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Short Paper

Experiences and Challenges for K to 12 Science Education in the New Normal in Bicol, Philippines

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Abstract

This study identified the challenges encountered by K to 12 Science teachers in the new normal along with content, learning modalities, and assessment which employed descriptive research design utilizing survey method. Respondents were the 217 secondary Science teachers in the different provinces in the Bicol Region teaching Biology, Chemistry, Physics, General Science, and Earth Science who joined freely in the survey. Findings showed that there are emerging (1) challenges with mobilizing technical contents, (2) problems with learning materials due to incorrect information and design flaws, problems with time management, learning gaps, and health-related issues in learning modalities where modules are the most frequently used method, (3) and problems with academic dishonesty and evaluation contents in assessments. Nevertheless, all of the measurements showed a lack of attention to the use of ICT because of individual, institutional, and resource-related variables. The study concluded that the curriculum is too time-bounded and time-centered, which adds to the difficulty experienced by teachers in delivering content, modality, and assessing the students regardless of the student's degree of acquired knowledge.

Keywords – Science teaching, learning modality, pandemic

INTRODUCTION

The Department of Education is committed and dedicated to delivering quality education to its learners and the community, in connection with the constitutional

mandate of the State "to establish, maintain and support a complete, adequate, and integrated system of education relevant to the needs of the people, the country and society-at-large," under Section 2 (1), Article XIV of the 1987 Constitution, as reiterated in Republic Act (RA) No. 10533, or the Enhanced Basic Education Act of 2014. In line with the department's mandate, basic education, it offers different learning delivery modalities that the region, division or school may adopt such as Modular Distance Learning Modality (MDL), Online Distance Learning (ODL), and TV/Radio-Based Instruction where learning takes place between the teacher and the learners who are geographically remote from each other during instruction.

Due to the COVID-19 pandemic and strict observance of health protocols, mass gatherings, which include students going to school for any purposes, unless otherwise needed, are strongly discouraged and prohibited, in turn, students are not permitted to go to school to conduct laboratory experiments and activities to prevent the chances of getting infected by the virus. Because of this, science teachers are challenged to provide alternative ways to get students to conduct laboratory experiments and activities with improvised and alternative materials available within the safety of their homes. According to STAN 40th Anniversary conference proceedings (1997), improvised materials provide a cognitive bridge between abstraction and reality to students. In addition, improvisation saves costs and the teacher and the students make a positive effort towards effective instruction.

Due to the new demands of education in the new normal set-up, science teachers are pushed and encouraged to become more adaptable in coping with the current educational set-up and becoming more creative in building new ways to facilitate students in achieving and acquiring the most essential learning competencies through modular distance learning modality despite the prohibition of using laboratory equipment in schools and other compromises brought by the COVID-19 pandemic. Thus, it must be explored especially in teaching science.

With this, this center explored the teachers' experiences and challenges available along science education in the K to 12 during the pandemic for the development of responsive development programs that will benefit not only the science educators but also the learners and the community in general.

LITERATURE REVIEW

Researching science teachers' practices on facilitating explicit experiences is crucial in achieving science literacy. Kloser et al. (2019) conducted a study on science teacher education experiences and they suggested future research to investigate the relationship between novice secondary science teachers' use of discussions and student learning. In onsite and pandemic setup, active participation of students in laboratory

activities is one method for ensuring the development of science process skills (one of the science learning domains) (Sulong Udyong, 2014). Microscopy, mechanics, chemical reactions, gas laws, volcanoes, and faults are examples of science contents that are thought to be difficult for science teachers and need laboratory experiences and simulation-based activities through inquiry. Indeed, Gausabel (1998) found that these science concepts were best learned when students were involved in laboratory activities whilst science teachers believe that these are the most challenging science topics to mobilize since they require hands-on activities.

The use of distance learning tools and resources to deliver learning objectives and problem-solving, as well as innovative pedagogical approaches to sustain effective teaching and learning, is therefore expected of teachers who conduct teaching and learning activities on the new normal (Eickelmann & Gerick 2020). Along with all of these responsibilities, teachers are also required to stay in touch with their students and sustain social ties. The study of Gregorio (2022), which highlighted those educational reformers and institutions that failed to mobilize teaching in the new normal as everything is in the stage of dry run and experimentation, also yielded the same result and meaning.

Science teachers raised a multitude of challenges with learning modalities, most of which were technology-related. These issues included a lack of gadgets, a poor internet connection, a power outage, and a lack of technical know-how, especially for learning modalities involving virtual platforms. These challenges seen in the Philippines due to a lack of technological use are a worldwide problem encountered in other countries (Palak & Walls, 2009).

Findings of Dossari et al. (2022), discovered that online teachers frequently suffer from vision problems. While other countries introduced teacher support measures like granting health insurance and free check-ups for illnesses connected to their jobs during the new normal, Filipino teachers still suffer from having to pay out of their own pockets to get them healthy enough to work (Gregorio, 2022).

Prior to the pandemic, teachers were trained to use technology-based testing with OER (open educational resources) as alternate modalities of assessment, incorporating fun and getting into the ways that students learn (Llego, n.d.). Competitions on OER production are managed for both students and teachers to promote the program.

METHODOLOGY

Method. This study employed a descriptive research design utilizing the survey method. Data were collected with the aid of questionnaires. The teachers' experiences and challenges in teaching Science in the K to 12 were extracted from their responses to the questionnaire.

Data Collection & Analysis. Permission to conduct the study in DepEd Region V was sought from the DepEd Regional Director as assisted by the science education supervisor. The questionnaires were sent to the High School Science teachers through email and messenger through Google forms as well as the consent form from the respondents. Online interview with random science teachers in the region who expressed willingness to be interviewed was conducted for the triangulation of data. The data obtained from the responses to the questionnaire were tallied, classified, and treated using descriptive statistics. The qualitative data was analyzed and examined to provide a holistic picture of the experiences and challenges obtained from the questionnaire. The information which was obtained from the interviews was also analyzed qualitatively. These qualitative data were coded to reduce them into smaller groupings so that they are more manageable.

Data Gathering Instrumentation. The instrument used in gathering the data was developed by the RCSMED team and underwent intense validation as validated by research-faculty from different state universities in Bicol Region and DepEd curriculum supervisors.

Respondents. Respondents were secondary Science teachers in the different provinces in the Bicol Region. The sampling includes those who were teaching in small, medium, and large schools in the different Divisions in the region regardless of how long they are in the teaching profession and those who are assigned in rural and urban areas. Added consideration in the choice of participants was the teacher's specialization since all areas such as Biology, Chemistry, Physics, General Science, and Earth Science must be represented. However, the choice of respondents also depended on their willingness to participate in the study.

RESULTS

The operation of schools during the pandemic era with the COVID-19 virus still on the rise posed a challenge and opportunity for science teachers due to the new normal in teaching. The current system of regular education offers science teachers unorthodox ways to mobilize instruction. The important conclusions drawn from the accounts and responses of science teachers in the Bicol region are discussed below.

Abstract concepts were also regarded as challenging for science teachers to communicate during the new normal. In a sample response, these contents must be "*thoroughly explained*," yet time is restricted for the topic, and a change in the instructional flow is required but "*not carried out owing to perceived added workload*". This response exemplifies the inability to shift material content as a result of overburdened activities that limit teachers' ability to change the material based on the needs of the content and the student. This supports the claim that, whether pandemic or

not, topics centered on abstract concepts are exceedingly difficult to learn since students are rarely exposed to them and are required to manifest deeper levels of imagination of the micro world.

Table 1. Science topics are the most difficult content for teaching in the new normal.

Challenging Science Contents	**Science Area**	**Category**
Optics	Physics	Computational/Abstract
Mechanics	Physics	Computational/Laboratory
Genetics	Biology	Computational/Abstract
Microscopy	Biology	Laboratory
Electrodynamics	Physics	Computational/Abstract
Chemical Reactions	Chemistry	Laboratory/Abstract
Bioenergetics	Biology	Abstract
Cytology	Biology	Abstract
Balancing Equations	Chemistry	Computational
Gas Laws	Chemistry	Computational/Laboratory
Atom	Chemistry	Abstract
Volcanoes	Earth and Space	Laboratory/ Abstract
Faults	Earth and Space	Laboratory/ Abstract
Cosmology	Earth and Space	Abstract

Considering the numerous problems in directing these challenging contents, narratives on why science teachers find it difficult to teach these contents in the new normal were also considered. Parallel to the recent narrative on the limitation to perform the consolidated science contents was also reflected in the codes indicating difficulty in "*teaching science topics with mathematical concepts*" and "*lack of materials to perform experiments at home.*" These are solid arguments for assuming that the perceived complexity/technicality of the content and the material resources required for experiments influence the challenging delivery of these contents. True, these testimonies posed a threat to the acquisition of the target science domains, but accounts from science teachers also showed the "*need to lower requirements/standards*" to accommodate the new normal and reduce academic burnout among students and teachers.

Table 2. Code of responses of science teachers regarding the emerging challenges encountered during the new normal in teaching the content.

Challenges with Experiential Science Content Teaching Codes	**Category/Theme**
Teaching science topics with mathematical concepts Too broad MELCs (Most Essential Learning Competencies) Expectations from administrators	Technicality

Redundant activities Activities not related to the students Hard to develop LAS for some MELCs Lack of materials to perform experiments at home	Material and Resources
Students lack pre-requisite skills. Students' lack of understanding	Learning Gaps
Cannot complete the course, MELCs are not met Limited time frame to teach MELCs	Timeline

During the code consolidation, four primary themes/categories emerged as terminals for the content's faced issues. (1) Technicality, (2) material and resources, (3) learning gaps, and (3) timeframe are among them. The coding revealed that the difficulty in mobilizing the content is related to the material to be learned, the nature of the students, and the period within which the contents should be mastered. This demonstrates the department's lack of appropriate time and meticulous planning to prepare the curriculum for the new normal, in which teachers act as the catch-all for all drawbacks in the implementation error. Many science teachers had problems with the curriculum content because they were "*bombarded with activities in the module,*" resulting in copious paper output to evaluate and check on. Similarly, one teacher commented that the activities are "*too broad and unsuited to the level of the student and intended for fast learners.*" On a similar point, this has a subtle impact in the sense that teachers indicated that the content to be learned lacks reliability since "*parents/guardians are reported to answer the activity sheets,*" accounted for the learning gaps.

Schools were given the choice to choose the most appropriate distance learning modality for their students and school capacity under the DepEd's adaption of BE-LCP. Table 3 shows the results of science teachers' responses regarding the frequency of use of a learning modality utilized in the new normal.

Table 3. Utilization of distant learning delivery modalities during the new normal

Learning Delivery Modes	**Frequency Count***					**Mean**	**Descriptive Equivalent**
	A	**O**	**S**	**R**	**N**		
Modular (using printed modules)	205	10	2	0	0	4.94	Always
Modular (using digital modules)	44	35	67	26	45	3.03	Sometimes
Online (Asynchronous)	23	21	57	34	82	2.39	Sometimes
Online (Synchronous)	18	14	46	32	107	2.09	Rarely
TV/Radio-based Instruction	5	11	54	29	118	1.88	Rarely
Blended Learning	31	33	58	30	65	2.70	Sometimes

***Legend: Always (A), Often (O), Sometimes (S), Rarely (R), and Never (N)

Given the unique difficulties faced by science teachers in implementing each learning modality, some obstacles have emerged in their responses, which are a

collection of various teaching challenges during the new normal. The code of challenges and its accompanying theme are summarized in Table 4.

Table 4. Code of challenges for every learning modality

Learning Modality	Codes of Challenges for Every Learning Modality	Theme
Modular (print)	Insufficient supply of modules, Printing of modules Delay in material and module supply Laborious crafting of activity sheets	Material availability
	Material error, Content difficulty, and error Difficulty in performing experiments	Material structure
	Monitoring of student progress Late/incomplete/ no submitted output	Recording
Modular (digital)	Late/incomplete/ no submitted output	
	Eye discomfort	Health factors
	Time demanding	Labor
	Technical problems, No gadgets Lack of stable internet connection	Technology
Online (Asynchronous)	Lack of stable internet connection Late/incomplete/ no submitted output No gadgets, Power interruption, Lack of ICT skills	
	Eye discomfort	Health factors
Online (Synchronous)	Eye discomfort	
	Power interruption, Poor internet connection No gadget	Technology
	Preparation of lesson	Instruction
	Punctuality and behavior Late/incomplete/ no submitted output	Focus and Interest
TV/Radio-Based	Not interested in watching/listening to TV/radio	
	Late launching of topics No scheduling of topics for broadcasting Time mismatch between student time and airing Limited time for broadcasting content	Scheduling and time
	Lack of TV/radio	Technology
Blended	No gadgets, Poor internet connection	
	Difficulty in catching up	Learning gap
	Limited resources	Material availability
	Intensive preparation, Adjustment in pacing Monitoring and recording student progress	Instruction and recording
	Schools used as quarantine facilities. Health risks	Health factors

According to Table 5 (below), science teachers prefer pen-and-paper assessment strategies during the new normal, as seen by the "*Always*" response. The table also demonstrated a lack of experimentation in assessment procedures utilizing technology, as seen by the "*Rarely*" response to nearly every virtual assessment platform. This is an

indication that the potential of technology is not always harnessed in all instructional activities, whether in planning, delivery, or assessment, as seen by the preceding tables, notably in the usage of online teaching platforms.

Table 5. Assessment tools employed by science teachers in the new normal

Assessment Tools	Frequency Count*					Mean	Descriptive Equivalent
	A	O	S	R	N		
Paper and pencil test (printed)	180	23	10	2	2	4.74	Always
Digital quiz using Google form	20	23	36	29	109	2.15	Rarely
Digital quiz using Kahoot	6	8	32	25	146	1.63	Rarely
Digital quiz using Quizziz	11	8	28	26	144	1.69	Rarely
Digital quiz using other platforms	12	13	33	34	125	1.86	Rarely
Digital writing discussions	12	15	32	33	125	1.88	Rarely
Journal	23	35	50	39	70	2.55	Sometimes
Reflections	71	55	48	24	19	3.62	Often
Oral questioning using Google Meet, zoom, or call	23	23	45	30	96	2.29	Rarely
Discussion board using FB, messenger, or Google Classroom	62	49	45	20	41	3.33	Sometimes
Mentimeter	8	12	35	26	136	1.76	Rarely
Jamboard	9	7	34	29	138	1.71	Rarely
Other OER	8	7	44	27	131	1.77	Rarely

*Legend: Always (A), Often (O), Sometimes (S), Rarely (R), and Never (N)

Table 6. Code of challenges experienced by teachers in the assessment of learning

Challenges with Experiential Science Assessment Codes	Category/Theme
Poor comprehension and low scores	Level of understanding
Poor internet connection	Technology
No authenticity, Lacks honesty, Copying answer keys, And Having similar answers with peers	Credibility of results
Different developmental levels of assessment Testing science process skills	Approaches
Communication Difficulty in providing feedback	Connection
Late submission, Incomplete answers, and No names, Not following instructions	Channeling and content

Teachers have responded by claiming that they believe that "*designing experiments*" and topics requiring "*laboratory work*" were a setback to many science teachers who wanted to make sure that the instruction covered not only the acquisition of knowledge but also the science process skills. Although most science teachers

proposed and took into consideration the addition of experimentation using "*context-based materials*" in science distance learning approaches, science teachers are still skeptical of the approach, believing that materials may not be widely available to all students, which could lead to workload offshoot and multiple queries to answer from students. Though Darrah et al. (2014) innovated a virtual distance lab, they insisted that nothing can substitute the physical manner for carrying out laboratory work. According to these reports, there is enough evidence to conclude that science process skills are lagging across all science domains, especially when it comes to issues like failure to mobilize laboratory activities.

Despite the difficulties that teachers have in teaching content knowledge, the majority of science teachers believed that the content should be provided and learned thoroughly throughout the pandemic. Some science teachers received technical assistance from colleagues who were in the same situation, but they were still unsure about their priorities. For the majority of science teachers, letting go of content knowledge was an outcome, not a decision or a plan. One teacher noted, "*There is no assurance that these topics are grasped, yet administrators have great levels of expectations and demand*," and a "*lot of paper works*" which divides teachers' attention between ancillary works, actual teaching loads, and attainment of expectations. This strengthens the premise that if course goals and curriculum standards were adjusted appropriately, students and teachers would retain some confidence and efficacy even in a pandemic learning mode.

Learning Modalities

Teachers in particular, as well as educational institutions, were caught off guard by the abrupt and rapid shift to various modalities of teaching. It was difficult for teachers to get over the challenges and restrictions of face-to-face teaching during this paradigm shift in education brought on by the COVID-19 pandemic. As a result, it has been observed that both teachers and students find it difficult to reorganize the teaching and learning process within the context of the new normal and make the switch to distance learning modalities. The sustainability of education was paramount in this new normal.

Based on the science teachers' accounts of how more tasks were given to implement the distance learning modality, science teachers agree that their workload rose. A reflection of experience also revealed that science teachers were very challenged in the sense that they were expected to provide the necessary deliverables to students on time with delays and insufficient supplies from the distributing offices. In a sample response, teachers claimed that "*unconventional preparation, planning, and designing*" are the most challenging aspects of the new normal, which contributes to the added effort that was not customary for their teaching methods before the pandemic. Regardless of the distance modality utilized, this answer exemplifies the additional effort that was

required as a result of insufficient training and the necessity for the department to quickly adjust to the new teaching arena. The testimonies of challenging experiences and increased workload indicated that it all stemmed from a lack of materials required for distance learning. In response, the majority of science teachers stated that "*printing of the learning materials*" is the most time-consuming task in the new normal to supplement the division office's insufficient material supply, while narratives from online science teachers mentioned the need to "*develop learning materials appropriate for an online platform*." Science teachers' accounts support the probable allegation that the department is not properly prepared and equipped to operate in the new normal. This is consistent with other studies by Giovanella et al. (2020) and Marek et al. (2021), which similarly examined science teachers' perceptions of science instruction in the new normal and discovered an increase in their workload.

Despite the development and improvement of technology use in schools (DepEd, 2022), science teachers continue to prefer the use of printed modules as a medium for remote learning, as seen by the descriptive equivalent "*Always*" over "*Rarely*" to "*Sometimes*" use of technology. A review of teachers' responses revealed a lack of technical skill to independently operate technology-aided instruction, a lack of school facilities to host online learning, a power interruption, a poor internet connection, a lack of gadgets by teachers, as well as a lack of gadgets by most students and their lack of interest. Whichever way the truth is reflected, the school, the teachers, and the students who were ill-prepared to engage in virtual teaching despite the numerous training programs and seminars designed to improve digital competence in the classroom (Marcial, 2021) all attest to the negligence in the use of technology. 58%-86% of the surveyed science teachers participated in online training courses in preparation for the new normal but did not apply what they learned in practice. In particular, this finding is consistent with the writings of Anzaldo (2021), who stated that the majority of students, particularly in rural locations where internet access is not always available and schools are disadvantaged, resort to the usage of printed modules. The body of research and the current work provide adequate proof that the implementation of technology-aided education and its training programs has no or limited effect on how ICT is used in practice or as a backup plan for the new normal.

Many science teachers, meantime, faced difficulties with the learning materials provided by the Division Offices because they felt that its content was either too broad or narrow to be covered by the MELCs or that it was too challenging for students to comprehend without teacher guidance. Since some of the pages were poorly developed and incorrectly printed by the provided instruction of the material, the physical structure of the learning resources is also judged to be an issue. The lack of learning resources also makes it difficult for science teachers to meet the demand for materials and maintain the one-to-one student-to-material ratio.

When teachers began to shift to off-campus learning, they encountered several concerns. According to the study results, most science teachers suffer from work burnout as a result of the tedious activities that must be completed. Other pressing concerns were (1) health-related issues (virtual), (2) recording issues (in all modalities), (3) labor quantity, (4) scheduling and time (TV/Radio), (5) instruction (all modalities), (6) student attention and interest (virtual), and (7) learning gap. Throughout the current study, teachers expressed worries about the quality of science materials and the necessity to properly evaluate the contents before distribution, in addition to printing to meet the material's quantity requirements. According to one respondent, teachers have "*more office work than instructional-related responsibilities,"* which supports the premise of performing extra effort, particularly on material development. Concerns regarding students' incapacity to provide the output on time were also a stated problem by science teachers in all learning modalities since it delays the recording of the grades.

While some schools received support from the community and stakeholders like [responses] *"provision of flashdrives", "procurement of printers", "delivery of laptops", "establishment of free wifi hub", "internet load allowance", "partnership with local radio stations", "barangay officials collaboration", "training workshop",* and *"gadget supply to students"*, science teachers were concerned about the distance learning modalities because it does not fully guarantee the quality of learning without teacher guidance. Maintaining precise class procedures, establishing relationships and a classroom rapport, and preserving and maintaining active student engagement are just a few of the issues that science teachers encounter while utilizing distance learning modalities. The same issues were raised by teachers across the world regarding outside distractions, networking issues, a lack of engagement, poor participation rates, lack of training and technical support, and others (Joshi et al., 2020).

According to excerpts from the responses, science teachers responded to the survey about the health risks of distance learning for both teachers and students. In a sample answer, teachers taking online classes complained of eye fatigue and discomfort caused by prolonged screen exposure, resulting in impaired eyesight. These results show that, in addition to the department's lack of extensive preparation, the system also has a significant gap between teachers' needs and instructional expectations that needs to be resolved. Beyond these plausible and reasonable concerns, several difficulties made teaching science during the pandemic considerably more difficult.

Assessment

A crucial part of the teaching and learning process is student assessment. Comparing student performance to predetermined learning objectives enables teachers to evaluate their efficacy as teachers and to solve current challenges in educational learning gaps. Since it provides information on how effectively students are achieving the topic goals, performance assessment is essential. When the DepEd discussed the learning

continuity plan for the 2020-2021 academic year specifically on assessment methods, one of the problems raised was academic dishonesty (DepEd, 2021). Students will be tempted to cheat due to the lack of a teacher personally proctoring the assessment. This anticipated challenge has long been handled in many countries by offering more concrete questions based on scientific principles, performing observations, using Google Forms as a learning management system, and requiring students to submit handwritten assignments (Arietta et al., 2020).

This is an obvious indication that science teachers were unable to actualize the supposedly technology-based assessment tools despite their amplification due to identified issues like a slow internet connection and a lack of gadgets. The sole fundamental option responded to by science teachers in technology adoption was through the use of social media applications, yet science teachers still favor paper-based assessment methods.

These results were consistent with the previously described responses of science teachers on learning modalities. Science teachers previously stated that the learning materials are too broad for students to absorb in a short amount of time, in addition to their mechanical mistakes. This difficulty in mobilizing the challenge of material errors resulted in poor scores in the assessment outcome. The outcome merely attests to the domino effect in the educational system when the material springboard is incorrect, resulting in a slew of setbacks in the learning outcome. For distant learning modalities, a critical review of the learning materials should be performed, and science teachers must devote time and religious effort to rectifying materials if they intend to improve the academic standing of their students in science.

Code categories showed assessment challenges, particularly about the credibility of results. This was supported by some teacher responses stating that "*students are just copying the answer keys*" and "*submission of similar outputs.*" Indeed, the predicted problem in the learning continuity plan for 2020-2021 gave rise to the accounts of the surveyed teachers on the student's assessment results regarding academic dishonesty. Perhaps this is based on the premise that if students can copy answers, they will not be concerned about receiving low test scores, which could signal a learning gap or failure. The fact that students received poor scores based on teacher responses attests to the assumption that cheating was their only option for passing the subject. Because students are more interested in grades than in learning, the lack of credibility of results overshadows the true quality of learning. In other countries, they recommended a skill-based monitoring assessment technique that uses a checklist to track students' progress toward acquiring specific learning outcomes rather than grading (Klemen, 2022).

Other identified codes for assessment challenges indicated (a) technology-related aspects, particularly for virtual learning modalities, (b) connection with students, (c)

content of submitted output and its channeling, (d) assessment approaches, and (d) students' level of understanding. According to responses, power outages and bad internet connections impede online assessment strategies. This is a challenge, particularly for schools that rely on virtual platforms. This recommends the need to invest in technology to strengthen not only assessment but instruction as well. It is thought that the anticipated difficulty in connecting with students through communication and delivering feedback could be a technology-related concern because students are challenging to reach despite technological advances. Other obstacles that may obstruct the connection with students include the student's failure to reply to call-ups or the topography of the area, which is a travel impediment for students to report to school.

While some science teachers face assessment challenges in integrating the appropriate approach to make distance instruction inclusive of all developmental needs of students, several challenges were recorded on the assessment content of the students, such as the absence of a name, incomplete or inappropriate answers, and not following instructions, which could indicate that the students are not fond of reading and understanding instruction in guiding them to do activities. This issue must be addressed if the educational system aims for students who can work independently without supervision.

The current study's findings on the challenges faced by science teachers in assessing learning outcomes raise several concerns about the quality of learning. This also highlights the students' limitations, as the rapid transition to remote learning has imposed significant learning changes that are all new to them, most notably the minimal development of self-control, personality, and honesty.

CONCLUSIONS AND RECOMMENDATIONS

Exploration of science teachers' experiences and challenges in the new normal revealed significant reports of emerging problems that presented unusual challenges to teachers on content, modality, and assessment, indicating the department's lack of readiness in implementing the new normal and the science curriculum's unsuitability for distant learning modalities.

IMPLICATIONS

During this unprecedented time because of the pandemic, it is important to explore the experiences and best practices of science educators on how they deliver the content, mode of delivery, and assessment. This unprecedented scenario has highlighted the resilience and adaptability of educators, as they have had to navigate challenges such as remote learning, technology integration, and maintaining student engagement. The result of the study may also contribute significantly to a possible future shift in education

caused by human and natural calamity. This research study may inform policymakers and implementers that enhance educational resilience in the face of future calamities.

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DECLARATIONS

Conflict of Interest

No conflicts of interest exist between the authors that might be deemed significant to the article's content.

Informed Consent

Informed consent was obtained from all respondents involved in the study.

Ethics Approval

Approval to conduct the study was obtained.

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