Teaching Preparation, Technological Pedagogical Content Knowledge Preparedness, and ICT Competency as Determinants of Criminology Instructors' Online Instructional Skills in Region 12

Evelyn Albrando[1], Dr. William A Revisa.[2]

[1]Doctor of Philosophy Student, Professional School University of Mindanao

[2]Professor, Professional School, University of Mindanao Davao City

ABSTRACT

The intention of this research study was to determine the levels of teaching preparation, technological pedagogical content knowledge preparedness, and information and communication technology competency as determinants of Criminology instructors' online instructional skills in Region 12. It employed the quantitative, non-experimental research design using correlation technique and administered the adapted questionnaires to the Criminology instructors of Region 12 as the respondents of the study. The data collected were treated using statistical tools such as Mean, Pearson r, and Linear Regressions. The result of the study are as follows: The level of teaching preparation of Criminology instructors in Region 12 was very high; the level of technological pedagogical content knowledge preparedness of Criminology instructors in Region 12 was very high; the level of information and communication technology competencies of Criminology instructors in Region 12 was rated very high; there was significant relationship between teaching preparation and online instructional skills of Criminology instructors in Region 12; there is a significant relationship between technological pedagogical content knowledge preparedness and online instructional skills of Criminology instructors in Region 12; there was significant relationship between information and communication technology competencies and online instructional skills of Criminology instructors of Region 12; and, teaching preparation, technological pedagogical content knowledge preparedness and ICT competencies of Criminology instructors positively influence the online instructional skills of the Criminology instructors in Region 12.

Keywords: Teaching Preparation, Technological Pedagogical Content Knowledge Preparedness, and ICT Competency, Determinants of Criminology Instructors' Online Instructional Skills, Region 12, and Philippines

A. Sections

Note: The presence\ absence of the following sections remains an author(s) decision. Their inclusion and order depends on the nature, on the form or the scope or the research work. The "References" section should be present at the end of any kind of research work and should contain all the consulted\cited sources.

INTRODUCTION

Online distance learning has become a very popular mode for learning in today's pandemic state to avoid contagion. Even though many educators see the importance of online education, many still lack the experience or knowledge to teach online effectively (Setiyawati, Wulandari, Moch, Arifin, Rudyanto, & Santia, 2018). Online learning within the scope of tertiary education encourages educators to face the learning assumptions that exist in tertiary education, such as the Criminology program. Indeed, tertiary education leaders are challenged to position their institutions to meet the demands of prospective student

connectivity and meet growing expectations and demands for more quality learning experiences and results. particularly during challenging times such as pandemic. As it is there are still educational institutions that neglect giving appropriate training for the teacher how to conduct classes online, leaving the teachers to strive on their own to gain knowledge and skill in the said instructional aspect (Buchbinder, & Cook, 2018).

Online instructional skill is very important for every teacher, including those teaching in Criminology program. The advent of pandemic caught every teacher unprepared, thus, having proper knowledge and skill in setting up distant learning class using technology, such as preparing the gadgets, making sure the Internet is fast enough for class interaction and power supply in consistent during the scheduled classes so as not to disrupt the class when black out would occur (Sharp and Potter, 2002).. With the experience teachers gained from the pandemic, they now knew in what certain area they are lacking and what area of their knowledge and skills needed augmentation and development (Buchbinder, 2018).

There are different views about teaching preparation and its implications on the Criminology teacher online teaching performance. Criminology teachers view online teaching preparation easy but of little academic value, because the focus will be on communication system and not on the content of the lesson. Teachers with sound professional technological pedagogical content knowledge preparedness contribute to quality in teaching online and to the learning process of the students. In addition, having appropriate ICT training with acquired competency, would strengthen the online instructional skills of the teachers and able to provide quality learning to the students (Monterroso & Escutia, 2014).

LITERATURE REVIEW

Criminology teacher preparation programs need to demonstrate with evidence that Criminology teacher education makes a difference in the Criminology student learning. The need for evidence of Criminology teacher impact arises from the ethical and professional responsibility of Criminology teacher education programs to assure the stakeholders that they are preparing effective Criminology teachers for the schools. The government plays an important role in the process of ensuring a supply of well-prepared Criminology teachers: It certifies and license Criminology teachers (Almy Tooley, & Hall, 2013; Center for Public Education, 2013).

In the United States, most teacher preparation programs conduct surveys pertaining to their graduates. Some institutional accreditation standards require such surveys, and some states are moving toward making these data a requirement for program approval. In addition, both principals who hire teachers and the students in teachers' classrooms are in a position to provide feedback on teachers' performance. A brief overview of the survey research is provided in this report and recommendations for ensuring data of high technical quality from surveys that assess the effectiveness of a program's graduates (Banerjee, 2015).

Furthermore, Criminology teachers must know the subject they teach. Indeed, there may be nothing more foundational to Criminology teacher competency. The reason is simple: Criminology teachers who do not themselves know a subject well are not likely to have the knowledge they need to help Criminology students learn this content (Bloomberg, 2020). At the same time, however, just knowing a subject well may not be sufficient for Criminology teaching. One need only sit in a classroom for a few minutes to notice that the subject that Criminology teachers work with in instruction is not the same subject taught and learned in college classes (Buchbinder, 2018).

Also, Criminology teachers must understand the organizing principles and structures and the rules for establishing what is legitimate to do and say in a field. The Criminology teacher need not only understand that something is so; the Criminology teacher must further understand why it is so, on what grounds its warrant can be asserted, and under what circumstances our belief in its justification can be weakened or denied. Moreover, we expect the Criminology teacher to understand why a particular topic is particularly

central to a discipline whereas another may be somewhat peripheral (Buchbinder, Ron, Zodik, & Cook, 2017).

Fostering the professional development of Criminology teachers seems to be a key challenge for governments, local politicians, and school managers to improve the quality of education. As a consequence, schools are expected to improve teaching through enhancing capacity building for individual and collective learning in schools. Building school wide capacity to promote professional learning is also considered an important prerequisite for addressing the continuous stream of changes (demographic changes and socio-cultural renewal) and different restructuring demands, including large-scale reforms and tightened output controls, introduced by accountability policies (Westhorp, 2014).

On the other hand, Pedagogy refers to a clearly designed and interrelated pattern of learning experiences embedded within a particular theoretical perspective and guided by a clearly articulated philosophical stance that provides vision and purpose for long- and short-term learning outcomes (Nordin, Davis, & Ariffin, 2013). In this perspective, teaching strategies are based on the developmental needs of the learner with the intent of facilitating learning and personal development that will result in achieving the immediate learning outcomes and contributing to the best quality of life possible for the learner, and that enable the learner to contribute to improving life conditions in the larger society (Biermann, Karbach, Spinath, & Brünken, 2015).

In addition, technological knowledge describes teachers' knowledge of, and ability to use, various technologies, technological tools, and associated resources. It concerns understanding educational technology, considering its possibilities for a specific subject area or classroom, learning to recognize when it will assist or impede learning, and continually learning and adapting to new technology offerings (Lu, 2014). However, any definition of technology knowledge is in danger of becoming outdated by the time this study has been published. That said, certain ways of thinking about and working with technology can apply to all technology tools and resources (Kurt, 2014).

Moreover, technological pedagogical knowledge is an especially important knowledge domain for teachers working in elementary education, because these teachers are expected to teach a large variety of subjects and therefore often do not have deep content knowledge of each subject. Technological pedagogical knowledge is shown not only in the way teachers act in practice but also in their professional reasoning (Blazar & Kraft, 2017). Teachers use professional reasoning to make choices about the pedagogical strategies they enact in practice. Therefore, an observational instrument that captures teachers' professional reasoning in conjunction with the enactment of pedagogical strategies is a better alternative. The enactment of technological pedagogical knowledge occurs in practice is based on the pedagogical strategies' teachers prefer to apply (Tondeur, van Braak, Ertmer, & Ottenbreit-Leftwich, 2016).

Similarly, technological content knowledge is the knowledge of how to use technology within a specific content area. Knowing how to use a spreadsheet provides an example of how to analyze a set of data for patterns or knowing how to use Fraction Bars to show a proportional relationship (Phillips, Koehler, & Rosenberg, 2016). Technological content knowledge is the teachers' knowledge in determining certain technologies that can be used in the learning process. This knowledge is important for teachers, because it can help students in understanding the material that has been conveyed (Herning, Koehler, & Mishra, 2014).

Apparently, teachers need to know about information communication technology and about what information communication technology can provide. They also need to be able to critically evaluate and discriminate what technological resource to use and whether one should be used at all (Byrne, 2017). They need to be able to understand conceptually and in pedagogically-appropriate ways, how, where and why to use computer related technologies. Thus, it is clear that teachers need competencies for successful instructional use of information communication technology (Clark, 2013). The ubiquity of information technology and communication has significantly reshaped the structure of learning in higher education.

Classroom boundaries have exceeded the realms of time, location, and physical presence. It is the era of anytime and anywhere learning, new teaching pedagogies, learning skills, and assessment methods have emerged to adapt to these changes (Chai, Ng, Li, Hong, & Koh, 2013).

Technological, pedagogical and content knowledge are essential for teachers for successful integration of information communication technology in education. The researcher thoroughly studied the literature and frame out an information communication technology competency model for teachers. For successful instructional use of information communication technology, four types of competencies are required. These four competencies are technological competencies, pedagogical competencies, didactical competencies, and social competencies (Ruarte, 2019).

Technological information communication technology Competencies are related with teachers' knowledge and technical training on how to use and maintain information communication technology software. These competencies involve the skills to operate modern technologies such as- computer, Internet etc. (Khan, Khan, Zia-Ul-Islam, & Khan, 2017). Majority of teachers believed to be capable of producing relevant documents using information communication technology applications, process and get information through the Internet, using multimedia in the process of teaching and learning and carry out basic operations in handling information communication technology tools. In this Nano technology world, it is becoming a necessity and an obligation for teachers to equip themselves with knowledge and skills in the latest ICT in line with the current changes (Zahidi, 2013).

Pedagogical information communication technology Competencies are related with teachers' instructional practices and knowledge of the curriculum and requires that they develop applications within their disciplines that make effective use of information communication technology to support and extend teaching and learning (Lee, Smith, & Bos, 2014). This is a generic form of knowledge that is involved in all issues of student learning, classroom management, lesson-plan development and implementation and student evaluation. It includes knowledge about techniques or methods to be used in the classroom; the nature of the target audience; and strategies for evaluating student understanding (McLeod & Richardson, 2013).

When combining the various concepts into one study there is a dearth of literature and study, which actually goes with the present global educational situation worthy of exploring and investigating to come up with relevant data that would provide basis for applicable and useful recommendations. Specifically, relative to teaching preparation, technological pedagogical content knowledge preparedness, and ICT competency as determinants of criminology instructors' online instructional skills in Region 12.

The study is anchored to cognitive learning theory developed by Piaget (1977). He postulated that it looks at the way people think. Mental processes are an important part in understanding how people learn. Flavell, Miller, and Miller (2002) stated that cognitive theory understands that learners can be influenced by both internal and external elements. It focuses on unique elements of learning and understanding. At the most basic level, the cognitive theory suggests that internal thoughts and external forces are both an important part of the cognitive process. Teaching preparedness must start in understanding the students and how they think amidst the prevalent trend of gadgets and technology as well as how they can be influenced and absorb learning utilizing external forces.

Also, the study anchored to Behaviorism theory developed by Pavlov (1927). Behaviorism is based on the idea that knowledge is independent and on the exterior of the learner. In a behaviorist's mind, the learner is a blank slate that should be provided with the information to be learnt. Clark (2004) accentuated that through this interaction, new associations are made and thus learning occurs. Learning is achieved when the provided stimulus changes behavior. Thus, in order to fill the blank state of the student, the teacher must first be filled with content knowledge that he/she is ready to impart and "fill" the students with it through competent teaching incorporated with the technology, which is now integrated in the teaching and learning

process.

Another theory, connectivism learning theory developed by Siemens and Downs, (2009) hooked with the present study. It is a theory for the digital age, denouncing boundaries of behaviorism, cognitivism, and constructivism. Connectivism is one of the newest educational learning theories. It focuses on the idea that people learn and grow when they form connections. This can be connections with each other, or connections with their roles and obligations in their life. Duke et al. (2013) mentioned that hobbies, goals, and people can all be connections that influence learning, which now-a-days can be done in a multi-faceted way through social media. This must require knowledge in Information and Communication Technology (ICT), wherein teachers must technically know how to use a computer and familiar with the various social media platform and various internet websites. Teachers can use digital media to make good, positive connections to learning.

The instructional theory developed by Bruner (1966) on the other hand is where the other three theories mentioned above contributes. According to Bruner (1966) an instructional theory should deal with four major elements: The learning predisposition; the design of concepts to be presented and its structure for ease of understanding; the most successful progression of ideas in which to present a body of knowledge; and, the administration of rewards and punishments. Therefore, Gagne and Medsker (1996) emphasized that an instructional theory focuses on the overall structure of learning material for the most successful learning experience. Instructional theory enabled the educator to code the learning process.
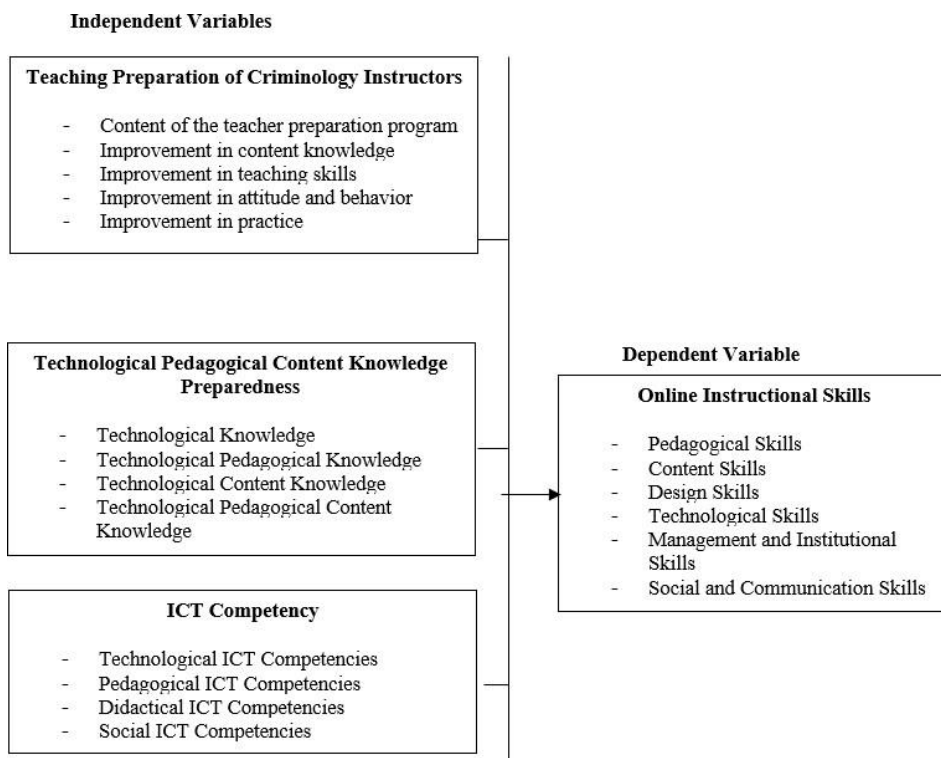

Figure 1. The Conceptual Framework of the Study

Figure 1 shows the conceptual framework with three independent variables and one dependent variable. The first independent variable is teaching preparation of criminology instructors, measured through indicators content of the teacher preparation program, improvement in content knowledge, improvement in teaching skills, improvement in attitude and behavior, and improvement in practice (Ahmad et al., 2012). The second independent variable is technological pedagogical content knowledge preparedness, measured through the indicators' technological knowledge, technological pedagogical knowledge, technological content knowledge, and technological pedagogical content knowledge (Apau, 2017). The third independent

variable is ICT competency, gauged through indicators technological ICT competencies, pedagogical ICT competencies, didactical ICT competencies, and social ICT competencies (Husain, 2010). The independent variable is online instructional skills, evaluated through the indicators' pedagogical skills, content skills, design skills, technological skills, management and institutional skills, and social and communication skills (Albrahim, 2020).

The main intention of the study was to measure teaching preparation, technological pedagogical content knowledge preparedness, and ICT competency as determinants of criminology instructors' online instructional skills in Region 12. Specifically, answers were sought from the queries as follows: Gauge the level of teaching preparation of criminology instructors in higher educational institutions in Region 12 in terms of content of the teacher preparation program, improvement in content knowledge, improvement in teaching skills, improvement in attitude and behavior, and improvement in practice; also, assess the level of technological pedagogical content knowledge preparedness of criminology instructors in higher educational institutions Region 12 in terms of technological knowledge, technological pedagogical knowledge, technological content knowledge and technological pedagogical content knowledge; moreover, determine the level of information and communication technology competency of criminology instructors in higher educational institutions Region 12 in terms of technological information and communication technology competencies, pedagogical information and communication technology competencies, didactical information and communication technology competencies, and social information and communication technology competencies; ascertain the level of criminology instructors' online instructional skills in higher educational institutions Region 12 in terms of pedagogical skills, content skills, design skills, technological skills, management and institutional skills, and social and communication skills; further, Determine the significant relationship between teaching preparation and criminology instructors' online instructional skills, technological pedagogical content knowledge preparedness and criminology instructors' online instructional skills, and information and communication technology competency of criminology and criminology instructors' online instructional skills; finally, determine the combined level of teaching preparation, technological pedagogical content knowledge preparedness that significantly influence criminology instructors' online instructional skills.

The formulated null hypotheses were tested at the level of significance of 0.01 stated as follows: There is no significant relationship between teaching preparation and criminology instructors' online instructional skills, technological pedagogical content knowledge preparedness and criminology instructors' online instructional skills, information and communication technology competency of criminology and criminology instructors' online instructional skills; and, the combined level of teaching preparation, technological pedagogical content knowledge preparedness does not significantly influence criminology instructors' online instructional skills.

The study is significant in today's context because of the ongoing pandemic. Classes are being held online to avoid the spread of the virus giving the teachers a new challenging opportunity to showcase their knowledge and skills in teaching online. Criminology instructors are no exemption and as teachers they still have to adhere to the basic principle of teaching such as making teaching preparation, having the technological pedagogical content knowledge preparedness, and practicing their information and communication technology competency to be able not only to communicate, but impart knowledge and information to the students online. Globally, the trend of online teaching is prevalent considering that there is no other option, wherein students can learn and attend classes but through the internet using various platform of group meetings. This study can provide significance as to the kind of preparation and the skills needed by Criminology instructors in teaching online.

The study might serve as the basis of the Criminology school institutions to provide quarterly trainings to their instructors so as to update their knowledge and skills in technology and the new system of teaching

online using various apps and programs. The result could be significant as well to the Criminology instructors by reinforcing their knowledge and skills through self-study and research and innovate in their teaching styles with one purpose in mind; their students will be able to learn the lesson satisfactorily. Criminology students could consider the outcome of this study significant because they themselves would strive to self-learn the technology as well as seeking more knowledge online to be able to learn and comprehend the lesson imparted to them by the Criminology instructors. The study is also significant for the future researchers to focus on blended learning as their topic considering that vaccination is turning everything to normal, which means classrooms would soon be open for the students and blended learning would be a thing for those who are residing far from the school.

MATERIAL AND METHODS

Presented in this section are the methods that were used in the study such as study research subject, instruments, as well as design, and procedure.

Research Respondents

The respondents of the study were the 313 Criminology instructors from various Criminology schools in the SOCCSKSARGEN Region conducting online classes during the school year 2020-2021. The distribution of the 313 respondents among the five key areas of the province where the Criminology schools are located are as follows: 102 from General Santos City, 59 from South Cotabato, 68 from Cotabato, 46 from Sultan Kudarat and 38 from Sarangani. Total enumeration was utilized by the researcher, wherein all the available Criminology teachers in the schools of SOCCSKSARGEN Region were taken as respondents of the study. In terms of inclusions, only the Criminology instructors teaching within the area of Region XII are included in the study. In terms of exclusion, instructors not teaching in the Criminology department were excluded in the study. Every participants or respondent has the option to withdraw, including those who have already answered the questionnaire but later on asked to withdraw; it was under their discretion and prerogative, considering that this research study was solely based on the willingness of the respondents.

Materials and Instrument

Adapted questionnaires were utilized as instruments of the study complied as one divided into four parts, which were validated by experts as well as pilot tested and qualified as valid and reliable, yielding an overall Cronbach Alpha of .930. The first part of the questionnaire measured the first independent variable, *teaching preparation*, which will be measured through indicators content of the teacher preparation program, improvement in content knowledge, improvement in teaching skills, improvement in attitude and behavior, and improvement in practice adapted from the study of Ahmad et al. (2012). The second part is the second independent variable, *technological pedagogical content knowledge preparedness,* which was measured through the indicators' technological knowledge, technological pedagogical knowledge, technological content knowledge, and technological pedagogical content knowledge, adapted from the study of Apau (2017). The third part is the third independent variable, *ICT competency,* which was gauged through indicators technological ICT competencies, pedagogical ICT competencies, didactical ICT competencies, and social ICT competencies adapted from the study of Husain (2010). The fourth part is the independent variable, *online instructional skills*, which was evaluated through the indicators' pedagogical skills, content skills, design skills, technological skills, management and institutional skills, and social and communication skills adapted from the work of Albrahim (2020).

The parameter limits that were utilized for the interpretation of the variables are as follows:

Range of Means	Descriptive Level	Interpretation
4.20- 5.00	Very High	The trait describing the Criminology instructors is always evident
3.40- 4.19	High	The trait describing the Criminology instructors is often evident
2.60- 3.39	Moderate	The traits describing the Criminology instructors is Sometimes evident
1.80- 2.59	Low	The traits describing the Criminology instructors is rarely evident
1.00-1.79	Very Low	The traits describing the Criminology instructors is never evident

Design and Procedure

The study employed the quantitative, non-experimental design using correlation technique. Correlational research is a type of research method that involves observing two variables in order to establish a statistically corresponding relationship between them. The aim of correlational research is to identify variables that have some relationship do the extent that a change in one creates some change in the other (Trochim, 2020). This type of research is descriptive, unlike experimental research that relies entirely on scientific methodology and hypothesis (Aliyas, 2012).

Correlation can be defined as the statistical test used to determine the tendency or pattern for two (or more) variables or sets of data to vary consistently. This design helps to predict score and explain the relationship among variables. Correlational research is focused on examining the relationships among two or more variables. This information can be used either to explain a phenomenon or to make predictions (Creswell, 2012). The said design was appropriate in determining the teaching preparation, technological pedagogical content knowledge preparedness, and ICT competency as determinants of criminology instructors' online instructional skills in higher educational institution in Region 12.

In terms of data collection, the questionnaire was subjected to validation by the panel of experts with an overall mean score of＿＿and was also subjected to pilot testing to ensure that it was valid and reliable garnering a Cronbach Alpha of＿＿. When approved for administration, the researcher requested from the office of the Dean of Professional School an endorsement letter which was later on attached to the permission letter addressed to the respective school directors of Criminology schools in Region XII asking permission to administer the research questionnaire among the Criminology instructors.

To secure the exact number of Criminology schools in Region 12, the researcher paid a visit to the Office of the Commission on Higher Education, Region 12 and inquire how many Criminology schools in the region are operating at this point of time including the number of Criminology instructors conducting online classes. After securing the exact figure of the Criminology schools as well as Criminology instructors, the researcher prepared letters which were forwarded to the respective schools online after contacting them one by one through phone and explain the researcher's intention of conducting the study. Once confirmed, only then were the letters sent online because of the pandemic situation, asking the schools to grant the researchers access to the online account of their Criminology instructors for the online survey.

Once approved, the researcher administered the questionnaires online among the respondents after explaining the reason why the study was conducted. Once the respondents have completed answering the questionnaires, the same were retrieved. The accumulated data were tallied and consolidated and were subjected to appropriate statistical tool and with the aid of the statistician, the researcher was able to discuss, analyze and interpret the data.

The following statistical treatments were utilized to be able to comprehensively analyze and interpret the data gathered, *Mean* was used to determine the level of teaching preparation, technological pedagogical content knowledge preparedness, and ICT competency as determinants of criminology instructors' online

instructional skills in Region 12. *Pearson r* was utilized to determine the significant relationship of the independent variables, namely teaching preparation, technological pedagogical content knowledge preparedness, and ICT competency to the dependent variable, criminology instructors' online instructional skills. Multiple Regressions was used to determine the significant influence of the independent variables teaching preparation, technological pedagogical content knowledge preparedness, and ICT competency towards dependent variable, criminology instructors' online instructional skills.

Ethical Consideration

Full ethical standards were observed by the researcher in conducting the study. The study conformed to the following norms: Voluntary participation, privacy and confidentiality, informed consent process, recruitment, technological issues, risks, benefits, plagiarism, fabrication, falsification, conflict of interest, deceit, permission from organization/location, and authorship.

Voluntary Participation. The respondents participated in the study on their own volition, which means it was voluntary on their part. The researcher asked them at first whether they are willing to participate and contribute their ideas to the study freely without any compensation whatsoever from the researcher.

Privacy and Confidentiality. Data collected from the respondents were used solely for the study and no other purposes, which were explained and pointed out to the respondents. The respondents professional and personal information indicated in the questionnaire were never be disclosed to anybody and were kept confidential. Respondents might, if they so decided, withdraw as respondents of the study at any point in the making of the mentioned study, so far none did so.

Informed Consent Process. The respondents were requested to sign an informed consent, which spelled out the consequences because of participating in the study, particularly the time that was consumed in answering the questionnaire and requiring from them honest answers for the items of questions stipulated in the questionnaire. The respondents were enlightened concerning voluntary participation and they were never coerced by the researcher to participate. The researcher gave gift some token of appreciation after the survey so as to erase the doubt concerning compensating them to participate.

Recruitment. Asking the respondents online to become one of the respondents might be called recruitment but it was more on asking their help to made the study materialized for the good of criminology education. The researchers convinced the respondents to participate in the study and at the same time explain the advantages and disadvantage of becoming respondents; the decision to accept such role in the study lies on the part of the respondents and saying yes did mean they voluntarily agreed to participate in the study.

Technological Issues. The role of technology in this study was considered major or important considering the fact that due to the pandemic situation, visiting the respondents in their respective homes, aside from being expensive and tiring, was prohibited in line with the health protocols implemented by the authorities. This means gathering was relying on technology by communicating with the respondents online using various communication formats. Obviously, each respondent has their own gadget and was connected online for the researcher to convince all of them to participate and answer the needed questionnaire through Google form.

Risks. Risky situation was totally be absent in this study considering the fact that the survey was conducted online and the respondents and the researcher have exclusive communication, and no harm befell them whether its physical, psychological, and socio-economic, or emotional.

Benefits. This study was more beneficial to the Criminology instructors because it enumerated all the aspect of online teaching and they have the opportunity to enhance their teaching practice online. The Criminology schools also benefitted because the result gave them ideas as to what area they needed to train their teachers.

Plagiarism. American Psychological Association (APA) format Seventh Edition was employed in the study to properly cite and referenced the authors and sources of related literatures. To safeguard the study from plagiarism, it was subjected to Turnitin.

Fabrication. Fabrication was avoided in this study making sure that the study was accurate and factual. The researcher made sure that there was no bias in the study and professionalism was the basis of making the study ensuring the pureness and accuracy of the study.

Falsification. Data gathered were as ease coming from the respondents and in no way was it manipulated; thus, making sure that all the documents were accurate and original, they were attached in the appendices to erase doubt from the stakeholders as well as the future readers.

Conflict of Interest. The main motive of the researcher was to augment her educational status as educator to become more effective and there were no other hidden agenda for the conduct of the study, except for the betterment of the Criminology education in Region 12 and in the country for that matter.

Deceit. No deceitfulness was employed just to convinced the respondents to participate in the study, the researcher was an open book to them baring all her intentions and motive in conducting the study

Permission from Organization/Location. All the needed correspondence was addressed and forwarded to the proper authorities concerning the study and proper protocols was observed in the conduct of the study.

Authorship. This researcher did not violate any copyright law and vows that the research study was solely her own with the assistance of her research adviser, even willing to the extent of publishing the study if the Professional Studies wishes her to do so.

RESULTS AND DISCUSSION

This section exhibited the result and discussion of the study. The order of presentation follows that of the study objectives.

This chapter presents the results of the study arranged according to the following subheadings: Level of Teaching Preparation of Criminology Instructors; Level of Technological Pedagogical Content Knowledge Preparedness of Criminology Instructors; Level of ICT Competencies of Criminology Instructors; Level of Online Instructional Skills of Criminology Instructors; Significance of the Relationship between the Teaching Preparation and Online Instructional Skills; Significance of the Relationship between the Technological Pedagogical Content Knowledge Preparedness and Online Instructional Skills; Significance of the Relationship between the ICT Competencies and Online Instructional Skills; and, The extent of Influence of Predictor Variables on Online Instructional Skills.

Level of Teaching Preparation of Criminology Instructors

Table 1 shows that the level of teaching preparation of Criminology instructors ranges from 4.42 to 4.64with an overall mean score of 4.57 described as very high level and having a standard deviation of 0.392 indicating that the responses of the respondents are clustered. The indicator with the highest mean score is content of the improvement in attitude/behavior of the trained teachers garnering 4.64 described as very high with a standard deviation of 0.403 indicating that the respondents' responses are clustered. This shows that the improvement in attitude/behavior of the trained teachers is always evident. The indicator with the second highest mean score is improvement in the content knowledge of the trained teachers with 4.62 and a standard deviation of 0.423 showing that the responses are clustered. This discloses that the improvement in the content knowledge of the trained teachers is always evident. The indicator with the third highest mean score is Content of the Teacher Preparation Program with 4.60 labeled as very high and a standard deviation

of 0.450 indicating that responses are clustered. This manifests that the content of the teacher preparation program is always evident. The indicator with the fourth highest mean score is improvement in teaching skills of the trained teachers with 4.58 described as very high and a standard deviation of 0.417 indicating the responses of the respondents are clustered. This shows that improvement in teaching skills of the trained teachers is very evident. The indicator with the lowest mean score is improvement in practice of the trained teachers; nevertheless, it is still very high with 4.42 and a standard deviation of 0.536 indicating the responses are clustered. This indicates that the improvement in practice of the trained teachers is very evident.

Table 1. Level of Teaching Preparation of Criminology Instructors

Indicators	SD	Mean	Descriptive Level
Content of the Teacher Preparation Program	0.450	4.60	Very High
Improvement in the Content Knowledge of the Trained Teachers	0.423	4.62	Very High
Improvement in Teaching Skills of the Trained Teachers	0.417	4.58	Very High
Improvement in Attitude/Behavior of the Trained Teachers	0.403	4.64	Very High
Improvement in Practice of the Trained Teachers	0.536	4.42	Very High
Overall	**0.392**	**4.57**	**Very High**

The outcome manifested the very evident teaching preparation of Criminology instructors. The disclosure of very high level of content of the teacher preparation program is an indication that the said preparation program is well-organized, relevant, updated, interesting, and covering all areas of teaching and learning. The finding supports the statement of Almy et al., (2013) who emphasized that the need for evidence of Criminology teacher impact arises from the ethical and professional responsibility of Criminology teacher education programs to assure the stakeholders that they are preparing effective Criminology teachers for the schools.

Level of Technological Pedagogical Content Knowledge Preparedness of Criminology Instructors

Table 2 displays the level of technological pedagogical content knowledge preparedness of Criminology instructors with mean scores ranging from 4.39 to 4.56 with an overall mean score of 4.48 labeled as very high and a standard deviation 0.448 showing the responses are clustered. This indicates that the technological pedagogical content knowledge preparedness of Criminology instructors is always evident.

In terms of technological pedagogical knowledge of Criminology instructors, the garnered mean score is 4.56 labeled as very high with the standard deviation of 0.457 indicating the responses are clustered. This shows that the technological pedagogical knowledge of Criminology instructors is always evident; when it comes to the indicator technological content knowledge of Criminology instructors, the mean score is 4.52 described as very high having a standard deviation of 0.480 indicating responses of the respondents are clustered. This discloses that the technological content knowledge of Criminology instructors is always evident; in terms of the indicator technological pedagogical content knowledge of Criminology instructors, the garnered mean score is 4.47 labeled as very high with the standard deviation 0.477, wherein responses are clustered. This shows that technological pedagogical content knowledge of

Table 2. Level of Technological Pedagogical Content Knowledge Preparedness of Criminology Instructors

Indicators	SD	Mean	Descriptive Level
Technological Knowledge	0.522	4.39	Very High
Technological Pedagogical Knowledge	0.457	4.56	Very High
Technological Content Knowledge	0.480	4.52	Very High
Technological Pedagogical Content Knowledge	0.477	4.47	Very High

Technological Pedagogical Content Knowledge	0.477	4.47	Very High
Overall	**0.448**	**4.48**	**Very High**

Criminology instructors is very evident. The indicator technological knowledge of Criminology instructors garnered a mean score of 4.39 declared as very high with a standard deviation of 0.522 disclosing that responses do not vary. This shows that technological knowledge of Criminology instructors is very evident.

Overall, the technological pedagogical content knowledge preparedness of Criminology instructors was always evident. Furthermore, the Criminology instructors' technological knowledge of was very high, which showed that technological knowledge of Criminology instructors was very evident. The finding is in accordance with the statement of Herning et al (2014) elucidating that teachers are knowledgeable in determining certain technologies that can be used in the learning process. This knowledge is important for teachers, because it can help students in understanding the material that has been conveyed.

Level of ICT Competencies of Criminology Instructors

Presented in Table 3 is the level of ICT competencies of Criminology instructors with mean scores ranging from 4.18 to 4.48 and an overall mean score of 4.31 labeled as very high with a standard deviation of 0.519 indicating that the responses of the respondents are clustered. This shows that the ICT competencies of Criminology instructors is very evident.

Table 3. Level of ICT Competencies of Criminology Instructors

Indicators	SD	Mean	Descriptive Level
Technological ICT Competencies	0.670	4.19	High
Pedagogical ICT Competencies	0.699	4.18	High
Didactical ICT Competencies	0.533	4.37	Very High
Social ICT Competencies	0.500	4.48	Very High
Overall	**0.519**	**4.31**	**Very High**

The indicator with the highest mean score is social ICT competencies garnering 4.48 or very high level and a standard deviation of 0.500 disclosing that responses are clustered. This manifests that the social ICT competencies of Criminology instructors is very evident. The indicator with the second highest mean score is didactical ICT competencies of Criminology instructors with the mean score of 4.37 labeled as very high having a standard deviation of 0.533 indicating that the responses are clustered. This indicates that the didactical ICT competencies of Criminology instructors is very evident. The indicator with the third highest mean score is technological ICT competencies of Criminology instructors with 4.19 described as high level having a standard deviation of 0.670 manifesting that the responses of the respondents are clustered. This shows that the technological ICT competencies of Criminology instructors is evident. The indicator with the lowest mean score is pedagogical ICT competencies of Criminology instructors with 4.18 or high level and a standard deviation of 0.699 indicating the responses are clustered. This shows that the pedagogical ICT competencies of Criminology instructors is evident.

The level of ICT competencies of Criminology instructors was indeed rated very high which means that the ICT competencies of Criminology instructors was very evident. This implies that the technological ICT competencies is above average but there is still room for development. The result is in accordance with the statement of Zahidi (2013) who pointed out that in today's technology world, it is becoming a necessity and an obligation for teachers to equip themselves with knowledge and skills in the latest ICT in line with the current changes.

Level of Online Instructional Skills of Criminology Instructors

Table 4 displays the level of online instructional skills of Criminology instructors with mean scores ranging from 4.39 to 4.59 garnering an overall mean score of 4.47 described as very high having a standard deviation of 0.462 indicating that the respondents' responses are clustered. This shows that the online instructional skills of Criminology instructors are always evident.

From highest to lowest mean scores, the indicators are presented as follows: In terms of social and communication skills of Criminology instructors, the garnered mean score is 4.59 or very high level with a standard deviation of 0.472 indicating that responses are clustered. It discloses that the social and communication skills of Criminology instructors is very evident. When it comes to the indicator management and institutional skills of Criminology instructors, the mean score is 4.51 labeled as very high with a standard deviation of 0.533 manifesting that the responses are clustered. This shows that the management and institutional skills of Criminology instructors are always evident. In terms of content skills Criminology instructors, the garnered mean score is 4.47 with the standard deviation of 0.471 indicating that the responses are clustered. This manifests that the content skills Criminology instructors are always evident. The indicator design skills of Criminology instructors garnered a mean score of 4.45 with a standard deviation of 0.556 disclosing that the responses are clustered. It shows that the design skills of Criminology instructors are always evident. When it comes to the indicator pedagogical skills of Criminology instructors, the mean score is 4.44 or very high level with the standard deviation of 0.483 indicating that the responses are clustered. This means that the pedagogical skills of Criminology instructors are always evident. The indicator with the lowest mean score is technological skills of criminology instructors garnering a mean score of 4.39 described as very high level with the standard deviation of 0.550 showing that the respondents' responses do not vary.

Table 4. Level of Online Instructional Skills of Criminology Instructors

Indicators	SD	Mean	Descriptive Level
Pedagogical Skills	0.483	4.44	Very High
Content Skills	0.471	4.47	Very High
Design Skills	0.556	4.45	Very High
Technological Skills	0.550	4.39	Very High
Management and Institutional Skills	0.533	4.51	Very High
Social and Communication Skills	0.472	4.59	Very High
Overall	**0.462**	**4.47**	**Very High**

This means that the online instructional skills of Criminology instructors are always evident. Simply put, the online instructional skills of Criminology instructors were excellent, which was acquired during the pandemic considering the fact that classes for tertiary education are all online. The result is in accordance with the statement of Darby and Lang (2019) accentuating that the technology provides the mechanism through which the online teacher implements the best pedagogy for that course or topic; online teacher use technology to enhance the course content.

Significance of the Relationship between the Teaching Preparation and Online Instructional Skills

Table 5 shows the analysis on the significance of the relationship between the teaching preparation and online instructional skills. The first indicator of teaching preparation namely, content of the teacher preparation program is significantly related with all the indicators of online instructional skills, namely pedagogical skills, content skills, design skills, technological skills, management and institutional skills, and

social and communication skills. The result showed a p-value of 0.000 each, which is lesser than 0.05 indicating significant relationships.

Overall computation yielded an r – value of .697 while the p-value is 0.000, which when compared with the level of significance of 0.000 is lesser indicating significant correlation thereby rejecting the null hypothesis. This means that there was significant relationship between teaching preparation and online instructional skills of Criminology instructors in Region 12. The result of the study confirmed the research study conducted by Franklin, Burdette, East, & Mellard (2015) concerning the effectiveness of teacher preparation for the online environment, participant-teachers responded stating that teacher preparation was a high priority. The participants reiterated the importance of teacher preparation for online learning.

Table 5. Significance of the Relationship between the Teaching Preparation and Online Instructional Skills

Teaching Preparation	Online Instructional Skills						Overall
	Pedagogical Skills	Content Skills	Design Skills	Technological Skills	Management and Institutional Skills	Social and Communication Skills	
Content of the Teacher Preparation Program	.496*	.566*	.601*	.529*	.533*	.477*	.592*
	0	0	0	0	0	0	0
Improvement in the Content Knowledge of the Trained Teachers	.522*	.608*	.578*	.589*	.554*	.561*	.629*
	0	0	0	0	0	0	0
Improvement in Teaching Skills of the Trained Teachers	.570*	.625*	.591*	.617*	.611*	.576*	.663*
	0	0	0	0	0	0	0
Improvement in Attitude/Behavior of the Trained Teachers	.456*	.540*	.521*	.513*	.467*	.466*	.547*
	0	0	0	0	0	0	0
Improvement in Practice of the Trained Teachers	.547*	.519*	.618*	.623*	.579*	.473*	.624*
	0	0	0	0	0	0	0
Overall	.592*	.648*	.665*	.656*	.627*	.579*	.697*
	0	0	0	0	0	0	0

*Significant at 0.05 significance level.

Significance of the Relationship between the Technological Pedagogical Content Knowledge Preparedness and Online Instructional Skills

Presented in Table 6 is the analysis on the significance of the relationship between the technological pedagogical content knowledge preparedness and online instructional skills of Criminology instructors. The indicators of the variable technological pedagogical content knowledge preparedness of Criminology

instructors is correlated with all the indicators of the variable online instructional skills of Criminology instructors. All indicators disclosed a computed p-value for each is 0.000, which when compared to the level of significance of 0.05 is lesser indicating correlation.

Table 6. Significance of the Relationship between the Technological Pedagogical Content Knowledge Preparedness and Online Instructional Skills

Technological Pedagogical Content Knowledge Preparedness			Online Instructional Skills				
	Pedagogical Skills	Content Skills	Design Skills	Technological Skills	Management and Institutional Skills	Social and Communication Skills	Overall
Technological Knowledge	.553*	.558*	.571*	.591*	.672*	.622*	.659*
	0	0	0	0	0	0	0
Technological Pedagogical Knowledge	.543*	.621*	.637*	.621*	.662*	.708*	.699*
	0	0	0	0	0	0	0
Technological Content Knowledge	.637*	.688*	.678*	.688*	.732*	.759*	.771*
	0	0	0	0	0	0	0
Technological Pedagogical Content Knowledge	.713*	.779*	.795*	.692*	.704*	.662*	.802*
	0	0	0	0	0	0	0
Overall	.660*	.712*	.722*	.700*	.748*	.742*	.791*
	0	0	0	0	0	0	0

*Significant at 0.05 significance level

The overall computation disclosed an r-value of .791 with a p-value of 0.000, which is lesser once compared with the level of significance of 0.05 indicating significant relationships. This means that the null hypothesis is rejected. This implies that there was a significant relationship between technological pedagogical content knowledge preparedness and online instructional skills of Criminology instructors in Region 12. The finding coincides with the study conducted by Ruarte (2019) on exploring effective teaching pedagogies and understanding online education found out that the new online educational environment of today requires that teachers become those life-long educators that are acquainted with the new pedagogies for online teaching and the new technology required for facilitating online instruction.

Significance of the Relationship between the ICT Competencies and Online Instructional Skills

Table 7 displays the significance of the relationship between the ICT competencies and online instructional skills of Criminology instructors. All the indicators of the variable ICT competencies, namely technological ICT competencies is correlated with all the indicators of the variable online instructional skills of Criminology instructors, All the computations disclosed uniformity of p-value which is 0.000, which is

lesser when compared to 0.05 level of significance indicating significant relationships.

The overall computations manifested an r-value of .823 and a p-value of 0.000, which is lesser than 0.05 level of significance showing a significant relationship thereby rejecting the null hypothesis. It could be surmise therefor that there is a significant relationship between the ICT competencies and online instructional skills of Criminology instructors. The result is congruent with the study conducted by Marcial and Fortich (2015) who discovered that in the digital age, information and communication technology (ICT) plays an important role in the professional development of teachers, particularly the development of their instructional skills online. The study reveals that there is a significant relationship between the level of ICT competence of teachers and their professional development, particularly online teaching.

Table 7. Significance of the Relationship between the ICT Competencies and Online Instructional Skills

ICT Competencies	Online Instructional Skills						
	Pedagogical Skills	Content Skills	Design Skills	Technological Skills	Management and Institutional Skills	Social and Communication Skills	Overall
Technological ICT Competencies	.648*	.573*	.637*	.612*	.684*	.563*	.688*
	0	0	0	0	0	0	0
Pedagogical ICT Competencies	.559*	.561*	.660*	.655*	.605*	.501*	.658*
	0	0	0	0	0	0	0
Didactical ICT Competencies	.689*	.771*	.746*	.626*	.659*	.632*	.759*
	0	0	0	0	0	0	0
Social ICT Competencies	.760*	.699*	.679*	.655*	.677*	.726*	.772*
	0	0	0	0	0	0	0
Overall	.756*	.740*	.782*	.736*	.756*	.687*	.823*
	0	0	0	0	0	0	0

*Significant at 0.05 significance level

The extent of Influence of Predictor Variables on Online Instructional Skills

The results of regression analysis shown in Table 8 indicates a linear correlation between the independent variables and dependent variable. Disclosed is the linear correlation between the first independent variable, namely Teaching Preparation and Online Instructional Skills of the Criminology Instructors (t = 3.111) with P-value = 0.002 which is less than the level of significance 0.05. Shown also is the linear correlation between the second independent variable, namely Technological Pedagogical Content Knowledge Preparedness and Online Instructional Skills of the Criminology Instructors (t = 4.624) with P-value = 0.000 which is less than the level of significance 0.05. Manifested as well is the linear correlation between the third independent variable, namely ICT Competencies and Online Instructional Skills of the Criminology Instructors (t = 8.427) with P-value = 0.000 which is less than the level of significance 0.05.

Table 8. The extent of Influence of Predictor Variables on Online Instructional Skills

Online Instructional Skills (Dependent Variable)				
Independent Variables	β (Standardized Coefficients)	B (Unstandardized Coefficients)	t	Sig.
Constant	0.559	0.168	3.319	0.001
Teaching Preparation (TP)	0.143	0.169	3.111	0.002
Technological Pedagogical Content Knowledge Preparedness (TPCKP)	0.273	0.282	4.624	0
ICT Competencies (IC)	0.49	0.436	8.427	0
R	0.848			
R^2	0.72			
F	264.455			
p	0			

The coefficient of determination (R^2) suggests that 72.0% of the variance is due to the linear combination influence by the three independent variables Teaching Preparation, Technological Pedagogical Content Knowledge Preparedness and ICT Competencies. This means that the Online Instructional Skills of the Criminology Instructors is good by 72.0%. Thus, it can be said that Teaching Preparation, Technological Pedagogical Content Knowledge Preparedness and ICT Competencies contribute significantly to the Online Instructional Skills of the Criminology Instructors. However, ICT Competencies is a stronger predictor than Teaching Preparation and Technological Pedagogical Content Knowledge Preparedness, since its Beta coefficient has a greater value (0.490, 0,273, and 0.143) respectively.

These findings confirm that the Online Instructional Skills of the Criminology Instructors positively influence the Teaching Preparation, Technological Pedagogical Content Knowledge Preparedness and ICT Competencies of Criminology Instructors. The result confirms the veracity of Behaviorism theory developed by Pavlov (1927). Behaviorism is based on the idea that knowledge is independent and on the exterior of the learner. In a behaviorist's mind, the learner is a blank slate that should be provided with the information to be learnt.

In order to fill the blank state of the student, the teacher must first be filled with content knowledge that he/she is ready to impart and "fill" the students with it through competent teaching incorporated with the technology, which is now integrated in the teaching process through online learning.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study, the following conclusions are drawn: The level of teaching preparation of Criminology instructors in Region 12 is very high; the level of technological pedagogical content knowledge preparedness of Criminology instructors in Region 12 is very high; the level of ICT competencies of Criminology instructors in Region 12 is rated very high; and, the level of online instructional skills of Criminology instructors is rated very high. It is recommended that the Criminology school institutions may provide quarterly trainings to their instructors so as to update their knowledge and skills in technology and the new system of teaching online using various apps and programs, particularly in the area of technological ICT competencies and pedagogical ICT competencies, wherein there is still room for improvement.

There is significant relationship between teaching preparation and online instructional skills of Criminology instructors in Region 12; also, between technological pedagogical content knowledge preparedness and

online instructional skills of Criminology instructors in Region 12; as well as, between ICT competencies and online instructional skills of Criminology instructors of Region 12. It is recommended that the Criminology instructors may reinforce their knowledge and skills through self-study and research as well as be innovative in their teaching styles with one purpose in mind: their students will be able to learn the lesson satisfactorily, while Criminology students should strive to learn the technology as well as seek more knowledge online to be able to learn and comprehend the lesson imparted to them by their Criminology instructors.

Teaching preparation, technological pedagogical content knowledge preparedness and ICT competencies of Criminology instructors positively influence the online instructional skills of the Criminology instructors in Region 12. It is recommended future researcher may continue the study by conducting a qualitative study, such as live experiences of Criminology instructors on their online instruction during pandemic.

ACKNOWLEDGEMENTS

ABOUT THE AUTHOR(S)

EVELYN POTESTAS ALBRANDO is a Criminology Program Head, researcher, and board reviewer from Notre Dame of Midsayap College, Midsayap, North Cotabato. She was a candidate status in Doctor of Philosophy with Specialization in Criminology at the University of Mindanao, Davao City. She is a licensed Criminologist and an active member of the Professional Criminologist Association of the Philippines (PCAP), Philippine Criminalistics Society, Inc (PhilCSI), and International Society of Researchers, Teachers and Students (iSORTS).

REFERENCES

1. Ahmad I., Zeb A., Rehman S.U., Ahmad S., Khan W., Ahmad K., & Ghani A. (2012). An evaluation of the effectiveness of teacher preparation programmes in Khyber Pakhtunkhwa Province, Pakistan. International Journal of Business and Social Research (IJBSR), 2(7), 124-134.
2. Akyüz, Y. (2013). Turkish education history. Ankara: Pegem.
3. Albrahim, F.A. (2020). Online Teaching Skills and Competencies.TOJET: The Turkish Online Journal of Educational Technology, 19(1), 9-20
4. Aliyas, J. (2012). Effect of online social networking on student academic performance.Computers in Human Behavior, 28(6), 2117–2127.
5. Almy, S., Tooley, M., & Hall, D. (2013). Preparing and advancing teachers and school leaders: A new approach for federal policy. Retrieved from http://www.edtrust.org/sites/edtrust.org/files/publications/files/Preparing_and_Advancing_0.pdf
6. Apau, S.K. (2017). Technological Pedagogical Content Knowledge Preparedness of Student-Teachers of the Department of Arts and Social Sciences Education of University of Cape Coast. Journal of Education and Practice, 8(10), 167-181
7. Banerjee, K. (2015). Application of micro teaching skill forimproving the quality of teachers: exploring opinion of trainee teachers. Journal of Educational Technology, 12(1).
8. Biermann, A., Karbach, J., Spinath, F. M., & Brünken, R. (2015). Investigating effects of the quality

of field experiences and personality on perceived teaching skills in German pre-serviceteachers for secondary schools.Teachers' Teaching Education, 51(1), 77–87

9. Blazar, D. & Kraft, M. A. (2017). Teacher and teaching effects on students' attitudes and behaviors. Educational Evaluation and Policy Analysis, 39(1), 146-170.https://doi.org/10.3102/0162373716670260

10. Bloomberg, L.D. (2020). Strategies and tips for successful online teaching. Retrieved from https://us.sagepub.com/en-us/nam/being-an-effective-online-instructor

11. Bruner, J. (1966). Toward a theory of instruction. Cambridge, MA: Harvard University Press.

12. Buchbinder, O. (2018). "Who is right?" What students' and prospective teachers' responses to scripted dialog reveal about their conceptions of proof. In R. Zazkis& P. Herbst (Eds.), Scripting approaches in mathematics education: Mathematical dialogues in research and practice (pp. 89-113), New York, NY: Springer doi.org/10.1007/978-3-319-62692-5_5

13. Buchbinder, O., & Cook, A. (2018). Examining the mathematical knowledge for teaching of proving in scenarios written by pre-service teachers. In O. Buchbinder& S. Kuntze (Eds.). Mathematics Teachers Engaging with Representations of Practice (pp. 131-154). Springer, Cham. doi.org/10.1007/978-3-319-70594-1_8

14. Buchbinder, O., Ron, G., Zodik, I. & Cook, A. (2017). What can you infer from this example? Applications of on-line, rich-media task for enhancing pre-service teachers' knowledge of the roles of examples in proving.In A. Leung and J. Bolite-Frant (Eds.), Digital Technologies in Designing Mathematics Education Tasks – Potential and Pitfalls. (pp. 215-235). Springer, Cham. doi.org/10.1007/978-3-319-43423-0_11

15. Byrne, C.S. (2017). eLearning integrators' narratives expressing professional identity and explaining patterns of practice with ICT. Dissertation, Ph.D., University of Southern Queensland, Australia.

16. Center for Public Education. (2013). Trends in teacher evaluation: How statesare measuring teacher performance. Retrieved from http://www.centerforpubliceducation.org/Main-Menu/Evaluatingperformance/Trends-in-Teacher-Evaluation-At-A-Glance/Trends-inTeacher-Evaluation-Full-Report-PDF.pdf

17. Chai, C. S., Ng, E. M., Li, W., Hong, H. Y., & Koh, J. H. L. (2013). Validating and modeling technological pedagogical content knowledge framework among Asian preservice teachers. Australasian Journal of Educational Technology, 29(1), 41-53.

18. Clark, C. (2013). A phenomenological study of the impact of pre-service and in-service training regarding the integration of twenty-first century technologies into selected teachers' instruction. Retrieved fromhttp://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1734&context=doctoral.

19. Clark, R. (2004). The classical origins of Pavlov's conditioning. Integrative physiological and behavioral science. The Official Journal of the Pavlovian Society, 39(1), 279-94.

20. Creswell J. (2012). Educational research: Planning, conducting, and evaluating qualitative and quantitative research (4th Ed.). Toronto: Pearson

21. Darby, F. & Lang, J.M. (2019). Small teaching online: Applying learning science in online classes. https://www.wiley.com/en-au/Small+Teaching+Online%3A+Applying+Learning+Science+in+Online+Classes-p-9781119619093

22. Duke, D., Harper, G., & Johnston, M. (2013). Connectivism as a Digital Age Learning Theory. Kaplan University, USA

23. Flavell, J., Miller, P., & Miller, S. (2002). Cognitive development (4th ed.). Upper Saddle River, NJ: Prentice-Hall.

24. Franklin, T.O., Burdette, P., East, T., & Mellard, D.F. (2015). Effectiveness of teacher preparation for the online learning environment. Retrieved from https://kuscholarworks.ku.edu/bitstream/handle/1808/22604/SEA_Topic_5_Summary_updated_July_2015.pdfsequence=1&isAllowed=y

25. Gagne, R. M. & Medsker, K. L. (1996). The conditions of learning: Training applications. Fort Worth, TX: Harcourt Brace College Publishers.

26. Herning, M. C., Koehler, M. J., & Mishra, (2014). Handbook of technological pedagogical content knowledge (TPCK) for educators. New York: Routledge.

27. Husain, N. (2010). Teacher competencies for the use of information communication technology. Journal of Indian Education, 36(1), 1-17

28. Khan, A., Khan, S., Zia-Ul-Islam, S., & Khan.M. (2017) Communication skills of a teacher and its role in the development of the students' academic success. Journal of Education and Practice, 8(1), 18-21.

29. Kurt, S. (2014). TPACK: Technological pedagogical content knowledge framework. In Educational Technology, May 12, 2018. Retrieved from https://educationaltechnology.net/technological-pedagogical-content-knowledge-tpack-framework/

30. Lee, K. S., Smith, S., & Bos, B. (2014). Pre-service teachers' technological pedagogical knowledge: Acontinuum of views on effective technology integration. International Journal of E-Learning & Distance Education, 29(2).

31. Lu, L. (2014). Learning by design: Technology preparation for digital native pre-service teachers. Retrieved fromhttp://surface.syr.edu/cgi/viewcontent.cgi?article=1124&context=etd.

32. Marcial, D.E. & Fortich, M.S. (2015). ICT competence level in the professional development of teacher educators in Central Visayas, Philippines. Asia Pacific Journal of Multidisciplinary Research, 3(5),28-38.

33. McLeod, S., & Richardson, J. W. (2013). Supporting effective technology integration and implementation. In M.Militello and J. I. Friend (Eds.), Principal 2.0: Technology and educational leadership. Charlotte, NC: Information Age Publishing.

34. Monterroso, E. &Escutia, R. (2014). Education Inmersiva: ensenanzapracticadel derecho en 3D. Rev. Comun. Y TechnolohiyaEmergentes, 9(2), 83 –100.

35. Nordin, H., Davis, N., & Ariffin, T. F. T. (2013). A case study of secondary pre-service teachers' technological pedagogical and content knowledge mastery level.Procedia – Social and Behavioral Sciences, 103(1), 1–9. https://doi.org/10.1016/j.sbspro.20 13.10.300

36. Pavlov, I.P. (1927). Conditioned reflexes; an investigation of the physiological activity of the cerebral cortex. (Translated and edited by G.V. Anrep) Oxford U.P., Humphrey.

37. Phillips, M., Koehler, M., & Rosenberg, J. (2016). Looking outside the circles: Considering the contexts influencing TPACK development and enactment. Society for Information Technology & Teacher Education International Conference, Mar 21, 2016 in Savannah, GA, United States

38. Piaget, J. (1977). The development of thought: Equilibration of cognitive structures. New York, NY: Viking.

39. Ruarte, D. (2019). Effective pedagogies for online teaching and learning. Retrieved from https://www.researchgate.net/publication/332655856_Effective_Pedagogies_for_Online_Teaching_and_Learning_Ruarte_2019/citation/download

40. Setiyawati, E.,Wulandari, F., Moch. B., Arifin, U., Rudyanto,H.E., & Santia, I. (2018).Using online learning systems to measure students' basic teaching skill.International Journal of Engineering & Technology, 7 (4.7), 463-467.

41. Sharp, J. and Potter, J. (2002). Primary ICT: Knowledge, understanding and practice, (2nd edition). Glasgow: Learning Matters Ltd.

42. Siemens, G., & Downs, (2009). Elearn space.Retrieved from http://www.elearnspace.org/blog/

43. Tondeur J., van Braak, J., Ertmer, P. A., & Ottenbreit-Leftwich, A. (2016). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: a systematic review of qualitative evidence. Educational Technology Research and Development, 65(3), 1–21. https://doi.org/10.1007/s11423-016-9481-2

44. Trochim, W.M.K. (2020). Research methods knowledge base. Retrieved from https://conjointly.com/kb/correlation-statistic/

45. Westhorp, G. (2014). Realist impact evaluation: An introduction. Methods Lab Publication, Overseas Development Institute.

46. Zahidi, M.A. (2013). Implementation Use of ICT in Teaching English in primary schools. Seminar Hasil Penyelidikan Sektor Pengajian Tinggi ke 3. Putrajaya: Malaysia's Ministry of Education.

B . Survey Questionnaire

Survey Questionaire on Teaching Preparation, Technological Pedagogical Content Knowledge Preparedness, And ICT Competency as Determinants of Criminology Instructors' Online Instructional Skills in Region 12

Dear Respondents,

The Undersigned professional student of the University of Mindanao is currently conducting a research study on, **"Teaching Preparation, Technological Pedagogical Content Knowledge Preparedness, and ICT Competency as Determinants of Criminology Instructors' Online Instructional Skills in Region 12".** The main objective of the study is to determine the level of Criminology instructors' teaching preparation, technological pedagogical content knowledge preparedness, and ICT competency in relation to their online instructional skills.

As one of the Criminology Instructor in one of the Criminology Institution in Region 12, the undersigned researcher would like to ask you to become one of the respondents of this study; your reactions on the items of statements provided will serve as the primary data of the study.

The undersigned researcher can assure you that all your answers would be treated with utmost confidentiality.

Thank you for cooperation.

Sincerely yours,

Evelyn Albrando

Researcher

Part I. Respondents' Profile

Name (Optional): _____

Name of School: _____

School Address: _____

1. **Teaching Preparation**

5 – Strongly Agree

4 – Agree

3 – Moderately Agree

2 – Disagree

1 – Strongly Disagree

Note: Please check the box corresponding to your chosen answer

Content of the Teacher Preparation Program	5	4	3	2	1
1. The teacher preparation program content is well organized					
2. The teacher preparation program content is relevant					
3. The teacher preparation program content is updated					
4. The teacher preparation program content is interesting					
5. The content covers all areas of teaching and learning					

Improvement in the Content Knowledge of the Trained Teachers	5	4	3	2	1
1. The trained teachers explain the concepts easily					
2. The trained teachers provide relevant examples					
3. The trained teachers relate the concepts to daily life experiences					
4. The trained teachers simplify difficult concepts					
5. The trained teachers present the concepts in interesting manner					

Improvement in Teaching Skills of the Trained Teachers	5	4	3	2	1
1. The trained teachers are able to make lesson plan					
2. The trained teachers communicate clearly in the classroom					
3. The trained teachers manage their classes easily					
4. The trained teachers evaluate student's learning competently					
5. The trained teachers use various teaching aids effectively					

Improvement in Attitude/ Behavior of the Trained Teachers	5	4	3	2	1
1. The trained teachers are friendly with the students					
2. The trained teachers cooperate with their colleagues					
3. The trained teachers share different ideas with other teachers					
4. The trained teachers are punctual in their duties					
5. The trained teachers accept additional responsibilities happily					

Improvement in Practice of the Trained Teachers	5	4	3	2	1
1. The trained teachers are able to conduct research in education					
2. The trained teachers maintain lesson plan diary on regular basis					
3. The trained teachers design interesting classroom activities					
4. The trained teachers involve students in teaching and learning					
5. The trained teachers use different methods of teaching					

Source:

Ahmad I., Zeb A., Rehman S.U., Ahmad S., Khan W., Ahmad K., &Ghani A. (2012). An Evaluation of the Effectiveness of Teacher Preparation Programmes in Khyber Pakhtunkhwa Province, Pakistan. International Journal of Business and Social Research (IJBSR), 2(7), 124-134. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.679.8682&rep=rep1&type=pdf

2. Technological Pedagogical Content Knowledge Preparedness

5 – Strongly Agree

4 – Agree

3 – Moderately Agree

2 – Disagree

1 – Strongly Disagree

Note: Please check the box corresponding to your chosen answer

Technological Knowledge	5	4	3	2	1
1. I have the technical skills I need to use technology.					
2. I have the knowledge to learn technology easily.					
3. I can solve the problems that I encounter when using technology.					
4. I know different types of technology.					
5. I can install a new program that I would like to use.					
6. I can create and edit a video clip.					
7. I can create my own website.					
8. I can save an image from a website to the hard drive of my computer.					
9. I can send an email with an attachment.					
10. I can create a basic presentation using PowerPoint or a similar program.					
11. I can create a document with text and graphics in a word processing program					

Technological Pedagogical Knowledge	5	4	3	2	1
1. I can use technologies that enhance the teaching approaches for a lesson.					
2. I can use technologies that enhance students' learning of a lesson.					
3. My teacher education program has stimulated me to think more deeply about how technology could influence the teaching approaches I use in the classroom.					
4. I can use technologies that are appropriate for my teaching.					
5. I can apply technologies to different teaching activities.					
6. I can use technologies to assess students learning.					
7. I can use technology to introduce my students to real world scenarios.					
8. I can assist my students to use technology to plan and monitor their learning.					
9. I can assist my students to use technology to construct different forms of knowledge representations.					
10. I can assist my students to collaborate with each other using technology.					

11. I can use technology to motivate students.					
12. I can use technologies to improve communication with student					
13. I can use technologies to improve my teaching skills					
14. I can use technologies to improve the presentation of information to learners.					

Technological Content Knowledge	5	4	3	2	1
1. I know how my subject matter can be represented with the application of technology					
2. I know about technologies that I can use for enhancing the understanding of specific concepts in my subject matter.					
3. I know about the technologies that I have to use for the research of content of my subject matter.					
4. I can use appropriate technologies (multimedia resources, simulation) to represent the content of my teaching subject.					
5. I know about technologies that I can use for enhancing the understanding of specific concepts in my subject matter.					
6. I can use technology representations (multimedia, visual demonstrations, etc.) to demonstrate specific concepts in my subject matter.					

Technological Pedagogical Content Knowledge	5	4	3	2	1
1. I can teach lessons that appropriately combine my subject matter, technologies and teaching approaches.					
2. I can select technologies to use in my classroom that enhance what I teach, how I teach and what students learn.					
3. I can use strategies that combine content, technologies, and teaching approaches in my classroom.					
4. I can use technologies that enhance the understanding of the content for a lesson					
5. I can find and use online materials that effectively demonstrate a specific principle in my subject area.					
6. I can use technology to facilitate scientific inquiry in the classroom.					
7. I can use technology to create effective representations of content that departs from textbooks approaches.					
8. I can structure activities to help students to construct different representations of the content using appropriate technologies (Webspiration, Mindmaps, and Wikis).					
9. I can create self-directed learning activities of the content knowledge with appropriate technologies (Blogs, Web quests).					
10. I can design inquiry activities to guide students to make sense of the content knowledge with appropriate technologies (simulations, web-based materials).					

Source:

Apau, S.K. (2017). Technological Pedagogical Content Knowledge Preparedness of

Student-Teachers of the Department of Arts and Social Sciences Education of University of Cape Coast. Journal of Education and Practice, 8(10), 167-181

https://core.ac.uk/download/pdf/234640102.pdf

3. ICT Competencies

5 – Strongly Agree

4 – Agree

3 – Moderately Agree

2 – Disagree

1 – Strongly Disagree

Note: Please check the box corresponding to your chosen answer

Technological ICT Competencies	5	4	3	2	1
1. Use of different operating system					
2. Use of e-mail					
3. Working with Multimedia					
4. Using available computer hardware					
5. Participating in online discussion					
6. Hardware repairs					
7. Writing general computer programs					
8. Use of variety of software like- word processing, database, spreadsheet and statistical software.					
9. Using ICT skills in developing and presenting information					
10. Familiarization with computer terminology					
11. Setting up websites					
12. Ability in and understanding of fundamental					
13. Computer operations and concepts					
14. Use of different instructional packages.					
15. Clear understanding about computer hardware and software					
16. Accessing the Internet					

Pedagogical ICT Competencies	5	4	3	2	1
1. Select and evaluate subject-specific educational software					
2. Develop and maintain educational website					
3. Prepare ICT-based learning environment					
4. Develop educational programs with the help of programming languages					
5. Monitor and evaluate ICT-based teaching-learning process					
6 Applying ICT supported strategies to manage students' learning					
7. Designing effective learning experiences and creating rich learning environments with the support of ICT					
8. Surfing the internet and locating useful information from the internet for the development of lesson plans					

	5	4	3	2	1
9. Integrate ICT in other subjects across the curriculum					
10. Prepare schemes of work and lesson notes using ICT					
11. Ability to explore and apply to suitability of ICT for cooperative learning and for peer interaction					
12. Understanding of how computer technology can enhance student learning					

Didactical ICT Competencies	5	4	3	2	1
1. Make decisions about how to present the content.					
2. Create materials and tools that adapt the use of ICT to students.					
3. Make decisions about how students are to interact and which tools are appropriate for a given type of interaction (wikis for collaborative construction, blogging for conversation-type activities, etc.).					
4. Plan student support during the teaching and learning process.					
5. Use ICT as a didactical tool in the class.					
6. Make decisions about methodologies appropriate to previous knowledge and experience of students					
7. Design the feedback and evaluation moments adjusted to the learning and teaching process.					
8. Create activities related to specific aims. These activities have a close relationship with the knowledge to be acquired.					
9. Know how to use ICT tools to create and facilitate a community of learning.					
10. Implement cooperative learning strategies using ICT.					

Social ICT Competencies	5	4	3	2	1
1. Understanding the concepts of ICT and its impact upon current society and the whole world.					
2. Demonstrating knowledge and skills for using technology in ethical, legal and safe ways.					
3. Maintain continuous, positive and constructive feedback to encourage student participation and high levels of motivation.					
4. Set a trustful atmosphere for communication.					
5. Be able to give to students equal opportunities to participate in collaboration.					
6. Be able to use humour and good manners during the teaching and learning process.					
7. Promote communication between students.					
8. Demonstrating knowledge and skills for acquiring and processing learning resources with technology tools and using the resources foe educational purposes in fairways.					
9. Promote collaboration among students and assist them in the acquisition of collaboration skills.					
10. Build a feeling of belonging to an online learning community.					

Source:

Husain, N. (2010). Teacher Competencies for the Use of Information Communication Technology. Journal of Indian Education, 36(1), 1-17

4. Online Instructional Skills

5 – Strongly Agree

4 – Agree

3 – Moderately Agree

2 – Disagree

1 – Strongly Disagree

Note: Please check the box corresponding to your chosen answer

Pedagogical Skills	5	4	3	2	1
1. Learning theories, such as learning styles, the adult learning theory, the learner-centered approach, and collaborative learning;					
2. Designing and implementing appropriate instructional strategies, as well as classroom assessment and student engagement techniques;					
3. Participation and providing guidance and support as needed;					
4. Using criterion-based assessment to evaluate individual and group performance;					
5. Motivating students and showing enthusiasm and interest;					
6. Encouraging knowledge construction based upon learners' prior knowledge and life experience;					
7. Fostering learners' self-assessment and reflection; and					
8. Promoting group interaction, collaboration, and teamwork.					

Content Skills	5	4	3	2	1
1. Expressing and mastering extensive knowledge of the content;					
2. Stating learning goals and objectives that coincide with learners' levels and characteristics;					
3. Drafting and developing learning and assessment activities that align with learning goals and objectives;					
4. Developing a course outline that includes all course components and elements;					
5. Designing a teaching proposal at the general level and identify each of its phases or elements;					
6. Developing and selecting appropriate and varied learning resources that accommodate different learning styles and preferences;					
7. Linking the subject and content with scientific, social, cultural, and any other relevant phenomena; and					
8. Developing an inventory of existing content and resources and any additional content and resources that will be needed.					

Design Skills	5	4	3	2	1
1. Understanding and applying instructional design principles, models, and theories					
2. Organizing and presenting the learning materials in different formats;					
3. Cooperating with the production team to design learning activities and select appropriate tools and techniques to present these activities; and					
4. Using students' previous feedback to develop and design new courses and assess the course design quality by using quality assurance tools and instruments, such as the Quality Matters Rubric.					

Technological Skills	5	4	3	2	1
1. Accessing various technological resources and tools, such as email, Internet browsers, LMSs, text and video chat applications, and productivity software and applications;					
2. Understanding the learning and teaching capabilities and limitations of these tools;					
3. Being aware of the technical potential of, and procedures used to create, e-content, such as e- books and instructional videos; and					
4. Being alert to the latest updates and renovations of educational technology and software.					

Management and Institutional Skills	5	4	3	2	1
1. Being able to clarify the roles and expectations of the instructor and the learners;					
2. Managing the course time and applying time-saving techniques;					
3. Demonstrating leadership, management, mentoring, and coaching skills, as well as knowledge of administrative qualities and procedures;					
4. Tracking course and students' progress on a regular basis;					
5. Establishing and declaring rules and regulations for participation, submission of assignments, timeliness, sending and seeking feedback, and communication protocols;					
6. Conducting research on classroom teaching then interpreting and integrating research findings and results;					
7. Understanding and demonstrating commitment to institutional policies;					
8. Maintaining contact and networking with online teaching and administrative teams; and					
9. Complying with legal, ethical, and copyright issues and standards.					

Social and Communication Skills	5	4	3	2	1
1. Facilitating and maintaining interactive discussion and information exchange;					
2. Using sufficient and commonly understandable language;					
3. Respecting and considering cultural differences;					
4. Clearly requesting information and asking questions;					
5. Clarifying the purpose and meaning of messages and feedback;					
6. Emphasizing the important points using font colors and effects;					
7. Ensuring the quality and accuracy of written messages and feedback and detecting typographical and grammatical errors;					

8. Personalizing messages and feedback and making them more lively by adding the appropriate sense of humor when possible;					
9. Using different communication methods to ensure accessibility among the instructor and learners, and the learners with their peers;					
10. Maintaining a warm, friendly, and inviting collegial atmosphere;					
11. Creating and developing respectful relationships and a sense of community among the learners;					
12. Showing sensitivity and empathy when communicating online;					
13. Resolving conflicts and misunderstandings amicably; and					
14. Offering advice and suggestions and clarifying doubts and suspicions.					

Source:

Albrahim, F.A. (2020). Online Teaching Skills and Competencies.TOJET: The Turkish Online Journal of Educational Technology, 19(1), 9-20

https://files.eric.ed.gov/fulltext/EJ1239983.pdf