Alternative Learning System (ALS) Teachers' Digital Competence and Online Teaching Readiness

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Abstract

This descriptive correlational study assessed the digital competence and online teaching readiness of Alternative Learning Systems (ALS) teachers in the 3rd District of Iloilo. "The responses were analysed using t-test, One-way Analysis of Variance (ANOVA), and Pearson's r with an alpha level set at .05". Results revealed that the level of education is a significant factor in determining the level of digital teaching competence and online teaching readiness of ALS teachers. A meaningful relationship exists between digital teaching readiness and the digital competence of ALS teachers. This study revealed that digital teaching readiness is high when digital teaching competence is high. The results of this study may be utilised for Faculty Development Program. The Department of Education may organise training to improve the ALS teachers' digital proficiency, which would aid them in adjusting to systemic changes in education.

Keywords: alternative learning system, digital teaching competence, online teaching readiness, descriptive-correlational.

1. Introduction

Students and educators saw the unexpected transition from in-person classes to online learning in 2020. Researchers began talking about online schooling and emergency remote online teaching (Judd et al., 2020; Jeffery & Bauer, 2020), emergency remote teaching (Bozkurt & Sharma, 2020; Hodges et al., 2020); emergency e-Learning (Murphy, 2020), emergency online teaching (Kirschner & Neelen, 2020; Şener et al., 2020). Others talk about the 'forced' shift to remote teaching (Carrillo & Flores, 2020) and the abrupt change in education to new, distance, electronic teaching (Kitishat et al., 2020). Many teachers lack expertise with and knowledge of online learning and teaching because many teachers' training programs do not emphasise online pedagogies or how to promote learning online (McAllister & Graham, 2016). As a result, many teachers lack expertise with and knowledge of online learning and teaching. Within weeks of the COVID-19 outbreak, traditional teachers were forced to teach online (Arum & Stevens, 2020; Gülbahar & Adnan, 2020). University closures forced teacher educators to develop and conduct online instruction even though they were not ready to undertake it or were not interested in it before (Hechinger & Lorin, 2020; McMurtrie, 2020).

As a result of COVID–19 pandemic issues, online learning instruction is currently a trend in the Philippine educational system. "Department of Education (DepEd)", "The Commission

7584

Eur. Chem. Bull. 2023,12(Special Issue 7), 7584-7597

on Higher Education (CHED)", and other educational institutions are making sure classroom instructions are carried out smoothly. It is a critical situation that academic sectors must handle. COVID-19 has significantly impacted the student's learning process (Malekian et al., 2020). Online instruction necessitates technological skills and alternative pedagogical methods other than in-person teaching to facilitate online learning (Gurley, 2018).

The present study investigated the digital teaching competence and online teaching readiness of ALS teachers assigned to the 3rd District of Iloilo. It also aimed to provide the data as inputs to developing a virtual skills training program.

2. Literature Review

2.1. Alternative Learning System (ALS) Teachers

An "alternative Learning System (ALS)" is a parallel learning system that offers a "valuable substitute for formal education when it is unavailable or cannot be accessed in schools". It encompasses sources of information and skills, both informal and non-formal. District ALS Coordinators and ALS Teachers implement the ALS Programs throughout the 17 regions of the Philippines. ALS Teachers and District ALS Coordinators are regular employees of the Department of Education. Harmonisation of ALS initiatives in the district is the primary responsibility of the District ALS Coordinator.

On the other hand, ALS Teachers, who are licensed teachers, facilitate the delivery of the Basic Literacy Program as well as the Accreditation Equivalency Program (DepEd, 2023). ALS teachers face many challenges compared to teachers teaching in regular classrooms. One of them is that they are constantly moving and might need help learning in a conventional classroom when hired. Additionally, they could be placed in difficult-to-reach locations, making travel uncomfortable. Residents of the target neighbourhood are given preference among prospective teacher applicants to decrease the anticipated commute and communication challenges. ALS teachers assigned to a specific area must be able to communicate in the local language or dialect. They must also be physically fit to handle the demands of mobile teaching due to variations in physical conditions based on the designated learning places.

2.2. Teacher's Digital Competence

Due to the lockdowns in March 2020 brought about by the COVID–19 pandemic, tens of thousands of schools were closed worldwide. Even though schools have begun to reopen months later, predicting when closures will end partially ultimately is difficult. Because of this, "teachers encounter difficulties adjusting to online teaching and learning, keeping a basic level of contact with students, thereby promoting students' growth and learning. The degree that the teachers have handled these challenges is uncertain" (König, Jäger-Biela, & Glutsch, 2020).

The widespread school closures occurred when technology advancements and digitisation generally changed quickly, especially in educational settings (McFarlane, 2019). Consequently, school digitalisation has gained attention before and independently of the COVID-19 pandemic. In addition to the question of whether the loss brought about by the lockdown can be compensated by using digital tools in online instruction, it also raises the issue of how competent the teachers are in using digital tools to ensure that the students have achieved the necessary competency. "The European Union Council defines digital

7585

Eur. Chem. Bull. 2023,12(Special Issue 7), 7584-7597

competence as the capacity to responsibly and safely use technologies in the information society for work, play, and communication". Teacher's Digital Competence refers to developing a specific set of abilities, knowledge, and attitudes that a teacher must have to technically, didactically, and pedagogically incorporate "information and communication technologies (ICT)" in education. (Cabero-Almenara, et al., 2021).

The "European Framework for the Digital Competence of Educators" (DigCompEdu), which the "Joint Research Centre" produced, by the European Commission in 2017, is a framework that outlines the importance of educators being competent digitally (Ghomi & Redecker, 2019). It gives teachers a frame of reference to help develop specific digital skills. DigCompEdu is designed for teachers at all levels of education, including elementary and secondary, colleges and universities, adult education programs, special needs programs, and informal learning settings.

2.3. Teacher's Online Teaching Readiness

"In the last ten years, the Alternative Learning System, or ALS, taught 5.5 million students aged 15, making the Philippines one of the world's most extensive second-chance education systems. Before the COVID-19 pandemic, 258 million school-age children and teenagers worldwide were not attending school, while 781 million people could not read or write in any language". As the effects of a prolonged closure of schools worldwide become apparent, these figures might increase dramatically. The second-chance education systems in various countries were already being criticised and frequently seen as inferior. The pandemic significantly increases their need, making reforms more urgent (Igarashi et al., 2020).

Technology readiness characterises a person's propensity to use technology to accomplish goals. According to Msila (2015), teachers' readiness for integrating technology and acquiring experience with educational technology depends on their awareness, knowledge of use, perspectives, and attitudes. Several schools use a readiness instrument to determine whether a teacher can teach online. However, most of the instruments must be researched systematically or tested empirically. Teacher preparation for online teaching has yet to be extensively researched. Gay (2016) investigated the e-learning readiness of online teachers before, during, and after the course delivery. The results of the study showed that there was an urgent need for helpdesk services for online teachers.

According to Lichoro (2015), teachers must prepare for online teaching. The essential competencies must be determined to prepare teachers to teach online. These competencies will enable the teachers to be appropriately guided when teaching online. Martin, Budhrani, & Wang (2019) created an instrument development framework for teacher preparation. This tool combines technical, time management, course design, and communication.

3. Objectives of the Study

This study was conducted to determine the relationship between digital competence and online teaching readiness of ALS teachers in the 3rd district of Iloilo. It also sought to answer the following questions:

 i. Is there a significant difference in the digital competencies of ALS teachers regarding age, sex, level of education, and years of teaching experience?

 ii. Is there a significant difference in the online teaching readiness of ALS teachers in terms of age, sex, level of education, and years of teaching experience?

7586

Eur. Chem. Bull. 2023,12(Special Issue 7), 7584-7597

iii. Is there a significant relationship between digital teaching competence and the online teaching readiness of ALS teachers?

3.1. Conceptual Framework

Figure 1 illustrates the relationship of the variables used in the study. The first two questions determined the difference in the digital competence and online teaching readiness of ALS teachers as classified according to the different variables. A significant "relationship between digital competence and online teaching readiness" was determined in the third objective.
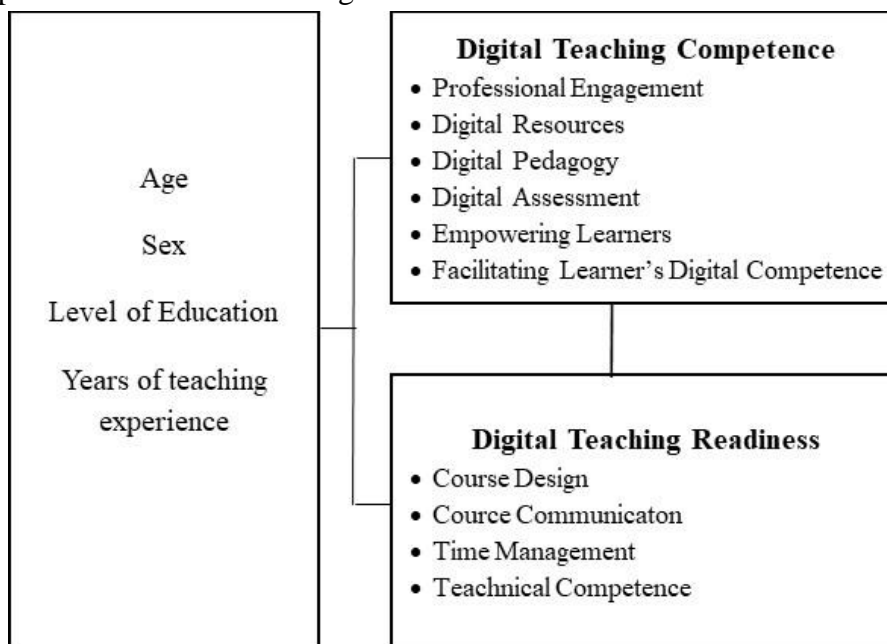
Figure 1. The paradigm shows the relationship between the independent and Dependent Variables.

4. Methodology

4.1. Research Design

The study employed a descriptive–correlational research design, wherein a quantitative approach was used to determine ALS teachers' digital competence and online teaching readiness. "A descriptive research design is a scientific approach that entails observing and describing the subject's behaviour without altering it (Explorables, 2021). Correlational research examines two variables, comprehends and evaluates their statistical relationship, and reports findings". It looks for interact variables to give a researcher a fair idea of how the other variables will change (Pressbooks, 2021).

4.2. Respondents of the Study

The respondents of this study were the 31 ALS Teachers from the nine towns of the 3rd District of Iloilo, namely: Badiangan, Bingawan, Cabatuan, Calinog, Janiuay, Lambunao, Maasin, Mina, and Pototan. The respondents were classified according to age, sex, level of education, and years of teaching experience. Table 1 shows the distribution of the respondents. The respondents were chosen through simple random sampling using the fishbowl method based on the list of ALS Teachers from the 3rd District of Iloilo. The number of samples was determined using Slovin's formula.

Table 1. Distribution of the Respondents

7587

Eur. Chem. Bull. 2023,12(Special Issue 7), 7584-7597

Category	f	%
Whole	31	100
Age		
43 years old and below	16	51.6
44 years old and above	15	48.4
Sex		
Male	10	32.3
Female	21	67.7
Level of Education		
Bachelor's Degree	25	80.6
Master's Degree	6	19.4
Years of Teaching Experience		
Ten years and below	17	54.8
11 – 20 years	7	22.6
21 years and above	7	22.6

4.3. Instrument and Data Gathering Procedure

The data-gathering instruments utilised to gather data needed for the investigation were the adapted research questionnaire from the "European Framework for the Digital Competence of Educators" (DigCompEdu) to measure the ALS teacher's Digital Competence (Ghomi & Redecker, 2019) and the adapted questionnaire from Martin, Budhrani, and Wang (2019) to measure the ALS teacher's Teaching Online Readiness.

"Digital Competence was assessed through the *Self-Assessment Tool of the European Digital Competence Framework for Educators (DigComEdu)*". Each item in the Digital Competence research instrument is provided with the following responses on a 5-point Likert Scale and scored as follows: Responses were 5, 4, 3, 2, and 1, while the descriptions were almost always, often, sometimes, seldom, and never, respectively.

For overall scoring:

Total Score	Characterisation	Narrative Description
30.00-49.99	Newcomers (A1)	They need more experience with digital tools and training to broaden their toolkit.
50.00-69.99	Explorers (A2)	Have begun utilising digital tools without adopting a thorough or consistent strategy. For explorers to develop new skills, they require inspiration and insight.
70.00-89.99	Enthusiasts (B1)	By experimenting with various digital technologies, learn which digital tactics are most effective in various settings.
90.00-109.99	Professionals (B2)	Utilise various digital tools to improve their professional tasks with assurance, creativity, and objectivity. They keep adding new exercises to their repertoire.
110.00-129.99	Experts (C1)	Rely on various adaptable, thorough, and robust digital techniques. They serve as an example for others.
130.00-150	Pioneers (C2)	Even though they are specialists in these fields, they still determine the suitability of modern pedagogical and digital methods. They set the bar for innovation and serve as an example

7588

Eur. Chem. Bull. 2023,12(Special Issue 7), 7584-7597

Total Score   Characterisation   Narrative Description

for new teachers.

The Online Teaching Readiness has four categories: course design (nine items), course communication (10 items), time management (6 items), and technical competence (7 items). On a 5-point Likert scale, respondents were asked to rate their capability to accomplish the tasks based on their assessment of their competencies. Each item is provided with the following responses and scored as follows:

Response	Description
5	Extremely Agree
4	Agree
3	Somewhat Agree
2	Disagree
1	Extremely Disagree

For scoring:

Mean Score	Narrative Description
4.50 - 5.00	Very Much Ready
3.50 - 4.49	Very Ready
2.50 - 3.49	Ready
1.50 - 2.49	Approaching Readiness
1.00 - 1.49	Developing Readiness

The adapted questionnaire was subjected to validation for face and content. Cronbach's alpha for the reliability test was found to be .86, which can be described as 'Excellent'.

4.4. Data Analysis

Upon retrieval of the questionnaire, the data gathered were encoded, tallied, analysed, and interpreted using Statistical Package for Social Sciences (SPSS) version 21. To determine the variation in the digital teaching competency and online teaching readiness of ALS Teachers, a t-test and one-way analysis of variance (ANOVA) were utilised. The association between ALS teachers' readiness and digital teaching proficiency was assessed using Pearson's r. The .05 alpha significance level was used as a criterion for accepting or rejecting the null hypotheses.

5. Results And Discussion

5.1. Differences in the digital teaching competence of ALS teachers in terms of age, sex, level of education, and years of teaching experience

"The T-test for the difference in the level of digital teaching competence in terms of age, sex, and years of teaching experience is presented in Table 2. Results show no significant difference existed in the level of digital teaching competence of ALS teachers regarding age and sex (t = .962, p = .344; t = -1.857, p = 0.082, respectively).

According to (Krumsvik et al., 2016), gender is a predictor of digital competence. Casillas-Martín et al. (2019) reported that the teachers' level of digital competence varies by gender, while Hinojo-Lucena et al. (2019) showed they do not.

Regarding age, some studies found a decline in the interest in and attitude towards ICT as the person ages. Most recent studies show that these factors influence digital competence levels

7589

Eur. Chem. Bull. 2023,12(Special Issue 7), 7584-7597

in a determining way. Some studies demonstrate that persons over 30 and 40 have higher levels of digital proficiency and a more favourable attitude towards ICT (Gonzales et al., 2021). In addition, Schmidt et al. (2011) showed that millennials perceived ICT more positively than the older respondents, called "digital immigrants."

Significant differences existed in the digital teaching competence in terms of level of education (t = 4.65, p = .001). This result implies that the level of education is a significant factor in determining ALS teachers' digital competence level.

This result conforms with the study of Napal-Fraile et al. (2018), which reported that master's degree holder teachers did not believe they were adequately equipped to create digital content, including other types of content.

Table 2. t-test Results on the difference in the Digital Teaching Competence of ALS Teachers in terms of Age, Sex, and Level of Education

Category	n	Education	Mean	t-value	df	Sig.
Age	16	43 years old and below	3.96	.962	29	.344
	15	44 years old and above	3.78			
Sex	10	Male	3.62	-1.857	16.15	.082
	21	Female	4.00			
Level of Education	25	Bachelor's Degree	4.02	4.65	10.41	.001*
	6	Master's Degree	3.27			

*p<.05, significant

One-way ANOVA test for the significant difference in digital teaching competence in terms of years of teaching experience revealed no significant difference in the level of digital teaching competence of ALS teachers (F = .595, p = .558) (Table 3). This difference means that the years of teaching experience do not determine the digital teaching competence of ALS teachers.

The results contradict the findings of Carrol, Sanmamed, and Sellés (2013), which stated that teachers with more experience in teaching online are seen to perform better online pedagogical competency. It also contradicts results obtained in the study of Ghomi & Redecker (2011), "which found that teachers with more years of teaching experience using technologies indicate a higher digital competency. While more experienced teachers displayed a lower degree of self-perception in the four aspects of digital competence, teachers with less teaching experience believed they were more capable of practical teaching competencies."

Table 3. One-way ANOVA Results on the difference in the Digital Teaching Competence of ALS Teachers in terms of Years of Teaching Experience

Category		Sum of Squares	df	Mean Square	F	Sig.
Digital Competence	Between Groups	.341	3	.071	.595	.558
	Within Groups	8.018	28	.286		
	Total	8.359	30			

p>.05, not significant

5.2. Differences in the digital teaching readiness of ALS teachers in terms of age, sex, level of education, and years of teaching experience

Table 4 shows the t-test results on the significant differences in the level of digital teaching readiness of ALS teachers in terms of age, sex, and level of education. Results revealed no significant difference in the level of digital reaching readiness regarding age (t = 760, p = .454) and sex (t = -.512, p = .614). This result means that age and sex are not significant factors in determining the digital teaching readiness of ALS teachers.

The results conform with the study of Keržič (2021); although there are "some age-related differences in how ICT is used by teachers personally, age is not a factor in how ICT is used in education. According to Almerich et al. (2016), the frequency of ICT use outside work is only connected to technological competence. In contrast, gender and ICT usage at work are substantially associated with technological (generic) and pedagogical (integrating ICT into teaching practice) competencies". Hatlevik and Hatlevik (2018) and Tondeur et al. (2018) could not identify any "significant correlations between the teachers' gender and ICT use or self-efficacy, indicating that gender differences appear complex".

Regarding the level of education, a significant difference existed in the level of digital teaching readiness of ALs teachers (t = 296, p = .008). This difference means that the level of education is a significant factor in determining the digital teaching readiness of ALS teachers. Tracing "online teaching and learning (OTL)" in the academe, Baran (2011) stressed the need to consider how students learn and grow across disciplines and how educators can support these learning opportunities using online technology. However, there has yet to be an evaluation of teachers' readiness for OTL concerning their academic fields of discipline (Baran, 2011). Moreover, Napal-Fraile et al. (2018) reported that teachers with master's degrees felt inadequate to create digital curricula and include various types of content.

Table 4. t-test Results on the difference in the Digital Teaching Readiness of ALS Teachers in terms of Age, Sex, and Level of Education

Category	n	Education	Mean	t-value	df	Sig.
Age	16	43 years old and below	3.96	.760	25.96	.454
	15	44 years old and above	3.78			
Sex	10	Male	3.62	-.512	19.47	.614
	21	Female	4.00			
Level of Education	25	Bachelor's Degree	4.02	296	19.96	.008*
	6	Master's Degree	3.27			

*"p>.05, not significant, *p<.05, significant"*

Table 5 shows a one-way Analysis of Variance results on the test for differences in the digital teaching readiness of ALS teachers in terms of teaching experience. Results revealed that no significant difference existed in ALS teachers' teaching readiness regarding years of teaching experience. This outcome means that the length of teaching experience does not determine the teaching readiness of ALS teachers.

According to a study by Martin et al. (2019) on instructors' opinions of their readiness for OTL, prior online teaching experience affects aspects of teaching presence and practice, such

7591

Eur. Chem. Bull. 2023,12(Special Issue 7), 7584-7597

as online course design. These results were confirmed by Bolliger et al. (2019), "which showed that faculty members with no or little OTL expertise were less conscious of developing the programming community and the systems and activities utilised to support it. These illustrations demonstrate how OTL experience affects instructors' self-efficacy, OTL adoption, and OTL practice".

Table 5. One-way ANOVA Results on the Difference in the Digital Teaching Readiness of ALS Teachers in Terms of Teaching Experience

Category		Some of Squares	df	Mean Square	*F*	Sig.
Online Teaching Readiness	Between Groups	.259	2	.129	.471	.629
	Within Groups	7.696	28	.275		
	Total	7.955	30			

*p<.05, significant   p>.05, not significant

5.3. Relationship in the Digital Teaching Competence and Ceadiness of Mobile Teachers

"Table 6 shows Pearson's r test for a significant relationship between digital teaching competence and digital teaching readiness of ALS teachers. The result shows a significant relationship existed between digital teaching competence and digital teaching readiness of ALS teachers. Furthermore, the result also showed a 'High positive' correlation between the variables, $r = .829$, $n = 31$, $p = 0.000$". This finding means that digital teaching readiness is high when digital teaching competence is high.

This result conforms with Hung's (2016) report that examining the connections between these elements and instructors' preparation for "online teaching and learning (OTL)" is essential for a deeper understanding of this topic. Additionally, not all teachers may be impacted by these elements similarly. Higher education teachers are a diverse bunch. The significant relationships influencing one group may differ, given differing histories, OTL experience, and academic specialities. Understanding some factors that influence whether or not teachers adopt new OTL practices is crucial to offer the right kind of assistance (Bruggeman et al., 2020).

Table 6. Pearson's r Results on the Relationship Between the Digital Teaching Competence and Digital Teaching Readiness of ALS Teachers

		Digital Teaching Readiness
Digital Teaching Competence	Pearson Correlation	.829
	Sig. (2-tailed)	.000
	n	31

*p<.05, significant   p>.05, not significant

6. Conclusions

Based on the findings, the following conclusions were drawn:

i. Age and sex are not significant factors in determining ALS teachers' digital teaching competence level. However, the level of education is a significant factor in determining the level of digital competence of ALS teachers. Furthermore, "more than years of teaching experience is needed to determine the digital teaching competence of ALS teachers".

7592

Eur. Chem. Bull. 2023,12(Special Issue 7), 7584-7597

ii. Age and sex are not significant factors in determining the digital teaching readiness of ALS teachers. Educational attainment is a significant factor in determining the digital teaching readiness of ALS teachers, while the length of teaching experience does not determine the teaching readiness of ALS teachers.

iii. A significant relationship existed between digital teaching competence and teaching readiness of ALS teachers, showing a 'High positive' correlation. This result means that digital teaching readiness is high when digital teaching competence is high.

7. Recommendations

Based on the conclusions drawn from the study, the following recommendations were suggested:

i. The Department of Education may organise training to improve the ALS instructors' digital proficiency, which would aid the faculty in adjusting to systemic educational changes. Institutions that want to improve their teachers' digital preparedness and competence might plan and administer training sessions to aid in that process.

ii. Teacher training in online instruction may include advanced digital teaching competence for teachers. These issues may be included in the in-service training.

iii. The Schools Division should continue moving forward and developing new objectives and indicators in light of the findings from the analysis of the teachers' levels of digital competence and readiness for online instruction. As a result, the ALS Division can keep methodically collecting data to monitor changes and ensure quality.

iv. The School Division should continue creating its overall training plan's ICT-specific professional development plan for the teaching staff as a necessary component of institutional improvement.

v. Institutions may introduce an institutional learning management system (LMS) to all stakeholders. Teachers may consider identifying strategies that are currently being employed as well as those that could be.

vi. The Department of Education is encouraged to use Platforms and Tools for Online Education.

vii. Future researchers can now gain insights and understanding regarding the emerging factors or areas concerning mobile teachers' digital competence and online teaching readiness. They can now conduct studies that could help enrich the literature and practices related to remote learning. They may replicate the study to a broader scope to involve other stakeholders like teachers, students, and parents. Further research may be conducted to identify the needed skills in the current situation and to determine the gaps in skills and shortages that may develop.

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7593

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7594

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