| **RESEARCH ARTICLE**

Research, Writing, and Collaborative Skills, and Research Output Quality of Senior High School Students Under the New Normal

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| **ABSTRACT**

This survey-correlational research was conducted to determine the levels of research, writing, and collaborative skills and research output quality of Senior High School students under the new normal, S.Y. 2020-2021. The participants of this study were sixty-three (63) Grade 12 students and five (5) Senior High School teachers involved in research advising, paneling, and teaching, who are currently enrolled and employed respectively in Ochando National High School in the District of New Washington. The research skills of the students were measured using a 42-item objective type researcher-made Research Skills Test. The writing skills were evaluated through an adapted Writing Skills Test and were graded using a 20-point adapted rubric. The collaborative skills were assessed using a 50-item adapted and modified Collaborative Skills Questionnaire. The research output quality was assessed through a 60-point researcher-made Research Output Quality Rubric. The data-gathering instruments were subjected to face and content validation by a panel of experts, reliability testing, and item analysis. The statistical tools used in descriptive data analyses were frequency count, mean, and standard deviation. The Analysis of Variance and Pearson r were used as inferential statistical tools to determine the significant differences and relationships among the levels of the variables of the study. All inferential tests were set at a 5% alpha level of significance. The study revealed that students had developing research skills. Students possessed developing writing skills. Students had high collaborative skills. Their research output quality was poor. There was a significant difference in research output quality among the levels of research skills of Senior High School students. There was a significant difference in research output quality among the levels of writing skills of Senior High School students. There was a significant difference in research output quality among the levels of collaborative skills of Senior High School students. There were significant relationships among research skills, writing skills, collaborative skills, and research output quality of Senior High School students.

1. Introduction

In order to cope and thrive in this modern and technologically-advanced society, all learners need the acquisition of new skills and refinement of knowledge to succeed. If the aim is to equip learners with skills needed for success in learning, career, workplace, and life, then teaching and giving them opportunities to acquire such at schools, homes, and other learning institutions, through whatever modality, are deemed essential now more than ever. Recalibrating instructions while emphasizing 21st-century skills ensure students' effective learning and thriving in this globalized and constantly changing world where learning is never-ending. Continuous honing and reinforcement of their potential must be strengthened through meaningful learning experiences in various situations for them to become skillful and competent individuals.

Recently, the COVID-19 pandemic, the most alarming public health crisis, brought about profound impacts on the education sector of most countries. UNESCO (2020) reported that it affected more than 1.2 billion learners worldwide, with more than 28 million learners in the Philippines.

With this, the Department of Education (DepEd, 2020) was forced to devise the Learning Continuity Plan (LCP) to continue providing quality, inclusive, and accessible education for every student. Included in the LCP is the adoption of the Essential Learning Competencies (MELCs), where the K to 12 curricula were streamlined. From the original 14,171 competencies, it was restructured to 5,689 MELCs. A significant reduction of 60 percent was done to it (Gonzales, 2020). Although K-12 curricula were reorganized, MELCs still promotes skills integration and application in most academic tasks of SHS subjects like data gathering, write-ups of the scientific inquiry process, project plans, collaborative research paper, and other meaningful activities.

In short, most of it still aims to improve learners' research, writing, and collaborative skills, which could be developed into major keys for the production of quality learning outputs. However, if learners would not focus on extensively improving such skills, then problems would arise.

Nonetheless, even before the adoption of the new normal in education, it has been observed that problems with these various students' skills already exist. This new normal had just added more difficulties to the teaching and learning process, and it had challenged the researcher on how to capitalize on these students' skills while making sure that they still accomplish tasks effectively and produce good quality outputs. He had grown more interested in finding answers to the questions he had in mind about whether the use of these skills under the new normal has led to a positive change or a decline in learning as compared to previous academic years.

Problems like stereotyping of research and researching as too complicated and boring became an issue. One example of this was the researcher's encounters with different learners from various schools who referred to research as their most dreaded subject and a tedious one. This led him to ponder why they fear the subject of Research and do not like researching.

Also, inexperienced students failed to have the ability to undertake higher order problem-solving and writing tasks like research and capstone projects. In fact, the authors agreed that learners' acquisition of these skills was problematic. According to Radic-Bojanic and Topalov (2013), students failed even on the surface level of properly filtering and selecting appropriate and essential information needed to systematically approach an inquiry. With this, Moore and Teter (2014) suggested that training to acquire research skills should have started at the elementary level, but Purcell et al. (2012) believed that it is better taught later in students' careers. At which point, educators must intensify the teaching of research skills to students because these are indispensable in dealing with real-life issues at school, at home, in society, and in their future workplaces.

Other issues to tackle were the observed negative perception of students towards writing and their writing skills acquisition. Students viewed writing as a challenging task because it is a complicated process that requires a combination of skills. This resulted in their experienced difficulties in acquiring such. It hindered them in clearly communicating and expressing their ideas in written form.

With this concept, Grami (2010) believed that it is indeed the most difficult language ability, while Pablo and Lasaten (2018) asserted that mastering written skills is a major challenge for learners because it requires careful thought, discipline, and mastery of the conventions of English language.

Moreover, learners' lack of writing interests, self-motivation, and teachers' use of inappropriate methodologies have negative effects on students' writing skills acquisition. With these experiences, they usually resort to avoiding the tasks missing the opportunities to develop their writing literacy and competence, and communicative skills.

Another important aspect of dealing with this was the students' practice of collaboration. Gapinski (2018) defined it as working together to achieve educational objectives. However, if not done properly results in groups' difficulty in goal attainment and accomplishment. It is broken down by independent work arising from conflicts within a group. Also, varying perspectives and the inability to recognize and accept opinions from others made collaboration unsuccessful.

It has been observed that within groups, tasks were not properly and evenly distributed, differences were not resolved and managed, and problem-solving tasks did not stimulate and engage members; that is why teamwork and collaborative skills were not honed if teachers aimed for learners to be responsible team players as soon would-be professionals, enhancement of these skills must be given emphasis because according to Reusser and Pauli (2015), it increases students' social competency, academic self-concept, learning, and knowledge retention.

These skills interplayed and affected each other in terms of ensuring the production quality of students' academic outputs. Australian Qualifications Framework Council (2013) viewed the quality of academic outputs as the characteristics of knowledge, skills, and the application of both that a student had acquired and had demonstrated as a result of learning.

In the academe, quality of output, like academic research, was always in question and subjected to scrutiny when it comes to evaluation and assessment. In fact, Benson et al. (2015) asserted that many authors are already in general consensus that the quality of outputs produced by students is declining.

Additionally, researchers argued as to what specific aspects of students' research outputs should be looked at as there are no existing specific and standardized criteria to follow in doing such. With this desire to fill this gap, the researcher believed that there is a need for the development of specific criteria in order to validly assess such.

With the researcher's observations among his Research students in the past three years, problems concerning all these aspects had been confirmed to exist. Being a Practical Research subject teacher heightened his motivation and ignited his interest in ascertaining the levels of students' research, writing, and collaborative skills and how these affected their research output quality in this completely different academic setting.

The researcher, to the best of his ability in conducting a prior investigation, found no current research involving these four aspects altogether. Most of the research he reviewed only presents either a pair or three of these variables in one. Hence, by doing so, he firmly believed that this study would be the first in the field to fill this gap and to put all these four variables into thorough scrutiny, especially since both the timeframe and environment are unique and challenging.

1.1. Research Questions
The primary aim of this study was to ascertain the research output quality of SHS students as influenced by their research, writing, and collaborative skills under the new normal during School Year 2020-2021.

Specifically, it sought to provide answers to the following questions:

1. What is the level of research skills of Senior High School students?
2. What is the level of writing skills of Senior High School students?
3. What is the level of collaborative skills of Senior High School students?
4. What is the research output quality of Senior High School students?
5. Is there a significant difference in research output quality among the levels of research skills of Senior High School students?
6. Is there a significant difference in research output quality among the levels of writing skills of Senior High School students?
7. Is there a significant difference in research output quality among the levels of collaborative skills of Senior High School students?
8. Are there significant relationships between research, writing, collaborative skills, and research output quality of Senior High School students?

Based on the above-mentioned problems, the following were hypothesized:

1. There is no significant difference in research output quality among the levels of research skills of Senior
2. High School students.
3. There is no significant difference in research output quality among the levels of writing skills of Senior High School students.
4. There is no significant difference in research output quality among the levels of collaborative skills of Senior High School students.
5. There are no significant relationships between levels of research, writing, and collaborative skills and research output quality of Senior High School students.

2. Literature Review
2.1. Research Skills
Numerous details on how research is done within specific disciplines could be found, but there was limited literature that explained what research skills truly are and how they must be clearly defined and characterized.

In a broader sense, research skills encompass both problems solving and information skills. An online article by Badke (2012) characterized research skills as the capability to recognize a problem, identify the right source of information required to respond to the problem, search those sources efficiently, assess the quality and relevance of the collected information, and use the information effectively to tackle the problem. These skills are complex and higher order abilities that not only equip individuals to write better research papers but also teach them about the problem solving skills required to tackle issues they encounter.

Research skills are closely attached to academic writing as it is the most necessary skills required in its performance. Students had to acquire these before they carried out research for capstone projects, research papers, theses, or dissertations. Seago, as cited by Meerah and Arsad (2010), emphasized this as the abilities needed to undertake research, including strategies that can be acquired. Research skills cover problem solving, critical thinking, analysis, and dissemination. Moore and Teter (2014) agreed that by undertaking such tasks, students imbibe research skills.

However, there were two opposing views as to when training in research should start. For Moore et al. (2014), it should have been started or begun at elementary school as sufficient and extensive time and effort is needed to cultivate them. But Purcell et al. (2012) argued and warned that these advanced skills are better taught later in a student's career because they may not be ready to learn the nuances of bias, fair use, and salience.

In students' learning, whatever subjects they would undertake, research skills are very useful and beneficial. Educators then must understand the aspects of research skills that students need in order to impart to them knowledge and make a long-term difference. Resilient Educators (2020) believed that research skills taught to students could last all their lives. It is as essential as helping them develop good habits early in their school careers.

With this, Radić-Bojanić et al. (2013) pinpointed that students, as beginners in the field of academic writing, have to learn much and develop their ability to do research, i.e., find the necessary sources and make use of them, and then to shape the knowledge they have gathered into academic assignments. In order to complete their academic tasks, students had to do research and preparation, which primarily involved finding information and using them properly with certainty by choosing a good, relevant, and reliable source.

Easterby-Smith et al. in Garg et al. (2018) presented an important discussion of attributes of an effective researcher, which included: diverse knowledge and capabilities such as knowledge of their discipline and related sub-areas; understanding of philosophical issues; searching skills; knowledge of research methods and capability to apply them; knowledge of various data collection methods; abilities to obtain data as well as apply qualitative and quantitative techniques for data analyses; rhetorical skills for creating a persuasive and logical argument; written and oral presentation skills; computer skills; planning and time management skills; capabilities to work in collaboration; abilities to develop contacts; and abilities to continuously improve to find new ways of solving problems. Thomas in Garg et al. (2018) agreed and added that qualities to handle these skills demand that a researcher should be self-critical, aware of his own strengths and weaknesses, devoted, creative, novel, and innovative.

However, this idea was challenged by Schroeder in Legetter et al. (2010) as he ascertained that there are research students who display a lack of confidence in their intellectual abilities, are uncomfortable with abstract ideas, have difficulty with complex concepts, have a low tolerance for ambiguity, are often less independent in thought and judgement and more dependent on the ideas of those in authority. He further suggested that they are also more dependent on immediate gratification, and they display more difficulty with some basic academic skills.

Meanwhile, Quarton (2013) pinpointed the importance of information literacy skills in this context. The American Library Association (2019) defined information literacy as a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use the needed information effectively". He further characterized this set of skills as a prerequisite for an academically skilled internet user.

On this note, Purcell et al. (2012) emphasized the need for the development of information retrieval skills of the students, which includes their understanding of the information generated, effective and appropriate use of search words, and judgment on the quality and accuracy of information.

Due to the vast quantity of information available online, an example of a problem that might arise is the inability of inexperienced students to choose good, valid, and reliable sources with certainty. One example was the assertion of Miller (2018) regarding today's students who continue to need their teachers to help them learn to sift through it and come to evidence-supported conclusions.

Radić-Bojanić et al. (2013) stated that this kind of research, online researching for that matter, is reduced to the first few links in a Google search, one of which is usually Wikipedia, as many teachers have witnessed when checking their students' assignments.

To further develop the research skills of students, Manning in Radić-Bojanić et al. (2013) claimed that students must be aware of a range of sources of information (university, college, or school libraries, virtual and digital libraries, other online sources), be able to identify the strengths and weaknesses of different sources and be able to note down bibliographic details for books, articles,

and websites that they used in the process of preparation and research. Alexander in Radić-Bojanić et al. (2013) affirmed the claim that by a thorough consideration of the vast quantity of data and variety of sources that can be found online, students should develop the skill of assessing the credibility of materials they find and make judgments regarding the status and relevance of a large number of texts.

With the advent of the digital age, Lemke in Radić-Bojanić et al. (2013) stated that students today have a plethora of opportunities to learn throughout their lives, both in formal and informal environments, as motivated by their personal, professional, family, work and community needs, interests or responsibilities.

With this assertion, ALA (2019) posited that the role of educators needs to include at least two new features. First, teachers need to have a sufficient understanding of their students' informal learning habits and daily routines in using the Internet in order to successfully integrate it with formal learning contexts. Second, teachers need to help students develop experience and skills in navigating, interacting, and learning within digital environments.

Several authors had provided different strategies that would help develop research skills. Feldon et al. (2015) had focused on faculty mentorship as a way to impart research skills and argued that the quality of research conducted by students depends on the quality of mentoring they receive.

One affirmation of this point was the study conducted by Chemers et al. (2011) on different mentoring functions (psychological or instrumental) that had been positively associated with both students' identity as a researcher, their sense of belonging, and their research self-efficacy. In support of this, Pfund (2016) confirmed that these factors had been associated with increased interest, motivation, commitment, and preparedness for research.

Research skills have been identified by higher education institutions as one of the important graduate attributes that need to be imbibed among and used by students. By this, Purcell et al. (2012) asserted that assigning research projects help students develop an understanding of the various aspects that go into successful research. They suggested further that teachers must help students "sort through the noise" by planning and focusing on what they are looking for, require them to utilize more than online resources, teach them how to properly cite sources, develop their ability to determine timeliness, relevance, and quality of online information, and teach them how to paraphrase and synthesize information.

In view of all the facts mentioned, Seago in Meerah et al. (2010) emphasized that if the students had research experience at various educational levels before advancing to higher levels, they would acquire the skills of observation, manipulation, coordination, and internalizing the research attitude, the habit of inquiry or problem solving and all the features of a good researcher besides possessing the knowledge of the skills of conducting research, the methods, and materials needed to solve the problem, the collection of empirical data or observations, the analysis of data and drawing on findings to be shared with others.

Murtonen et al. in Osman et al. (2011) presented a convincing explanation that students considering research skills significant for their future work were more task-oriented and used a deeper approach to learning, and experienced fewer difficulties in the learning of research skills than other students. They argued that if the students were given better research experiences and orientation, the students might be better prepared for their future work.

Murdoch-Eaton et al. (2010), in another study, indicated that undergraduate students were aware of the benefits of research experience and felt that a better understanding of the research process might improve their skills. A number of studies have been conducted to showcase how research skills among students could improve their job opportunities (Murdoch-Eaton et al., 2010; Nikkar-Esfahani et al., 2012), while some studies have been conducted show that actual teaching of the skills improves research skills of students (Mariani et al., 2013).

Murdoch-Eaton et al. (2010) conducted a study to assess the research skills of students through assessment of student projects in four areas - research methods, information gathering, critical analysis, and review, as well as data processing. An analysis of 905 projects in their study revealed that 52% of projects provided opportunities for students to develop one or more skills, only 13% offered development in all areas, and the rest of the cases, provided insufficient information to determine opportunities.

Also, the results of the recent study by Garg et al. (2018) showed that 52% percent of their respondents felt they had research skills, 11% percent felt they did not have these skills, and 37% were not aware of whether they possessed such skills. Furthermore, out of the total respondents, 95% felt that such skills are useful, and 5% of them were unaware of their benefits. This response indicated that most students recognize the importance of having such skills. Seventy-three percent said that if the research skills

were taught, it would improve their research skills and would help them to conduct scientific research. Indeed, the acquisition of research skills is a must for students as it would open new doors to enormous opportunities and learning.

2.2. Writing Skills

In language acquisition and production, learning and being able to write is not just an important skill but also the most challenging aspect and the most difficult skill to acquire. It is one of the productive language skills that teachers and students face because of its complexity of having several aspects that should be gained. Herdi (2015) asserted that the writing skill is a complex skill, and the learners should require not only mastery of grammar but also sharing the information and writing elements. In Jaramillo and Medina's (2011) study, the written skill was perceived as an art in which willingness and motivation are important.

Writing, in a broader sense, increased its significance because it is extensively used for the global production of knowledge. In his study, Kellog in Fareed et al. (2016) opined that writing is a cognitive process that tests memory, thinking ability, and verbal command to successfully express ideas. Dhanya et al. (2019) agreed and stated that writing equips students to enable their thinking and craft their written or spoken communication effectively. Writing, as an important and effective means of self-expression, communication, and information gathering, requires more focus, cognition, and diligence. As a language skill, it is a vital means to share ideas, culture, customs, and beliefs.

Research conducted by Mahboob (2014) revealed that writing promoted learning and enhanced critical- thinking skills. Emig in Kenta and Bosha (2019) supported this by stating higher cognitive functions, such as analysis and synthesis, seemed to develop most fully only with the support of verbal language, particularly of written language.

In writing, learners must have more sustained and conscious effort. Writing, according to Grami (2010), could be a difficult skill to be learned or taught due to the fact that it is not a simple cognitive activity; rather, it is believed to be a complex mental production that requires careful thought, discipline, and concentration.

The ability to achieve communicative competence in writing is a major facet of language development and academic success among students at all levels of the education system. It is more than the abstract process of memorizing vocabulary and the application of grammatical rules. This is supported by the investigation of Kenta et al. (2019), which revealed that students who do not have adequate writing skills would be at a great disadvantage in education and employment.

The language learning process is an interplay of learners' background, culture, experiences, beliefs, perceptions, and learning environment. In this case, written communication strategies play a crucial role in how this skill is acquired and whether the language learner acquires adequate skills to communicate effectively in the foreign or second language. Kenta et al. (2019) further added that process of learning English is slow and progressive, and it could be interpreted as a series of challenges to face. This process consists of the proper development of certain skills. Writing, particularly, was significant because it authorized learners to perform communicative aspects such as written studies, report writing, and communicating using electronic materials and formal writings, among others.

In their study, Diliberto and Algozzine (2009) stated that written communication is the development and expression of ideas in writing. It involved learning to work in many genres and styles. It is any type of interaction that makes use of the written word, and it involves expressing oneself clearly, using language with precision, constructing a logical argument; note-taking, editing and summarizing; and writing reports. Mahboob (2014) affirmed these and mentioned that it was based on the appropriate and strategic use of language with structural accuracy and communicative potential.

Writing skills, being an extremely difficult cognitive ability, is greatly affected by various factors that interplay in the process of acquisition and mastery, which a learner must have control over. According to Dar and Khan (2015), these varied from an academic background and personal interest of the writer to various psychological, linguistic and cognitive phenomena. In a similar manner, Dhanya et al. (2019) enumerated some more factors affecting writing skills which include student-teacher relationship, classroom environment, intrinsic learner motivation, feedback systems, and use of modern technological tools and techniques.

Some previous studies had attempted to categorize these factors into some broad domains. For example, teachers' incompetence by Haider (2012), students' lack of interest, inappropriate methodologies by Ahmad et al. (2013), and Javed et al. (2013). Conversely, Fareed et al. (2016) believed that further research is required to explore and examine the origin of the factors that adversely affect students' writing skills resulting in subsequent conversion into permanent student writing problems. The authors asserted that issues in writing could be more efficiently addressed only if the factors that generate them are identified.

Student writers faced various writing problems at different stages of their learning. Haider (2012) classified these problems into linguistic, psychological, cognitive, and pedagogical categories. In the assertion of Nik et al. (2010), learners struggled with the structural components of English that complicated the content and comprehension of the text, which a reader deciphers through the involvement of a mental process.

Similarly, Trioa in Defazio et al. (2010) ascertained that problems experienced by students in writing effectively are attributable to their difficulties in executing and regulating the process, which underlies proficient composing, planning, and revisions of their research work.

Rico (2014) emphasized then that these complications result in incoherent text failing to communicate ideas which causes a lack of confidence in learners even if they had mastered syntactic, lexical, and grammatical command over text composition. In Ahmad et al. (2013), the authors indicated students' lack of confidence is caused by a teaching strategy that does not conform to students' learning styles and cultural backgrounds.

Bilal et al. (2013) argued that poor writing skills originate from two factors: the teacher and the learner. Teachers lacked an appropriate pedagogic approach to teaching writing, including providing prompt and effective feedback to students, and most crucially, teachers lacked the ability to motivate students. On the other hand, students faced numerous challenges: effects of first language transfer, lack of reading, motivation, and practice. Several studies on writing skills conducted (Bilal et al., 2013; Dar et al., 2015; Haider, 2012) revealed that student writers encounter psychological, cognitive, social, and linguistic problems while converting ideas into text.

The case study conducted by Pineteh (2013) added social media, inconsistent feedback from teachers, learners' lack of analytical and evaluative approach, and large and unmanageable class sizes negatively impact the structural and communicative accuracy of the students' texts. For Gonye et al. (2012), most of the students found it very challenging to obtain sufficient and relevant source information, paraphrase or summarize information, and use an appropriate academic writing style. It was caused by delayed essay writing instruction, large classes, students' negative attitude towards their English, first language transfer, and lack of dialogue between students and teachers about the constructive steps that need to be taken to address these problems.

Students, indeed, were not acquiring knowledge correctly. As an end result, identifying these problems might help find a solution to overcome these problems. Gass and Selinker in Kenta et al. (2019) agreed and opined on the necessity to explain why there are many learners expressing their ideas in a second language who find themselves without the linguistic resources to carry it out.

For students, writing is a highly demanding task. Teachers, on the other hand, should constantly sustain students' interest by keeping a tab on their writing abilities and regular realignment of teaching methods to suit student preferences. Zhang and Chen in Dhanya et al. (2019) suggested that in aiming for the achievement of optimum results in writing tasks, students would need strong comprehension ability involving grammar, vocabulary, conception, rhetoric, and other parts of the language. This meant that every lesson a teacher prepares requires careful preparation where they need to adopt a variety of techniques, customization of their lesson plans, and use of up-to-date and relevant teaching aids to make writing tasks more interesting.

Speaking of planning and evaluation, Latief (2009) stated that students writing skills could be assessed in two ways. First was direct assessment, where students were asked to produce a written text, and teachers scored the quality of the text using certain standards of writing judgment. The second was by indirect assessment where students were given an objective test, like a multiple-choice type test, which assessed their knowledge of skill in the prerequisites of writing components like the skill in choosing correct words, applying the right use of grammar, in ordering the ideas in the sentences and the paragraphs, and in using the right cohesive devices without necessarily asking the students to actually write a piece of writing.

Though considered formidable, writing skills could be successfully imparted by teachers provided they were aware of the underlying factors influencing the acquisition of these skills. Having a clear understanding of the influencing factors would not only ease the process of learning but would also make it more interesting for teachers and students alike.

With this, Brookes and Grundy, as cited by Dhanya et al. (2019), emphasized then that teacher's primary responsibility is not only to encourage students to write but also to write effectively. Without proper writing skills, students could not claim to have learned the language.

Students' writing skills and abilities, according to Graham et al. in Dehaghi et al. (2015), could be improved by fostering their interest, motivation, and enjoyment of writing through technology. Further, Pineteh (2013) encouraged teachers to adapt

pedagogic approaches and mutually design tasks that could motivate and encourage students by giving them the liberty of choosing topics of their interest.

Even though different scholars have always agreed that writing is a crucial skill, Fareed et al. (2016) argued that writing is central to learning in every discipline and that writing has the power to produce active, student-centered learning. Writing allows students to synthesize and integrate information into their existing knowledge. It is a demanding task for language teachers to provide sufficient inputs for students to be competent writers in language learning.

Hence, it has always been important for teachers to remember that irrespective of students' approach to writing, it is essential to always care and provide encouragement to them at all times. Some struggling students in the writing process developed a negative view of writing as well as a negative image of their own abilities to conduct written communication.

In Dhanya and Alamelu's (2019) study, they concluded that a conducive classroom environment, positive student-teacher relationships, positive feedback, and constant motivation are the key ingredients that will enable students to write well. Therefore, it was always of paramount importance for teachers to never give up on any of their students and allow them to explore and practice writing through engaging activities at school to foster confidence and a lifelong love of writing.

2.3. Collaborative Skills
Work and life's success are often anchored on effective and efficient knowledge application in problem-solving and the generation of new ideas and information. In this sense, working collaboratively during school work prepares students for modern citizenship and work where most complex social, communal, and workplace problems are dealt with and solved by groups, not individually. By letting students work together towards achieving a goal, they are able to recognize the value of contributions and perspectives of all team members, thus preparing them for 21st-century life.

Collaboration was seen as a core key skill and an important educational outcome in 21st-century education (Griffin et al., 2012; Pellegrino and Hilton, 2012). The P21 Framework for 21st Century Learning included collaboration as one of its four key concepts (the Four Cs), along with creativity, critical thinking, and communication.

One of the most widely cited definitions of collaboration came from Roschelle and Teasley in Lai et al. (2017), who characterized it as "coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem." Similarly, Riebe et al. (2016) defined teamwork as "a process involving two or more students working toward common goals, through interdependent behavior with individual accountability."

Even task division, responsible management, completion, and constant engagement in group academic endeavors would lead to success in collaboration. Hughes and Jones (2011) agreed and stated that real collaboration is a process involving how team members interact more than the team's ultimate success or the quality of its end product. Authors pointed out that there are many reasons why a group could succeed in its objective, and not always because they interact effectively. The most efficient way to achieve the group's objective might entail dividing up a task into subcomponents, letting everyone complete their subparts independently, and then putting them all together at the end.

Collaboration emphasizes the process of working together to achieve a set goal. Dillenbourg in Hernández (2012) described it as involving two or more people to share responsibilities, jointly decide on actions, and act together to learn about something. Collaborative learning, on the other hand, was described by Ghokale in Dewi et al. (2020) as providing opportunities for students to engage in group discussions and be responsible for the learning process being carried out. Collaboration could not only be done between students but also with other parties as well as the surrounding environment.

It is important to distinguish between the increasing focus on improving learners' collaboration skills and the significant body of research on cooperative learning. It could not always be assumed that the application of cooperative learning in instruction is aimed toward the direct acquisition of collaborative skills. Lai et al. (2017) strongly emphasized that cooperative learning should not be confused with teaching the actual skill of collaboration. Cooperative learning was a teaching method used to teach a variety of academic skills. Brame and Biel (2015) added that cooperative learning was characterized by positive interdependence, where students perceived that better performance by individuals produces better performance by the entire group. In contrast, collaboration was a constellation of knowledge and skills, including the ability to work effectively in diverse teams, with the assumption of shared responsibility.

To achieve the team goal, students should capitalize on each member's strengths and varying perspectives. Bias and Kolk (2015) stressed that working in teams on complex problems required a variety of skills and expertise because as team members identify

and explore their own strengths, weaknesses, and skills, they gain an understanding of how combining the various skills of several individuals contributes to greater success that cannot be achieved by one person alone.

It is important to say that collaboration consists of a number of skills that must be honed in order to become skills that are constantly embedded in students. Bosworth in Dewi et al. (2020) enumerated and explained that collaborative skills include interpersonal skills, group management skills, inquiry skills, conflict skills, and presentation skills.

Collaborative learning stressed the social nature of learning and the need to train students how to work collaboratively in order to resolve conflicts, interact appropriately, and actively involve all group members. According to Panitz and Panitz in Malec (2012), collaborative learning is more than a classroom technique; it is a personal philosophy. When it works well, it respects and highlights individual group members' abilities and contributions. They also pointed out that it is based on consensus building through the cooperation of group members, rather than competition in which individuals try to do better than their fellow group members.

For a meaningful activity to be considered collaborative learning, Malec (2012) reiterated the five elements enumerated by Panitz and Panitz that needed to be present in it. These were: (a) positive interdependence (personal commitment to success) – where the group had a clear task or goal that guided members of the expected outcome and efforts from them; (b) individual accountability – which meant members' responsibility to contribute a fair share to the group for the achievement of goals; (c) interpersonal or small group skills (basic teamwork skills) – the ability of members to know how to be motivated to provide effective leadership, make decisions, build trust, communicate, and manage conflicts; (d) promotive interaction – or the promotion of each other's success by sharing resources through help, support, encouragement, and praise for efforts exerted; and (e) group processing – or the engagement to free and open communication in expressing concerns, celebrating accomplishments, and maintaining effective working relationships.

In recent years, the characteristics of collaborative learning have been carefully investigated. Smith and Macgregor in Piniuta (2019) asserted that there were already numerous studies showing that collaborating in group assignments and projects, compared to working independently, results in deeper information processing and more meaningful psychological connections among the participants. In fact, studies conducted by colleagues like Contreras-Leon and Chapeton-Castro (2016), Mosley et al. (2016), and Turner et al. (2014) referred to identifying positive impacts of collaborative learning.

Collaboration in an educational setting was used in many ways. According to Jansen (2012), it could be used to enhance critical thinking. Contreras-Leon and Chapeton-Castro (2016) said it created positive community feelings among a number of students with similar needs. As for Jacobs (2016) and Brennen (2017), it provided grit through the support of teammates. Finally, for Sears and Reagin (2013) and Trespalacios et al. (2011), it increased academic and social abilities. Offering opportunities for students to engage themselves in collaborative learning, according to Backer et al. (2018), sets them up with tools to be confident and increase their abilities and interests in harder subjects, therefore helping them become more academically successful.

Also, Roseth et al. in Gilles (2016) confirmed that when students are working productively in cooperative groups, they are more likely to participate, develop positive attitudes toward others, exert more effort, and genuinely engage in the content. However, little research was done to investigate the development and assessment of collaboration skills as an educational outcome.

Henri in Piniuta (2019) added that while working together, students build new understanding by challenging others' ideas and defending their own. As a result, this created a product that is different from what any individual could produce alone. Similarly, McDonough et al. (2015) supported this through their affirmation that although there were activities, like research and capstone projects, that required students to write together, each student is responsible for reaching a higher quality of individual writing. Also, Anggraini et al. (2020) added that collaboration coupled with writing provides an opportunity for the students to generate ideas and give peer feedback.

Ingram and Hathorn in Piniuta (2019) asserted the most important criteria for collaboration which is the synthesis of information — that is, creating a new product through the combination of different perspectives and ideas, as well as a more or less equal contribution from each participant. They further stated that the benefits of collaboration and teamwork in education include peer support and feedback on the students' practices. Collaborative skills were necessary to solve complex, interdisciplinary problems. Besides, they promoted the understanding of alternative perspectives, which is vital for the progression of society and useful for achieving educational goals. Moreover, learning how to collaborate allowed students to have a broader set of skills that will help industries and economies progress.

Collaborative skills, according to Plucker et al. (2010), were considered both cognitive and social skills. Collaborative cognitive skills include task regulation and knowledge building, whereas collaborative social skills include participation, perspective taking, and

social regulation. Jahng et al. (2010) emphasized that students' teamwork is usually analyzed and assessed in terms of (a) equality, or to what extent contributions are equal; (b) participation, or how much interaction occurs; and (c) sharing, or what portion of ideas are shared with the whole group.

There was research that suggests that people with good collaboration skills enjoyed a better performance in school. For example, a study by Druskat and Kayes in Lai et al. (2017) found that interpersonal understanding and proactivity in problem-solving, both part of good collaboration, are significant predictors of group performance and learning in university programs. Another study by Prichard et al. in Lai et al. (2017) found that training students how to work together (e.g., plan, make decisions as a group, set objectives, manage time, agree on roles, and create a positive group environment) increased the effectiveness of collaborative learning. In other words, having better collaborative skills yielded better results in collaborative learning contexts.

Finally, as students worked to formulate an answer to an open-ended task, they talked and worked together. When they do such, they exchange ideas and insights, they work through misunderstandings, they absorb content more effectively, and they help each other achieve true understanding. This was in agreement with Cohen and Lotan, as cited by Bias et al. (2015), who concluded that collaborative learning entailed more than just students working next to each other or even helping one another.

2.4. Research Output Quality

One of the major goals of any instruction was the production of output from lesson presentations, tasks assigned, and discussions done. As part of the requirement for the course or subject completion, students were required to undertake various project works, one of which was academic research. This fulfilled a partial condition for the completion of secondary and conferment of any level of the tertiary educational degrees. However, these scholarly outputs produced were not just for plain submission, compliance, and acceptance; it was rather put first under thorough quality assessment by experts based on certain criteria. As we all know, evaluation was always an integral part of the academic field.

There has been growing debate focused on the quality of students' project works and outputs in academia, and it was always in question and currently attracting a lot of interest in many developing as well as developed countries. In fact, Benson et al. (2015) asserted that many authors are already in general consensus that the quality of outputs students produce was declining. For this reason, it was of great importance to first clarify what is meant by the terms research, output, and quality separately before providing a definition for the combined term. Due to many available yet different perspectives of definitions these terms had, the ambiguous understanding from vague discussion of what it meant in the context of this study would be critical hence the necessity of providing such.

To start with, Bocar (2018) defined research as a laborious academic pursuit conducted to address a particular issue by doing a precise and systematic manner of looking for new knowledge, skills, attitudes, and values or for the reinterpretation of existing knowledge, skills, attitudes, and values. Specifying it from the perspective of the academe, Cohen et al. (2018) described educational research as a deliberative, complex, subtle, challenging, thoughtful activity, and often messier process than researchers would like it to be.

Meanwhile, Williams in Garira (2020) referred to outputs as the short-term consequences of schooling, like students' cognitive achievement, completion rates, certification, individual skills, attitudes, and behaviors.

In education, outputs emerge from a process of reflection on the essential contents of an instruction. It is a product that reflects the application and integration of the knowledge and skills acquired from or at the end of any lesson, assignment, class, course, or program.

On the other hand, quality, as described by Diaz (2014), is a basic tool for characterizing a product (academic or non-academic) that allows it to be compared with other products of its kind. From the perspective of Mahmood (2011) in her study, quality was the totality of features and characteristics of a product or service that bore on its ability to satisfy stated or implied needs. As for D'Andrea and O'Dwyer (2017), quality included elements such as clarity, technical corrections, importance, relevance, and interest to readers.

In an attempt to present a singular view of what research output quality is, Fink in Benson et al. (2015) ascertained that in order for any academic research to qualify as something to be of quality, it must have certain key elements or features. In his view, research work was deemed to be of quality if it had an "internally and externally valid research design, reliable data sources, free from plagiarism, application of appropriate tools, and meaningful interpretation of results in practical and statistical terms". Ranjit (2011), on the other hand, argued that quality research work "must be controlled, rigorous, systematic/structured, valid and verifiable, empirical and critical".

Mahmood (2011) suggested ways to achieve this by having a focus on the quality of the content of the thesis, the quality of the research process, and the quality of research management. Clearly, from the foregoing definitions, the common thread running through these definitions is that quality research can only be assured if it is valid in terms of methodology, practical relevance, verifiability, presentation, and process.

Specific conditions and criteria of quality for assessing research output validly had remained abstract, complex, and not yet established. In the pursuit to determine the context of quality assessment of research outputs in this study, it was still deemed necessary to go further in clearly defining and identifying its constructs. Indeed, the difficulty of measuring research output quality validly and reliably on a large scale had meant that virtually no education systems knew empirically whether their learners were achieving their goals and objectives. By this, Moss et al. (2009) posed a question, "What are the touchstones by which you judge quality or rigor in education research?"

With the researcher's continued aim for clarity of conditions of the term quality specifically as a valid measure for research output and with the question as a motivating factor, he came across one notable research conducted by Jaroonkhongdach et al. (2011) presented at a conference that laid out three dimensions of research quality which could be used as a basis for judging research outputs.

However, Denscombe (2014) posited that there was no guideline that provided a universally accepted convention in judging research quality. Although no consensus on such convention existed, from the survey on a wide selection of literature related to research quality (e.g., Jaroonkhongdach et al., 2011; Benson et al., 2015; Schramm et al., 2016; Brown and Ozgur, 2018; Litman, 2019, Mahmood, 2011; D'Andrea and O'Dwyer, 2017; Ranjit, 2011; Cresswell and Creswell, 2018), it seemed there are, arguably, three agreed on dimensions in judging research quality: research procedure quality, research presentation quality, and researching quality.

The first dimension, research procedure quality, is generally related to ensuring the reliability and validity of the research. To do this, researchers were expected to follow certain procedures in collecting and analyzing data, which are influenced by research approaches. Therefore, Sale et al. in Jaroonkhongdach et al. (2011) believed there was a need to consider research approaches when assessing research procedure quality. There were several ways to distinguish approaches, but it is a must to follow the distinctions that were common among diverse fields, which referred to quantitative, qualitative, and mixed methods (Creswell and Creswell, 2018).

In using a quantitative approach in conducting research, Fraenkel et al. in Jaroonkhongdach et al. (2011) ascertained that this mainly aimed to explain cause-effect phenomena and strive for universal laws. Creswell and Creswell (2018) explained that its general practices included tallying, a priori categorization, intervening in the research context and controlling variables, using statistics, and standardized procedures to assess objective reality.

Contrasting with the quantitative approach was the qualitative approach. For Burns, as cited by Jaroonkhongdach et al. (2011), qualitative researches were value-laden, and context-bound in a particular social environment in which people live could influence what they do and how they act. Hence, it aimed to explore and understand phenomena. Jaroonkhongdach et al. (2011) ascertained that qualitative approaches shared common practices, which were collecting open-ended, emerging data with the primary aim of developing themes from the data despite varying in design.

The third research approach was the mixed methods. Croker in Terrell (2012) believed mixed-methods research tended to combine quantitative and qualitative approaches to best understand research problems. Dörnyei in Neupane (2019) suggested mixed-methods research to include 1) the justification for mixing methods, 2) the justification for the specific mixed design applied, including the choice of the particular methods, and 3) the quality of the specific methods making up the study.

The second dimension, research presentation quality, was described by Jaroonkhongdach et al. (2011) as dealing with two related issues, the text-oriented and the interpersonal-oriented issues. Text-oriented issues refer to the strategies applied by researchers in describing information and revealing their attitudes towards the materials being talked about at the same time. It mainly involved clarity and coherence, which were both essential in research report writing. Borg (2010) suggested they were a necessary aspect of effective research writing and thus a component of research quality since they were widely suggested.

The interpersonal-oriented issues for Hyland et al. in Duruk (2017) were concerned with interpersonal uses of language and how the subjective presence of the writer or speaker intruded into communication to convey an attitude to both those they addressed and the material they discussed. Nevertheless, these important linguistic features were related to research presentation quality. It was difficult to judge their impact on enhancing or reducing research presentation quality.

The third dimension, researching quality, dealt with, as Borg (2010) laid out, providing a justification of the methods chosen, thinking about their underlying assumptions, and being aware of their limitations since research methods are not guarantors of truth and are normally used inventively according to the situation. Similar to Smith et al., as cited by Jaroonkhongdach et al. (2011), who proposed discussing the reasons for choices made and what implications for the research findings follow from these decisions. However, they further suggested considering the grounds on which knowledge claims were being justified and the strength and weaknesses of their research design and strategy. Denscombe (2014) then raised a common concern of most researchers on facing a variety of options and alternatives and making strategic decisions about which to choose.

Researching quality could help in understanding the nature of research, exploring alternatives in research, being aware of decisions and their implications, as well as constantly shaping thinking in conducting and presenting research, leading to improved research quality overall.

Finally, to reiterate, research procedure quality was simply following the rules for establishing reliability and validity in much quantitative and qualitative research is generally acceptable, whereas validation procedures in mixed methods research might require extensive justification. For research presentation quality, the need to clearly define variables or describe data collection and analysis is generally accepted, but the extent to which researchers should express their stance in writing is a matter for the researchers to decide. As for research quality, it was generally evaluated while conducting the research and considers how the research is written up.

2.5. Synthesis

Amidst the current new normal education situation that was being faced, 21st-century skills development was of importance and utility to academic life, employment, and future career and endeavors in order for learners to become globally-competent ones.

Research skills, described as complex and crucial sets of skills, must be cultivated within students as it develops many higher order thinking skills. By giving importance to this, learners would subsequently develop critical thinking expertise, effective analytical skills, and research and communication skills that were globally sought after and incredibly beneficial.

These skills would be the keys that would help individuals answer their most burning questions and aid in their investigation and solution finding to a specific problem. It involved several aspects and was influenced by many factors like personal interest and motivation, mentorship and support, and practice and application.

Writing, being one of the four language skills, was regarded as the most difficult and most complex among the language production skills. This skill is not a natural skill as one could not acquire this ability automatically and easily. To obtain such skills, the learner should get sufficient writing practice and must be given enough writing opportunities.

These practices must, in turn, stimulate the learner's thinking ability and shape their verbal command and communication effectively through thought expression in writing. It was also believed that writing promotes learning, enhances critical thinking, and develops communicative competence, which also served as determinants of language development and academic success. Hence, acquiring effective writing skills was never an easy task since it had been a gradual process of development like any other skill, which must begin at the early stages of learning.

Letting learners work together effectively was equivalent to indirectly helping them recognize the value of contribution, tolerance of individual differences, and acceptance of varied opinions, which are all essential components of collaborative skills. Collaborative skills involved many aspects that in many ways influenced how learners engaged in discussion and how they took responsibility for the learning process being carried out through the use of a variety of skills and expertise.

Learners, as members of a group, should then identify and explore their own strengths and weaknesses, capitalize on their varying perspectives, and understand how combining various skills individually contribute to a greater measure of success as compared to working alone. With constant honing of many subskills that made up collaborative skills of students in general, it further developed into skills that are embedded in the learners and are used in many ways in the educational setting.

Finally, all of these skills discussed, if taken as one, could influence the production quality of academic output. Research outputs were products of an academic pursuit involving deliberative and complex tasks yielded from the application and integration of the knowledge and skills acquired from a series of academic tasks. Judging its quality has been debated in assessment and evaluation. A comprehensive study with a compelling discussion on quality was reviewed in this research, and it presented three aspects of which research output quality should be assessed.

The three aspects being referred to were research procedure quality, research presentation quality, and researching quality. Respectively, these mainly looked into the justifications of choosing a specific approach, the stance of learners in oral presentation and its influence on their written outputs, and finally, the mechanics and process of how the entire research output was written up.

3. Methodology
3.1. Purpose of the Study and Research Design
The purpose of this study was to ascertain the level of research, writing, and collaborative skills and how they affected the quality of research outputs of Senior High School students of Ochando National High School under the new normal for School Year 2020-2021.

This study utilized the survey-correlational research design. Check et al. in Ponto (2015) defined survey research design as the use of a survey administered either in written form or orally to quantify social science research. In survey research, the researcher selects a sample of respondents from a population and administers a standardized questionnaire to them. The questionnaire or survey could be a written document that is completed by the person being surveyed, an online questionnaire, a face-to-face interview, or a telephone interview. Using surveys, it is possible to collect data from large or small populations.

The independent variables in this study were research, writing, and collaborative skills. The dependent variable was the research output quality of Senior High School students of Ochando National High School.

The frequency count, percentage, mean, and standard deviation as descriptive statistical tools were utilized for the analyses of the data. The Analysis of Variance and Pearson r were used as the inferential statistical tools to determine the significant differences and relationships among the variables of the study. All inferential tests were set at a 5% alpha level of significance.

3.2. Methods
3.2.1. Respondents
The respondents of the study were the 63 Grade 12 Senior High School students and 5 SHS teachers involved in research advising, presentation paneling, and research teaching from Ochando National High School (ONHS) for the school year 2020 – 2021. The students' population size of 63 and teachers' population size of 5 were both taken as the sample sizes. The selection of the respondents was made using complete enumeration.

The table below shows the profile of the student-respondents according to their sex, age, and grade level track and strand.

Table 1. *Profile of Student-Respondents*

Profile	f	%
Sex		
Female	30	48
Male	33	52
Age		
17 yrs old	10	16
18 yrs old	27	43
19 yrs old	15	24
20 yrs old	7	11
21 yrs old	2	3.2
22 yrs old	1	1.6
26 yrs old	1	1.6
Grade/Track/Strand		
12 TVL-Aquaculture	14	22
12 TVL-Computer Software Servicing	8	13
12 TVL-Electrical Installation and Maintenance	10	16
12 General Academic Strand	18	29
12 TVL-Home Economics	13	21
Total	63	100

The respondents, who were all Grade 12 students and SHS teachers of Ochando National High School, were taken using complete enumeration.

3.2.2. Data-Gathering Instruments
To gather the needed data for the study, the researcher used four (4) separate instruments. These were Research Skills Test, Writing Skills Test, Collaborative Skills Questionnaire, and Research Output Quality Rubric. Data on research skills were obtained using a researcher-made Research Skills Test. Data on writing skills were obtained using an adopted Writing Skills Test. Data on the collaborative skills of students were obtained using an adopted and modified Collaborative Skills Questionnaire. Finally, in obtaining data for research output quality, the researcher made use of a researcher-made Research Output Quality Rubric intended for teachers.

Research Skills Test. To determine the level of research skills that Senior High School students had under the new normal, a 42-item Research Skills Test was used. The instrument underwent item analysis, and it revealed that all items from the test should be accepted and retained. According to Sharma's (2021) suggestions, a difficulty index of 0.20 – 0.90 and a discrimination index of 0.20 – 1.00 should be utilized as a basis for the acceptance, revision, and rejection of an item. The research skills were categorized as problem identification, hypotheses formulation, research design identification, information evaluation, and data gathering, data analysis and interpretation, and report or research writing.

For the descriptive interpretation of the mean score, the table below was used:

Scale	Description
33.61 – 42.00	Advanced
25.21 – 33.60	Proficient
16.81 – 25.20	Approaching Proficiency
08.41 – 16.80	Developing
00.00 – 08.40	Beginning

Writing Skills Test. To determine the level of writing skills of Senior High School students under the new normal, they were asked to interpret the data found in a research-related table in the Writing Skills Test that was adopted from the University of Cambridge (2014). Their outputs were graded according to criteria presented in the rubric adopted from Slone (2016).

For the descriptive interpretation of the mean score, the table below was used.

Scale	Description
16.01 – 20.00	Advanced
12.01 – 16.00	Proficient
08.01 – 12.00	Approaching Proficiency
04.01 – 08.00	Developing
00.00 – 04.00	Beginning

Collaborative Skills Questionnaire. For determining the level of collaborative skills that Senior High School students have under the new normal, a 50-item Collaborative Skills Questionnaire was used. It was adopted and modified by the American Institutes of Research (2018) and Child and Shaw (2016). The Cronbach's alpha revealed that the collaborative skills survey-questionnaire was highly reliable, with a score of 0.888. According to Taber (2018), an instrument with a reliability index of 0.70 and above is considered acceptable and reliable. The collaborative skills were subdivided into five elements, namely positive interdependence, individual or group accountability, interpersonal skills, promotive interaction, and group processing. The instrument had a five (5) point rating scale responses as:

Responses	Description
5	Strongly Agree
4	Agree
3	Neither Agree nor Disagree
2	Disagree
1	Strongly Disagree

For the descriptive interpretation of the mean score, the table below was used:

Scale	Description
4.21 – 5.00	Very High
3.41 – 4.20	High
2.61 – 3.40	Average
1.81 – 2.60	Low
1.00 – 1.80	Very Low

Research Output Quality Rubric. In determining the research output quality of Senior High School students under the new normal, a 60-point researcher-made Research Output Quality Rubric for assessing research output quality intended for teachers was used. It was based on the three criteria, namely research procedure quality, research presentation quality, and researching quality presented by Jaroonkhongdach et al. (2014). To avoid subjectivity and bias, teachers, as members of the panel, individually rated the students during an offline oral presentation. After which, the average of the scores was taken to finally determine the learner's research output quality.

For the descriptive interpretation of the mean score, the table below was used:

Scale	Description
51.01 – 60.00	Very Good
42.01 – 51.00	Good
33.01 – 42.00	Acceptable
24.01 – 33.00	Poor
15.00 – 24.00	Very Poor

3.2.3. *Data Gathering Procedures*

The data gathering instruments were subjected to face and content validation by the panel of experts, which included English teachers, master teachers, supervisors, research experts and consultants, and an international research presenter. Their suggestions and recommendations for the improvement of the instruments were incorporated into the revision of the data gathering instruments.

Before proceeding with the implementation of the pilot-test and the conduct of the study, a permission letter was secured from the Office of the Schools Division Superintendent of Aklan. Another letter for approval was sent to the Office of the Public School District Supervisor of the District of New Washington. Another letter of permission was also sent to the principal of New Washington National Comprehensive High School to ask permission for the pilot test implementation. Another letter was also sent to the school head of Ochando National High School to ask permission for the conduct of the study. All letters of permission were signed and approved.

Finally, informed consent and waiver were also sent to the parents to secure their approval of their son's or daughter's participation in the study. Confidentiality of information was ensured, and strict compliance to standard health protocols at the venue during the pilot test and data gathering was observed.

The students who were chosen as respondents but did not have signed informed consent and waiver on the scheduled date were not allowed to participate in the study and were rescheduled on another date instead, provided that they brought with them the signed informed consent and waiver during that time. Others who were not able to come during the scheduled date due to work commitments and unavailability of someone to attend to their children were rescheduled too and were visited at home upon prior approval and permission of their parents or guardians through online messages, respectively.

Upon finalization of the validated research tools, the data gathering instruments were subjected to pilot-testing. The instruments were implemented at New Washington National Comprehensive High School using the printed form on scheduled and agreed upon dates, with the assistance of the adviser and in observance of stringent public health standard protocols at the venue, to ensure the reliability of data gathering.

Thirty (30) Grade 12 Senior High School students and four (4) SHS teachers were the subjects of pilot-testing. After which, reliability testing and item analysis followed. The results of the pilot-testing of the Collaborative Skills Questionnaire were determined by the computer-processed reliability testing on the internal consistency of the research instrument known as Cronbach's alpha using the Statistical Package for Social Sciences (SPSS) software.

After finalizing the data gathering instruments based on reliability tests and item analysis, the conduct of the study proceeded at Ochando National High School. In the first phase of data gathering, the researcher invited the respondents to school per group of ten (10) on scheduled dates and times of data collection to properly observe standard health protocols. The instruments were distributed with the assistance of the advisers of the respondents.

With possible threats and risks brought about by the prevailing rise of COVID-19 active cases in the community where the school is situated, during the last phase of data gathering, the researcher was advised to think of alternative means for students' research presentation and was restricted by the school head on letting respondents go to school for face-to-face oral presentation.

Having prior knowledge of most students' incapability to access the Internet, the synchronous oral presentation was not possible too. The researcher opted for offline presentation and requested students to pre-record and submit a video presentation of their research output. Proceedings and recommendations for the improvement of studies were either sent to group leaders online or were retrieved by their parents during scheduled claiming of modules at school. To avoid subjectivity and bias, teachers, as members of the panel, individually rated the students in their pre-recorded oral presentations. After which, the average of the scores was taken to finally determine a learner's research output quality.

The data obtained from the tests, survey-questionnaire, and rubric were processed, encoded, and analyzed using the Statistical Package for Social Sciences (SPSS).

3.3. *Statistical Data Analysis and Procedures*
The following statistical tools were employed in the analyses of the data gathered.

Frequency Count. This was used to determine the number of respondents as classified according to their sex, age, grade level, and SHS track and strand.

Mean and Standard Deviation. These were used to describe the level of students' research, writing, and collaborative skills, as well as the quality of their research outputs.

Analysis of Variance. This was utilized to determine the significant differences in research output quality among the levels of research, writing, and collaborative skills.

Pearson r. This was utilized to determine the relationship between the research output quality of Senior High School students under the new normal and the levels of their research, writing, and collaborative skills.

All inferential tests were set at a 5% alpha level of significance.

4. Results/Findings
4.1. Level of Research Skills
Table 2 shows that the research skills of SHS students is "Developing" (M = 15.43, SD = 6.07).

Table 2. *Mean and Standard Deviation of Research Skills*

Variable	Mean	Description	SD
Research Skills	15.43	Developing	6.07

Scale	Description
33.61 – 42.00	Advanced
25.21 – 33.60	Proficient
16.81 – 25.20	Approaching Proficiency
08.41 – 16.80	Developing
00.00 – 08.40	Beginning

The result shows that the level of the Senior High School students' research skills in the new normal is developing. This means that students are still in the process of improving their knowledge, abilities, and learning of some crucial subskills involved in research.

The research skills of students are at a developing level because in this new academic setting, even if they have already learned theories and concepts of research, their abilities to properly identify a research problem and correctly formulate a research hypothesis, their understanding of basic guidelines of research title writing and formulation, their awareness on the salient characteristics of various research designs and methodologies of each, their knowledge on information and gathering needed in finding appropriate offline and online materials and sources of data and information, their skills on information evaluation and utilization, and their critical, analytic, and problem solving skills used in data analysis and interpretation, might not have been put into appropriate practices while independently learning at home that is why it is still on the progressing stage.

Other reasons for this result could be the influence and effect brought about by the new normal. These days, students do independent and self-learning at home due to the cancellation of face-to-face classes. Perhaps, they have only received less parental support and/or limited teacher mentorship and guidance. These probably hindered them from accomplishing the research activities expected of them because modular instruction, as the learning delivery mode adopted by the school, might have been difficult and challenging for the students, especially in learning and acquiring these research skills.

The developing result might also be due to students' limited capabilities of accessing the Internet in the comfort of their homes without having a prescribed gadget. This is because, most likely, struggling and underprivileged families of several students, who continue to face the challenges brought about by the pandemic, never prioritize purchasing gadgets. It may also be due to the fact that only a few of them have the financial capacity to afford connectivity and have the privilege of accessible Internet.

Finally, community lockdowns have also greatly affected the students in terms of honing such skills. Because of this, access to the Internet at computer shops, especially when connectivity is an issue at home, was not possible for some period of time due to strict implementation of travel restrictions for minor students. Also, public school libraries, with scarce research resources, have become difficult to access too, as schools have been closed as well for students.

The result undermines the statement of Lemke in Radić-Bojanić and Topalov (2013), who asserted that students today, having a plethora of opportunities that emerged with the advent of the digital age, learn throughout their lives, both in formal and informal environments, as motivated by their personal, professional, family, work and community needs, interests or responsibilities as it failed to consider underlying factors that hinder learners from grabbing such opportunities despite having the determination and intentions of improving the skills they possess.

Contrastingly, the study of Schroeder in Leggetter et al. (2010) supports the results as he believed that these are outcomes of students' display of lack of confidence in their intellectual abilities, apprehensiveness with abstract ideas, difficulty with complex concepts, low tolerance for ambiguity, less independence in thought and judgement, more dependence on the ideas of those in authority, and more difficulty with some basic skills.

4.2. Level of Writing Skills
Table 3 shows that the writing skills of SHS students are "Developing" (M = 7.25, SD = 5.01).

Table 3 *Mean and Standard Deviation of Writing Skills*

Variable	Mean	Description	SD
Writing Skills	7.25	Developing	5.01

Scale	Description
16.01 – 20.00	Advanced
12.01 – 16.00	Proficient
08.01 – 12.00	Approaching Proficiency
04.01 – 08.00	Developing
00.00 – 04.00	Beginning

The result shows that the level of Senior High School students' writing skills in the new normal is developing. This means that students are still in the process of improving their knowledge of the basics, elements, and processes of the English language.

The writing skills of the students are at the developing level because, in this new academic setting, they only have acquired less understanding and knowledge of the mechanics, techniques, and steps of the writing process as opposed to their expected knowledge of the language according to their current grade level. Probably, with the new normal, they are unable to grasp further

knowledge on how to accurately present and organize content using correct and specific usage of the language for making valid analyses and interpretations as well as for research and report writing in general.

Other reasons for this result can be the influences brought about by this new normal. As students independently learn at home, due to the cancellation of the face-to-face classes where instructions could have been directly given, they might have been less exposed and less motivated in accomplishing and engaging in writing practices and tasks. These probably influence their perceptions negatively about writing because they experience difficulties with it while independently learning at home and view writing as a challenging task. With this, they are led to missing opportunities of enhancing their writing skills through such tasks because, in the first place, they probably find it hard to express their ideas appropriately in the written form, especially in a highly technical one such as research writing.

The developing result might also be due to their lack of writing practices at home, most likely because of limited support and monitored mentorship. With this, they might have lost interest and feared engagement in writing tasks while self-learning because they might lack confidence in their writing abilities and were too afraid to try and commit grammatical errors. Finally, they might have limited knowledge of the written language, its elements, and processes because they lack conscious effort and diligence in improving their writing skills while self-learning at home.

This result conforms with the study of Bilal et al. (2013), who asserted that poor writing skills originate from two factors: the teacher and the learner. Teachers lack an appropriate pedagogic approach to teaching writing, including providing prompt and effective feedback to students, and most crucially, teachers lack the ability to motivate students.

The authors further asserted that students face numerous challenges: effects of first language transfer, lack of reading, motivation, and practice. They further reveal that student writers encounter psychological, cognitive, social, and linguistic problems while converting ideas into text.

4.3. Level of Collaborative Skills

Table 4 shows that the collaborative skills of SHS students is "High" (M = 3.88, SD = 0.51).

Table 4. *Mean and Standard Deviation of Collaborative Skills*

Variable	Mean	Description	SD
Collaborative Skills	3.88	High	0.51

Scale	Description
4.21 – 5.00	Very High
3.41 – 4.20	High
2.61 – 3.40	Average
1.81 – 2.60	Low
1.00 – 1.80	Very Low

The result shows that the level of Senior High School students' collaborative skills in the new normal is high. This means that students work and complete tasks efficiently together, effectively practice equal division of tasks, and responsibly harness their individual contributions to their groups even if face-to-face classes have been canceled this school year.

The collaborative skills of students are at a high level because, during these days of independent and self-learning, they maximize the power of social media, such as Messenger, Facebook, and YouTube, and utilize these platforms to get along with others while working in a group. In this completely different teaching-learning approach, they positively believe that sharing of tasks and knowing the importance of responsible contribution are indicators of goal achievement. Probably, they utilize their good interpersonal skills through online collaboration as they openly communicate with each other and recognize tasks given to each member of the group.

Perhaps, during their online discussions and collaboration, students feel belongingness within their groups because their opinions are heard and considered, and they may have felt that they are part of planning and decision making. With the current situation, learners, as members of a group, are still able to find ways to maximize their engagement and communication with their group as well as their compliance with the assignment given to them by their leaders thru free online applications and various accessible social media platforms. This might be the result of their positive perspective on cooperative learning, where help is offered and received in accomplishing a complicated and challenging task, such as research writing, in this new normal education.

This result is supported by the study of Hughes and Jones (2011), who stated that real collaboration is a process involving how team members interact more than the team's ultimate success or the quality of its end product. The most efficient way to achieve the group's objective may entail dividing up a task into subcomponents, letting everyone complete their subparts independently, and then putting them all together at the end.

Also, the study conducted by Druskat and Kayes in Lai et al. (2017) is consistent with the results as it found that interpersonal understanding and proactivity in problem-solving, both part of good collaboration, are significant predictors of group performance and learning.

4.4. Research Output Quality
Table 5 shows that the research output quality of SHS students is "Poor" (M = 26.38, SD = 10.90).

Table 5. *Mean and Standard Deviation of Research Output Quality*

Variable	Mean	Description	SD
Research Output Quality	26.38	Poor	10.90

Scale	Description
51.01 – 60.00	Very Good
42.01 – 51.00	Good
33.01 – 42.00	Acceptable
24.01 – 33.00	Poor
15.00 – 24.00	Very Poor

The result shows that the level of Senior High School students' research output quality is poor. This means that students' research output quality is low, and it needs more improved compliance with research writing, research procedures and methodologies, and oral presentation guidelines.

This implies that their research outputs under this new normal were either not well presented, with lacking or incoherent parts, with insufficient or unverified information, with unorganized content, with inappropriate methodologies, invalidated results, and interpretations, or with the improper format.

This poor research output quality result might probably be due to cancellation of face-to-face classes; challenges brought about by the new normal education, improper researching due to limited access to research resources, materials, and various platforms, and limited access to gadgets and the Internet at home, poor information and data gathering, poor research and writing skills, less knowledge of the study, poor ICT skills, inadequate timeframe due to curriculum streamlining, less consultation and mentorship under the new normal leading to limited proofreading, editing, and validation, unorganized content, imprecise results, discussion and interpretation, lack of confidence during the offline presentation, and more assumed tasks and responsibilities given to leaders by the members of each group.

Maybe, under the new normal, students have not invested much time in constantly editing their research output to ensure its good quality. They might have assumed that only completing required parts of research output, regardless if it has not been thoroughly reviewed, is already acceptable. Maybe, there has been impatience on the part of the researchers during the research and write-up.

They might also not have correctly put into practice their basic computer skills, which are crucial to proper research formatting and doing presentations for research, due to the unavailability of gadgets at home. It can also be that their research outputs have poor grammatical expression and the absence of a novel investigation of the problem.

In short, they might not have secured, verified, incorporated, utilized, validated, or properly formatted some salient parts and aspects of research in their output. Their use of crucial skills needed in following correct research procedures, appropriate research, and proper research presentation might not be strengthened, which is why it significantly resulted in the poor quality of their research outputs.

The result is challenged by the study of Fink in Benson et al. (2015), who ascertained that in order for any academic research to qualify as something to be of quality, it must have certain key elements or features such as "internally and externally valid research

design, reliable data sources, free from plagiarism, application of appropriate tools, and meaningful interpretation of results in practical and statistical terms".

Also, the assertion of D'Andrea and O'Dwyer (2017) challenges the result as they asserted that research output quality should include elements such as clarity, technical corrections, importance, relevance, and interest to readers.

Whereas the study of Jaroonkhongdach et al. (2011) substantiates the result as it laid out three dimensions of research quality, which are research procedure quality, research presentation quality, and researching quality, that can be used as a basis for judging research outputs.

4.5. Difference in Research Output Quality Among the Levels of Research Skills of Senior High School Students

Table 6 shows the difference in research output quality among the levels of research skills of Senior High School students. The Analysis of Variance reveals that the research output quality of Senior High School students, when classified according to their levels of research skills, is significant (F = 44.0, Sig. = 0.000).

Table 6. *Analysis of Variance of Research Output Quality Among the Levels of Research Skills*

Source of Variation	SS	df	MS	F	Sig.
Between Groups	5090.16	3	1696.7	44.00*	0.000
Within Groups	2276.57	59	38.6		
Total	7366.73	62			

* $p < 0.05$ significant @ 5% alpha level
ns $p > 0.05$ not significant @ 5% alpha level

Levels of Research Skills		Mean Research Output Quality
Proficient	(25.21 - 33.60)	49.00
Approaching Proficiency	(16.81 - 25.20)	32.35
Developing	(08.41 - 16.80)	20.59
Beginning	(00.00 - 08.40)	19.19

The result shows that there is a difference in the quality of research output of SHS students according to their levels of research skills. It implies that under the new normal, the differences in students' manners of research skills' acquisition and application have a bearing on the quality of their produced research output. It means that research output quality varies and depends on their individual level of research skills. As presented in the table, as students' research skills increase, their research output quality increases too. As students' research skills do not improve, their research output quality will remain low or poor.

One of the main reasons for this might be the diverse nature, background, and characteristics of learners, along with their uniquely imbibed level of research skills which they utilize in accomplishing tasks to ensure that their research outputs will be something of significant worth. Provided that they acquire research skills, they might have differences in privileges on Internet connection, access, and utilization on various research platforms found online, which either help or hinder them in completing the necessary research outputs.

In this new normal where most research activities are accomplished online, students might have dissimilarities in terms of opportunities and experiences online, which result in either successful or undesirable production of their research outputs. Students have their own styles of learning and acquiring such skills in this new teaching-learning approach which definitely affect the presentation of information contents and the general production quality of their research outputs.

Perhaps, learners' collective and/or individual level of abilities in research problem identification, hypothesis formulation, proper evaluation and effective use of information gathered, knowledge of research methodologies, familiarity with research designs, critical thinking and problem-solving skills, and proficiency in report writing influence how the end-result quality of their research is produced. The way they nourish their proficiency in all of these research subskills has an impact on the way they produce research outputs expected from them.

The result is challenged by the assertion of Easterby-Smith et al. in Garg et al. (2018), who posited that in order to produce an acceptable research output, a researcher must have diverse knowledge and capabilities, such as knowledge of their discipline and

related sub-areas, understanding of philosophical issues, searching skills, knowledge of research methods and capability to apply them, knowledge of various data collection methods, abilities to obtain data as well as apply qualitative and quantitative techniques for data analyses, computer skills, planning and time management skills, and abilities to continuously improve to find new ways of solving problems.

Badke (2012), on the other hand, supports this result with his assertion that research skills not only equip individuals to write better research papers but also teach them about the problem solving skills required to tackle issues they encounter.

Thus, the null hypothesis, which states that there is no significant difference in research output quality among the levels of research skills of Senior High School students, is rejected.

4.6. Difference in Research Output Quality Among the Levels of Writing Skills of Senior High School Students
Table 7 shows the difference in research output quality among the levels of writing skills of Senior High School students. The Analysis of Variance reveals that the research output quality of Senior High School students, when classified according to their levels of writing skills, is significant (F = 12.34, Sig. = 0.000).

Table 7. *Analysis of Variance of Research Output Quality Among the Levels of Writing Skills*

Source of Variation	SS	df	MS	F	Sig.
Between Groups	3386.15	4	846.54	12.34*	0.000
Within Groups	3980.59	58	68.63		
Total	7366.73	62			

* p<0.05 significant @ 5% alpha level

ns p>0.05 not significant @ 5% alpha level

Levels of Writing Skills		Mean Research Output Quality
Advanced	(16.01 - 20.00)	52.13
Proficient	(12.01 - 16.00)	40.36
Approaching Proficiency	(08.01 - 12.00)	26.00
Developing	(04.01 - 08.00)	24.18
Beginning	(00.00 - 04.00)	20.57

The result indicates that there is a difference in the quality of research output of SHS students according to their levels of writing skills. It means that the quality of their research output under the new normal varies and depends on the level of writing skills they imbibed and applied as they do independent and self-learning at home. As presented in the table, as students gain proficiency in writing skills, their research output quality becomes high. As students fail to acquire mastery or development in writing skills, their research output quality remains poor or low.

Maybe, students with different levels of interests and motivations engage or avoid writing tasks related to research under this new normal due to their lack of confidence in their individual capabilities to learn and master the basic elements and processes of the language, which affect their research output quality.

The unique writing abilities they possess and use to construct content for the research outputs required from them in this completely new teaching-learning approach are reflected differently in the research output they produce. It could be that the differences in students' acquisition and application of writing skills in research projects under this new normal could possibly impact the way they comprehensively or incompletely convey and discuss the salient and important details of their research outputs.

Perhaps, their varied ways and styles in putting together their gathered ideas in mind into writing might have a direct influence on the overall quality of their research outputs. The manner by which they utilize their learning of the written language's technicalities, processes, and appropriate usage in different contexts greatly affects the quality of their research output.

This result may be due to students' differences in understanding how to analyze, evaluate, criticize, combine, and draw conclusions from information sources that are crucial in decision-making, especially in research writing. Their personal strategies and techniques in combining and putting all ideas together might differ.

This result is actually supported by the study of Kellog in Fareed et al. (2016), who opined that writing as a cognitive process tests memory, thinking ability, and verbal command to successfully express the ideas in the written form.
Also, the statement of Dhanya and Alamelu (2019) confirmed the result as they posited that writing equips students to enable their thinking and craft their written or spoken communication effectively.

Finally, the claims of Kenta and Bosha (2019) actually strengthen the result as they emphasize that students who do not have adequate writing skills will be at a great disadvantage in education and employment.

Thus, the null hypothesis, which states that there is no significant difference in research output quality among the levels of writing skills of Senior High School students, is rejected.

4.7. Difference in Research Output Quality Among the Levels of Collaborative Skills of Senior High School Students

Table 8 shows the difference in research output quality among the levels of collaborative skills of Senior High School students. The Analysis of Variance reveals that the research output quality of Senior High School students, when classified according to their levels of collaborative skills, is significant (F = 9.03, Sig. = 0.000).

Table 8. *Analysis of Variance of Research Output Quality Among the Levels of Collaborative Skills*

Source of Variation	SS	df	MS	F	Sig.
Between Groups	2317.56	3	772.52	9.03*	0.000
Within Groups	5049.17	59	85.58		
Total	7366.73	62			

* p<0.05 significant @ 5% alpha level

ns p>0.05 not significant @ 5% alpha level

Levels of Collaborative Skills		Mean Research Output Quality
Very High	(4.21 - 5.00)	36.10
High	(3.41 - 4.20)	23.74
Moderate	(2.61 - 3.40)	20.11
Low	(1.81 - 2.60)	20.00

The result shows that there is a difference in the quality of research output of SHS students according to their levels of collaborative skills. This implies that the quality of their research output under the new normal varies and depends on the level of collaborative skills they possess and utilize. As presented in the table, as students' collaborative skills increase, their research output quality increases too. As students' collaborative skills remain low, their research output quality remains the same too.

This implies that in this new educational setting, students' varied exerted intensity of engagement and cooperation at group tasks influence the production quality of research outputs. It could be that students' differences in motivation and interests, along with their varied capabilities in accessing and using free online social media platforms to communicate and collaborate with their group under the new normal, impact the way they responsibly contribute to the generation of ideas and agreement on information to include in their research outputs.

Probably, their unique individual strategies of working together through online communication while dialoguing and making decisions as a result of constant feedback aid in assuring the production quality of their research outputs. More so, their varied techniques of participation and accomplishment of group tasks have something to do with the way they can achieve the group's goal of producing a well-written and well-presented research output.

Other reasons for this could be students' personal involvement, willingness, and openness to working with others in aiming for group task completion. The manner by which students contribute to the content, goals, and decisions of the group through the

use of free online applications contributes to how and at what specific level and aspects of quality research output are produced. Also, the techniques they use in understanding their individual tasks, in this new academic setting, along with the way they intensify their process of working with other group members, help each one of them be aware of how research outputs are expected to be produced.

The result is in accordance with the study of Backer et al. (2019), who stated that offering opportunities for students to engage themselves in collaborative learning sets them up with tools to be confident and increase their abilities and interests in harder subjects; therefore, helping them become more academically successful.

Also, the findings of Henri in Piniuta (2019) supported this by confirming that while working together, students build new understanding by challenging others' ideas and defending their own. As a result, this creates a product that is different from what any individual could produce alone.

Thus, the null hypothesis, which states that there is no significant difference in research output quality among the levels of collaborative skills of Senior High School students, is rejected.

4.8. Relationships Among Research Skills, Writing Skills, Collaborative Skills, and Research Output Quality of Senior High School Students

Table 9 shows the relationships among research skills, writing skills, collaborative skills, and research output quality of Senior High School students. The Pearson r test reveals that the research skills and writing skills has relationship (r = .633, Sig. = 0.000); that research skills and collaborative skills has relationship (r = .419, Sig. = 0.001); that research skills and research output quality has relationship (r = .855, Sig. = 0.000); that writing skills and collaborative skills has relationship (r = .311, Sig. = 0.013); that writing skills and research output quality has relationship (r = .601, Sig. = 0.000); and that collaborative skills and research output quality has relationship (r = .488, Sig. = 0.000).

Table 9. *Pearson r Among Research Skills, Writing Skills, Collaborative Skills, and Research Output Quality*

Variables	r	Sig.
Research Skills and Writing Skills	.633*	0.000
Research Skills and Collaborative Skills	.419*	0.001
Research Skills and Research Output Quality	.855*	0.000
Writing Skills and Collaborative Skills	.311*	0.013
Writing Skills and Research Output Quality	.601*	0.000
Collaborative Skills and Research Output Quality	.488*	0.000

* p<0.05 significant @ 5% alpha level
ns p>0.05 not significant @ 5% alpha level

As presented in the table, there are significant relationships between research skills, writing skills, collaborative skills, and research output quality of Senior High School students.

The first result, which states that research skills and writing skills have a relationship, means that both skills have a positive correlation and have a direct and strong relationship. It means that either way, as one skill increases, the other skill also increases. This further implies that whatever level of research skills or writing skills students possess and how they develop proficiency in such skills have significant influences and potent effects on each other.

This might be because even in this completely different academic setting, aptitude in writing is essential to research problem identification and title writing, hypotheses formulation, literature review, data analysis and interpretation, and report writing in general, which are all outcomes and manifestations of students' research skills application. Perhaps, writing knowledge on mechanics, technicalities, and processes of context-based language use is fundamental to comprehensively write discussion and presentation of all the information they gathered as a result of research.

Another reason for this could be that students might not be able to impart through writing the results of the investigation they conducted if, in the first place, they do not have the basic abilities to identify the research tasks they need to accomplish and the research skills they need to use to complete such activities.

Finally, these two aspects are associated with each other because proofreading and doing revisions on such outputs of research skills' application require students to have good writing skills in order for them to polish what they have produced from all the research they have done under this new normal.

This result is strengthened by the study of Trioa in Defazio et al. (2010), as he ascertained that problems experienced by students in writing effectively are attributable to their difficulties in executing and regulating the process which underlies proficient composing planning and revisions of their research work.

The second result, which states that research skills and collaborative skills have a relationship, implies that both skills have a positive correlation and have a direct and moderate relationship. It means that either way, as one skill increases, the other skill also increases. This further implies that whatever the level of research or collaborative skills students possess and however they acquire mastery of such skills have significant influences and adequate effects on each other.

Perhaps one reason for this could be that in group researching, under this new and distinct academic setting, brainstorming, which involves the spontaneous contribution of ideas of members, is a vital activity. It might be that in this activity, students, as members of a group, help in generating concepts and engage in group discussions to eventually come up with a consensus of what problem the group will tackle, what specific tasks to accomplish, or what relevant topics they will include in their study.

This might also be due to the manner by which students use their skills of participation and engagement in various research tasks. Probably, the way they process information from individual members and the way they cooperate and interact are associated with their research abilities because completion of group research projects requires the participation of all members in decision-making to arrive at an agreement on what information is to be incorporated in their research outputs.

It could also be possible due to the fact that consideration of others' ideas and opinions are counted and valued before finally proceeding and deciding on the assignment of individual research tasks they need to accomplish in order to add something valuable to their research work. Finally, the relationship between these two aspects is established because as each member does research tasks, peer consultation, support, and giving of feedback might have been constructively practiced within the group.

This result is in line with the assertion of Smith and Macgregor in Piniuta (2019), who stressed that collaborating in group assignments and projects, compared to working independently, results in deeper information processing and more meaningful psychological connections among the participants.

The third result, which states that research skills and research output quality have a relationship, implies that both aspects have a positive correlation and have a direct and very strong relationship. It means that as students' research skills increase, their research output quality also increases. This further implies that students' utilization of whatever level of research skills and aspects they individually imbibed has significant and positive influences and compelling effects on the quality of the research outputs they produce.

Perhaps, one of the main reasons for this could be the manner by which students utilize the research knowledge and skills they have under this new normal, which are revealed in their research outputs by thoroughly assessing their quality. It could be that the way they have done the research and researching in terms of identifying a research problem, formulating a hypothesis, finding reliable sources of relevant data and information, and identifying research designs is reflected in their written and presented research outputs and serve as determinants of its overall quality.

Probably, another reason for this is that the manner by which research outputs are acceptably and validly produced is dependent on students' basic knowledge of how to find reliable information sources and how to evaluate, assess, and utilize information found for research projects they are undertaking. Finally, in this new academic setting, the quality of research outputs depends on how students utilize their skills in critical thinking, problem-solving, analytical thinking, and in-depth interpretation to comprehensively convey all the results of their research skills' application.

The result is in line with the stand of Seago, as cited by Meerah et al. (2010), who posited that research skills are the necessary abilities to undertake research. In addition, Moore et al. (2014) confirmed this as they stressed and agreed that in order for students to imbibe research skills, they should undertake capstone projects and class-based research projects.

Finally, the study of Radić-Bojanić and Topalov (2013) supports the result as well by emphasizing that students have to learn much and develop their ability to do research to shape the knowledge they have gathered into academic assignments (research projects, seminar papers, presentations).

The fourth result, which states that writing skills and collaborative skills have a relationship, implies that both skills have a positive correlation and have a direct yet weak relationship. It means that either way, as one skill increases, the other skill also increases too.

It further implies that students writing skills is somewhat positively influenced by their collaborative skills, especially in research-related tasks, or vice versa. Probably, the manner by which they utilize either of these acquired skills still has that slight significant and certain positive effects on the other.

It could be that even under the new normal, students' degree of participation and willingness to responsibly work in groups significantly improve their writing abilities because while collaboratively working, they may be able to imbibe new knowledge on how they can present their ideas together in a comprehensible and intelligible way that readers can easily comprehend what they want to impart to them.

Maybe this is because of another reason that this new normal and collaborative work, such as research projects, requires students, as members of a group, to individually work on accomplishing their assigned writing tasks. Such activities require the individual use of their knowledge of elements, processes, and mechanics of writing to be able to organize information coherently and logically.

Likewise, it might be that in this new teaching-learning approach, their group written outputs, which are evidence of their writing skills application, are accomplished through online collaborative effort and are reviewed and improved through peer critiquing, which is a fundamental aspect of collaboration. Perhaps, the results of their individual writing tasks are assessed online by other group members and are given valuable suggestions through constructive feedback to enrich their content and eventually be able to significantly contribute to the collaborative written work they are undertaking.

Finally, these reasons establish the association of these skills with each other because the way they brainstorm and contribute ideas in groups affects how they process, decide, and put together with inputs they gather into meaningful content.

This result is in line with the argument of McDonough et al. (2015), which states that although there are activities, like research and capstone projects, that require students to write together, each student is responsible for reaching a higher quality of individual writing. In a similar manner, Anggraini et al. (2020) added that collaboration coupled with writing provides an opportunity for the students to generate ideas and give peer feedback.

The fifth result, which states that writing skills and research output quality have a relationship, implies that both aspects have a positive correlation and have a direct and strong relationship. It means that as students' writing skills increase, their research output quality also increases. This further implies that students' utilization of whatever level of writing skills and aspects they individually imbibed and mastered has significant and positive influences and potent effects on the quality of the research outputs they produce.

In this new normal, one major reason for this is that students' unique means of writing skills' utilization in specific contexts and highly-technical writing activities, like research writing, impact the value of the produced research outcomes. Their own writing techniques and styles of generating ideas, putting them together, and presenting such in written form, especially in research writing, influence the way research outputs will be produced.

Perhaps, in this new academic setting, students' individual and personal knowledge of technicalities, processes, and context-based language use determine the quality of their research outputs. It might be that their writing proficiency or writing incompetence influentially affect how they engage in research-related writing tasks that aim for the quality production of research outputs. Also, this might be because students' writing knowledge of many writing aspects is fundamental to the logical and well-argued presentation of facts, data, ideas, and generalizations in their research outputs.

Finally, the main reason for this could be that their research outputs, technically, are products of their utilization and application of their acquired writing skills, and whatever they came up with as end results are subjected to thorough scrutiny in terms of their quality.

This result is parallel with Kellog's assertion in Fareed et al. (2016), who opined that writing is a cognitive process that tests memory, thinking ability, and verbal command to successfully express the ideas in the written form. In the same manner, Dhanya et al. (2019) agreed and stated that writing equips students to enable their thinking and craft their communication effectively.

The result is also in accordance with the study of Zhang and Chen in Dhanya et al. (2019), who suggested that in aiming for the achievement of optimum results in writing tasks, students would need strong comprehension ability involving grammar, vocabulary, conception, rhetoric and other parts of the language.

Finally, the last result, which states that collaborative skills and research output quality have a relationship, implies that both aspects have a positive correlation and have a direct and moderate relationship. It means that as students' collaborative skills increase, their research output quality also increases. This further implies that students' utilization of whatever level of collaborative skills and aspects they individually imbibed and mastered has significant and positive influences and adequate effects on the quality of the research outputs they produce.

Possibly, students' unique manner of participation in online brainstorming and generation of ideas within their group have effects on the production quality of their research output. This might also be due to the harnessed amounts of students' volunteerism, engagement, and cooperation within groups through varied and unique ways, which help them ensure the output quality of the research they are undertaking.

Perhaps, the manner by which other group members review, validate, and assess individual members' accomplished assigned tasks for their research significantly influence the quality of their research outputs. Also, it could be that the techniques each group of students apply to give constructive feedback, comments, and suggestions for improvement of individuals' fair share of tasks for the group shape the production quality of their research outputs.

Finally, another reason for this could be that students' varied use of their unique interpersonal and social skills, which are major subskills of collaboration, also affect how each individual learner interacts and works with others while completing the tasks assigned to them as well as ensuring its quality production.

This result is in consonance with the study of Roseth et al. in Gilles et al. (2016), who asserted that when students are working productively in cooperative groups, they are more likely to participate, develop positive attitudes toward others, exert more effort in accomplishing tasks, and genuinely engage in the creation of quality content.

The assertion of Bias and Kolk (2015) strengthens the result as they stressed that working in teams on complex problems requires a variety of skills and expertise because as team members identify and explore their own strengths, weaknesses, and skills, they gain an understanding of how combining the various skills of several individuals contributes to greater success, like that of quality production of research output, that cannot be achieved by one person alone.

Thus, the null hypothesis, which states that there are no significant relationships between levels of research, writing, and collaborative skills and research output quality of Senior High School students, is hereby rejected.

5. Conclusions

In light of the aforementioned findings of the study, the following conclusions were drawn:

1. The level of research skills of SHS students was "Developing". As a result, students encountered challenges in research problem identification, title writing, and hypothesis formulation. They might have had difficulties identifying specific research tasks to do. Also, they might be confused in recognizing variables of their study and might therefore be led to improper information and data gathering.

Consequently, if they still had a hard time identifying a specific research design for their study, the tendency is that they would incorrectly apply methodologies. If their information evaluation and data gathering skills were still on the developing level, they would experience difficulty in searching for materials and sources of data as well as find it difficult to collect, assess, and utilize relevant information.

Also, although students learned theories and concepts of research, under this new normal, they would be faced with limited opportunities of applying such because of many factors like unavailability of gadgets at home, limited access to the Internet, and inefficiency in putting together all of those into the written form.

With this, students would not be able to correctly accomplish research tasks that require higher-order problem-solving and critical thinking skills. They would struggle to comply with research activities and would not be able to come up with expected outputs from them.

Apparently, students, under this new normal, would be continuously challenged with limited access to research resources and platforms. If this continues to happen, they would resort to what is readily available and easily accessible and would not have varieties of information sources to utilize in conducting research and gathering relevant information. Hence, they would not hone such skills because they would have unfocused, undirected, and inconsistent research skills' learning and application and will therefore be at a great disadvantage academically.

When problems with connectivity and accessibility to the Internet were encountered by the learners, especially now that they do independent learning at home, there would be a high tendency of not acquire the research skills they need in order to confront abstract issues and complex dilemmas they experience.

On the contrary, when both offline and online research platforms were readily available, accessible, and abundant in sources, with the usual guidance and mentorship teachers can offer, students could surely improve their own research skills. Considering all of these consequences, when students' research capabilities and readiness are enriched, then they can confront abstract issues they encounter and could embark on projects that demand higher cognitive abilities and advanced critical thinking and problem-solving skills.

2. The level of writing skills of SHS students was "Developing". As a consequence, if SHS students' writing abilities, especially on its basic steps, processes, and elements, are not yet refined, they would not be able to accomplish most writing tasks such as interpretation of specific data and making valid and logical analyses.

When they still need to grasp further knowledge of language mechanics, techniques, and elements, they would have difficulties accurately presenting and organizing content using context-specific language use for more valid written interpretations and data presentations. With this, it follows that learners would encounter linguistic, cognitive, and communicative difficulties, which might affect their continued pursuit of progression and enhancement of their writing skills.

Under this new normal, if learners had been less exposed and less engaged to writing practices and tasks such as this at home, their writing competence and writing efficacy would not develop properly. When there are limited writing opportunities and experiences offered to them while independently learning at home, they will find it hard to express their ideas appropriately in the written form, especially if they are required to do so for academic learning activities. For this reason, they would not be able to write outputs that require a higher level of writing. Hence, they would suffer in academic writing activities, and they would not be able to come up with expected outputs.

As a consequence, students might lack interest, motivation, and willingness to engage in writing, especially when primarily they perceive the task as something difficult and challenging without having tried it first. Finally, if they would not consciously and diligently practice writing at home and when they continue to have a negative perception of it and with all the tasks involving it, these would unfavorably result in their inadequate writing skills' acquisition and development.

3. The level of collaborative skills of SHS students was "High". For this reason, it has been proven that students effectively complete tasks and work together in groups even under the new normal. When learners continuously need and help each other to maximize their unique individual abilities in accomplishing tasks, they would be able to effectively contribute something significant and of worth to their group.

In this completely new teaching and learning approach, when students were able to maximize the power of social media like Messenger, Facebook, YouTube, and other free online platforms, they would be able to communicate and get along with their groups while doing collaborative work such as research projects.

This being so, students, as members of a group, who continue to do their individual assignments responsibly and maximize the group processing to complete their tasks at hand, would certainly be successful in achieving the group's goals and objectives. Therefore, these would positively lead to easier accomplishments of academic tasks within a group, especially if members have positive perspectives, have support for each other, and have an open mind to acknowledge everyone's weaknesses, strengths, and contributions.

Furthermore, when students are willing to collaborate, independently engage in group tasks, share ideas, accept varying opinions, and value contribution within a group, these would be evidently shown in activities they carry out and accomplish. Hence, if they efficiently use their good interpersonal and social skills while collaborating online with their group, then there would be a continuous manifestation of effective cooperative learning.

4. The research output quality of SHS students was "Poor". This result led to the presumption that students were producing and presenting research outputs that were only of low quality under the new normal. Readers of research outputs with this kind of quality would not be able to fully grasp the aims and objectives of the research itself.

If students continue to settle in mediocrity and would not strive to come up with the best research results through the employment of appropriate and accurate methodologies, anyone who would read the written research output would be confused in comprehending the totality of it and would have unanswered questions in mind.

If students continue to submit and present research outputs that have an improper format, lacking and incoherent parts, insufficient and unverified information, and inappropriate methodologies, its quality would never be acceptable in the research field and would never have an impact on the academe and the society.

If face-to-face classes remain canceled, students would continuously be challenged in the new normal education in terms of proper application of all theories and concepts related to research, writing, and collaboration that they have independently learned. If they are not given ample time to complete and produce research outputs due to inadequate time allocation and congested curriculum timeframe, they might not be able to ensure the quality of the information they incorporate in their research work.

With these, their research outputs, under this new normal, would be understood as something that had been rushed, done, and completed without the employment of intensive problem-solving skills and critical and analytical thinking. This result of the research output quality might also be perceived by the readers as an outcome of superficial problem-solving, a result of improper application of learned research theories and concepts, and a mere subject requirement compliance.

If students continue to produce poor research outputs, readers would have poor first impressions of the student-writers and would have an immediate negative reaction, especially if they simply spot a spelling or grammatical error or if they could not comprehend what they wanted to impart. As a result, readers would doubt student-writers readiness and capabilities to be effective researchers.

Furthermore, if students continue to have impatience during research and write-ups and would not invest time in constantly editing and doing revisions for their manuscripts to ensure continuous improvement of their quality, surely their outputs would remain to have poor quality. Also, if they do not strive to possess expertise in basic computer skills, their written and oral research presentation, an aspect of research output quality, would be at stake as well since these skills are also crucial to adhering to proper formatting of their research output.

More so, if students do not have the awareness and grasp of major aspects of quality in a research procedure, research presentation, and research itself, they would not have the bases on how to properly work towards quality completion of highly-demanding, arduous, and challenging task of research writing.

5. A significant difference was found between research output quality and the levels of research skills of SHS students. This led to a manifestation that quality production of research output would be dependent on students' acquired and applied research skills. When students lack the basic knowledge for research and researching, the quality of their outputs would be at stake. Whereas, if students possess the necessary abilities required to do the task, then the quality of their outputs would be highly acceptable.

With this in mind, learners who do not substantially possess the skills required to accomplish higher-order and highly-demanding academic research tasks would experience difficulty in producing good quality research output. But when they have already acquired these crucial skills and effectively utilized such, it would be easier for them to produce valid and quality research outputs.

Consequently, if learners within a group have low research skills, then there would be a lower quality of data and information in their research output. Whereas, if learners within a group have high research skills, then there would be better quality of data and information in their research outputs.

In other words, under this new normal, learners' differences in economic backgrounds, research abilities, research opportunities, and research experiences could significantly affect how they ensure the quality of their research outputs. Therefore, by taking all of those into account, it could be concluded that the production quality of research output varies and depends on students' acquired research skills, which is an outcome of the influences of factors mentioned above.

6. A significant difference was found between research output quality and the levels of writing skills of SHS students. From this result, it could be concluded that differences in production quality of research output are highly dependent on the differences in students' acquired and utilized writing skills. When students lack basic knowledge of writing elements, processes, and steps, the

quality of their research outputs would be at stake. Whereas, if students have the mastery of mechanics and technicalities of research writing, surely their research outputs would be of high quality.

If students continuously practice writing tasks at home during this new normal, they would significantly improve their confidence in engaging in more complex yet beneficial academic writing tasks such as research writing. Meanwhile, if they avoid engagement and exposure to those, they would not benefit from such activities and would remain uninterested and unmotivated to contribute some significant accomplishments in group research writing. With this, it could therefore be concluded that students' individual choices regarding their writing skills' acquisition, development, and application would significantly influence the production quality of their research outputs.

Consequently, when learners do not possess a mastery of the basics, processes, and elements of the written language, they would be incapable of logically constructing and organizing content and writing comprehensive research outputs. Meanwhile, in contrast with those who already have writing proficiency, especially in technicalities, mechanics, and context-based language use, these types of students would be able to convey research results clearly and intelligibly in their high quality research outputs.

In other words, when learners have more advanced writing skills, they are expected to have better quality written research output. Whereas, when learners fail to acquire even the basic writing skills, the quality of their research output would presumably be incoherent, inconsistent, and illogical.

To put it simply, under this new normal, learners' differences in writing skills' acquisition, writing knowledge, writing interest, and writing experiences could highly affect the production quality of their research outputs. Thus, in consideration of all of those factors, it could be concluded that the quality of research output produced varies according to students' overall acquired writing skills, which is a manifestation of the influences of many factors like those mentioned above.

7. A significant difference was found between research output quality and the levels of collaborative skills of SHS students. From this result, it could be concluded that the production quality of research outputs is highly dependent on the differences in students' imbibed and applied collaborative skills. When students, as members of the group, actively engage and responsibly do the task given to them while collaboratively working, there is a higher tendency for quality completion of the research work to be achieved. Whereas, if students avoid and disengage in tasks at any collaborative work, there is a tendency that quality completion of the research work will be at stake.

When learners within a group openly communicate and value shared responsibilities under the new normal, they would be able to maximize their individual contributions and would continuously work towards the achievement of the group's goal in any research work. Meanwhile, if they avoid or constantly miss out on consulting with their group members as they individually do their assigned tasks or if they do not responsibly take part in accomplishing such, achievement of the group's goal would be difficult. With this, it could therefore be concluded that students' individual choices regarding their collaborative skills' acquisition, development, and application would significantly influence the production quality of their research outputs.

Furthermore, when learners have problems with dealing with individual diversity and differences in opinions as they collaboratively work, members of the group would have a hard time settling personal issues and would be in conflict while dialoguing and making decisions for successful cooperative learning and production of highly desirable research outputs. Meanwhile, in contrast to those who have a high tolerance for diversity and differences in opinions, these types of students would easily resolve issues and concerns about their research outputs during dialogues and decision-making because they know how to value and consider other's opinions while they all work to successfully complete collaborative research work with quality.

Accordingly, the more involved and cooperative learners are in group tasks, the better their research outputs would be. The less interested and less participative they are, and the less effort they exert to ensure the quality of collaborative work output they share with their group, there would be the poorer quality of their group research output.

To put it simply, under this new normal, learners' differences in collaborative skills' acquisition, collaboration applications, collaboration experiences, and collaboration motivations could highly affect the production quality of their research outputs. Thus, in consideration of all of those factors, it could be concluded that the quality of research output produced varies according to students' overall acquired collaborative skills, which is evidence of the influences of many factors like those mentioned above.

8. There were significant relationships among research skills, writing skills, collaborative skills, and research output quality. There were established positive relationships and direct associations between the four variables. They clearly had connections and thus affected each other.

First, it could be concluded that, under this new normal, the established strong relationship between students' research and writing skills manifests the significant influence of both skills on each other. Therefore, it follows that when one of these students' skills increase, then their other skill will increase too. Whether students possess an either high or low mastery of one skill, it would definitely have a positive or negative impact on the other skill.

As a consequence, during this new academic setting, if students experience difficulty in writing, their skills in research would not be properly honed as they would only have fewer capabilities to coherently organize and comprehensively present all the information they gathered as a result of researching.

For this reason, their research abilities would be useless if they could not logically put together the products of these skills in written form. Meanwhile, their writing skills would not improve if they lack mastery of the skills for research problem identification, hypothesis formulation, information evaluation, data gathering, research design identification, data analysis and interpretation, and report or research writing because they would be confused about what specific data and information they should present in their written outputs.

Moreover, if students, while independently learning at home, fail to have proficiency in research and researching, they would not be able to clearly impart the results of the investigation they have conducted through the written form. On the other hand, if they lack mastery of writing, they would not be able to spot errors and information inconsistencies in their written outputs, would not be able to thoroughly proofread such, and would not be able to properly do revisions for it in order to improve quality of information they have gathered. Hence, this established that both research and writing skills were compellingly attributable to each other.

Second, it could also be concluded that, under this new normal, the established moderate relationship between students' research skills and collaborative skills manifested the significant influence of both skills on each other. Therefore, it follows that when one of these students' skills increase, then their other skill will increase too. Whether students possess an either high or low mastery of one skill, it would definitely have a positive or negative impact on the other skill.

As a consequence, in this new teaching and learning approach, if students consistently collaborate and brainstorm for ideas with others in order to decide on crucial and relevant information to deal with while they utilize whatever research skills they have, they would be able to easily confront issues they encounter on the study they are undertaking. Because of this, their research skills would definitely be enhanced, especially when all group members participate in various research tasks and engage in their individual assigned tasks.

As for their collaborative skills, it might also be improved if, while doing research tasks, they constantly consult and support each other online, share feedback and opinions about concerns, and openly discuss matters that are essential to their research work.

Moreover, when students, while independently learning at home, do not properly utilize necessary collaborative skills, they would not be able to clearly understand and accomplish research tasks assigned to them hence would be confused about what to do and would not be guided in doing so, and would have limited collaboration experiences.

If they lack mastery of research and researching, they would not be able to discuss matters about research tasks they need to accomplish and would not be able to generate information crucial to their collaborative research work, which would result in a failure in the accuracy of their decision-making. On the other hand, when students know the value of cooperation and contribution even in this new academic setting, their accomplishment of research tasks will be ensured.

Finally, if their research knowledge is shared within the group, their interaction, participation, and group processing would be intensified, and it would lead to significant development of both skills. Hence, all of these concepts establish that both research and collaborative skills were reasonably attributable to each other.

Third, it could also be concluded that, under the new normal, the established a very strong relationship between students' research skills and their research output quality manifested the significant influence of both aspects on each other. Therefore, it follows that when students' research skills increase, then their research output quality would increase too.

As a result, if students appropriately apply their knowledge of research —procedures, presentation, and researching— in this new academic setting, then it would be evident in the quality of the research outputs they produce. When students' basic knowledge of finding reliable information sources and information evaluation and utilization are harnessed appropriately, they will be able to acceptably and validly produce research outputs. When they employ critical and analytical thinking skills, extensive problem-

solving, and in-depth interpretation in accomplishing research tasks, the goals and objectives of their study can be comprehensively communicated and presented, and the general quality of their research output is enhanced.

Meanwhile, if students, while independently learning at home, fail to have proficiency in research and researching, they would have difficulty in accomplishing research tasks, and their research output quality would be negatively affected too. Considering this idea, when their research output quality is poor, they would not be able to clearly impart the results of their investigation.

Accordingly, when students responsibly and correctly accomplish research tasks and work towards the achievement of good production quality of research outputs, they would be able to contribute significantly in the academic field and will help society solve problems and understand certain issues. Finally, the outcome of students' application of their acquired research skills in this new normal would be subjected to thorough scrutiny and assessment of its quality which would also depend on how they superficially or profoundly capitalize on their research skills. Hence, all of these concepts establish that both research skills and research output quality were strongly attributable to each other.

Fourth, it can also be concluded that, under the new normal, the established weak relationship between students' writing skills and collaborative skills manifested the slight influence of both aspects on each other. This might be the case. It still follows that either way, when one of these students' skills increases, then the other skill would increase too.

As a consequence, when students, contributing individually to their groups, put together all the information they collaboratively gathered into written form, they were offered opportunities either to utilize their acquired writing skills or imbibe new knowledge and techniques to coherently organize and present ideas in an intelligible written manner.

In this new educational setting, when shared responsibilities in individually consolidating collaborative ideas for research work are emphasized, students' writing knowledge on technicalities, mechanics, and processes would be harnessed to systematically convey information in their outputs.

Also, if these written outputs are reviewed and peer critiqued, their quality will be significantly enhanced because there will be more group members that would proofread such and will be able to pinpoint salient parts of it that need to be revised and improved. Further, in this new normal, when students' individually completed writing tasks are assessed by other group members, the promotion of peer feedback, suggestions, and constructive criticisms would benefit students and their uniquely imbibed skills.

Accordingly, when students value the importance of collaboration or seeking help from others to improve personal writing expertise, they would have a healthy interpersonal relationship within the group and would be reassured of support and assistance while each one of them aims to improve their writing knowledge and to write efficacy in accomplishing tasks assigned to them at group activities. Hence, as they cooperatively learn unique writing strategies through the employment of various collaborative techniques, their group processing, teamwork in tasks accomplishment, and decision-making would be significantly improved too.

Fifth, it could also be concluded that, under the new normal, the established strong relationship between students' writing skills and their research output quality manifests the significant influence of both aspects on each other. Therefore, it follows that when students' writing skills increase, then their research output quality would increase too.

As a result, when students' acquired writing expertise is properly employed, they could be expected to successfully produce a highly desirable research output. Meanwhile, if they are incompetent and inefficient in the writing aspect, one could not expect them to produce well-written and quality research outputs.

When students' basic knowledge of logically presenting well-argued facts, information, and generalizations is not intensified, they will not be able to communicate and present such a written research output. They would have difficulties in establishing claims of their study, especially when, in the first place, their language use is already erroneous. To put it simply, when students have more advanced writing skills, their research output quality will be high. But if they fail to master even the basics of writing, their research output would most probably be of low quality.

Moreover, if students, while independently learning at home, fail to have writing proficiency and efficacy, they would have difficulty in accomplishing higher-order research writing tasks, and their research output quality would be negatively affected too. Considering this idea, when their research output quality suffers from erroneous language use and presentation, they would not be able to clearly report the results of the investigation they have done in their research work. Accordingly, when students responsibly and correctly accomplish writing tasks and work towards the achievement of good production quality of research outputs, then understanding the main objectives of their output would be easier.

Finally, the outcome of students' application of their acquired writing skills in this new normal would be subjected to thorough scrutiny and assessment of its quality which would depend on how they proficiently or incompetently capitalize on their writing skills. Thus, all of these concepts establish that both writing skills and research output quality were strongly attributable to each other.

Lastly, it could be concluded that, under the new normal, the established moderate relationship between students' collaborative skills and their research output quality manifested the significant influence of both aspects on each other. Therefore, it follows that when students' collaborative skills increase, then their research output quality would increase too.

As a result, if students, while working and collaborating together within a heterogeneous group, correctly apply the necessary skills, the quality of their research outputs which is revealed upon thoroughly looking at it, would be improved because it had been processed and produced after peer reviews and critiquing. When students harness a significant amount of engagement and willingness to accomplish collaborative research tasks, then the quality of research output they are undertaking is ensured.

In the same manner, if students' individual accomplished assigned tasks for their group research output are reviewed, assessed, and validated online by all members, its quality would be positively influenced and would increasingly be significant. Also, if they practice continuous giving of feedback, comments, and suggestions on everyone's individual accomplished tasks, every group member would be fairly responsible for shaping their research outputs into something desirable and worthy of production.

Accordingly, when students responsibly accomplish individually assigned tasks and collaboratively work towards the production of research outputs, the achieved objectives of the undertaken research work would be communicated and presented clearly in good quality and in a highly desirable manner. Thus, whatever the outcome of students' application of their acquired collaborative skills in this new normal, it would be viewed and subjected to thorough scrutiny and assessment of its quality which would depend on how they excellently or inadequately capitalize on their collaborative skills.

Hence, in general, students' utilization of their acquired research skills, writing skills, and collaborative skills would positively affect each other and would surely influence their research output quality.

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