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Research Article

What do Science Teachers Notice in the K12 Learner's Material Produced by State Education Department?

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ABSTRACT

Learning materials aid conceptual retention, stir learning motivation, increase academic engagement, and enhance student achievement. This study is a descriptive-evaluative research that described the science teachers' assessment of the Grade 8 Science K12 learner's material produced by the state education department. The study was conducted in three government-owned secondary schools in Zambales, Philippines. The science teachers used a modified Learning Resource Assessment Tool developed by Prince Edward Island (2008) in evaluating the K12 material. Results revealed that the learner's material is satisfactory in terms of content, instructional design, and technical design. However, the teachers cited some problems encountered, such as inadequacy of the materials for the learners, the incongruence of the topics to the learning competencies, and lack of instructional time to cover all the topics. The teachers also laid some recommendations that can be forwarded to the Department of Education to review, refine, revise and re-align the learner's material to make it research-based, relevant, and responsive to the learners' needs.

Keywords*: Instructional material, K12 instructional material, Learning material, Material development, Science education*

Introduction

Instructional materials are quintessential resources of teachers and learning facilitators to deliver instruction. Effective instructional tools can be significant mechanisms to improve learners' attention and success in science (Al-Balas et al., 2020; Asrizal et al., 2018).

Schools need proof of the effectiveness of instructional tools to improve students' achievement in science. Furthermore, several research reports indicate that well-designed, standards-based materials supported by professional development focused on implementing the materials have a vital influence on teaching and learning (Bartholomew et al., 2020; Gerde et al., 2019; Senk & Thompson, 2020).

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In a teaching-learning process, the teacher also encounters some problems with the learning materials in terms of the content, which is usually not updated or inclined to the latest curriculum. They also suffer a physical quality deficiency of the learning materials. Legaspi (2014) reported that in the last three years, Grade 7 students in one secondary school in Metropolitan Manila had to purchase workbooks as there were no learning resources issued by the Department of Education (DepEd) to the school. It indicates that one of the biggest problems of teachers nationwide is the learning materials provided by the DepEd. Upgrading the instructional facilities, which includes instructional materials, may be given priority to further develop students' competencies in response to the demands of the new industrial era (Reusia et al., 2020). Furthermore, research-based and commercially viable teaching resources are limited in scientific education. (Lee et al., 2019).

Aside from the educators, the students, and the conducive learning environment, learning materials are also pivotal elements that make the teaching-learning process possible. Instructional materials assist the teachers and learners in achieving learning outcomes. Learner's materials are the instructional resources used by teachers to deliver instruction. Without these resources, the teacher may have trouble teaching the students. It acts as a guide for the instructor in the teaching process so that they may effectively present each lesson to their students. According to Rahman (2015, p. 98), a teacher might utilize the end-of-module or end-of-unit exam to evaluate the student's or student's progress in learning. The use of learning resources will aid students in comprehending the presented topics throughout the learning process. They will also improve their scientific literacy and critical thinking abilities. Instructional resources are vital as they significantly improve student's performance by supporting student's learning. Therefore, there is a need to assess the learning materials to determine if these materials are congruent with the curriculum and the students' context.

"Science education in 21st-century has become more challenging concerning educating students in 21st-century skills in addition to imparting scientific attitude, knowledge, and skills required in science education" (Tufail et al., 2016, p. 197). Learning materials can also be an essential tool in facilitating students learning in the 21st century and this knowledge-based society.

The Department of Education (2016) emphasizes that the curriculum will provide students with a range of competencies essential in the real world and in a knowledge-based society. The curriculum will help the students in preparing themselves to become productive citizens in the near future. Science education will mold the students to become better stewards of the environment and better leaders of their own fields. Moreover, the students can be profoundly energetic and increasingly engaged with the learning procedure in science if they enjoy what they do and have interactive instructional material to use (Rogayan & Bautista, 2019).

There have been several global studies on the development and evaluation of educational materials (Asrizal et al., 2018; Gusweri, & Rifai, 2019; Khan et al., 2019; Mead et al., 2019; Rubini et al., 2018; Somakim et al., 2016; Uzun & Yildirim, 2018).

Previous research on instructional materials in the Philippines has also been conducted. These research focused on the creation of educational materials in science and technology (Barquilla & Cabili, 2021; Bibon, 2020; Bigcas et al., 2022; Cruz & Rivera, 2022; Oronce & Manalo, 2021; Rogayan & Dollete, 2019; Soltura, 2022; Urbano, 2020; Variacion et al., 2021), material development in mathematics and engineering (Dio, 2017; Madrazo & Dio, 2020; Mamolo, 2019; Mercado, 2020; Subia, 2020; Terano, 2015; Torrefranca, 2017), baseline studies for instructional development in science (Gregorio et al., 2019), development of digital learning modules in health education (Tolentino et al., 2020), and evaluation of DepEd-produced modules in biology (Tan, 2019). The literature review found a scarcity of research on the evaluation of science teachers in K12 learner's materials used in public schools.

Hence, the researchers were prompted to conduct the study. The researchers used the instructional design model in investigating the

content, instructional design, and technical design of the state education department-produced learner's material used in the K12 Science curriculum as assessed by Grade 8 Science teachers.

This study aimed to describe the teacher's assessment of the Grade 8 K12 science learner's materials produced by DepEd and are used by eight grade students in the public schools in the Philippines.

Conceptual Framework

Figure 1 presents the research paradigm on the assessment of the Grade 8 science K12 learner's materials. The left box contains the profile of the Science teachers while the right box contains the assessment variables, which include the content, instructional design, and technical design. The output of the study is the recommendations shared by the respondents to address the challenges they encountered in the learner's materials.

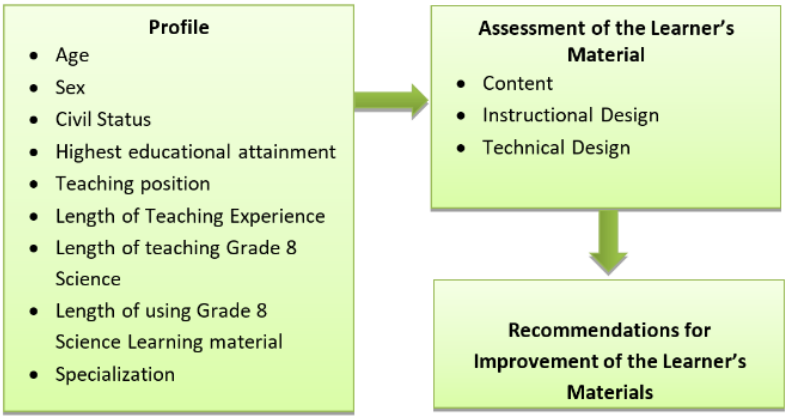

Figure 1. Diagrammatical framework of the study

Methods

Research Design

The study used a descriptive-evaluative research design with an evaluation tool as the main instrument in gathering teacher's assessment on the Grade 8 Science K12 learner's material. The study used descriptive-evaluative research design to provide a better picture of the teachers' evaluation of the instructional material being used in science instruction. Descriptive-evaluative is a method of systematic way of systematically gathering, assessing, categorizing, and making sense of data. Its primary objective is to assess and interpret the collected data (Calderon & Gonzales, 2004).

Study Respondents

The study's respondents were eighth-grade science teachers from three government-owned schools in the southern Philippine province of Zambales. Teachers must have taught eighth-grade science for at least two years before the research. The respondents were selected using a method of purposive-comprehensive sampling. Purposive sampling is based on selecting samples of persons depending on the researcher's aims. An individual is selected for the sample based on strong evidence that they are representative of the whole population (Calmorin, 2010). Comprehensive sampling is a sampling method in which the researcher selects all of the study's target respondents.

The researcher selected all the Grade 8 science teachers in each school from the three public high schools in Zambales. School A and B have 6 respondents, while School C has 5 respondents. The teacher-respondents were asked to complete an evaluation tool questionnaire to assess the Grade 8 science K12 learner's material regarding content, instructional design, and technical design.

Table 1. Profile of the Grade 8 Science Teachers

Profile	Frequency (N=17)	Percent (100.0)
Age		
25 and below	4	23.53
26 to 30	1	5.88
31 to 35	4	23.53
36 to 40	3	17.65
41 to 45	2	11.76
46 to 50	1	5.88
51 to 55	2	11.76
Sex		
Male	7	41.18
Female	10	58.82
Civil Status		
Single	6	35.29
Widowed	2	11.76
Married	9	52.94
Highest Educational Attainment		
BS/AB holder	3	17.65
MA/MS holder	2	11.76
BS/AB with master's unit	11	64.71
MA/MS with doctorate units	1	5.88
Teaching Position		
Teacher I	11	64.71
Teacher II	2	11.76
Teacher III	2	11.76
Master Teacher I	1	5.88
Master Teacher II	1	5.88
Length of Teaching Experience		
Below 5 years	9	52.94
5 to 10 years	2	11.76
11 to 15 years	4	23.53
16 to 20 years	1	5.88
26 to 30 years	1	5.88
Length of Teaching Grade 8 Science K12		
2 years	9	52.94
3 years	2	11.76
4 years	1	5.88
5 years	5	29.41
Length of Using Grade 8 Science K12 Learner's Material		
2 years	10	58.82
3 years	2	11.76
4 years	1	5.88
5 years	4	23.41
Specialization		
Biological Science	8	47.05
Physical Science	5	29.41
Chemistry	1	5.88
General Science	2	11.76
Mathematics	1	5.88

As shown in Table 1, most of the respondents are aged 25 and below (4, 23.53%), and only one (5.88%) is aged 26-30 and 46-50. In terms of sex distribution, out of 17 respondents, 7, or 41.18% are males, and 10 or 51.82% are females. Most of them are married (9, 52.94%), and 6, or 35.29% are single. Among 17 respondents, only 2 or 11.76% are widowed.

Most respondents are BS/AB with master's units (11, 64.71%). Some are BS/AB holders (3, 17.65%), MA/MS holders (2, 11.76%), and MA/MS with doctorate units (1, 5.88%). In terms of teaching position, the respondents were mostly Teacher I (11, 64.71%), followed by Teacher II (2, 11.76%) and Teacher III (2, 11.76%). Some respondents hold positions as Master Teacher I (1, 5.88%) and Master Teacher II (1, 5.88%).

In terms of years in service, 9 or 52.94% of respondents are in the service below five years, followed by 11-15 years (4, 23.53%). It can be inferred that the Grade 8 Science teachers from the three schools are a mixture of neophytes and amateurs. Most of the respondents had two years of experience (10, 58.82%). Some of the respondents had three years (2, 11.76%), four years (1, 5.88%), and five years (4, 23.53%) of experience. Most of the respondent teachers had two years (10, 58.82%) experience of using Grade 8 Science K12 learner's material, while the other teachers only had three years (2, 11.76%), four years (2, 11.76%), and five years (3, 17.65%).

Eight or 47.05% of the teacher respondents specialized in biological science, 5 or 29.41% in physical science, 1 (5.33%) in chemistry, 2 (11.76%) in general science, and 1 (5.88%) in mathematics.

Research Instrument

The researcher used a research-modified evaluation tool which served as the main instrument in gathering the data. It is composed of three parts. The first part consists of the demographic profile of the respondents. The profile of the teachers includes age, sex, civil status, teaching position, length of service, length of teaching Grade 8 Science, length of using Grades 8 Science learning materials, highest educational attainment, and specialization. The second part is the assessment of the teachers in the Grade 8 science K12 learner's material. It consists of 30 items, which include content (10 items), instructional design (10 items), and technical design (10 items). The third part is an open-ended question which consists of 2 items about the problem have encountered by teachers in using Grade 8 science K12 learner's material and the teacher's recommendations in improving the learner's material.

The researcher-crafted evaluation tool was based on the Learning Resource Assessment Tool developed by Prince Edward Island (2008). The purpose of the tool is to assess a material based on the general criteria for the selection of learning resources in the areas of content, instructional design, technical design, and social consciousness. However, the researchers did not include social consciousness for the current study since these cannot be measured in a cross-sectional design of research. Items in the survey questionnaire were subjected to Cronbach alpha reliability analysis in SPSS version 25. Table 2 shows the corresponding reliability indices.

Table 2. Cronbach Alpha Value of Variables in the Survey Questionnaire

Aspect	Cronbach's Alpha	Number of Items
Content	0.94	10
Instructional Design	0.92	10
Technical Design	0.97	10
Overall	**0.94**	**30**

The result of the test for the three assessment variables in Grade 8 Science K12 learner's material indicated very high reliability (α=0.94).

Data Gathering Procedure and Analysis

The evaluation tool was adopted and modified based on the assessment tool of Prince Edward Island (2008). Three experts were selected to check the consistency of each item in the research tool used. For reliability testing, seven respondents who were not part of the study were selected. Afterwards, the researchers secured permission and approval from the principals of the three selected schools. The letter of permission was given to the three schools. The survey questionnaires were floated to the science teachers of each school based on the date set by the school. A total of 17 out of 17 survey questionnaires (100.0%) were retrieved from the respondents. The study was conducted before the COVID-19 pandemic.

After the data were gathered and encoded in Excel 2016, the researcher worked on data analysis and interpretations. The researchers used frequency and percent distribution, mean, standard deviation, and thematic analysis in data analysis. The computer software SPSS version 25 and MS Excel 2016 were used for the processing of data. Descriptive statistics were used to analyze and interpret quantitative data while thematic analysis was used to analyze the answers in the open-ended questions thematically. The researchers used R01 or Respondent number 1 as the coding for the participants in the thematic analysis.

Results and Discussion

Assessment of Grade 8 K12 Learner's Material

The assessment of Grade 8 Science teachers in Grade 8 K12 learner's material in terms of content, instructional design, and technical design are presented in the succeeding tables.

Content. As shown in Table 3, based on the results, the Grade 8 Science teachers assessed the content of the Grade Science K12 learner's material as "satisfactory" with an overall mean of 3.27 (SD=0.54).

It can be noted that the highest means were noted in the indicators, content is based on the grade-level standards of the K12 curriculum (3.76), which is considered very satisfactory. Meanwhile, the lowest means were seen in the following statements: Content integrates real-world experiences (3.06); activities provide practical work and references used are updated (3.12), and content provides relevant information and material provides sufficient knowledge and skill (3.18).

Table 3. Assessment of Grade 8 Science K12 Learner's Material in Terms of Content

Statement	Mean	SD	VD
Content is based on the grade level standards of the K12 curriculum.	3.76	0.56	VS
Content met the learning standards of the K12 curriculum.	3.35	0.61	S
Scope and learning targets are appropriate to students' needs.	3.24	0.67	S
The material provides sufficient knowledge and skill.	3.18	0.53	S
Level of difficulty is appropriate for intended students.	3.24	0.44	S
Content integrates real-world experiences.	3.06	0.43	S
Activities are relevant to the topic presented.	3.41	0.51	S
Content provides relevant information.	3.18	0.64	S
Activities provide practical work.	3.12	0.49	S
The references used are updated.	3.12	0.49	S
Mean	**3.27**	**0.54**	**S**

Note: Very Satisfactory (VS) 3.50-4.00; Satisfactory (S) 2.50-3.49; Not Satisfactory (NS) 1.50-2.49; Did Not Meet Expectations (DE) 1.00-1.49

Instructional Design. As shown in Table 3, based on the results, the Grade 8 Science teachers rated "satisfactory" the instructional design of the Grade Science K12 learner's material with an overall mean of 2.86 (SD=0.54).

It can be noted that the highest mean was in the indicator, resource promotes student engagement (3.35). Meanwhile, the lowest means were seen in the following statements: Methodology promotes the development of

communication skills and encourages student creativity, technical terms are consistently explained/ introduced, and adequate/appropriate assessment/evaluation tools are provided (3.06); concepts are introduced, developed, and summarized (3.12); and resource allows/encourages students to work independently (3.18).

Table 4. Assessment of Grade 8 Science K12 Learner's Material in Terms of Instructional Design

Statements	Mean	SD	VD
Instructional goals and learner objectives are clearly stated.	3.29	0.47	S
Resource promotes student engagement.	3.35	0.49	S
Methodology promotes the development of communication skills and encourages student creativity.	3.06	0.56	S
The resource encourages group interaction.	3.29	0.47	S
The resource allows/encourages students to work independently.	3.18	0.39	S
Materials are well organized and structured.	2.94	0.56	S
Learning material is congruent to the K12 curriculum.	3.29	0.59	S
Concepts are clearly introduced, developed, and summarized.	3.12	0.60	S
Technical terms are consistently explained/ introduced.	3.06	0.66	S
Adequate/appropriate assessment/evaluation tools are provided.	3.06	0.56	S
Mean	2.86	0.54	S

Note: Very Satisfactory (VS) 3.50-4.00; Satisfactory (S) 2.50-3.49; Not Satisfactory (NS) 1.50-2.49; Did Not Meet Expectations (DE) 1.00-1.49.

Technical Design. As shown in Table 4, based on the results, the Grade 8 Science teachers assessed the technical design of the Grade Science K12 learner's material as "satisfactory" with an overall mean of 3.04 (SD=0.56).

It can be noted that the highest means were noted in the resource makes effective use of various mediums (3.18), the material is arranged in the correct sequence (3.18), and material provides varied activities to sustain interest (3.18). Lowest means were seen in the following statements: visual design is interesting/ effective (2.82); illustrations/visuals are effective/ appropriate, and character size/typeface is appropriate (2.94), and appropriate support materials are provided, and packaging/design is suitable for the classroom/library (3.00).

Table 5. Assessment of Grade 8 Science K12 Learner's Material in Terms of Technical Design

Statement	Mean	SD	VD
Appropriate support materials are provided.	3.00	0.5	S
Visual design is interesting/ effective.	2.82	0.53	S
Illustrations/visuals are effective/ appropriate.	2.94	0.43	S
Character size/typeface is appropriate.	2.94	0.43	S
The layout is logical and consistent.	3.06	0.56	S
Users can easily employ the resource.	3.06	0.66	S
Packaging/design is suitable for the classroom/library.	3.00	0.71	S
The resource makes effective use of various mediums.	3.18	0.39	S
Material is arranged in correct sequence.	3.18	0.81	S
The material provides varied activities to sustain interest.	3.18	0.53	S
Mean	3.04	0.56	S

Note: Very Satisfactory (VS) 3.50-4.00; Satisfactory (S) 2.50-3.49; Not Satisfactory (NS) 1.50-2.49; Did Not Meet Expectations (DE) 1.00-1.49.

As shown in Table 6, based on the results, the Grade 8 Science K12 learner's material is "satisfactory" in terms of content, instructional design and technical design with an overall mean of 3.04 (SD=0.55).

Table 6. Summary of the Assessment of Grade 8 Science K12 Learner's Material

Grade 8 Science K12 Learner's Material	Mean	SD	VD
Content	3.27	0.54	S
Instructional design	2.86	0.54	S
Technical Design	3.04	0.56	S
Total	3.04	0.55	S

Note: Very Satisfactory (VS) 3.50-4.00; Satisfactory (S) 2.50-3.49; Not Satisfactory (NS) 1.50-2.49; Did Not Meet Expectations (DE) 1.00-1.49

As gleaned from the table, the Grade 8 Science teachers assessed the Grade Science K12 learner's material as "satisfactory" in terms of content (3.47), instructional design (2.86), and technical design (3.04).

Problems encountered by the teachers in using the Science Grade 8 K12 learner's material

Table 7 shows some of the teachers' feedback regarding the problems they have encountered using Grade 8 Science K12 learner's material.

Table 7. Problems encountered by the teachers in Using the Grade 8 learner's material

Theme	Sample Feedback
Inadequacy of learner's materials	"Some materials are not available." (R01) "There are no sufficient materials." (R02) "Some materials given are not available in the local market." (R03) "Insufficient learning materials" (R06) "Some of the materials are not readily available." (R12) "Materials are not available." (R13) "Lack of materials." (R15) "Not enough learners' materials." (R16)
Incongruence of the topics to the learning competencies	"Topics are not appropriate in learning competencies.' (R05) "Some topics are complicated." (R09)
Lack of conceptual information	"Some modules in the materials are not informative." (R02)
Lack of instructional time	"Some of the lessons per quarter are too long" (R06) "Limited time to tackle all the competencies." (R08) "There are modules which cannot be discussed for the whole quarter because of insufficient time." (R11)

Based on the feedback, it is evident that the Grade 8 Science teachers had mixed experiences regarding the use of the learner's material. Based on the results, the teacher-respondents mentioned that the main problems they have encountered using Grade 8 Science K12 learner's material are inadequacy of learner's materials, the incongruence of the topics to the learning competencies, lack of conceptual information, and lack of instructional time.

Teachers' recommendations in Improving the Learner's Material

Table 8 shows some teachers' recommendations for improving the learner's material. The findings revealed that most teachers

recommend improving the learner's material in terms of quality and quantity. Some of the teacher's recommendation is to provide relevant information about the content (R4, R15), include some interactive activities (R05), and adopt the needs of the students (R08). The results also revealed that the Grade 8 Science K12 learner's material needs further revision.

Table 8. Teachers' Recommendations in improving the Learner's Material

Theme	Sample Feedback
Enhance the concept presentation	"The materials must be revised in such a way that for each topic, supporting information about the topic will be given too." (R02) "Provide more relevant information about the content." (R04) "Improve the content of learner's material" (R15)
Remove unnecessary learing competencies	"Lessen learning competencies for each module." (R11)
Check the overall quality of the material	"Exert great effort in improving quality instructional materials." (R17)
Include interactive activities	"Put some interactive activities which learners will become productive." (R05)
Align the material to the learner's needs	"Adopt the needs of the students." (R08)
Provide adequate number of learner's material	"Provide materials which are affordable and readily available." (R12) "Provide enough learners' material." (R16)

The study ascertained the Science teacher's assessment of the eighth-grade Science K12 learner's material produced by the country's Department of Education. The profile of the Science teachers was described in terms of age, sex, civil status, highest educational background, teaching position, teaching experience, length of teaching Grade 8 Science K12, length of using Grade 8 Science K12 learner's material and specialization.

Most of the respondents are aged 25 and below, which can be considered as proficient teachers based on the Professional Standards for Teachers. Female science teachers are higher in number compared to their male counterparts in the distribution. This is in congruence to the common picture that the females dominate the teaching profession in the Philippines. Majority are BS/AB graduates with master's units. This implies that the Science teachers are pursuing advanced degrees in order to re-tool their technological pedagogical and content knowledge (TPACK) in science. In terms of teaching position, the respondents were mostly teacher I (11, 64.71%), while in the years of teaching experience, most of them served the education department below five years. According to MacLeod (1987), length of seniority is a system used to designate an employee's status about other employees of the same workplace, determine matter such as layoff and recall order, and awarding of benefits and promotion. Most of the teachers are specialized in Biological Science.

The Science teachers rated the Grade 8 learner's material as satisfactory in the three aspects. The material's content was assessed the highest, followed by the technical design and the instructional design. This implies that the Grade 8 Science K12 learner's material is useful and essential to all the teachers and learners. Though it is rated as satisfactory, there is a need to revisit the material to make it very satisfactory. Assessment of instructional material is critical to identify its appropriateness, usability, and alignment.

Learning materials are vital element in pedagogical cycle as these serve as guiding points for teachers in the delivery of the lesson and in facilitating the students' learning. With the shortage of learning resources, teachers are forced to provide suitable instructional materials that may promote student learning and may

resolve the dilemma of reference material scarcity (Rogayan & Dollete, 2019).

In terms of content, the learner's material was based on the grade-level standards of the K12 curriculum and was rated very satisfactory. The activities are relevant to the topic presented, and the content met the learning standards of the K12 curriculum. Although in the acceptable range, lowest ratings were given in the aspect of integrating real-world experiences, provision of practical work, use of updated references, and the provision of relevant information and sufficient knowledge to the learners. This connotes that the materials need further enhancement to be more relevant, learner-centered, and more useful for Generation Z Science learners. Instructional resources are tools that students and teachers may use to facilitate and enhance the learning process (Asrizal et al., 2018).

For the instructional design, the material is rated satisfactory. The resource promotes student engagement as assessed by the teachers. This connotes that the material engages the students positively in learning science. Though still satisfactory, lowest means were noted in the methodology of the material, evaluation tools used, concept presentation, and provision of independent work. This may imply that the science material could be enhanced in these aspects to ascertain that the learning outcomes are achieved by the learners. Students' interest in a subject or domain may change when they encounter instructional materials and activities that might function as on- or off-ramps to interest growth (Alexander et al., 2019). Activities stressing the utility of academic content may be effective on-ramps for reinforcing students' current interest in a subject, particularly in knowledge-acquisition activities with repeated chances to learn new things and develop connections (Hecht et al., 2021). In the same vein, Chukwu et al. (2016) evaluated the availability of learning materials at the basic education and showed a little extent of availability of these materials.

The technical design of the material is likewise assessed as satisfactory by the teachers. The resource material effectively uses various mediums, arranged in the correct sequence, and provides varied activities to sustain interest. This suggests that the material is understandable by the learners, follows the proper sequence of topics based on difficulty level, and comprises different activities that cater to the students' multiple intelligences. However, the teachers noted that there should be an enhancement of the visual design, illustrations, and support materials. This may suggest that learner material designer may consider enhancing the material's visual appearance to make it more appealing and interesting for the Gen Z learners. Moreover, Ogbu (2015) examined the effects of insufficient instructional facilities in the pedagogical process of technology education courses. It was recommended in the study that all stakeholders must join hands in providing effective and efficient instructional materials and facilities to eliminate all the negative influences of insufficient learning resources.

In terms of problems encountered, the teachers cited some issues using Grade 8 learner's material. These include inadequacy of the materials for the learners, the incongruence of the topics to the learning competencies, poor conceptual information, and lack of instructional time to cover all the topics. This suggests that further revision of the instructional material be done to address these problems. The results conform to the study of According to Sadera et al. (2020), the instructional materials provide the most difficulty for junior high school students studying science. Wambui (2013) conducted a similar study that was designed to ascertain the effect of instructional materials on learner's involvement in the science preschool classroom. The study revealed that instructional tools are not successfully used in the area due to large class size, lack of laboratory room, low learner's confidence, language barrier, teachers' negative attribute, lack of professional skills, and domestic violence.

The teachers also laid some recommendations to improve the material. Some of their suggestions include the enhancement of the concept presentation, inclusion of most essential learning competencies, ensuring the overall quality of the material, integration of interactive activities, alignment of the material to the learner's needs, and provision of an adequate number of materials for the students to use.

These recommendations can be forwarded to the Department of Education to review, refine, revise and re-align the learner's material to make it research-based, relevant, and responsive to the needs of the learners. In accordance, Tufail et al. (2016) analyzed biology textbooks for higher secondary students concerning 21st-century life skills. Findings reported that the textbook did not meet the requirements of the 21st-century for students of secondary level. It was suggested that there should be an update of the content and methodology of the material.

Conclusion

The Grade 8 Science teachers generally assessed the quality of the Grade Science K12 learner's material as satisfactory in terms of content, instructional design, and technical design. The Grade 8 Science teachers encountered different problems using Grade 8 Science K12 learner's material, specifically its adequacy in quantity. They recommend improving the learner's material to be relevant and responsive to the needs of the learners.

The study recommends that the learner's be revised in terms of content, instructional design, and technical design for it to be more responsive to the learner's needs and congruent to the goals of science education in the new curriculum. Highly proficient and distinguished Science teachers and context experts may also be tapped to assess the Grade 8 Science K12 learner's material in future studies to come up with more valid results. The tool used in this study may be adopted to assess the learner's materials in other grade levels in science and other subject areas. The problems encountered by the teacher in using the material may serve as baseline data to further enhance the instructional material. The recommendations put forth by the teachers may be considered in the revision process. The government's education department may allocate adequate funds to achieve 1:1 ratio on the number of students and the number of resource materials.

Since the science K12 curriculum is now in spiral progression, teacher education institutions may focus on developing the integrative science competencies among prospective teachers who will be handling Science classes in basic education. With the pedagogical and content expertise of the teachers, the learner's materials will be a more effective tool in science instruction. The present study has several limitations. The study only involved a few Science teachers in the public school setting; further studies may involve a greater number of respondents to ensure high validity of results. Moreover, content experts who are not involved in actual teaching may also be included as evaluators of the learner's material. In-depth documentation of the problems in each of the topics of the material may also be done in future studies.

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