ALTERNATIVE LEARNING SYSTEM (ALS) TEACHERS COMPETENCE IN DIGITAL CITIZENSHIP IN THE DIVISION OF APAYAO

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Alternative Learning System (ALS) Teachers Competence in Digital Citizenship in the Division of Apayao

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Abstract

Information and communications technology (ICT) is a mode of education to support, enhance and upgrade the delivery of information to learners. This study aimed to investigate the level of competence, challenges, and coping mechanisms of ALS teachers in teaching the Learning Strand 6 - Digital Citizenship competencies. A mixed method was used particularly an explanatory sequential research design using a questionnaire administered to 22 ALS teachers and interviews. Data were analyzed using mean and thematic analysis. Results showed that the teacher's level of competence in Digital Citizenship is "Competent" wherein the teacher has the majority of the competencies at a high level for effective teaching, but training and professional development is still needed. There is no significant difference in the level of competence of teachers in terms of age and educational attainment. However, significant differences were shown in terms of years of teaching experience. In terms of seminars or training attended, significant differences in Digital Citizenship along Concept, Application, Devices, and Ethics but not in Operation and Networks. The challenges encountered by the ALS teachers were a lack of ICT facilities and teaching/learning resources; a lack of teachers' competence; a need for more relevant training and technical problems. The teacher's coping mechanisms to address the identified challenges were collaboration, alternative plans, peer mentoring, and the internet. Hence, ALS teachers are competent to teach Digital Citizenship yet still need the training to enhance their competence to deliver the lesson to learners and address challenges.

Keywords: learning strand 6-digital citizenship competencies, challenges, thematic analysis, explanatory sequential research design

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Introduction and Rationale

The 21st century is a Digital era. Are the Alternative Learning System (ALS) teachers of today digital literates too? With the increasing use of online platforms as alternative means of delivering education, ALS Implementers are faced with new challenges. One of which is making sure that ALS learners also demonstrates knowledge and skills on the productive, safe and responsible use of digital tools and resources.

Based on the result of the 2020 Division Training of ALS teachers in December on Indexing of Critical Content for Team Teaching, one group among the participants identified some competencies in the Learning Strand 6 – Digital Citizenship in the new ALS K to 12 Basic Education Curriculum as the least practiced competencies in teaching the digital citizenship. These competencies are under the following Content Standard: Digital Operations and Management, Digital Applications and Digital System Network.

Moreover, one of the indicators in the classroom observation tool is the integration of ICT in the teaching-learning process and it has been observed during the conduct of instructional supervision last September 2020, that 13 out of 29 or 44.82% among the ALS teachers tend to skip integrating ICT in the teaching learning session due to teachers' lack of expertise in using ICT. This hinders teachers' readiness and confidence in using ICT's in the teaching learning process. This scenario prompted the researcher to conduct a study on the level of competence of the ALS Teachers in teaching the competencies of the Learning Stand – 6 Digital Citizenship as one of the learning strands in the Alternative Learning System. Accordingly, with the inclusion of the Learning Strand 6 as one of the Learning Strand in the ALS Curriculum, the ALS teachers are expected to enhance their skills in teaching the Learning Strand 6 - Digital Citizenship.

Learning Strand 6 is Digital Citizenship. It was formerly known as Digital Literacy learning strand in ALS Basic Curriculum. It is known as Information and Communication Technology (ICT) in the formal school. It has 6 content standards and 6 performance standards. Under each standard are numerous non-negotiable competencies. Starting school year 2019-2020, the A & E test was based on the new and expanded range of

competencies. Completers of the previous ALS curriculum who desire to have the equivalency certification are required to undertake additional learning on the Digital Citizenship. It is not an option but a requirement (DepEd, 2019).

In the educative process, the teachers are the center. So, their competence is linked with learners' achievement. The concept of competence can have quite different connotations and definitions. Competence is the effective overall performance within an occupation, which may range from the basic level of proficiency through the highest levels of excellence. It is a combination of knowledge, skills, attitudes, and experiences. However, one thing common to this notion is that competence is about the qualification and capability of an individual to perform a given role. A competent teacher demonstrates leadership, establish a healthy environment for diverse learners, facilitate students' learning, reflect on their practices, and mastery of the content they teach.

(Iluzada, 2016) also stressed that although this is a requirement, a lot of teachers in the country are lagging behind the expected ICT literacy from them. In fact, in the recent implementation of the eSkwela project, an e-learning curriculum for the Alternative Learning System (ALS) in the Philippines, they have found out that a lot of teachers expressed resistance in the integration of ICT in their teaching process. Some of the reasons that were given are lack of time to be "creative" because of overlapping job roles, unprepared for the incorporation of ICT, lack of experience on the internet, and the tendency to go back to the traditional education set up. Basically, the problem of educators is rooted in their lack of experience and exposure to ICT. (Iluzada, 2016)

It is said that you cannot share what you do not have. Hence, if teachers are the shapers of the next generation, then they must possess the necessary ICT knowledge and skills for them to be able to deliver effectively the needed ICT- mediated learning to their learners. If they fail to possess this, the tendency is that students, who are most of the time far more knowledgeable in ICT than their teachers, would only use technology for entertainment and other unnecessary usages and may not be able to fully appreciate ICT as

a learning tool. Hence, it is imperative that teachers can appropriately and effectively utilize ICT in their teaching-learning process.

Moyer (2016) also stressed that teachers' training in using technology in learning is vital and must be regularly instituted. Furthermore, Russell, Finger, and Russell (2000) and Hardy (1998) revealed in the study that the limited use of ICT can be characterized by the provision of minimal skills in educational technology for teachers in preservice education training courses. Hence, as a result, teachers do not employ the use of ICT, but rather stick to the traditional mode of teaching. And at the end, students will not have any avenue to develop their ICT skills.

Several studies (Dela Fuente & Biňas (2020); Caluza et al (2017) ;Alpuerto (2022) were conducted to secondary and elementary teachers on the assessment of teachers' ICT competence which focused mainly on the concepts and operations of technology, social, ethical, pedagogical, and professional domains however the researcher found out that there are no works of literature conducted on Alternative Learning System Teachers'Digital Citizenship competence.

The aim of this study is to investigate the level of competence and to determine the challenges and coping mechanisms of the Alternative Learning System teachers in teaching the competencies of the Learning Strand 6 – Digital Citizenship of the ALS K to 12 Curriculum. The result of the study will be a basis for the ALS teachers to design a training program, Learning Action Cell or Teachers' Guide for those competencies which will be identified as the least practiced competencies. This is to enhance their knowledge and skills in teaching the identified least practiced competencies in order to produce 21st-century digital citizens who are confident in using ICT and digital tools in a responsible and ethical manner.

Literature Review

ICT in Education

Information and communications technology (ICT) is a mode of education that use information and communications technology to support, enhance and upgade the delivery of information. It can improve student learning when teachers are digitally literate and know how to integrate it into curriculum.

ICT integration in teaching is quite complicated and challenging because teachers need to be equipped with the competencies for teaching practices (Aslan & Zhu, 2015; Paudel, 2021). Bingimlas (2009) supports that confidence, competence, and accessibility is the critical component of technology integrated in the educational system. Thus, teachers should be provided with technical support which includes software and hardware services. Some findings support that teachers has access and confidence in using ICT, however, limited to the use of common forms alone. As a result of the expanding possibilities of ICT integration in the educational system, the 21st-century teachers are facing new challenges in technological education. Accordingly, the potential of teachers is tailored to global competence which has a positive impact to reinforce effective technological practices in the educational system (Akturk & Ozturk, 2020; Albion, Tondeur, Forkosh-Baruch, & Peeraer, 2015; Çelik, Hebebci, & Şahin, 2016).

Technology provides the framework of education specifically in the school's implementation a vital role in learners (Brush, Glazewski, & Hew, 2008; Castro Sánchez & Alemán, 2011; Chai, Koh, & Tsai, 2010; Mutlu, & Polat, & Alan, 2019). However, works of literature support that technology of its curriculum with the integration of technology. Different authors believed that ICT has has challenges that needs to be addressed (Fu, 2013); such as teachers' low expectations and unclear goals for ICT in schools (Al-Bataineh, Anderson, Toledo, & Wellinskiet, 2008), lack of teachers' experience, collaboration and pedagogical support among colleagues (Ertmer & Otternbreit-Leftwich, 2010), and the inadequate time to master the integration of ICT skills in education (Almekhlafi & Almeqdadi, 2010). If the school administrators and policymakers could address the said challenges, ICT

can immensely transform the school's learning environment (Summak & Samancıoğlu, 2011). In the field of Vocational Education and Training (VET), the integration of ICT is not only an option technology to augment traditional teaching but also on how to integrate ICT in the teaching process to attract and motivate students towards meaningful learning. Thus, teachers should be confident enough as to the ICT skills to facilitate the students in a technology-driven learning environment and it is also a necessity to attract more engagement for teachers and students in the education process (Paryono & Quito 2010). In fact, according to Tezci (2011), teachers should learn not only how to use technology to augment traditional teaching but also on how to integrate ICT in the teaching process to attract and motivate students towards meaningful learning. Thus, teachers should be competent enough as to the ICT skills to facilitate the students in a technology-driven learning environment.

Digital Citizenship

Twenty-first-century Philippine society is replete with myriad rapidly changing information and communication technologies (ICTs). The ways people plan, develop, implement, and communicate ideas and knowledge have been transformed as computers, the internet, social media, and mobile devices have become increasingly pervasive. To adapt to these changes, Filipinos need to develop a whole new range of ICT-related skills to be effective citizens in an increasingly digital world. This Learning Strand addresses the needs of ALS learners to develop basic skills in ICT use and digital literacy. Accordingly, a new Learning Strand has been added to the ALS Curriculum focused on "Digital Citizenship" for 21st-century Filipino citizens. This Learning Strand seeks to help equip ALS learners with critical knowledge, skills, and values to be able to live and work effectively as part of the digital universe. Digital Citizenship is the continuously developing norms of appropriate, responsible and empowered technology use. (Ribble & Park. The Digital Citizenship Handbook for School Leaders, 2019).

Furthermore, digital citizenship is not solely a list of behaviors for using technology, but instead is a concept that impacts all students, teachers, parents, school and community

leaders, and the greater world by establishing norms or codes of behavior for how individuals learn to get along in an increasingly connected world (Snyder, 2016).

Çiftci and Aladag (2018) conducted a descriptive survey study of elementary-level preservice teachers using two instruments: The Digital Citizenship Scale developed by Isman and Canan Gungoren (2014) and the Attitude Scale for Digital Technology developed by Cabi (2016). Study results showed no connection between gender and attitudes toward technology digital citizenship. However, a significant difference emerged between the level of digital citizenship and Internet access (connection), but no significance in attitude and Internet access. The results also showed a significant difference in attitudes on technology and citizenship when considering years of experience using the Internet. Additionally, participants' years in the program impacted the attitudes and citizenship scale. The implications of the study revealed that with more experience in Internet use, participants had a more positive attitude toward technology and an increased level of digital citizenship. These results are significant when considering future classrooms filled with digital natives because if educators who are responsible for their instruction have a positive attitude toward technology use, they are likely to support students in positively developing as digital citizens.

Baumann (2016) conducted a qualitative case study using surveys, interviews, and artifact analysis with 20 administrators and teachers from public schools in Connecticut. Baumann aimed to examine the perceptions of K–5 faculty in addressing computer safety and security in the curriculum. The administration did not recognize the need for additional instructional time to address computer safety and security. In contrast, teachers who were attempting to implement this concept into their instructional practices believed they lacked proper training. Researcher recommendations included up-to-date and ongoing training on relevant topics for computer-safety issues and instruction, professional development for computer use and integration, adoption of a new curriculum that emphasizes common core and 21st-century skills for technology use, and a need for administrators to reconsider policies to address and enforce consequences for inappropriate technology use. Additionally, Baumann recommended that further research address the effectiveness of AUP

and enforcement of policies for student computer safety and security. Similar to Baumann's (2016) study, Klinger's (2016) qualitative case study used teachers; however, Klinger used 12 private-school teachers from Grades 6–12 classrooms inquiring into the digital communication tool use for social collaborative and learning usage among students.

Caluza et al. (2017) For successful integration of ICT into teaching, the review has highlighted on factors that positively or negatively influence teachers 'use of ICT. These are personal, institutional and technological components.

Challenges on ICT

Integrating ICT into teaching and learning is a complex process and one may encounter a number of difficulties. These difficulties are known as "challenges" (Schoepp, 2005). A challenge is defined as "any condition that makes it difficult to make progress or to achieve an objective" (WordNet, 1997, as cited in Schoepp, 2005, p. 2). The following are some of the key challenges that have been identified in the literature regarding teachers' use of ICT tools in classroom.

The research of conducted interviews and the results of the research revealed not only the depth but the wide size of the limited ICT adoption in the educational institutions subjected for study. The results of the study of Kubota, Yamamoto, and Morioka (2018) are thematically divided into the following themes of analysis: infrastructures, human resource, and financial resource.

Firstly for infrastructure status, it was emphasized in the result of the study that in the rural school chosen as one of the research foci, there was a very scarce number of computers and the computers were also not connected to the internet and were not used effectively. Furthermore, there was unstable power supply in the area and the fluctuating supply of electricity is detrimental to the present scarce computer facilities.Thus, computers can only be used for minimal work.

Secondly in Human resource, it was mainly revealed that there is no skilled personnel that is capable of basic computer repairs. Teachers were revealed to possess low

computer skills and knowledge about software and hardware. This is supported by the results of the study of Caluza et al. (2017) revealing that most of the public school teachers they have assessed have basic knowledge on ICT and are in need of improvement. In addition, there is no technical support staff to maintain the functionality and usability of computers and teachers were given very limited training due to their (teachers) hectic schedule while some teachers did not have a learning opportunity for training and no technical support staff was present hence repairs or any basic damage cannot be given immediate solution. Teachers were also revealed to lack computer knowledge and skills for instructional purposes and lacked the motivation to teach computer-related topics as mentioned 'it was not mandated to use computers in classrooms' (Kubota, Yamamoto, and Morioka, 2018).

More trainings must (Journal of Governance And Public Policy 268) be provided to the teachers for an effective integration of ICT in teaching and other related task assigned to the teaching force in order to uplift and enhance the quality of education in schools (Caluza et al., 2017).

Thirdly in budgetary challenges and financial resource status, it was revealed by Kubota, Yamamoto, and Morioka (2018) that there was no budget for computer maintenance. Also, there was no budget for internet connection hence computers remained to be unconnected and can only be used for very minimal offline work. The following results in the study of Kubota, Yamamoto, and Morioka (2018) revealed as surfacing challenges of ICT integration in the education setting. Kubota, Yamamoto, and Morioka (2018) analyzed these challenges to be connected in a perpetuating cycle. This cycle shows an analysis of the situation of the interconnectedness of the factors that continue to hinder the effective integration of ICT in education.

Coping Mechanisms on ICT Challenges

In a study conducted by Alpuerto (2022) revealed that despite the problems and difficulties experienced in the utilization of information and communications technology in science classroom instruction, Science teachers have also shared positive experiences and feedback with regards to their coping abilities in the use of ICT resources and materials in helping students learn important scientific facts and concepts. These good practices and coping mechanisms used by teachers are presented in the following subthemes: self-training and support, collaboration with colleagues and knowledgeable others, and time management and self-organization. (Alpuerto, 2022).

Moreover, in a study conducted by Patadilla et al (2022), Teachers' and School Adminstrators on the Use of Standardized Classroom Observation Tool to 30 School Adminstrators and 89 teachers in Sultan Naga, Dimaporo, Lanao del Norte, she concluded that to cope with the mentioned challenges the following strategies were both used by the teachers and school administrators, such as time management, peer tutoring, giving more technical assistance, constant communication, self-learning, intensive training, and workshop specifically on the use of ICT.

Research Questions

This study aimed to investigate the level of competence of the ALS teachers in the Division of Apayao in teaching the Learning Strand 6 – Digital Citizenship. Specifically, it sought answers to the following:

1. What is the level of competence of teachers in the content standards of Learning Strand 6 – Digital Citizenship in terms of digital concept, digital operations and management, digital application, digital network, digital devices, and digital ethics?

2. Is there a significant difference in the level of competence of teachers in the content standards of Learning Strand 6 – Digital Citizenship according to their profile?

a. age

b. highest educational attainment

c. years of teaching experience

d. Number of seminars/trainings attended related to Digital Citizenship

H_o: There is no significant difference in the level of competence of teachers according to age, highest educational attainment, length of teaching experience and number of seminars attended related to Digital Citizenship.

3. What are the challenges encountered by ALS teachers in teaching Digital Citizenship?

4. What are the coping mechanisms of ALS teachers to address the challenges in teaching Digital Citizenship?

Scope and Limitations

This study focused on the level of competence, challenges, and coping mechanisms of the Alternative Learning System (ALS) teachers in the Division of Apayao in teaching the Learning Strand 6- Digital Citizenship competencies. The respondents were permanent ALS teachers and does not include the Local School Board (municipal and provincial) paid teachers. This study made used of the survey questionnaire using google forms and interview in data gathering. Mean and thematic analysis were used to analyze the data.

Research Methodology

Research Design

In this resarch, explanatory sequential research design was used consisting of a questionnaire followed by interview questions. . An explanatory sequential design according to Plano Clark (2011) consists of first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results. A questionnaire and interview was prepared to assess the level of competence, challenges, and coping mechanisms of the ALS teachers in teaching the Digital Citizenship competencies.

Population and/or Sampling

The researcher used a total enumeration in this study. There were 22 out of twenty-eight (28) regular permanent ALS teachers voluntarily participated in the study. The study did not include the Local and Provincial School Board teachers.

Data Collection

A questionnaire in a Google form was used to determine the level of competence in digital citizenship of ALS teachers. The first part was about their demographic profile that includes: age, highest educational attainment, years of teaching experience and number of trainings attended related to digital citizenship. The second part assessed the level of competence of the respondents in the Learning Strand 6 – Digital Citizenship competencies. The Learning Strand 6 competencies were written in a checklist method using the four-point Likert Scale to determine the respondents' level of competence. The competencies was taken from the list of LS 6 Digital Citizenship competencies in the ALS K to 12 Basic Education Curriculum (ALS K to 12 BEC) and had undergone validation by our Division ALS Personnel.

Interview guide questions were developed to find out the challenges and coping mechanisms of ALS teachers in digital citizenship. Phone calls were conducted, yet the participants did not respond. As a result, the guide questions were sent to the teachers' personal messenger. Moreover, follow up questions were sent to verify or validate their answers to the questions.

Data Analysis

A four-point Likert scale and mean was used to determine the level of competence of the ALS teachers in the Digital Citizenship. Analysis of variance was used to determine the significant difference in the level of competence in the Digital Citizenship competencies according to their profile. Thematic analysis was used to determine the challenges and coping mechanisms of ALS teachers in teaching the Learning Strand 6 Digital Citizenship competencies.

Table 1

Level of Competence in Digital Citizenship

Relative Value	Scale	Level of Competence	Description
4	3.26 – 4.00	Highly Competent (HC)	Teacher has almost all the competencies for effective teaching at high level. These are the identified strengths. Strengths have to be sustained and enhanced; however professional development needs have to be continuously addressed.
3	2.51 – 3.25	Competent (C)	Teacher has majority of the competencies at high level for effective teaching. Strengths have to be enhanced. Training and professional development needs have to be addressed.
2	1.76 – 2.50	Moderately Competent (MC)	Teacher has average of all the competencies at high level for effective teaching. These strengths have to be enhanced; however, training needs have to be addressed as priority.
1	1.00 – 1.75	Least Competent (LC)	Teacher has very few of the competencies at high level for effective teaching. Training needs have to be given priority and addressed urgently.

Ethical Issues

To establish and safeguard ethics in conducting this study, ethical procedures was observed before and during the conduct of the study. The researcher sent a letter to the schools division superintendent and public schools district supervisor asking permission to conduct the study and to access the respondents. Respondents were informed about the purpose of the research and participation of the respondents were humbly requested by the researcher.The researcher ensured the quality and integrity of the study by respecting the confidentiality and anonymity of the respondents and prior consent was taken before the conduct of the study.

Results and Discussions

Level of Competence of ALS Teachers in Digital Citizenship Competencies

Table 2 presents the level of competence of ALS teachers in Digital Citizenship. The results show that the ALS teacher's competence is "Competent" which means that majority of the competencies is at high level for effective teaching. Yet, strengths have to be enhanced. Training and professional development needs have to be addressed. The ALS teachers can teach effectively but they still need trainings and professional development on digital citizenship. Although they are competent in the content standards of Learning Strand 6 – Digital Citizenship, strengths have to be enhanced; likewise, training and professional development needs have to be addressed. The findings imply that they need to undergo further trainings relative to ICT to capacitate them well with the new trends in ICT especially that this plays a significant role in education. Teachers" professional development is a key factor to successful integration of computers in classroom teaching according to Buabeng-Andoh (2012).

Similarly, Lawless & Pellegrino (2007) stated that educators who integrate technology with new teaching practices gained through professional training can transform the performance of the students. among the respondents of the study. This will be done by suggesting a framework for the notion of digital competence for teachers, which includes three aspects: teaching *of* ICT; teaching *about* ICT; as well as teaching *with* ICT. Teaching of ICT concerns training in digital tools and technology use, teaching about ICT is to teach about technology itself as well as the impact on society, and teaching with ICT is about arranging for student learning with digital tools. Moreover, teachers and administrators need the most current and relevant knowledge and skills specifically on ethical and responsible use of technology (Ozdamli & Ozdal, 2015).

Also, the result shows that Digital Concept ranked as the teachers' highest level of competence. This means that teachers are competent in teaching the basic concepts related to use of information communication technologies (ICT's) in an increasingly digital world. The result support the claim that teachers' competence as to ICT basic concepts is in the

competent level because most of the competencies under Digital Concept are well taught by teachers in their lesson. Similarly, research has shown that teachers' understanding of content kowledge and applying technology to support students' learning and attainment are joined to increase in knowledge level, confidence and attitues towards technology (Pilar, 2008).

On the other hand, the lowest competency is Digital System Network. This implies that teachers have limited knowledge in navigating the digital global system to search for information and resources and communicate with others in everyday life. This reflects that the respondents do not frequently use these features when they use computers. According to Teo (2008), using computers more frequently and developing a variety of computer related skills and techniques increases one's knowledge of the computer as a whole. Another could be is the lack of technical support and/or training of the respondents. The lack of available technical support is also likely to lead to teachers avoiding ICT, for fear of a fault occurring that cannot be rectified and lessons being unsuccessful as a result (Becta, 2004; see Cuban, 1999; Preston et al.., 2000) In Preston et al, (2000) teachers felt that they had not had adequate training, particularly in their ability to solve technical problems and in understanding the basic workings of the technology.

Table 2

Level of Competence of ALS Teachers in Digital Citizenship

	Content Standard	Mean	Description
1	Digital Concept	3.28	Highly Competent
2	Digital Operations and Management	3.15	Competent
3	Digital Applications	2.92	Competent
4	Digital System Network	2.90	Competent
5	Digital devices	3.07	Competent
6	Digital Ethics	2.98	Competent
	Overall Average Mean	**3.05**	**Competent**

Difference in the Level of Competence of ALS Teachers in Digital Citizenship According to Age

Table 3 shows the difference in the level of competence in digital citizenship of ALS teachers based on age. There is no significant difference between the age and the competencies of teachers towards digital citizenship. This implies that the age of the teacher has nothing to do with the teachers' level of competence. Similar to the ideas of Mahdi and Al- Dera (2013) where most of the teachers felt that the age of the teacher had nothing to do with the integration of ICT. This goes with the findings of Lam (2000) who found ICT competence is not significantly related to age.

Table 3

Differences in the Level of Competence According to Age

Digital Citizenship Competency				Sum of Squares	df	Mean Square	F	Sig.	Decision
CONCEPT	Between Groups	(Combined)		.277	3	.092	.385	.765	Fail to reject null hypothesis
		Linear Term	Unweighted	.030	1	.030	.126	.727	
			Weighted	.133	1	.133	.554	.466	
			Deviation	.144	2	.072	.300	.744	
	Within Groups			4.317	18	.240			
	Total			4.593	21				
OPERATION	Between Groups	(Combined)		1.742	3	.581	1.372	.283	Fail to reject null hypothesis
		Linear Term	Unweighted	.755	1	.755	1.783	.198	
			Weighted	1.305	1	1.305	3.083	.096	
			Deviation	.437	2	.219	.516	.605	
	Within Groups			7.622	18	.423			
	Total			9.365	21				
APPLICATION	Between Groups	(Combined)		2.622	3	.874	1.358	.287	Fail to reject null hypothesis
		Linear Term	Unweighted	1.921	1	1.921	2.985	.101	
			Weighted	2.150	1	2.150	3.340	.084	
			Deviation	.472	2	.236	.367	.698	
	Within Groups			11.586	18	.644			
	Total			14.208	21				
NETWORK	Between Groups	(Combined)		3.165	3	1.055	1.400	.275	Fail to reject null hypothesis
		Linear Term	Unweighted	2.969	1	2.969	3.939	.063	
			Weighted	2.887	1	2.887	3.830	.066	
			Deviation	.278	2	.139	.185	.833	
	Within Groups			13.567	18	.754			
	Total			16.731	21				
DEVICES	Between Groups	(Combined)		2.551	3	.850	1.280	.311	Fail to reject null hypothesis
		Linear Term	Unweighted	1.742	1	1.742	2.623	.123	
			Weighted	1.904	1	1.904	2.866	.108	
			Deviation	.647	2	.324	.487	.622	
	Within Groups			11.956	18	.664			
	Total			14.507	21				
ETHICS	Between Groups	(Combined)		1.846	3	.615	.991	.419	Fail to reject null hypothesis
		Linear Term	Unweighted	.922	1	.922	1.485	.239	
			Weighted	.675	1	.675	1.087	.311	
			Deviation	1.171	2	.585	.943	.408	
	Within Groups			11.178	18	.621			
	Total			13.024	21				

According to Highest Educational Attainment

In terms of highest educational attainment, table 4 shows that there is no significant difference between the educational attainment and the competencies of teachers towards digital citizenship. This reveals that most of the respondents are competent regardless if they are bachelor's degree or master's degree holder while there are two teachers whose level is moderately competent. Dela Fuente and Biňas (2020) revealed that gender, age,

highest educational attainment, field of specialization , and the teaching position has no significant impact on teachers' ICT competence.

Table 4

Differences in the Level of Competence According to Highest Educational Attainment

Digital Citizenship Competency				Sum of Squares	df	Mean Square	F	Sig.	Decision
CONCEPT	Between Groups	(Combined)		.147	3	.049	.199	.896	Fail to reject null hypothesis
		Linear Term	Unweighted	.011	1	.011	.043	.838	
			Weighted	.003	1	.003	.012	.912	
			Deviation	.144	2	.072	.292	.751	
	Within Groups			4.446	18	.247			
	Total			4.593	21				
OPERATION	Between Groups	(Combined)		.178	3	.059	.117	.949	Fail to reject null hypothesis
		Linear Term	Unweighted	.056	1	.056	.110	.744	
			Weighted	.120	1	.120	.234	.634	
			Deviation	.059	2	.029	.058	.944	
	Within Groups			9.186	18	.510			
	Total			9.365	21				
APPLICATION	Between Groups	(Combined)		1.291	3	.430	.599	.624	Fail to reject null hypothesis
		Linear Term	Unweighted	.454	1	.454	.632	.437	
			Weighted	.477	1	.477	.665	.425	
			Deviation	.813	2	.407	.567	.577	
	Within Groups			12.917	18	.718			
	Total			14.208	21				
NETWORK	veen Groups	(Combined)		1.966	3	.655	.799	.510	Fail to reject null hypothesis
		Linear Term	Unweighted	1.008	1	1.008	1.229	.282	
			Weighted	.400	1	.400	.488	.494	
			Deviation	1.566	2	.783	.955	.404	
	Within Groups			14.765	18	.820			
	Total			16.731	21				
DEVICES	Between Groups	(Combined)		.735	3	.245	.320	.811	Fail to reject null hypothesis
		Linear Term	Unweighted	.267	1	.267	.349	.562	
			Weighted	.370	1	.370	.483	.496	
			Deviation	.365	2	.183	.239	.790	
	Within Groups			13.772	18	.765			
	Total			14.507	21				
ETHICS	Between Groups	(Combined)		1.251	3	.417	.638	.600	Fail to reject null hypothesis
		Linear Term	Unweighted	.049	1	.049	.076	.787	
			Weighted	.014	1	.014	.021	.886	
			Deviation	1.238	2	.619	.946	.407	
	Within Groups			11.773	18	.654			
	Total			13.024	21				

According to Years of Teaching Experience

The years of teaching experience of ALS teachers and the competence of teachers significantly differ. The longevity of teachers in the profession tends to contribute to their competence in the application of technology as well as Network due to the nature of their work. Also, several studies found that teaching experiences and age influence the successful use of ICT in classrooms (Wong & Li, 2008; Giordano, 2007; Hernandez-Ramos, 2005). Similar findings can be found in research carried out by Gorder (2008) which was

reported that teachers' experience is significantly correlated with the actual use of technology. She discovered that effective use of computer was related to technological comfort levels and the liberty to shape instruction to teacher-perceived student needs.

Table 5

Differences in the Level of Competence According to Years of Teaching Experience

Digital Citizenship Competency				Sum of Squares	df	Mean Square	F	Sig.	Decision
CONCEPT	Between Groups	(Combined)		.367	2	.183	.825	.454	Reject null hypothesis
		Linear Term	Unweighted	.187	1	.187	.841	.371	
			Weighted	.028	1	.028	.127	.726	
			Deviation	.339	1	.339	1.522	.232	
	Within Groups			4.227	19	.222			
	Total			4.593	21				
OPERATION	Between Groups	(Combined)		.931	2	.466	1.049	.370	Reject null hypothesis
		Linear Term	Unweighted	.929	1	.929	2.094	.164	
			Weighted	.742	1	.742	1.672	.211	
			Deviation	.189	1	.189	.426	.522	
	Within Groups			8.433	19	.444			
	Total			9.365	21				
APPLICATION	Between Groups	(Combined)		4.468	2	2.234	4.357	.028	Reject null hypothesis
		Linear Term	Unweighted	3.736	1	3.736	7.287	.014	
			Weighted	1.590	1	1.590	3.102	.094	
			Deviation	2.877	1	2.877	5.613	.029	
	Within Groups			9.740	19	.513			
	Total			14.208	21				
NETWORK	Between Groups	(Combined)		6.702	2	3.351	6.348	.008	Reject null hypothesis
		Linear Term	Unweighted	4.605	1	4.605	8.723	.008	
			Weighted	1.333	1	1.333	2.525	.129	
			Deviation	5.368	1	5.368	10.170	.005	
	Within Groups			10.030	19	.528			
	Total			16.731	21				
DEVICES	Between Groups	(Combined)		3.312	2	1.656	2.810	.085	Reject null hypothesis
		Linear Term	Unweighted	2.395	1	2.395	4.065	.058	
			Weighted	.767	1	.767	1.301	.268	
			Deviation	2.545	1	2.545	4.319	.051	
	Within Groups			11.195	19	.589			
	Total			14.507	21				

ETHICS	Between Groups	(Combined)		1.070	2	.535	.850	.443	Reject null hypothesis
		Linear Term	Unweighted	.613	1	.613	.974	.336	
			Weighted	.121	1	.121	.193	.665	
			Deviation	.949	1	.949	1.508	.234	
	Within Groups			11.954	19	.629			
	Total			13.024	21				

According to Seminars/Trainings Attended

The number of trainings attended by teachers and the competence of teachers along Concept, Application, Devices, and Ethics differ significantly, but no significant difference in Operation and Network. The more trainings that teachers attend, the more competent they will be towards digital citizenship. According to Becta (2004) the issue of training is certainly complex because it is important to consider components to ensure training effectiveness. These were time for training, pedagogical training, skills training, and an ICT use in initial teacher training. Providing pedagogical training for teachers, rather than training them to use ICT tools, is an important issue (Becta, 2004). Correspondingly, the number of teachers' ICT seminars and trainings attended in ICT basics, spreadsheet, and computer ethics and security has significantly affected teachers' ICT competence which denotes that to enhance teachers' ICT skills, the teachers may expose themselves through different ICT trainings specifically in the low-level ICT skill-set. (Dela Fuente and Biňas, 2020)

Table 6

Differences in the Level of Competence According to Seminars / Trainings Attended

Digital Citizenship Competency				Sum of Squares	df	Mean Square	F	Sig.	Decision
CONCEPT	Between Groups	(Combined)		1.327	2	.664	3.861	.039	Reject the null hypothesis
		Linear Term	Unweighted	1.307	1	1.307	7.601	.013	
			Weighted	1.312	1	1.312	7.631	.012	
			Deviation	.016	1	.016	.091	.766	
	Within Groups			3.266	19	.172			
	Total			4.593	21				
OPERATION	Between Groups	(Combined)		1.245	2	.623	1.457	.258	Fail to reject null hypothesis
		Linear Term	Unweighted	1.184	1	1.184	2.770	.112	
			Weighted	1.001	1	1.001	2.344	.142	
			Deviation	.244	1	.244	.571	.459	
	Within Groups			8.119	19	.427			
	Total			9.365	21				
APPLICATION	Between Groups	(Combined)		3.921	2	1.961	3.621	.047	Reject the null hypothesis
		Linear Term	Unweighted	3.880	1	3.880	7.167	.015	
			Weighted	3.854	1	3.854	7.118	.015	
			Deviation	.068	1	.068	.125	.728	
	Within Groups			10.287	19	.541			
	Total			14.208	21				
NETWORK	Between Groups	(Combined)		3.263	2	1.631	2.301	.127	Fail to reject null hypothesis
		Linear Term	Unweighted	2.975	1	2.975	4.197	.055	
			Weighted	3.248	1	3.248	4.582	.045	
			Deviation	.015	1	.015	.021	.886	
	Within Groups			13.468	19	.709			
	Total			16.731	21				
DEVICES	Between Groups	(Combined)		3.220	2	1.610	2.710	.092	Reject the null hypothesis
		Linear Term	Unweighted	3.176	1	3.176	5.346	.032	
			Weighted	3.177	1	3.177	5.348	.032	
			Deviation	.043	1	.043	.073	.791	
	Within Groups			11.287	19	.594			
	Total			14.507	21				
ETHICS	Between Groups	(Combined)		3.133	2	1.567	3.009	.073	Reject the null hypothesis
		Linear Term	Unweighted	3.132	1	3.132	6.016	.024	
			Weighted	2.936	1	2.936	5.639	.028	
			Deviation	.198	1	.198	.379	.545	
	Within Groups			9.891	19	.521			
	Total			13.024	21				

Challenges Encountered by the ALS Teachers

ALS teachers revealed that they encountered problems in teaching the Digital Citizenship competencies. The result revealed that ALS teachers experienced different challenges in teaching the competencies of the Learning Strand 6 Digital Citizenship.

Challenges related to ICT facilities and teaching/learning resources

Teachers identified insufficient number of computers and lack of modules or learning activity sheets as one of the top problems in teaching the Digital Citizenship. Bonifacio (In non-formal education, there is very limited use of information technology because out-of-school youth and adults participating in non-formal education programs generally do not have access to computers. ICT usage depends first on whether there are enough ICT facilities. The research studies focusing on the barriers to use ICT reveal that the insufficiency or lack of ICT facilities appears as significant barriers (Usluel, Askar & Bas, 2008). Lack of basic infrastructure such as classrooms and Internet connectivity are hindrances in effective implementation of ICT curriculum standards in the Philippines. Yildrim (2007) found in a study that access to technology resources is one of the effective ways to teachers' pedagogical use of ICT in teaching. It is therefore important that teachers as well as learners should have access to computers, the internet, hardware and software to increase their knowledge in ICT. Most of the participants believed that having sufficient ICT equipment/gadgets and other teaching and learning resources is important in teaching the Digital Citizenship competencies. However, not all participants have complete devices to facilitate teaching the Digital Citizenship competencies.

Challenges related to human resources (teachers)

Lack of teachers' competence adds up to the concerns as some of the participants said that they have only limited knowledge and skills when it comes to ICT. This is rooted in the limited number of relevant trainings on Digital Citizenship. Providing pedagogical training for teachers, rather than simply training them to use ICT tools, is an important issue (Becta, 2004). . ICT is found to have vital potential in increasing learners' achievement and enriching teachers' skills; however, lack of training, equipment and skill limit its success. Confidence,

competence and accessibility have been critical ingredients to effectively blend ICT into the teaching and learning process (Habibu, Al Mamun, & Clement, 2012). Acquiring the latest devices and integrating ICT into the lesson is not enough. It must be sustained over the long term.

Challenges related to technical problems

The participants also mentioned that unstable and slow internet connection impede their duties and works. Teachers rely on internet connection when navigating the world wide web, download modules or learning activity sheets and some competencies are required to be taught online. Signal interruption in some geographical sites adds up also to the situation which is out of teachers' control. Tűrel and Johnson's study (2012) revealed that technical problems become a major barrier for teachers. These problems include low connectivity, virus attack and printer not functioning. Moreover, power interruption also interrupts teaching and it is worse to the students especially when it comes to practical lessons.(Habibu et al, 2012)

Coping Mechanisms to address the Challenges

As teachers face different challenges in teaching the Digital Citizenship competencies, they struggle to overcome such challenges through different strategies. This demonstrates the teachers' flexibility, adaptability and innovativeness. Four emerging themes were identified among the coping mechanisms.

Collaboration

Due to inadequate IT resources used by teachers in teaching the Digital citizenship competencies, the problem was being addressed through the continuous support and partnership with stakeholders like the Local Government Unit. Teachers asked assistance from the LGU in providing ICT equipment. Likewise, some of the participants borrow computer units and adopt modules or learning activity sheets of the formal school that are aligned with the Digital Citizenship competencies. Thus, the act of partnership is a good avenue for better understanding and responsibility.

Since the school cannot provide all the needs of of teachers due to its limited resources the gaps are filled through the continuous support and partnership with stakeholders as stipulated in the DepEd Memorandum No. 53 s. 2020 on the Joint Brigada Eskwela and Oplan Balik Eskwela. Collaboration is a key tool to create a meaningful learning experience (De Villa and Manalo, 2020).

Alternative plans

Being flexible and adaptive to changes allows us to survive and still succeed. Flexibility and adaptability are important qualities that every teacher must acquire. They are interested to learn the new techniques as to the technology tools and online resources. Likewise, some of the participants conducted training on Computer Literacy for teachers and learners to enhance their skills on the use of computers and related technology efficiently. This is done in coordination with other agencies.

Centers of excellence in information technology, crossing traditional boundaries, were established in order to focus on the needs of a greater number of learners. Three information technology centers were set up, two elementary and one secondary, in each of the regions. Each center was provided with a laboratory equipped with computers, printers, peripherals, a multimedia projector, an air-conditioning unit and software programs. Teacher training was also a component. For the first year of operation, operating funds were provided by the government, and the Local Government Unit was expected to supply funds for the maintenance and continuous operation of the facilities (Bonifacio, 2013).

Moreover, Computers for Public Schools Project (PCPS), funded through a grant of PHP 600,000 (US$ 12 million) from the Government of Japan, secured largely through the initiative of the Department of Trade and Industry. The grant has benefited 996 public secondary schools across the country through the provision of 20 desktop computers, two printers, one fax/data/voice external modem with cable, one software package and teacher training to each of recipient schools.

Meanwhile, in the absence of modules or learning activity sheets in some competencies, some teachers resort to use video lessons, and search for topics and lessons

in you tube or google. In a study conducted by Alpuerto (2022) revealed that Science teachers purported that for them to be able to learn using new educational technology themselves, they use video streaming platforms like YouTube for step-by-step video tutorials. Pre-exploration of the ICT material is also an option. Science teachers added that even without initial or previous knowledge about the use of certain ICT material, they explore the material until they can operate such material for classroom use. Additionally, science teachers said that trying or navigating the material before actual classroom instruction would help them operate the ICT material successfully.

Peer mentoring

The participants mentioned that asking assistance from competent teachers helps them to deal with the pressure in preparing their lessons in Digital Citizenship. They asked help from those who are experts in using technology so that they will be more acquainted in using technology.

In a study conducted by De Villa and Manalo (2020) revealed that peer mentoring helps teachers to collaborate and share best practices. They seek guidance and support from one another when preparing learning resources and ICT tools. Mentoring provides a strong support system in holistic well-being and development of educators. As teachers embrace change, peer mentoring allows them to build confidence and nurture competence in the new normal. Teachers value the support gained from one another as a beneficial way to stay connected. And when they feel appreciated and respected, they will render quality service through valuable teaching (Linton, 2017).

Further, science teachers also acknowledge the importance of the input of other people for the development of their skills in utilizing ICT pedagogically. Science teachers consult IT professionals for software installations, hardware repairs, and even for training on the use of ICT resources. In the school setting, teachers sometimes ask their students for help during lesson preparation when they find navigating ICT material difficult. This is in conjunction with the assertions of Castro-Silva, Amante, and Morgado, (2017) that teacher collaboration allows teachers to work together and have a positive impact on each other

which can contribute naturally to students' learning improvement. Specific types of teacher collaboration include working together in teams, sharing responsibilities, providing feedback, and building trust (Alpuerto, 2022).

Internet

In searching for a reliable and efficient internet connection, the teachers secure a place where the internet connection is fast and stable. They mentioned that they travel to other location just to have good internet connection.

Teachers may install Wi-Fiboosters and external antennas. Schools may also provide sufficient load cards to the teachers. Further, the Department of Education may enter with a memorandum of understanding/agreement with the Department of Energy and Department of Information and Communications Technology to support the electrification of remote areas and establish strong internet connection, respectively, for the schools, teachers, students, and parents to connect and communicate with each other (Agayon et al, 2020).

Conclusions and Recommendations

Conclusions

With the findings presented in this study, the following conclusions were drawn:

1. The level of competence of teachers in the content standards of Learning Strand 6 – Digital Citizenship is "Competent" describing that the teachers has majority of the competencies at high level for effective teaching yet still needs to be enhanced through training and professional development.
2. a. There is no significant difference in the level of competence of teacher's content standards of Learning Strand 6 – Digital Citizenship according to age.
   b. There is no significant difference in the level of competence of teacher's content standards of Learning Strand 6 – Digital Citizenship according to highest educational attainment.

c. There is a significant difference in the level of competence of teacher's content standards of Learning Strand 6 – Digital Citizenship according to years of teaching experience.

d. There is a significant difference in the level of competence of teacher's content standards of Learning Strand 6 – Digital Citizenship along Concept, Application, Devices, and Ethics differ significantly, but no significant difference in Operation and Network according to seminars or training attended.

3. The challenges encountered by the ALS teachers were lack of ICT facilities and teaching/learning resources; lack of teachers' competence; need for more relevant training and technical problems.
4. The teacher's coping mechanisms to address the identified challenges were collaboration, alternative plans, peer mentoring and internet.

Recommendations

While the core themes are found essential to the teachers' experiences in teaching the Digital Citizenship competencies, the following points are given for future considerations:

1. Conduct of relevant and intensive trainings and seminar workshops on Digital Citizenship competencies is suggested in order to capacitate teachers in teaching the Digtal Citizenship competencies.
2. Conduct of more trainings focused on Concept, Application, Devices and Ethics. should be provided among teachers to further enhance their computer skills and knowledge.
3. Sufficient ICT facilities and resources should be provided in Community Learning Centers so as to provide access to ICT to both teachers and learners.They should be given environment in which they will enhance their ICT-based competencies.
4. The researcher recommends that teachers need to formulate alternative plans on different issues that may arise as they are involved in the process of teaching. The higher offices and school authorities may work with the ALS teachers in addressing

the challenges they face in teaching the competencies of the Learning Strand 6-Digital Citizenship competencies to the learners. Lastly, they need to find ways to be able to solve problems related to teaching the Digital Citizenship competencies.

Plans for Dissemination and Advocacy

The result of the study will be a basis for the ALS teachers to design a training program, Learning Action Cell or Teachers' Guide anchored with their least mastered competencies of the Learning Strand 6 Digital Citizenship. This is to enhance their knowledge and skills in teaching the least practiced competencies and to bridge the gap between the competence of ALS implementers and the competencies or skills needed by ALS learners. Further, the result of the study would be the basis for other studies or researches.

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Financial Report

A. Supplies and Materials						
Activity	Item	Unit	Quantity	Estimated Cost	Total	ACTUAL COST
Implementation of the study and Preparation of Research Papers, Instructional Materials/Worksheets, and other documents	A4 Bond Paper	ream	10	250	2,500.00	2,500.00
	A4 Folder Tagboard with fastener	pc	20	20.00	400.00	400.00
	Printer Ink Black	bottle	10	300.00	3,000.00	3,000.00
	Printer ink Cyan	bottle	2	300.00	600.00	600.00
	Printer Ink Majenta	bottle	2	300.00	600.00	600.00
	Printer Ink Yellow	bottle	2	300.00	600.00	600.00
	USB Flash Drive	pc	1	1,000.00	1,000.00	1,000.00
B. Domestic Travel Expenses						
Submission of First Tranche Deliverables	Courier/Private Vehicle		1	300.00	300.00	500.00
C. Food and other incurred expenses during the conduct of research						
D. Reproduction, Printing, and Binding Cost						
E. Communication Expenses for the Implementation / Conduct of the Study						
Validation of Instruments	Load Validators/ Experts	card	5	300.00	1,500.00	2,500.00
Implementation of the study- Data Gathering/ Collection, Preparation and submission of research papers and other documents.	Regular Load of proponent	card	12	500.00	6,000.00	6,000.00
	Internet Load of proponent	card	12	500.00	6,000.00	6,000.00
Data gathering: quantitative data (Online Survey) (to be given through pasaload)	Load of respondents (37.50/hour)	2.67 hours	28	100	2,800.00	2,800.00
F. Other Expenses						
					25,300.00	26,500.00

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