Research Preparation for Students of Alternative Learning Systems

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Abstract: *This study investigates the research readiness of Alternative Learning System ALS senior high school students at Bulan National High School for the 2023 - 2024 school year. Using a mixed - method approach, 72 students were assessed using Lacson's Research Skill Scale to evaluate their abilities in problem conceptualization, research methods, data analysis, and writing reporting results. Follow - up interviews provided deeper insights into the underlying factors affecting readiness. The findings revealed moderate readiness overall, with variations across different skill sets. Key challenges included concept mapping, question formulation, information literacy, and statistical analysis, influenced by factors such as work - life balance and internet connectivity. To address these gaps, a research toolkit with lesson exemplars is proposed to enhance the research capabilities of ALS students.*

Keywords: Alternative Learning System, Senior High School, ALS students, Research readiness, Lesson Exemplars

1. Introduction

Research has become a collaborative endeavor across disciplines. It has evolved from simply transmitting knowledge to creating 21st century learners in the educational landscape. It is stipulated by Gregorski (2023), that research is what drives humanity forward to understanding the world around us and answering life's biggest questions.

Acquiring 21st century skills require completing a core set of academic subjects. One such academic subject is research. Research in secondary education is an integral part of the curriculum. It is both a rewarding and challenging course. In the formal senior high school setting of the Philippines, it is common to see students struggling to meet the research subject requirements every semester, which involves presenting a research study on their chosen topic. As a subject and a method of learning at various educational levels, research aims to provide students with opportunities to improve their critical thinking, problem - solving, and communication skills. The goal of research is to allow students to develop and publish knowledge in their various sectors of interest, as well as to make them skilled practical researchers and problem solvers in the community and personally improve individuals (Fischer et al., 2014; Walsh & Sattes, 2017).

On another side of the spectrum, DepEd and its partners have continuously intensified Alternative Learning System (ALS) to provide Out - of - school children, youth, and adults (OSCYAs) a second chance at completing their basic education. Between 2016 and 2021, almost 4.2 million OSCYAs registered in ALS were able to continue studying in a way appropriate to their preferences and circumstances, achieving their goals of enhancing their quality of life and becoming active members of society (UNICEF, 2022).

These numbers, however, were invalidated as previous studies discovered that ALS learners are not yet prepared to tackle the globalized world since their attainment of the required 21st - century abilities is poor (Tindowen et al.,

2017). Furthermore, only 9.1% of ALS graduates participating in tertiary education are college ready in terms of study orientation and lack the behaviors required for effective learning, such as being participative, independent, and accountable in their education. (Mamba et al., 2021).

In response to these identified needs, the Department of Education implemented the ALS Senior High School (ALS SHS) program under R. A.11510 or the Implementing rules and regulations of the ALS Act. This program aims to provide basic education to the "deprived, depressed, and underserved" (DDUs) Filipinos (Arzadon & Nato, 2015; Lua, 2020). ALS Senior High School functions as a parallel of formal senior high school, offering similar opportunities and preparing students for the four exits of the basic education program. Like their formal SHS counterparts, ALS SHS students are expected to develop 21st century skills and engage with research subjects as part of their curriculum.

Given the findings of studies such as of Tindowen et al. (2017) and Mamba et al. (2021), there is an imminent need for ALS learners to develop 21st - century skills and study orientation to succeed in the globalized world and in tertiary education. One way for ALS learners to develop these skills is through research. Research is an essential skill that all students, including ALS learners, must master. Conducting research promotes critical thinking, enhances problem - solving abilities, improves writing skills, fosters creativity, and increases knowledge and understanding of a topic. Through research, ALS learners can develop the skills necessary to tackle the challenges of the modern world, including the ability to analyze, interpret, and evaluate information, as well as to think creatively and come up with innovative solutions to problems. Research also helps students develop consistent study habits and behaviors, such as being participative, independent, and accountable in their education, which are crucial for effective learning. By mastering research skills, ALS learners can become college - ready and better prepared for the next step in their lives. The ALS SHS program provides an excellent opportunity for ALS

learners to develop these skills and become successful in their academic and professional pursuits.

A pioneer in the implementation of ALS SHS in the Schools Division of Sorsogon, Bulan National High School has seen a significant enrollment increase with an average of 500 new students each year. A prominent offering within the school's ALS is its SHS equivalent, which comprises roughly half of the total ALS enrollees. Launched in 2021, the program is now in its third year of implementation.

ALS SHS caters to students from diverse backgrounds and offers various learning modalities including face - to - face classes and distance learning utilizing the Hybrid Curriculum for ALS SHS. In terms of workforce, only 6 ALS teachers are assigned to handle all 6 learning strands (LS) mirroring the subject areas found in formal SHS. This means each teacher might be responsible for a wide range of subjects within a single strand, identical to the formal system's structure. One such strand is Learning strand 2: Scientific and Critical Thinking Skills. This strand incorporates science subjects and research with the latter being a crucial aspect of the SHS experience for students.

Given the importance of research skills and the potential limitations due to teacher workload, the researcher found it imperative to assess the research readiness of ALS senior high school students to provide a clearer picture for the educators to identify the areas of strengths and weaknesses and tailor instruction to meet the needs of each student.

This study investigates the readiness and attitude of ALS senior high school in research enrolled in the ALS SHS program specifically offered at Bulan National High School, a big school in the division. Situated in the Población of the Municipality of Bulan, BNHS has a thriving ALS Facility with over 500 ALS students enrolled in diverse learning modality for Balik - Paaralan Out - of - school youth (BP - OSA), grade 11 and 12. ALS enrollees are composed of individuals from the different municipalities of the province of Sorsogon, who are currently in the province as well as those working students outside Bicol region and the country. The learning delivery model of ALS SHS is blended with congested students in face - to - face, modular, and online. ALS SHS of the school ponders the recognition of prior learning (RPL) as well as what learner's wish to learn competencies (what students identified in their Individual Learning Agreement or ILA). However, ALS SHS also follows the Hybrid ALS Senior high school curriculum that was derived from the Kto12 Curriculum designed by merging competencies that are identified to address the necessary competencies needed by an ALS SHS student.

2. Methodology

The study used mixed - method research specifically the explanatory sequential approach. This approach is a two - phase design in which quantitative data is collected and evaluated first, followed by qualitative data based on the quantitative results (Creswell, 2018).

The Samples
The primary respondents are 72 Grade 12 ALS SHS students enrolled in the Bulan National High School ALS program for the 2023 - 2024 school year. The grade level was chosen as they are the only class that has already undergone research subjects in the ALS Program. Out of the total number of 72 who were surveyed on the first phase, only 10 students were purposively chosen to be questioned for the second phase. The selection was primarily based on their enrollment status, age, civil status, location, occupation, learning modality, and their willingness to engage in the study. In Paper Confidentiality, students were assured that their true names would not be exposed in the paper, and pseudonyms were used instead to preserve their anonymity.

The Instrument
The preliminary instrument used in this study to determine the readiness for research is a survey questionnaire adopted from the Research Skill Scale (RSS) developed by Lacson (2022) (Appendix B). The researcher sought permission from original author of the scale prior the conduct of the study. Exploratory factor analysis to refine the research instrument and Cronbach's alpha reliability analyses with 0.968 rating were already employed by Lacson (2022), to establish the validity and reliability of the scale. The questionnaire was administered in the present study through paper - and - pencil tests for 52 face - to - face and modular students done in the school while 20 online class students opted for the online surveys using Microsoft Forms.

Data Analysis Procedure

The research skills readiness of ALS Students was extracted from quantitative data of the Research Skills Scale (RSS) of Lacson (2022). The RSS was administered to collect information from respondents in staggered schedules for both paper and pen and online survey. The researcher analyzed the collected responses from the adopted Research Skill Scale using descriptive statistics, particularly in obtaining the frequency and percentage. The tallied responses were calculated to get the weighted mean as basis for interpretation using the scale below.
Description Scale Interpretation
Certainly True 2.50 – 3.00 Ready
Somewhat True 1.50 – 2.49 Moderately Ready
Generally False 1.00 – 1.49 Not Ready

To get its qualitative interpretations, the researcher provided open - ended questions derived from the findings of the RSS. Consecutive face - to - face unstructured interviews were conducted with the 10 respondents.

3. Results and Discussion

The gathered data were analysed and interpreted from the respondents of the study. These are also presented with the aid of tables which are sequentially arranged to answer the problems of the study. The data is categorized into three phases on which the first phase was presented and analyzed following: (1.) The research readiness of ALS learners among, a. Problem Conceptualization, b. Research methods and data analysis, and c. Writing and reporting of results.

a) Problem Conceptualizations

Table 2A shows a total mean average of 2.43 with a verbal interpretation of moderately ready. This revealed that the 72 respondents are somewhat confident on their research skills on conceptualizing a research topic. Out of 12 indicators, only 3 have been interpreted as 'ready' while the rest are 'moderately ready' with mean average ranging from 2.15 to 2.60.

The statement with the highest rating of 2.60 is item 10, "I can use the main ideas obtained from the information researched to support my topic". This statement garnered a "ready" rating, which indicates that students have high confidence in their ability to utilize information to support their topic.

From the unstructured interview, students have given their effective approach to gather related data for their research topic. The approach of Mia is stated below:

(…*I took notes and highlight the main idea of what related literature I have read on my phone*…)

2A. ALS Students Readiness on Problem Conceptualization

S. No.	Indicator	Weighted Mean	Description
1	I can indicate the scope and delimitation of my research	**2.55**	**Ready**
2	If confronted by question/ problem, I can see it as opportunity to do research	2.46	Moderately Ready
3	I can identify and ask useful, challenging questions. I am always curious	2.15	Moderately Ready
4	I can formulate my research topic/ problem based on related literatures and other sources	2.45	Moderately Ready
5	I can write a research title.	**2.56**	**Ready**
6	I can create mind or concept mapping of my research topic/ problem	2.33	Moderately Ready
7	I can generate research questions based on the topic/ problem	2.37	Moderately Ready
8	I can justify the reasons for conducting the research.	2.43	Moderately Ready
9	I can gather information about my research topic through various means (e.g. electronic media, images, audio and video)	2.40	Moderately Ready
10	I can use main ideas obtained from the information researched to support my topic	**2.60**	**Ready**
11	I can combine the main ideas from one source or more to form a new idea	2.38	Moderately Ready
12	I can observe and collect necessary data that can support my problem	2.49	Moderately Ready
	Overall Weighted Mean	2.43	Moderately Ready

Her response indicates she can filter out unnecessary details and focus only on the important information of what she had read. This suggests that ALS students have an active reading strategy of notetaking and highlighting key ideas to find related topic. Finding related sources, require ample amount

of reading. Therefore, it needs to be dedicated with a lot of time to ensure needed information is extracted and used correctly.

The first statement, "I can identify the scope and delimitation of my study" is the third and last indicator with a "ready" rating. This suggests that students are confident on indicating the scope and delimitation of their research. Defining the scope and delimitation is the foundation of a strong research. It creates a focused research plan that maximizes the effectiveness and efficiency of your investigation. It is a first step in research that 2.55 mean average of ALS student felt very assured to accomplish. According to Akanle et al. (2020), The scope of the research makes it manageable, optimal and SMART. Determining it in the earliest stage of conceptualization is crucial as it makes research process focused as well as clearly determine the financing and accounting aspects easy and accountable. A good research scope represents the researcher's competence, expertise, and integrity more established. Intimately linked to the scope, the Delimitation of the study is a more narrowed - down approach of the exclusion of the latter. A common misconception on this, even in postgraduate studies, is that most research is too ambiguous and try to cover the general areas of their topic. There may be research questions suggested in the design but failed to be addressed. This in turn makes the research difficult to manage and steering the study to be weakened. (Trinity Washington University, 2014).

It is also worth noting indicator 3: "I can identify and ask useful, challenging questions. " "I am always curious" received a "moderately ready" rating with the lowest mean of 2.15 from respondents. This implies that students are somewhat confident in their ability to identify a confusing topic and ask useful challenging questions. Yet, creating the questions they encounter during confusing parts in the research process might be a challenging task.

Most students feel they are not completely capable of formulating questions or ask for clarification when they see a confusing part of the research process. Majority of them were only doing what are delegated to them, without questions. When Liam was asked why most ALS students felt less comfortable with asking questions, he said: (…*No time…busy with work…)].*

What Liam encountered as a working student suggests that his busyness leads to not pursuing the topic he is curious about or ask further questions. Student responses such as Liam's are consistent with the study findings of Butcher and Rose - Adams (2015) when they point out that part - time students are in a state of time poverty where they balance school, job, and personal life. These multiple demands are frequently considered as "non - negotiable, " placing ongoing strain on the student's time management abilities and directly hinders them for in - depth research and studying.

Another response given by Ava stated her lack of motivation to simply continue. [(…*I get lazy… I have chores to tend to*…)].

As a mother of elementary school kids, Ava declares she lack the motivation to continue seeking further information when

she met with a topic, she is curious about. Her experience suggests the adult learners' skills on the motivation to pursue information seeking, and the initiative to act on that curiosity. In an ALS class with varied backgrounds and age groups, what holds true for formal school teenage students may not apply to ALS students. This distinction was first demonstrated by Rossing and Long's 1981 study, which found that adult learners are less motivated by curiosity than teenagers. This distinction is because adult learners tend to prioritize the value and practicality of information ("need to know") over the mere interest in the material ("want to know"). This was supported by the article of Stoltz (2024) where he highlighted how adults often prefer practical applications of knowledge, aligning with the "need to know" emphasis observed in Rossing's study.

Another notable statement with a low rating of 2.33 is indicator 6, "I can create mind or concept mapping of my research topic/problem". This indicates that a significant portion of the ALS students do not view themselves as confident in using concept maps on their research topics. This further supports the previous students who do not see themselves comfortable doing tasks they found challenging.
While the study of Conceição et al. (2017) highlighted the benefits of using concept mapping for research, applying it can be challenging. For example, Sophia described difficulty due to groupmate absenteeism during concept mapping sessions. […*my groupmates were always not around when we were conceptualizing... We are often not complete when we have meetings*…].

The experience of Sophia with her groupmates absences when they are conceptualizing may suggest that the other students have not experienced creating concept maps of their research on their own. This highlights a potential barrier for students who might benefit from concept mapping but struggle with group dynamics or unreliable participation. Absenteeism among ALS students is not new. As stipulated from the previous responses of Liam and Ava, absenteeism could be another factor contributing to a lack of confidence in concept mapping. Without consistent group participation, students might miss out on crucial collaborative learning experiences that can enhance their concept mapping skills.

b) Research Methods and Data Analysis.
Table 2B shows 'moderate readiness' in the ability of ALS students during the middle processes of their research study. This suggests that students in ALS are somewhat confident level on their readiness for research methods and Data analysis.

Before delving into interpreting the findings, establishing the significance of research methods and data analysis is a crucial stage that must be carefully addressed. This involves the translation of a research question into a well - defined plan for collecting and interpreting data.

The highest scored indicators on Research Methods and Data Analysis for this group were Indicators 2, 5, and 9 with mean averages of 2.74, 2.71 and 2.71, respectively. This implies that ALS students are very assured of their ability to adhere to ethical standards when writing related literature (2), accurately evaluate the content of other sources mentioned by writers (5), and plan and design the research process (9).
Adherence to ethical writing is an important aspect for academic writing such as research papers. This includes proper citation to avoid plagiarism which is what the 2nd statement in the survey, "I follow ethical standards in writing related literature" is pertaining to. The researcher asked questions related to how the students ensured their writing is original and properly cited sources.

2B. ALS Students Readiness on Research Methods and Data Analysis

Indicators	Weighted Mean	Description
1. I can elaborate key variables in my research topic.	2.49	Moderately Ready
2. I follow ethical standards in writing related literature	**2.74**	**Ready**
3. I can identify and access appropriate bibliographical resources, archives, and other sources of relevant information	1.94	Moderately Ready
4. I can assess the reliability, reputation, currency, authority, and relevance of sources.	2.57	Ready
5. I can evaluate the accuracy of the content by reading other sources mentioned by the writer.	**2.71**	Ready
6. When searching for information, I can arrange each item systematically.	2.51	Ready
7. I can write my references in any citation and referencing formats or styles.	2.27	Moderately Ready
8. I can formulate a conceptual framework of my research.	2.30	Moderately Ready
9. I can plan and design the research process of a research topic.	**2.71**	**Ready**
10. I can determine the appropriate research design or method of my research.	2.35	Moderately Ready
11. I can justify the principles and experimental techniques used in own research.	2.49	Moderately Ready
12. I can select or develop a research instrument to gather necessary data for my research.	2.44	Moderately Ready
13. I understand and apply the relevant codes of conduct and guidelines for the ethical conduct of research; seeks advice from supervisor.	2.60	Ready
14. I have basic understanding of legal requirements surrounding research	2.09	Moderately Ready
15. I can determine which statistical tool or method of analysis to use for my research.	2.34	Moderately Ready
16. I can perform common statistical tools in any statistical applications like MS Excel, SPSS, Minitab, or others app.	1.96	Moderately Ready
17. I can analyze and interpret the results of my statistical treatment or method analysis.	2.26	Moderately Ready
18. I can evaluate and systematically organize the data I have gathered.	**2.63**	Ready
Overall Weighted Mean	**2.41**	Moderately Ready

In response, most students have the same answer as Ashley who admitted using an online paraphrasing tool. Ashley answered: [...*used quillbot...*]. It is found that ALS students may hold high regard in writing their related literature since they use available artificial intelligence - powered paraphrasing tools online. According to the study of Kurniati and Fithriani (2022) about the utilization of Quillbot, three advantages emerged: improving students' positive attitudes toward writing, offering a range of user - friendly writing tools, and supporting students' language development. Moreover, they emphasized that using Quillbot, especially in academic writing, is important for producing high - caliber student writing. As ALS Students such as Ashley utilize online paraphrasing tools, they encounter these advantages and in return become confident in their ability to avoid unethical practices such as plagiarism. However, the study of Kurniati and Fithriani (2022) is only focused on student perception and more research is still necessary determine the impact of these paraphrasing tools to the quality of writing. It is still important that students gain the skill to effectively paraphrase text without the use of any tools.

The response of Hillary signifies the concern of over - reliance to paraphrasing tools. She added: [...*I don't copy - paste the result (quillbot result) ...*].

The response of Hillary also suggests that she is aware of the content produced by the paraphrasing tool. Her response denotes an understanding of the disadvantages of the tool especially if it does not give her preferred result. She also mentioned editing the sentences to make it appropriate for her sentences before using. To date, the use of such tools is not prohibited. However, it also needs to be used wisely. The study of Rogerson and McCarthy (2017) analyzed the use of paraphrasing tools and concluded that they do not oppose the use of such but rather to extend the education on teaching paraphrasing skills (without relying on tools).
 Emma supported the responses of Ashley and Hillary when she further stated the importance of citing the sources. [...*it should be cited... ...original writers should be acknowledged...*].

As she mentioned the need to cite the reference and acknowledge the original authors of the cited data, Emma demonstrates an understanding of ethical research conduct. Her answer also expresses her knowledge of plagiarism and its consequences. However, this is a common overlooked mistake of most high school students as stipulated in the study of Khrismawan & Widiati (2013). Their study emphasizes the difficulties students have in effectively paraphrasing, regardless of their comprehension of the idea.

Consequently, students were asked how they critically assess the credibility of the sources they found. Most of them replied that they use credible websites to search relevant literature instructed by their research teacher as well as searched tutorials online on best websites for research. Hillary stated: [...*google scholar and ERIC...*]

Hillary presented the use of credible websites and search engines as well as the practical ability to search data from other sources. However, critical assessment is beyond the source type. To fully evaluate a source, researchers should consider the author's expertise, the publication date to ensure information is accurate, and any potential biases present in the source. This applies not only to the initial sources found, but also to the references that those sources provide.

The 10th statement "I can plan and design the research process of a research topic", on the other hand, pertains to the ability of students to understand the research process and plan and design its execution. The planning and designing stage of the research process is a crucial part and should therefore be well - planned. Students were asked what specific strategy they had used to finish their research study. Chloe emphasized the importance of delegating tasks for each member for improved efficiency. [...*we delegate tasks (for each member) to finish faster...*].

Chloe's response highlights task delegation as a time management strategy. It also reinforces the importance of a well - defined research plan. A clear plan facilitates effective delegation by outlining specific tasks and deadlines for each member. Additionally, strong planning fosters collaboration during the planning stage, allowing the group to discuss tasks, delegate responsibilities, and establish a timeline that ensures efficient conduct of the research. The study of Riisgaard, et al. (2016) supports the claim of Chloe on the effectiveness of task delegation. They stated that task delegation increases the work autonomy and in turn improves job satisfaction.

Additionally, statement 10 states the ability to determine the appropriate research design of their research questions. However, most students tend to be confused on this aspect.

According to Tully (2014), the research question is a deciding factor on what research design is going to be used. Correctly choosing the design for a research study is a vital part before proceeding with any research. This is to ensure clear direction of each process in the research methodology. Despite the readiness rating to statement 10, students are less confident in choosing the research design if they have not formulated the correct questions. When asked how they choose the research design for their study most answered having difficulties in choosing the right one, Mia responded: [...*I'm not sure if I picked what is appropriate for my SOP...*]

Mia's response indicates confusion on what design should be used for her research. This suggests a potential limitation of students to plan and design the research process, particularly, in the selecting appropriate research design for each research questions.

On the contrary, many of the statements under this category require areas for improvement.3 statements garnering the lowest ratings and classified as "moderately ready" were presented in the discussion that follows. These are statements 3, 14, and 16 with 1.94, 1.96 and 2.09, respectively. These statements focus on skills of students regarding the access and identification of resources, use of statistical tools, and legal understanding.

The third statement, "I can identify and access appropriate bibliographical resources, archives, and other sources of relevant information (* including web - based resources, primary sources and repositories) " signals an inferior

perception of their ability to identify and access appropriate bibliographical resources. One of the students, Ava gave her reason why they took too long to finish the Chapter II or the Related Literature Chapter of their study when they were working on their coursework in Practical Research II. [...*I have no load for data (access on the internet), and I need to find strong signal to be able to search the internet*...]

She said that they often do not have sufficient funding for internet connectivity on their phones to be able to search for references online. She further added that finding a strong signal is a challenging task. As a housewife of a fisherman and living in the fisherfolk community of their area surrounded by the sea and mountain, she often struggles on making ends meet from time to time. Ava stated that they often have weak signal or can hardly connect to the internet in their area. What she felt was also experienced by 91% of Filipinos surveyed by Rappler in 2022 who wish internet infrastructures improve nationally. The study of Salac and Kim et. al. (2016) wanted to explore the cause of this in 2016 and found out that Philippines only has a low average internet speed of 2.8 mbps which is significantly lower than other Asian countries at 7.4 mbps. These figures ranked the country 104th out of 160 countries in internet connectivity. Regardless, the cost of internet connectivity remains high in the country. Salac and his colleagues found out that the main cause of the problem lies in lack of competition in the Internet Service Provider market.

Emma also added her difficulties in searching the internet for relevant sources. She stated: [...*it is overwhelming because there are many options (sources online)* ...]

She experienced being overwhelmed with the available online sources they could use. Her statement resonated with the 2014 study of Amegashie and Ankamah (2020) where they explored the deteriorating information literacy skills among university students. It highlights the challenges of navigating the vast amount of online information and identifying credible sources. This aligns with the low perception in indicator 15, suggesting students might struggle with effective information access and evaluation. Yan (2021) also explored the challenges of information overload in the digital age. He found out that Students might struggle to identify credible and relevant sources amidst the vast amount of redundant information available online.

Moreover, when asked if they had difficulty in writing any area in their paper, Sophia added: [...*formats in the references are confusing*...].

As someone who is in a class schedule that only meet every Tuesdays at the barangay hall of their community, she asserted that the formats given by the research teacher is confusing for her. Sophia's confusion with reference formatting suggests a lack of understanding in proper citation practices. The limited meeting hinders in - person support to students from the teacher in this set - up. Her limited class time and uncertainty with reference indicate to a circumstance were depending only on classroom education may be insufficient.

Her statement also poses a question on academic integrity according to Marsh and Campion in 2018. Traditionally, the responsibility for the misuse of citations and referencing is solely falling on the students. Marsh and his colleagues highlighted that there should be an equal shared responsibility between the student and instructor.

The 16th statement, "I can perform common statistical tools in any statistical applications like MS Excel, SPSS, Minitab, or others app. " Indicated a moderate readiness of 1.96 which suggests that students are not adept with their ability to use statistical tools.

A significant number of students checked the Generally false column for specific questions on Statistical tools used such as statement 16. When asked why so, some of them stated that they were not able to use tools personally and are not quite familiar with them. [...*we have not tried them yet, we don't own a computer*...].

Liam asserted the need for appropriate devices to be able to practice statistical tools. His statement is true with other ALS students wherein most of their personal technological devices cannot be used for tasks such as Excel and basic statistics. Moreover, the challenge may also be attributed to a deficiency in technological facilities within the ALS program which hinders proper demonstration of statistical tools and is the cause why the discussion of this topic is only at theory level. His predicament directly reflects the study of Crook et al. (2015) when they conducted an evaluation of 1: 1 Laptop per student and student attainment in Senior High School Sciences. Their study features that since there has been an increase in simulations and spreadsheets in using the device, students who have access to laptops in a 1: 1 ratio showed statistically significant improvements in exam scores compared to those who do not.

When asked if they have seen their peers using the statistical tools such as excel, they have agreed to observing Ashley and Hillary before used excel in getting the average and standard deviations. However, since most of them lack the necessary device for the tools such as laptop computer or phones, they opted to conduct manual tallying and computing descriptive statistics. Chloe answered: [...*we tallied and computed the result manually*...]

Students such as Chloe tend to do manual computation in interpretation of statistical data. They struggle with the availability of technological devices that greatly show diversity in learning. What Chloe and Liam experienced highlights the digital divide. The "digital divide" is the distinction between those who possess adequate technological expertise and access and those who don't (Moore, et al., [2019]). Moore and his colleagues also found out that digital divide is increasing the more technology is integrated in education. As most ALS students such as Chloe and Liam are considered students with underserved backgrounds, they are also most likely to experience this idea. There is a gap with their experience to their peers who invested in those technologies.

The rating on statement 14, "I have basic understanding of legal requirements surrounding research, e. g., Data

Protection Act, Freedom of Information Act," additionally, suggests that the students have low regard on their use of legal requirements for research. On a similar note—Oliver, a Barangay Kagawad in his 50s—responded in the question about why the importance of understanding of legalities surrounding research is low among his peers. He said,

[…*Many are not familiar with the laws pertaining to it… ...just like those youth who always post about someone (or something not theirs) on facebook…*)

What Oliver claimed is that most of his peers were not properly informed about the laws regarding data privacy and such. He also added that according to his observation, youth nowadays often post about someone or something without the subject's consent. His observation reflects the findings of Sales et. al (2024) who studied on the Security and Knowledge of students in using social media. According to them, there is a knowledge gap on data privacy, especially for younger audiences. This is consistent with Oliver's conclusion that his peers don't know the laws pertaining to data privacy. Oliver also inferred the lack of responsible

online behavior. Additionally, the study of Rogerson and McCarthy (2017) highlighted that students often have a limited understanding of copyright and plagiarism issues. This aligns with the low score for indicator 26, suggesting a need for improved education on research ethics and legal aspects. Moreover, Bahuguna (2019) iterated about the level of legal awareness of youth and found out that students are less likely to be knowledgeable about legalities in general.

Writing and Reporting of Results

The last category under the research skills is along writing and reporting of results. This is arguably the most crucial part of crafting the research study. Finding the results is the culmination of all the efforts made during its execution. The Result part of the research acts as the cornerstone of a study and highlights the achievement of the researcher. Due to its significance, it is vital to approach the writing and presentation process with necessary caution. Table 2C shows the moderate readiness on writing and reporting of results.

2C. ALS Students Readiness on Writing and reporting of results.

Indicators	Weighted Mean	Description
1. I have excellent knowledge of language(s) appropriate for research, including technical language.	2.50	Ready
2. I can understand, interpret, create, and communicate appropriately within an academic context.	2.58	Ready
3. I can prepare grammatically and syntactically correct content for presentations.	2.21	Moderately Ready
4. I can communicate research results clearly.	2.42	Moderately Ready
5. I can construct my thesis statement clearly.	2.13	Moderately Ready
6. I can organize my thoughts and ideas clearly and prepare a manuscript of my research	2.45	Moderately Ready
7. I can construct my own conclusion based on the information gathered.	2.52	Ready
8. I can communicate orally the results of my research process.	2.35	Moderately Ready
Overall Weighted Mean	**2.40**	**Moderately Ready**

The highest rated indicators in the last category of the RSS are indicators 2 (2.58), 7 (2.50), and 1 (2.70) respectively. These findings suggest that more than half of the population of the students have a believed on their ability to understand, interpret, create, and appropriately communicate their findings, write in technical language, and construct the conclusion based on the gathered information.

The 1st and 2nd statement, "I have excellent knowledge of language (s) appropriate for research, including technical language"; and "I can understand, interpret, create, and communicate appropriately within an academic context", showed that many students believe they are proficient in understanding, interpreting, creating, and communicating in academic settings such as writing their chapter on discussion of results. Furthermore, they regard their language skills, particularly in the research and technical domains, as remarkable.

When Mia was asked if she did a good job in writing her research manuscript, she said:
[…*I can understand English but struggles in speaking it… it is easier to write than to speak (English) ...]*

Mia's response revealed her confidence in understanding the English language as well as writing better in it compared to speaking. Albeit the potential limitations of being bias, the data provided by Mia can be interpreted as indicators of self - confidence in student's ability to handle English writing tasks such as research writing. It is a factor that is emphasized by Phillips and Russel in 1994 as an attribution of an effective researcher.

Mia's trust in her writing abilities is consistent with research indicating a favorable relationship between self - confidence and research effectiveness (Phillips & Russell, 1994). However, her assertion that writing is simpler than speaking English implies a potential constraint in spoken language proficiency, which could be a barrier in specific research activities. Furthermore, Soiferman (2014) found in her study that students are overconfident in their writing skills but do not reflect on their actual abilities. As a result, while Mia's confidence is encouraging, a more thorough evaluation is required to identify her overall research readiness and address any potential restrictions to ensure good study outcomes.

Moreover, the 2.52 weighted mean of the 7th statement, "I can construct own conclusions based on the information

gathered", adds to the top list of confidence. This suggests that the students view themselves as highly capable in formulating the conclusion of their study from the findings. Another set of statements were explored to present the least rated indicators under the Writing and Reporting of results category. These are statements 8, 3, and 5, discussed in descending weighted mean order. The ALS students had asserted to be inferior to these research skills.

Mia's response on the previous statement could also be attributed to the 8th statement, "I can communicate orally the results of my research process", which garnered the third lowest rating of 2.38 as one of their weaker areas. Her statement exemplifies student confidence in writing but shows limited English - speaking capabilities. This implies a potential gap between writing and speaking skills that some of the student's face.

Consequently, the actual final steps of the research process are the creation of the manuscript and its presentation. This is indicated in the 3rd statement under this category, "I can prepare grammatically and syntactically correct content for presentations". These are significantly important outputs that conclude the research study as this is making the research known to the public. In institutions it is a momentous event as well as a vital educational requirement to defend your paper through an audience.

When asked how they prepare themselves for their title defense, Mia exclaimed: [...*we are practicing constantly... ...it is very frightening (before defense)* ...]

The response of Mia suggests a need for practice before presenting and defending their study. Practicing is a well - known method to improve presentation skills. She also added that the defense itself is a frightening task. The relationship between practice and presentation anxiety as connected by Mia demonstrates that the more prepared you feel, the more confident you will be during the defense. Amalia and Ma'mun (2020) supported this when they collected factors of anxiety in oral presentations. They have concluded that the best way to eliminate anxiety is to do repeated rehearsals.

Subsequently, writing the research paper or manuscript is a factor of its own. The 2.21 moderate confidence of the students in this area highlights their challenges in completing this output. Most of the students believed they had analyzed their acquired data. However, interpreting information out of it to write in the manuscript is a harrowing task.

Additionally, the challenges faced by ALS students in the preparation of presentations after the research holds another issue. All 10 students were asked what specific challenges they faced before their thesis defense at the end of the semester. Almost all answered about creating the PowerPoint presentation used for the defense. Liam and Sophia supported this by stating a few reasons. [...*I was absent during discussion*...– Liam]

Liam stated that he was absent from class during the discussion on how to create the presentation for their research defense, that is why he was not familiar with the format.

Given the nature of the job of Liam, being absent in class discussions led him to miss various educational milestones. Moreover, Sophia also Exclaimed, [...*the teaching was rushed*...]. Sophia's statement describes why deep understanding and familiarization was not possible in her case. This may be because the classes Sophia was in were at a community learning center with very minimal class meetings as compared to other modalities.

Both answers add to the findings of Hizriani et al. (2022) by identifying difficulties that students face, including preparation, topic mastery, confidence, and technical difficulties, during the thesis proposal defense. Even though Liam and Sophia had different backgrounds and schedules for classes, they still had difficulties getting together with their research teacher. Liam might find it difficult to juggle his duties as a student on Mondays and Fridays and his nightly responsibilities as a food service crew, which could lead to a drop in class attendance. On the other hand, Sophia attends lessons in the barangay halls on Tuesdays to balance her academics with her profession as a barangay health worker. These diverse duties highlight how difficult it may be to combine work and school obligations, which affects how prepared and involved students are for their academic pursuits.

Finally, the lowest - rated statement with 2.13 is the 5th statement, "I can construct my thesis statement clearly". This suggests that a significant portion of ALS students have no confidence in their ability to write the thesis statement clearly. Therefore, students were asked questions pertaining to the 5th statement, such as: if they believed they had established their thesis statement. All the respondents lacked depth in understanding the term. Students' responses such as Ava revealed that she does not know the term. [... *I do not know the term thesis statement*...].

In the 2014 study of Soiferman of the freshmen students at University of Manitoba about the prior knowledge they bring with them in writing conventions necessary for argumentative essays. She found that 67% of the students could give the definition of the term thesis statement. However, upon further observation, all of them lack depth in understanding the term. Moreover, a study conducted by Owusu and Adade - Yeboah in 2014 suggested that there should be an increased focus in second language teaching and learning, learning materials such as textbooks and educational policies to address the difficulties of students in thesis statements.

Proposed Research Toolkit: Lesson Exemplars for Alternative Learning System Senior High School

Rationale
Originated as a concept in Gestalt psychology, Lesson planning stems from the idea of learning in "wholes" rather than isolated parts. It is when the interconnectedness of activities in the lesson helps the students understand the topic. As a viable strategy as well as an essential for teachers, lesson plans provide a roadmap for instruction, ensuring teachers translate theoretical knowledge into practical classroom applications. Lesson Plans, also called lesson exemplar, is a pre - phase activity of teachers to ensure student success is gained.

Throughout history, the aim to identify what knowledge is most valuable and how to supplement it into student success has driven progressive development in the curriculum. The development of lesson plans is based on unit planning which emphasize meaningful learning experiences within a specific topic area. Differentiated perspectives developed over the years stressed out diversity in focus in creating these plans. These early approaches often detach concepts and cause disconnect in the progress in learning of students (Tanner, 2020).

While a well - established concept with proven benefits for student success, traditional lesson planning often struggles to address the unique needs of adult learners. Students typically enrolled in the ALS programs are adult learners and come from diverse backgrounds. Most of the time, traditional one - size - fits - all teaching instruction is ineffective. The diversity is significantly wide that gaining similar level of acquisition of learning is a challenge (Arzadon & Nato Jr., 2015). If not properly addressed, it is often leads to frustration and disengagement.

Moreover, the preceding sections of this study demonstrated the difficulties ALS learners experience in establishing research skills and a positive research mindset. The development of proposed lesson exemplars titled, The Research Toolkit: Lesson Exemplars for Alternative Learning System Senior High School, is specifically created to address the identified shortcomings.

The Department of Education mandates that an ALS curriculum is competency - based, flexible, and responsive to learner needs (D. O.13 s.2019). These exemplars are tailored in the Andragogical approach for adults. Each part of the exemplar directly targets the enrichment of these competencies while also supporting the diverse learning styles and background of adult learners. Each includes research - based activities and tactics that are customized to the specific learning context and needs of adult learners in the ALS program.

Utilizing the research toolkit: Lesson Exemplars for Alternative Learning System Senior High School is necessary to create a more research - ready and research - positive learning environment for ALS students. It provides a practical solution to address the challenges identifies in research and create a more research - oriented learning environment for adult learners. In hindsight, the toolkit bridges the gap between the traditional lesson exemplars and the specific needs of ALS learners.

The proposed research toolkit, titled "The research toolkit: Lesson Exemplars for ALS SHS, " is a comprehensive resource designed to address the specific needs of adult learners in the ALS Program. It aims to bridge the gap between traditional lesson plans and the unique challenges faced by this population.

The toolkit aims to address four objectives. The first is to equip ALS learners with essential research skills. The previous sections of this study emphasized that ALS students needs improvement in the various aspects of the research process. Therefore, it is important to include activities and

strategies that train students in data collection, critical analysis and interpretation, research methodology and effective communication of research findings.

Diverse factors arise with negative mindset of the ALS learners when it comes to research. Therefore, is important to engage them in practical research activities. The toolkit's second aim is to foster a positive research mindset to ALS learners. Its goal is to let students develop a sense of curiosity and probe that leads to a more research - oriented learning environment.

The third aim is to align with the DepEd mandate for a competency - based and flexible ALS curriculum. Since ALS program focuses on the specific needs of students, it is only imperative that the exemplar is designed to address just that. The activities in the toolkit directly pursue the development of key competencies outlined in the DepEd ALS Curriculum Framework (D. O.13 s.2018).

Lastly, the toolkit aims to cater to diverse learning styles of ALS learners. Coming from diverse backgrounds also suggest diverse learning styles for each student. Therefore, it is important that the toolkit addresses a variety of activities and strategies that executes varied teaching styles to be effective for adult learners.

The research toolkit draws its philosophical foundation from the Andragogical approach to adult learning. Developed by Malcolm Knowles, Andragogy recognizes that adult learners possess unique characteristics and learning preferences compared to children. Specifically, the toolkit leverages on four principles of andragogy.

Self - directed learning. Traditional lesson plans often present information in a passive manner. The research toolkit promotes self - directed learning by providing activities that encourage students to take ownership of their learning journey. This might involve setting personal learning goals related to research skills, choosing research topics that align with their interests, and independently navigating the research process with the use of toolkit as a guide. One such example of an activity in the research toolkit is Lesson Exemplar A under the Abstraction section. The students are assigned to craft their own research questions using the handouts given by the teacher.

Experience - based learning: Adult learners bring a wealth of life experiences to the classroom (or anywhere there is a learning session). The research toolkit acknowledges this valuable resource by incorporating activities that allow students to connect their prior knowledge and experiences to new research concepts. An example of this type of learning is observed in Exemplar B2, under the application section. This activity encourages students to peer review their classmate's work using the guidelines and their own understanding of previous discussions.

Problem - solving focus. Shifting the focus from rote memorization to problem - solving is a key tenet of andragogy. The research toolkit presents students with real - world scenarios or case studies that necessitate the application of research skills to solve problems or answer questions. All

throughout the lesson presented in Exemplar B5, Basic Statistics in Research, students are presented with data sets they need to analyse the information, choose appropriate statistics, and interpret results. This type of activity enhances their critical thinking and problem - solving focus.

Collaboration and Peer learning. Adult learners often value collaborative learning environments. The research toolkit encourages collaboration and peer learning through activities that involve group discussions, brainstorming sessions, and peer review of research findings. Almost all the activities in every exemplar presented are done as a group. This encourages them to hone their communication skills and value their peers' opinions as well.

By incorporating these andragogical principles, the research toolkits help empower the ALS learners to take an active role in their learning, connect new knowledge to their own experiences, and develop valuable research skills that will benefit them throughout their lives.

Lesson Exemplar for Problem Conceptualization

This lesson exemplar teaches Grade 11 students in a Practical Research course how to construct clear and focused research questions. Through engaging activities and conversations, students will learn to distinguish between researchable and non - researchable questions, grasp the features of a good research question, and create their own compelling inquiry for their chosen research topic.

Lesson Exemplar for Research Methods and Data Analysis

This three - part lesson exemplar teaches Grade 11 Practical Research students how to identify appropriate sources, differentiate between citing and synthesizing information, and create a focused research question to lead their literature study.

To start with, students brainstorm various source types (academic, online, multimedia) and analyze the value of reliability. They learn to evaluate the credibility of websites using a checklist presented in group presentations and class discussions. The idea of citing and synthesizing material is also presented in another exemplar. Students distinguish between citing one source and synthesizing information from numerous sources to generate a new understanding. Lastly, students participate in a collaborative activity in which they organize discoveries from their research notes by theme. Group discussions dive deeper, examining the significance of the findings and weighing potential limits or biases.

The multi - part lesson plan develops students' critical thinking, cooperation, and research abilities, preparing them to write a well - structured and informative literature review. Aside from exemplars focusing on the literature review, a lesson exemplar focusing on the critical notion of ethical writing in research is also proposed. Students confront real - world ethical challenges in research scenarios through a variety of engaging exercises. They investigate how these quandaries can affect data, conclusions, and, eventually, the credibility of their research writing. The lesson discusses crucial concepts such as primary versus secondary data sources. Students learn to distinguish between data they acquire (primary) and data collected from other sources (secondary).

Another lesson exemplar provides students with the basic skills needed to assess research data. It begins by piquing interest with a query regarding the everyday use of numbers. Students then investigate the idea of data analysis as a fundamental research ability. They learn about how data helps researchers grasp information by using examples such as surveys and scientific studies.

Lesson Exemplar for Writing and Reporting of Results

The content of this lesson on thesis writing walks students through the process of developing the basic components of a research report. It begins by going over ethical research techniques and distinguishing between primary and secondary data sources. Students then discuss the critical role of a thesis statement, which is a single line that summarizes their research's core argument. They use paired activities to brainstorm and refine a thesis on their selected topic.

4. Conclusion

While ALS students exhibited some strengths in their confidence on research planning, ethical considerations, and data organizations, they are not fully ready to conduct research on their own. They have difficulties in formulating research questions, navigating information overload, performing statistical analysis, crafting clear thesis statements, and preparing presentations. Therefore, the Lesson exemplars called Research Toolkit: Lesson Exemplars of Alternative Learning System Senior High School is proposed as material for instruction.

Based on the findings and conclusions, the following were recommended: The Department of Education may provide tailored courses and tutorials focusing on specific areas of research skill development identified in the study, such as framing difficult research questions and improving statistical literacy. ALS teachers may organize research symposia, poster sessions, and multidisciplinary seminars on research to highlight student projects and promote intellectual interchange to sustain the positive impression of the students towards research. The proposed Lesson Exemplars may be validated by experts and once validated, may be proposed to ALS Teachers to incorporate into existing curricula. Lastly, this study may also be replicated to further evaluate the readiness of ALS students with their academic performance and observed skills in research as supplementary findings.

Disclosure
We declare that we have no financial or material interests related to the research in this paper that could create a conflict of interest.

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