Digital Skills: Academic Performance and Attitude Towards Science of the STE Learners in Subic National High School in the New Normal

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ABSTRACT

The study aimed to determine the effectiveness of digital skills in enhancing the academic performance and attitudes towards Science of the Grade 9 and 10 STE Learners in Subic National High School in the New Normal. The study utilized the descriptive correlational method and pre-experimental research with survey questionnaire, instrument was conducted during the second grading period of school year 2021-2022. The grade 9 and 10 STE Learners who choose online classes-digital mode of learning delivery modality for school year 2021-2022 of Subic National High School were the respondents. The data was obtained using attitudinal test questionnaire, validated teacher made test and digital skills questionnaire. The findings conclusions to the study will be as follows. The level of digital skills in Grade 10 STE learners was higher in all categorical areas compared to Grade 9 STE Learners; The level of academic performance in Grade 9 STE learners had outperformed Grade 10 STE learners in Science subjects: The level of attitude towards science of Grade 10 STE Learners the change in attitude was higher than the level of Grade 9 STE Learners in the New Normal; There was a significant difference among the digital skills, academic performance, and attitude towards science of Grade 9 and 10 Ste Learners when grouped according to the profile variables, thus the null hypothesis was rejected. The study recommended that the Parents may seriously look into their children's academic performance while using gadgets in the digital mode of learning in their studies to obtain the higher result in academic performance.

Keywords: Digital skills, academic performance, attitude towards science, STE Learners, perfect positive and perfect negative correlation.

INTRODUCTION

The novel coronavirus disease (COVID-19) has been declared by the World Health Organization as an international public health emergency. Owing to its high infectivity, countries all over the world implemented nationwide lockdowns with the hope of flattening the epidemic curve. Around the world, this led to the closure of schools in over 150 countries affecting the education of nearly 1 billion children (Sahu, 2020).

The current situation brought by Covid-19 pandemic and the global health emergency resulted in an accelerated transit from face-to-face education to online education. With the shift to online mode of delivery, teachers were able to continue to deliver learning through video calls and different online

platforms. It should be recalled that, for an educational paradigm shift to happen, the stage of "integration" of emerging technologies with traditional education systems must take place.

The increasing importance and use of digital platforms requires modifications in the skills and knowledge of digital learning. Digital skills became a must in the delivery of learning.

Digital skills are defined as the ability to find, evaluate, use, share and create content using digital devices such as computers or smartphones (https://digitalskills.univ.edu). Van Laar et al. (2017) identified 21st century digital skills as technical, information, communication, collaboration, creativity, critical thinking, and problem solving. Digital skills are important because they underpin so much of how modern work is conducted.

In technology-enhanced settings, learners interact to learn by giving explanations or communicating about each other's contributions. Learners' online collaboration consists of meaningful interaction between peers. Thus, working through the internet highlights their collaboration and communication skills. These skills are generally about what students can do with knowledge and how they can apply that knowledge in school and social life (UNESCO, 2018).

With the foregoing as background, and in search of alternative resources or technologies in the teaching of science during the pandemic to improve the level of performance of students as well as their attitude towards science, the study was undertaken.

MATERIALS AND METHODS

The study utilized the descriptive correlational method of research and pre-experimental research with survey questionnaire, instrument was conducted during the second grading period of school year 2021-2022. The grade 9 and 10 STE Learners who choose online classes-digital mode of learning delivery modality for school year 2021-2022 of Subic National High School were the respondents.

Respondents total number are one hundred thirty-one (131) STE learners of Subic National High School SY 2021-2022. Seventeen (17) respondents were Grade 9, and twenty-five (25) respondents were Grade 10 STE learners who chose the digital mode of delivery during the Second Grading Period, while the remaining eighty-nine respondents of the totality of 131 chose modular learning modality.

The study utilized the descriptive method of research specifically correlation. Data gathering instrument was a survey questionnaire which involves the profile of the respondents in terms of year-level, sex, number of siblings, and monthly family income. The 20-item test determines the level of digital skills of the respondents in terms of information, communication, content creation, safety, and problem-solving and was adopted from the study of Van Laar 2022 et.al. The Attitudinal Test, which determines the attitude of the respondents toward science was adopted from the study of Ahmad (2001). The 50- item teacher-made test, where the items are aligned from K-12 curriculum MELC for Grade 9 and Grade 10 during the 2nd grading period. The teacher-made test was constructed based on the Table of Specifications which was prepared by the researcher.

Variables included in the study were level of digital skills, level of academic performance, and attitude towards science. Digital skills include the following categories of information, communication, content creation, safety, and problem-solving. The academic performance of the learners was measured using validated teacher made test questionnaire, and Attitude towards Science was assessed using attitudinal test adopted from the study of Ahmad (2001).

To test the hypothesis, Pearson Product Moment Correlation and analysis of variance were used. This method of research aimed to analyze the quantitative data collected through research methods like survey

questionnaires. They try to identify the relationship patterns, significant connections between the 18 variables which are the dependent and independent variables of the study.

The design provides essential facts or information which can lead to the conclusion and recommendations. It focuses on identifying the academic performance and attitude towards science of the Grade 9 and 10 STE learners in Subic National High School in the new normal. To gather data from the respondents, a survey questionnaire was administered during the distribution and retrieval of modules or through google form.

Prior to the administration of the questionnaire, the researcher submitted a letter of request addressed to the school head to conduct a study at Subic National High School, specifically indicating the request to use Grade 9 and 10 STE learners as respondents. The questionnaires were administered with the assistance of Advisers of the two classes.

In gathering the academic performance, learners were informed regarding the schedule of when they are going to perform manipulative activities online to measure and evaluate their performances.

RESULTS AND DISCUSSION

This chapter presents the tabulations, analyses and treatment of data gathered in this study. The researcher used appropriate statistical tools to analyze data collected pertaining to the digital skills, academic performance, and attitudes towards science of the STE learners in Subic National High School in the New Normal

Profile of STE Learner in Subic National High School

The profile of the STE learners in this study involves the Grade Levels, Sex, Number of Siblings, and Monthly Family Income. Table 3 presents the frequency and percentage distribution of the STE learner in terms of the profile variables.

Table 3 Frequency and Percentage Distribution of Respondents

Variable	Category	Frequency	%
Grade Level	Grade 9	16	36.36
	Grade 10	28	63.64
Sex	Female	29	65.91
	Male	15	34.09
Number of Siblings	None	5	11.36
	One Sibling	21	47.73
	Two Siblings	12	27.27
	Three Siblings	6	13.64
Monthly Family Income	PhP 20,000 and below	16	36.36
	PhP 20,001 – 40,000	15	34.09
	PhP 40,001 – 60,000	10	22.73
	PhP 60,001 and above	3	6.82

Grade Level. The majority (63.64% or 28 out of 44) of the STE learner respondents were in Grade 10 level and there were 16 (36.46%) in the distribution of the STE learner respondents that are in Grade 9 level.

Sex. Majority (65.91% or 29 out of 44) of the STE learner respondents are female and there were 15 (34.09%) male STE learner respondents.

Number of Siblings. A greater proportion (47.73% or 21 out of 44) of STE learner respondents have One (1) Sibling and there are five (11.136%) in the distribution of the STE learner respondents who are only child or have No Sibling.

Monthly Family Income. A greater proportion (36.36% or 16 out of 44) of STE learner respondents belong to a family who earns a monthly income of PhP 20,000 and below and there were three (6.82%) STE learner respondent whose family earns a monthly income of PhP 60,000 and above.

Digital Skills of STE Learners in Subic National High School

Digital Skills are the skills of Grade 9 and Grade 10 STE learners in using digital tools in science subjects in the new normal and portability. This includes the sub-category of digital skills which are the content area, communication, content creation, safety, and problem solving. Frequency counts and mean analysis found in Appendix C revealed the mean values of each indicator.

Competence Area. Table 4 presents the level of digital skills of the STE learners in terms of competence area. It can be seen on Table 4 that the STE learners attained a highest mean rate of 3.84 (Good) which indicates that they can save or store files or content (e.g., text, pictures, music, videos, web pages) and retrieve them once saved or stored.

Table 4 Digital Skills of STE Learners in terms of Competence Area

Indicators	Wt. Mean	Descriptive Interpretation
1. I can look for information online using a search engine.	3.25	Average
2. I know not all online information is reliable.	3.64	Good
3. can save or store files or content (e.g., text, pictures, music, videos, web pages) and retrieve them once saved or stored	3.84	Good
Composite	**3.58**	**Good**

The STE Learners rated a highest mean score of 3.84 (Good) which indicates that they can save or store files or content (e.g., text, pictures, music, videos, web pages) and retrieve them once saved or stored. They had their lowest rate of 3.25 (Average) which indicates they can look for information online using a search engine. The composite value 3.58 indicates the STE learners are at a good level of digital skills in terms of competences area. They know that not all information online is reliable and can be used.

Communication. Table 5 presents the mean analysis on the digital skills of STE learners in terms of communication. The STE learners rated highest at 4.80 (Excellent) which indicates that they can communicate with others using mobile phone, Voice over IP (e.g., Skype) e-mail or chat – using basic features (e.g., voice messaging, SMS, send and receive e-mails, text exchange). They had their lowest mean rate of 4.30 (Good) which indicates that they know they can use digital technologies to interact with services (like governments, banks, hospitals). Digital skills research acknowledges that both basic skills necessary to use the internet and skills required to comprehend and use online content should be accounted for (Gui & Argentin, 2011; Van Deursen et al., 2016).

Table 5 Digital Skills of STE Learners in terms of Communication

Indicators	Wt. Mean	Descriptive Interpretation
1.I can communicate with others using mobile phone, Voice over IP (e.g., Skype) e-mail or chat – using basic features (e.g., voice messaging, SMS, send and receive e-mails, text exchange)	4.80	Excellent
2.I can share files and content using simple tools	4.64	Excellent
3.know I can use digital technologies to interact with services (as governments, banks, hospitals).	4.30	Good
4.I am aware of social networking sites and online collaboration tools.	4.39	Good
5.I am aware that when using digital tools, certain communication rules apply (e.g., when commenting, sharing personal information	4.61	Excellent
Composite	**4.55**	**Excellent**

The composite value 4.55 indicates that the STE learners have an Excellent digital skill in terms of communication. This means that they are aware that when using digital tools, certain communication rules apply (e.g., when commenting, sharing personal information and they can share files and content using simple tools. Although communication and collaboration are viewed as essential (Ahonen & Kinnunen, 2015), they are scarcely covered in academic research.

Content Creation. Table 6 shows the mean analysis on the digital skills of STE learners in terms of content creation. The STE leaners garnered the highest mean score of 4.57 (Excellent) which indicates that they know that content can be covered by copyright. They rated a lowest mean of 4.25 (Good) indicating that they can make basic editing to content produced by others.

Table 6 Digital Skills of STE Learners in terms of Content Creation

Indicators	Wt. Mean	Descriptive Interpretation
1. I can produce simple digital content (e.g., text, tables, images, audio files) in at least one format using digital tools.	4.50	Excellent
2. I can make basic editing to content produced by others.	4.25	Good
3. I know that content can be covered by copyright.	4.57	Excellent
4. I can apply and modify simple functions and settings of software and applications that I use (e.g., change default settings).	4.43	Good
Composite	**4.44**	**Good**

The composite value 4.44 indicates that the STE learners have good level of digital skills in terms of content creation. This means that can apply and modify simple functions and settings of software and applications that I use (e.g., change default settings).

Safety. Table 7 presents the mean analysis on the digital skills of STE Learners in terms of safety,

Table 7 Digital Skills of STE Learners in terms of Safety

Indicators	Wt. Mean	Descriptive Interpretation
1. I can take basic steps to protect my devices (e.g., using antiviruses and passwords)	4.50	Excellent
2. I am aware that my credentials (username and password) can be stolen	4.66	Excellent
3. I know I should not reveal private information online	4.84	Excellent
4. I know that using digital technology too extensively can affect my health.	4.66	Excellent
Composite	**4.66**	**Excellent**

It can be seen on Table 7 that the STE learners garnered the highest score of 4.84 (Excellent) which indicates that they know they should not reveal private information online. They had the lowest mean rate of 4.50 (Excellent) which indicates that they can take basic steps to protect their devices (e.g., using antiviruses and passwords). The composite value 4.66 indicates that the STE learners have an Excellent digital skill in terms of safety. This means that they are aware that their credentials (username and password) can be stolen and knows that know that using digital technology too extensively can affect their health.

Problem Solving. Table 8 presents the mean analysis on the digital skills of STE learners in terms of problem solving.

Table 8 Digital Skills of STE Learners in terms of Problem Solving

Indicators	Wt. Mean	Descriptive Interpretation
1. I can find support and assistance when a technical problem occurs or when using a new device, program, or application.	4.32	Good
2. I know how to solve some routine problems (e.g., close program, re-start computer, re-install/update program, check internet connection).	4.25	Good
3. I know that digital tools can help me in solving problems. I am also aware that they have their limitations.	4.57	Excellent
4. When confronted with a technological or non-technological problem, I can use the digital tools I know to solve it.	4.45	Good
Composite	**4.40**	**Good**

The STE learners garnered the highest mean rate of 4.57 (Excellent) which indicates that they know that digital tools can help them in solving problems. They are also aware that they have their limitations. They had the lowest mean rate of 4.25 (Good) which indicates that know how to solve some routine problems (e.g., close program, re-start computer, re-install/update program, check internet connection). The composite value 4.40 indicates that the STE learners have a good level of digital skills in terms of problem solving. This means that they can find support and assistance when a technical problem occurs or when using a new device, program, or application and when confronted with a technological or non-technological problem, they can use the digital tools they know to solve it.

Level of Academic Performance of STE Learners in Subic National High School

The level of academic performance of the STE learners was measured in a teacher-made 50 item test and had computed their Mean Percentage Scores (MPS). Table 14 shows the academic performance of the STE learners in science.

Appendix 14 STE Learners' Level of Academic Performance

MPS	SD	Qualitative Description
51.28	8.08	Average Mastery

Legend. 0 – 4   Absolutely No Mastery
      5 – 35 Low Mastery
      36 – 65   Average Mastery
      66 – 95   Moving Towards Mastery
      96 – 100   Mastered

With an MPS of 51.28 the STE learners had only attained and Average Mastery Level of academic performance in science. This implies that the STE learner still has a long way to work to improve their academic performance in science. This finding does not conform with Tabiolo and Rogayan (2019) that results revealed that the science class in their experiment had improved from "developing" to "proficient" level in their science achievement. This implies that there must be an effective teaching strategy to be applied in improving the academic performance of STE learners in Subic National High School and that is left in the hands of the Science teachers.

Attitude towards Science of STE Learners in Subic National High School

The attitude of learners towards science was analyzed using the variables normality of scientist, enjoyment in science, career interest in science, teacher influence and gender bias. The frequency counts and mean analysis on these variables is found in Appendix D.

Normality of Scientist. The normality of scientists describes students who place.

themselves as students of science. Table 9 presents the mean analysis on the attitude towards science of the STE Learners.

Table 9 Attitude towards Science in terms of Normality of Scientist

Indicators	Wt. Mean	Descriptive Interpretation
1.I am sure that I can learn science.	4.73	Strongly Agree
2.I am sure of myself when I do science.	4.30	Agree
3.I think I could handle more difficult science.	3.98	Agree
4.I can get good grades in science.	4.34	Agree
5.I know I can do well in science.	4.41	Agree
Composite	**4.35**	**Agree**

The STE learners garnered the highest mean rate of 4.73 (Strongly Agree)) which indicates that they are sure that they can learn science. They had the lowest mean rate of 3.98 (Agree) which indicates that they think they could handle more difficult science. The composite value 4.35 indicates that the STE learners Agree that they have positive attitude towards science such as being sure of themselves when they do science, can get good grades in science and they know they can do well in science.

Enjoyment in Science. Science as a school subject to be taught and learned, has always presented a challenge to both teachers and students. On the one hand, understanding science (as content, inquiry, and process skills) is a challenging and enjoyable task for students, as it involves a construction process, which is complex and iterative—not a linear one—and which also takes time and effort. Table 10 presents mean analysis on the attitude towards science in terms of enjoyment in science.

Table 10 Attitude towards Science in terms of Enjoyment in Science

Indicators	Wt. Mean	Descriptive Interpretation
1. I am interested to read about short stories based Scientific discoveries.	4.50	Strongly Agree
2. I am sure I can do advanced work in science.	4.07	Agree
3. If a Science exhibition is held in my school, I shall participate in it.	4.55	Strongly Agree
4. Science is fun.	4.80	Strongly Agree
Composite	**4.48**	**Agree**

The STE learners garnered a highest mean rate of 4.80 which indicates that the STE learners Strongly Agree that Science is fun. They had the lowest mean rate of 4.07 which indicates that they Agree that they are sure they can do advanced work in science. The composite value 4.48 indicates that the STE learners Agree that they have positive attitude towards science such as being interested to read about short stories based Scientific discoveries and aims to participate in science exhibitions when held in their schools.

Career Interest. Career interests are the preferences regarding work activities and environments. Identifying one's career interests helps him/her make a well-informed and more strategic career decision. Following one's career interests means he/she is pursuing a career that uses his/her talents and aligns with his/her values and preferences. Table 11 presents the mean analysis on the attitude of STE learners towards science in terms of career interest.

Table 11 Attitude towards Science in terms of Career Interest

Indicators	Wt. Mean	Descriptive Interpretation
1. Knowing Science will help me earn a living.	4.59	Strongly Agree
2. I'll need science for my future work.	4.45	Agree
3. I will use Science in many ways as an adult.	4.48	Agree
4. I'll need a good understanding of science. for my future work	4.64	Strongly Agree
5. I study Science because I know how useful it is	4.68	Strongly Agree
6. My teacher has been interested in my progress in science.	4.07	Agree

	Composite	4.48	Agree

The STE learners garnered a highest mean rate of 4.68 which indicates that they Strongly Agree that they study Science because I know how useful it is. They had the lowest mean rate of 4.45 which indicates that they Agree that they'll need science for my future work. The composite value 4.48 indicates that the STE learners Agree that they have positive attitude towards science such as knowing Science will help them earn a living and that they know they can use Science in many ways as an adult and they'll need a good understanding of science. for my future work.

Teacher Influence. Teachers have a very significant, lifelong impact on all of their students. This impact involves not only the teaching of academic skills, but as importantly, the fostering of student self-esteem. Reinforcing self-esteem in the classroom is associated with increased motivation and learning. Table 12 presents the mean analysis on the attitude of STE learners towards science in terms of teacher influence.

Table 12 Attitude towards Science in terms of Teacher Influence

Indicators	Wt. Mean	Descriptive Interpretation
1. My teachers have encouraged me to study more Science.	4.50	Strongly Agree
2. My teachers want me to take all the Science I can.	4.27	Agree
3. My teachers think I'm the kind of person who could do well in science.	4.18	Agree
4. Science teachers have made me feel I have the ability to go in science.	4.55	Strongly Agree
Composite	4.38	Agree

The STE learners garnered the highest mean rate of 4.55 which indicates that Science teachers have made them feel they could go in science. They had the lowest mean rate of 4.18 which indicates that they Agree that their teachers think they're the kind of person who could do well in science. The composite value 4.38 indicates that the STE learners Agree that they have positive attitude towards science such as being positively encouraged by their teachers more Science and to take all the Science they can.

Gender Bias. This refers to a person receiving different treatment based on the person's real or perceived gender identity, and in this case in science. Table 13 presents the mean analysis on the attitude of STE learners towards science in terms of gender bias.

Table 13 Attitude towards Science in terms of Gender Bias

Indicators	Wt. Mean	Descriptive Interpretation
1. Males are not naturally better than females in science.	3.70	Agree
2. When a woman must solve a science problem, she should ask a man for help.	2.98	Neutral
3. Women can do just as well as men in science.	4.64	Strongly Agree
4. I would have more faith in the answer for science. problem solved by a man than a woman.	2.84	Neutral

5. Females are as good as males in science.	4.52	Strongly Agree
6. Women certainly are smart enough to do well in science.	4.57	Strongly Agree
7. I would expect a woman scientist to be a forceful type of person.	3.41	Neutral
8. Studying Science is just as good for women as for men.	4.36	Agree
9. I would trust a female just as much as I would trust a male to solve important Science problem.	4.70	Strongly Agree
Composite	**3.97**	**Agree**

The STE learners garnered a highest mean rate of 4.70 which indicates that they Strongly Agree that they would trust a female just as much as they would trust a male to solve important Science problem. They had the lowest mean rate of 2.84 which indicates that they are on a Neutral stand that they would have more faith in the answer for a science. problem solved by a man than a woman. The composite value 3.97 indicates that the STE learners Agree that they have positive attitude towards science in terms of gender bias such as they believe women certainly are smart enough to do well in science and when a woman has to solve a science problem, she should ask a man for help.

Differences on the Level of Digital Skills of STE Learners in Subic National High School

At α =.05, it was hypothesized in this study that the involved profile variables of the STE learners have influence in their digital skills in terms of competence are, communication, content creation, safety and problem solving. Table 15 presents the analyses of variances on the digital skills of STE learners as summarized from Appendix E.1 to Appendix E.5.

In terms of **Competence Area**, profile variables Sex (F=5.998, α=.019) has a significance value that are less that the set alpha level (α=.05). This prompts the researcher to reject the null hypotheses on these two profile variables. Hence, there are significant difference on the digital skills in terms of competence areas of the STE learners when they are grouped according to the sex groups. The mean analysis in Appendix G supports this claim as it revealed that male group of STE learners garnered a higher mean rate that their female counter part when come to the competence area digital skills.

Table 15 ANOVA on Digital Skills of STE Learners

Profile Variables	Competence Area		Communication		Content Creation		Safety		Problem Solving	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Grade Level (df=1, 42)	3.119	.085	.034	.856	.115	.737	.099	.755	.208	.651
Sex (df=1, 42)	5.998	.019*	1.252	.270	.090	.765	.001	.991	.648	.425
Number of Siblings	.874	.463	3.106	.037*	1.248	.305	1.814	.160	.412	.745
Monthly Family Income (df=3,40)	1.368	.266	1.511	.226	1.285	.293	.224	.879	1.436	.247

Difference is significant at the 0.05 level (2-tailed)

In terms of **Communication**, profile variables Number of Siblings (F=3.106, α=.037) have a significance value that are less than the set alpha level (α=.05). This signifies rejection of the null hypotheses on these two profile variables. Hence, there are significant differences in the digital skills in terms of communication skills of the STE learners as influenced by their number of siblings. The mean analysis in Appendix H supports this finding as it revealed that STE learners with three siblings garnered the highest mean rate but with consideration on those with no siblings at all who scored second highest rate.

Differences on the Level of Academic Performance of the STE Learners in Subic National High School

At α =.05, it was hypothesized in this study that the involved profile variables of the STE learners have influence in their academic performance in science. Table 16 presents the analyses of variances on the academic performance of STE learners when they are grouped according to their profile variable.

Table 16 ANOVA on the Level of Academic Performance of the STE Learners when Grouped According to Profile

Profile Variables	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Grade Level	Between Groups	600.325	1	600.325	11.108	.002	Significant
	Within Groups	2269.85	42	54.044			
	Total	2870.18	43				
Sex	Between Groups	461.483	1	461.483	8.047	.007	Significant
	Within Groups	2408.69	42	57.350			
	Total	2870.18	43				
Number of Siblings	Between Groups	338.013	3	112.671	1.780	.167	Not Significant
	Within Groups	2532.16	40	63.304			
	Total	2870.18	43				
Monthly Family Income	Between Groups	489.244	3	163.081	2.740	.056	Not Significant
	Within Groups	2380.93	40	59.523			
	Total	2870.18	43				

It can be seen on Table 16 that profile variables Grade Level (F=11.108, α=.002) and Sex (F=8.047, α=.007) have significance values that are less than the set alpha level (α=.05). This signifies rejection of the null hypotheses for these two profile variables. Hence, there are significant difference on the academic performance of STE learners when they are grouped according to grade level and sex. Appendix I and Appendix J proves these by revealing that STE Grade 10 learner garnered a higher mean score compared to their Grade 9 counter parts and Female STE learners attained a higher mean score that their male counterparts.

Differences on the Level of Digital Skills of STE Learners in Subic National High School

At α =.05, it was hypothesized in this study that the involved profile variables of the STE learners have influence their attitude towards science in terms of normality of scientist, enjoyment in science, career interest in science, teacher influence and gender bias. Table 17 presents the analyses of variances on attitude towards Science of STE learners as summarized from Appendix F.1 to Appendix F.5.

Table 17 ANOVA on Attitude of STE Learners towards Science

Profile Variables	Normality of Scientist		Enjoyment in Science		Career Interest		Safety		Problem Solving	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Grade Level *(df=1, 42)*	.134	.716	.415	.523	3.164	.083	2.618	.113	.430	.516
Sex *(df=1, 42)*	.077	.782	.660	.421	2.553	.118	3.479	.069	.565	.423
Number of Siblings	1.468	.238	.639	.594	1.283	.293	.321	.810	1.387	.261
Monthly Family Income *(df=3, 40)*	.652	.586	.585	.628	.135	.938	.639	.595	.631	.599

It can be seen on Table 17 that none of the profile variables influence any variation on the attitude of the STE learners towards science in terms of normality of scientist, enjoyment in science, career interest in science, teacher influence and gender bias. This means that the STE learners share the same attitude towards science regardless of their grade levels, their sex groups, the number of siblings they have and the monthly income of their families.

Relationship between Level of Digitals Skills and Level of Performance and Attitude towards Science

This study hypothesized the relationship between the level of digitals skills and level of performance and attitude towards science. Table 18 shows the summarized correlation between the three mentioned variables.

Table 18 Correlation between the Level of Digitals Skills and Level of Performance and Attitude towards Science

Digital Skills	Coefficients	Attitude Towards Science					Level of Performance
		Normality of Science	Enjoyment in Science	Career Interest in Science	Teacher Influence	Gender Bias	
Competence Area	r	-.109	-.105	-.126	.239	-.270	-.017
	Sig. (2-tailed)	.462	.500	.416	.118	.077	.914
	N	44	44	44	44	44	44
Communication	r	.341*	.394**	.353*	.366*	.241	.323*
	Sig. (2-tailed)	.024	.008	.019	.014	.115	.033

	N	44	44	44	44	44	44
Content Creation	r	.341*	.532**	.244	.335*	.427**	.302*
	Sig. (2-tailed)	.024	.000	.110	.026	.004	.047
	N	44	44	44	44	44	44
Safety	r	.481**	.407**	.465**	.351*	.353*	.034
	Sig. (2-tailed)	.001	.006	..001	.019	.019	.824
	N	44	44	44	44	44	44
Problem Solving	r	.373*	.484**	.159	.244	.481**	.277
	Sig. (2-tailed)	.013	.001	.302	.110	.001	.069
	N	44	44	44	44	44	44

. Correlation is significant at the 0.05 level (2-tailed)

*** Correlation is significant at the 0.01 level (2-tailed)*

Normality of Scientist have low positive correlation with Communication (r=.341), Content Creation (r=.341), and Problem Solving (r=.373) that are all significant at .05 level and has a moderated positive correlation with Safety (r=.481), Security (r=.597 significant at .01 level, hence, positive relationships.

Enjoyment in Science has low positive correlation with Communication (r=.394) and a moderate positive correlation with Content Creation (r=.532), Safety (r=.407) and Problem Solving (r=.484) that are all significant at .01 level, hence, positive relationships.

Career Interest has a low positive correlation with Communication (r=.394) that is significant at .05 level and a moderate positive correlation with Safety (r=.465) that is significant at .01 level, hence, positive relationships.

Teacher Influence has low positive correlation with Communication (r=.366), Content Creation (r=.335), and Safety (r=.351) that are all significant at .05 level, hence, positive relationships.

Gender Bias have low positive correlation with Safety (r=.353) significant at .05 level and have a moderate positive correlation with Content Creation (r=.427) and Problem Solving (r=.481) which are both significant at .01 level, hence, positive relationships.

Academic Performance has low positive correlation with Communication (r=.323) and Content Creation (r=.302) that are both significant at .05 level hence, positive relationships.

From all the results of the correlations, it can be gleaned that Communication has a positive relationship with the attitude towards science and the level of academic performance of the STE Learners. They need the skills to find multiple solutions, solve unfamiliar problems, and transfer knowledge to new situations (Barak, 2018)

Conclusion

After the investigation on the digital skills on the academic performance and attitude towards science of the grade 9 and 10 STE learners in Subic National High School in the new normal. and from the findings of the study, the researcher draws the following conclusions:

First, a typical STE learner in Subic National High School is a Grade 10, female students with one sibling and belongs to a family that earns a monthly income that is below the minimum requirement for an average family.

Second, the STE learners have a good level of digital skills in terms of competence area, content creation and problem solving but they have an excellent level of digital skills in terms of communication and safety.

Third, the STE learners had attained an average mastery level of academic performance in science.

Fourth, the STE learners agree to have a positive attitude towards science all in terms of normality of scientist, enjoyment in science, career interest, teacher influence and gender bias.

Fifth, male group of STE learners have higher level of skills in competence area and STE learners with greater number of siblings showed to have a higher level of skills in communication. the grade levels and sex of STE learners have influence in their differences in their academic performance in science. Higher level female STE student performed better in science that their counterparts. Consequently, none of none of the profile variables of the STE learners influence any variation on the attitude of the STE learners towards science.

Sixth, communication has a great association with the digital skills and academic performance of STE learners in science, at least in this new normal.

Recommendation

From the findings of this study and the conclusions drawn, the following actions are highly recommended,

1. It is recommended to identify other profile variables of STE learners that may have influences on their acquisition of digital skills and their attitude towards science.
2. The teachers and the school management Subic National High School may have to strengthen their enhancement activities in improving the digital skills of the STE Learners.
3. STE learners may have to strive for a higher level of performance in science to reach the mastered level.
4. The schools and teachers may have to investigate the communication curriculum of the STE learners as this is the sole digital skill that influences the attitude towards science and their level of academic performance.
5. The relationships established on this study may be used for further research concerning other grade levels of STE learners and other subject matters maybe.
6. A follow-up study may be conducted to validate the results of this research.

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