct a Training Needs Assessment among teachers on ICT integration and other key pedagogical practices and skills they need to improve**	Teachers and Principal	NA	NA	March 2023	Challenges addressed in order to improve the students' performance in Computer Programming and Graphic Design		
	To address pressing concerns of teachers to effectively integrate technology in their class	Easy for students to be distracted: **Create a mechanism to involve the parents during online reading tests or activities**	Teachers and Principal	NA	NA	Next SY	Challenges addressed in order to improve the students' performance in Computer Programming and Graphic Design		

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Limitations of the Study

Several limitations should be considered in interpreting the findings. The study was conducted in a single institution with a small number of teacher-respondents and learners, and the respondents were selected through availability sampling; the findings therefore cannot be generalized beyond the research locale. The extent of utilization of technology and the level of learner performance were both assessed by the teacher-respondents, which may introduce perception bias. The chi-square test establishes a statistical relationship but does not by itself establish that greater technology utilization causes higher learner performance. The researcher accordingly recommends that future studies include a bigger pool of respondents, or a different set of respondents, to confirm the reliability of the findings of this study.

Conclusion and Recommendations

Conclusion

Based on the critical findings of this study, it is concluded that the level of status of integration of instructional technology of teachers and the level of academic performance of the learners in computer programming and graphic design resulted in the rejection of the null hypothesis, which means that the two yielded a significant relationship. This means that the status of the teachers' integration of instructional technology is significantly related to the level of academic performance of the learners in computer programming and graphic design. It means further that the more the teachers utilize technology in teaching, the higher the level of academic performance of the learners will be.

Recommendations

Based on the findings and conclusions of the study, the researcher recommends the following:

1. The proposed enhancement training on technology integration should be utilized in the research locale of this study; and
2. Future studies should include a bigger pool of respondents, or a different set of respondents, to confirm the reliability of the findings of this study.

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REFERENCES

AU School of Education Online Programs. (2020). *How important is technology in education? Benefits, challenges, and impact on students.* https://soeonline.american.edu/blog/technology-in-education

Brown, W. S. (2021). Successful strategies to engage students in a COVID-19 environment. *Frontiers.* https://www.frontiersin.org/articles/10.3389/fcomm.2021.641865/full

Englehart, J. M. (2009). *Teacher-student interaction.* ResearchGate. https://www.researchgate.net/publication/225966639_Teacher-Student_Interaction

Harris, J. L., et al. (2016). One to one technology and its effect on student academic achievement and motivation. *Contemporary Educational Technology.* https://files.eric.ed.gov/fulltext/EJ1117604.pdf

Kompen, R. T., et al. (2019). Personal learning environments based on Web 2.0 services in higher education. *ScienceDirect.* https://www.sciencedirect.com/science/article/pii/S0736585318306312

La Paro, K. M., Pianta, R. C., & Stuhlman, M. (2004). *The Classroom Assessment Scoring System: Findings from the prekindergarten year.* APA PsycNet. https://psycnet.apa.org/record/2004-14800-004

Llego, M. A. (2020). *DepEd's readiness for distance learning.* TeacherPH. https://www.teacherph.com/deped-readiness-distance-learning/

Pokhrel, S., & Chhetri, R. (n.d.). A literature review on impact of COVID-19 pandemic on teaching and learning. SAGE. https://journals.sagepub.com/doi/pdf/10.1177/2347631120983481

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