

Strand-Based Instructional Materials in Reading and Writing Skills

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Abstract: *The senior high school curriculum provided Reading and Writing Skills as a core subject to help the students be ready to have disciplinary literacy once they enroll in their specialized subjects. However, there are no prepared instructional materials in the subject and most of the time, the teachers in the subject prepare on their own without realizing the need to connect the subject to the learning competencies and performance standards of the students in the specialized subjects. This research aimed to provide aid to the Reading and Writing Skills teachers and students to discover and bring out the relevance of the subject to their strands. This study aimed at helping teachers and students in Reading and Writing Skills bring out the relevance of the subject to the strands of the students. This research was developed to help improve students' skill in reading and writing in different discipline contexts which is one of the most important tasks to be able to comprehend different texts in the specialized subjects of the students. The steps of this research and development consist of collection of data that focused on the perceptions of grade 11 students regarding the use of discipline contexts in Reading and Writing Skills and the level of relevance of Reading and Writing Skills to the performance standards of the discipline contexts of each strand of the grade 11 students of the second trimester of the School Year 2019-2020 of the University of the Cordilleras Senior High School.*

Keywords: *reading and writing skills, competencies, disciplinary literacy, instructional materials, performance standards*

I. INTRODUCTION

Instructional materials are the relevant materials utilized by a teacher during the instructional process to facilitate teaching and learning and for the purpose of making the contents of the instructions more practical and less vague (Esu & Inyang-Abia, 2004). Instructional materials serve as a channel through which messages, information, ideas and knowledge are disseminated more easily. According to Dike (1989) as cited by Ogbaji (2017), instructional materials facilitate teaching and learning and when it is not appropriate or available, learners cannot do well. This means that the utilization of instructional materials in the teaching and learning process is vital to the educational goals and objectiveness.

In 2016, the Philippines started the implementation of the K12 Program with an inclusion of 2 additional years in High School known as senior high school. The much-needed overhaul of the Philippine basic education system became a reality through Republic Act 10533, also known as the Enhanced Basic Education Act which was passed last May 2013 making the pre-university and basic education from 10 to 13 years. The enhanced basic education program encompasses at least one (1) year of kindergarten, six (6) years of elementary, and six (6) years in secondary education; the secondary education has four (4) years of junior high school and two (2) years of senior high school education.

The senior high school in the Philippines divided the two-year program into core subjects, applied subjects and specialized subjects. Grade 11 students take all the core subjects and applied subjects, the specialized subjects are only focused on the strands chosen by the

students. There are fifteen (15) core subjects that all Senior High School (SHS) students will take. One of these core subjects in Language is Reading and Writing which is considered an essential subject across the disciplines as said by Selangan, 2015, cited by Jaca, Jaluague, Lonoy, Mendoza, Mercado and Sandimas (2019). Mastering the skills in reading and writing will help the students achieve the learning competencies needed in their specialized subjects.

Reading and Writing Skills, as a subject, focuses on the skills of the students in written discourse, organizing information, critical reading and purposeful writing relevant to the strands namely Science Technology Engineering and Mathematics (STEM), Accountancy and Business Management (ABM), Humanities and Social Sciences (HUMSS) and Technical-Vocational Strand (TVL). This scenario requires teachers to reflect on how they are teaching, their use of instructional materials and their implications on the curriculum requirements.

In the University of the Cordilleras, teachers in the senior high school department create and provide their own instructional materials. There are no official textbooks or references especially in the subject Reading and Writing Skills, where the students need to master reading in their disciplines or strands for them to be prepared for the more difficult and more contextualized subjects based on their strands.

This research intended to find out the level of agreement of the students on the relevance of Reading and Writing Skills instructional materials to the specialized subjects in different strands in the senior high school.

The study sought to evaluate the printed instructional materials used in Reading and Writing Skills based on the curriculum guide provided by the Department of Education.

Specifically, this study seeks to answer the following problems:

1. What specific discipline contexts in Reading and Writing Skills are used by the Grade 11 teachers along the following strands:
 - a. STEM
 - b. HUMSS
 - c. ABM
 - d. ICT
 - e. HE?
2. What is the level of relevance of the printed instructional materials in different strands to their performance standards?

II. RELATED LITERATURE

Instructional materials refer to those alternative channels of communication, which a classroom teacher can use to concretize a concept during teaching and learning process. Traditionally, classroom teachers have relied heavily on the “talk-chalk” method during their teaching. But recently, instructional materials help to provide variations in the ways in which messages are sent across. In addition to extending the range of materials that can be used to convey the same instructional message to learners’ instructional materials also facilitate the “process” nature of communication (Dike, 1989 & Tyler, 2013). According to Farombi, (1998) as cited in the research of Tety (2016), instructional materials include books, audio-visual, software and hardware of educational technology. He further opines that the availability, adequacy and relevance of instructional materials in classrooms can influence quality teaching, which can have positive effects on students’ learning and academic performance.

According to Thompson as cited by Onyia (2013) the design of instructional materials creates opportunities which aid easy acquisition of knowledge and skills effectively by students in schools. It facilitates learning and ensures active involvement of the students in the learning process. It becomes imperative that in the designing of instructional materials, efforts must be made to include the criteria for the domains of educational objectives, so as to

integrate the overall achievement of learning. This implies considering the age, ability, interest as well as its production cost and availability in the teaching environment.

In the selection of appropriate instructional materials, considerations must be made. The first thing to consider is the relevance of the instructional materials to the standards where the learning competencies to be achieved by the students are based. Standards development is based on the notion of competence which is defined as the ability to perform the activities within an occupation. Competence is a wide concept which embodies the ability to transfer skills and knowledge to new situations within the occupational area. It encompasses organization and planning of work, innovation and coping with non-routine activities. It includes those qualities of personal effectiveness that are required in the workplace to deal with co-workers, managers and customers (Training Agency UK, 1989).

The Higher Education and Training Awards Council of Ireland (HETAC) takes a broad view of the term competence and describes competence in terms of the demonstration and application of knowledge and skills in human situations: The unique characteristic of competence is the effective and creative demonstration and deployment of knowledge and skill in human situations. Competence refers to the process of governing the application of knowledge to a set of tasks and is typically acquired by practice and reflection. Some aspects of performance in situations may depend on innate characteristics of an individual. In as much as such performance is not learned it cannot be recognized as learning. Competence also encompasses the extent to which the learner can acknowledge his/her limitations and plan to transcend these through further learning (HETAC, 2006).

The most important characteristic of competency-based education is that it measures learning rather than time. Students' progress by demonstrating their competence, which means they prove that they have mastered the knowledge and skills (called competencies) required for a particular course, regardless of how long it takes. Competence based education programs build from the idea that it is more important to focus on outcomes—what a student knows and can do—than on inputs like how the student learns it, where the student learns it, or how long the student takes to learn it (Sullivan, Burce, & Alan, 2014).

Specifically, performance standards give meaning to content standards by indicating what students must demonstrate to show that they have achieved the standards. Performance standards demand evidence from students' work: essays, mathematical problems, science experiments, and so forth (National Education Goals Panel, 1993). As the Goals Panel report notes, performance standards can be raised over time without affecting the content standards, simply by including work of higher and higher quality. Performance standards serve an important instructional function. By illustrating in a vivid way the qualities of exemplary work, the standards can help students, parents, and teachers improve performance by providing models to emulate and guiding classroom strategies.

Another consideration is the process by which of the instructional materials are utilized by the students to achieve the learning competencies and for their outputs to be within the criteria of the performance standards. Shanahan and Shanahan (2012) believe that teaching disciplinary literacy will provide learning advantages to middle school and high school students. They also believe that students would make greater progress in reading the texts of history, science, mathematics, and literature if instruction provided more explicit guidance that helped them to understand the specialized ways that literacy works in those disciplines. This approach stands in stark contrast with the more widely espoused content area reading approaches, which promote reading strategies that can be used in all disciplines rather than facilitating students' awareness of the specialized nature of literacy in each discipline.

III. METHODOLOGY

Research Design and Methodology

This study made use of a descriptive research design which aims to accurately and systematically describe a population, situation or phenomenon. It answered the what, when, where and how questions (Thyer, 2010). This descriptive research design used a quantitative method to investigate the variables. In this research, the researcher did not control or manipulate any of the variables, but only observed and measured them.

Respondents

The population of this research were the grade 11 students of the University of the Cordilleras officially and currently enrolled in the Second Trimester of the year 2019-2020. The total population of the grade 11 students is 2779, with 52 sections. This study employed the Cochran's Formula on ratio and proportion to determine the sample size needed for the research.

$$\begin{aligned}
 n &= (z^2 pq) / e^2 \\
 &= ([1.96]^2 \\
 & (0.5)(1-0.5) / [0.05] \\
 &^2 \\
 &= 384.16 \approx 385
 \end{aligned}$$

where $z = 1.96$ (based on the z-table), $p = 50\%$, $q = 1-p$, and e (margin of error) = 5%
At 95% level of confidence (5% margin of error), the sample size taken is 385.

Table 1
Students enrolled in Reading and Writing

Strand	N	n
STEM	1294	179
ABM	330	46
HUMSS	702	97
ICT	247	34
HE	206	29
TOTAL	2779	385

Instruments

The instruments helped the researcher in identifying the discipline context used in Reading and Writing Skills and the level of relevance of the printed instructional materials in Reading and Writing Skills to the Strands of the students. The data gathering tools that were used were: 1) checklist-questionnaire for the grade 11 students enrolled in the second trimester of the school year 2019-2020. The checklist-questionnaire had two parts; the first part was a binary checklist questionnaire that focused on the learning competencies of the discipline context that are expected to be obtained through the printed instructional materials used by Reading and Writing Skills teachers in different strands, the second part evaluated the experiences of the students on the level of relevance of the instructional materials based on the performance standards included in the curriculum guide of the subject.

The researcher initially had the questionnaire be evaluated and pilot tested. The researcher had the questionnaire go through content validity with the help of the Department Head of the School of Teacher Education and Liberal Arts in the University of Baguio. It had also gone through pilot testing through the help of the Director of the Research and Development Center in the University of Baguio and the Principal of the Senior High School in the

University of Baguio. The researcher requested for five student representatives from STEM, HUMSS, ABM, ICT and HE and based on the pilot testing, the questionnaire was reliable.

KR-20 was used for the testing of reliability of the stated checklist questionnaire. Kuder-Richardson Formula 20, or KR-20, is a measure of reliability for a test with binary variables (i.e. answers that are right or wrong). The checklist in this research equates to a binary data with responses as either (present or absent).

The checklist questionnaire was also used to determine the level of relevance of the printed instructional materials in Reading and Writing Skills, Cronbach's alpha was then employed to test its reliability. The reliability of the questionnaire was validated by her statistician.

Procedure

The researcher accordingly asked permission from the School Principal of the senior high school, and the Academic Director, after the questionnaire and interview guide questions were pilot tested and validated. After getting their approval, she then collected the data by floating the checklist questionnaire to the grade 11 students enrolled in the second trimester in the subject Reading and Writing Skills. The data were then evaluated and validated by the statistician. After the first data collection, the researcher analyzed the data through a quantitative approach.

Measurement

The study used 4-scale mean computation, as seen in Table 2, in reviewing relevance of the printed instructional materials to the specialized subjects of the students in the given strands, used by Reading and Writing Teachers.

Data Analysis or Treatment of Data

Problem number 1 and 2 were answered through a quantitative analysis. To determine the specific discipline content used in the Reading and Writing Skills included in the printed instructional materials used by the Grade 11 teachers along the different Strands, frequency count was used. To determine the level of relevance of the printed instructional materials used by Grade 11 teachers along the Strands, mean was employed.

Table 2 illustrates the indicators and descriptors in the second part of the checklist-questionnaire which present the level of relevance of the printed instructional materials used in Reading and Writing Skills.

Table 2
Mean Computation

Scale	Statistical Limit	Indicators	Descriptors
			Printed Instructional materials are:
4	3.26-4.00	Highly Relevant	-always focused on the strands
3	2.51-3.25	Moderately Relevant	-most of the time focused on the strands
2	1.76-2.50	Slightly Relevant	-sometimes focused on the strands
1	1.00-1.75	Not Relevant	- not at all focused on the strands

IV. RESULTS AND DISCUSSION

Discipline Contexts in Reading and Writing used by Grade 11 Teachers

The first part elaborates the specific discipline contexts in Reading and Writing Skills that are used by the Grade 11 teachers along the different strands based on the Curriculum guide provided by the Department of Education.

Science Technology Engineering and Mathematics (STEM)

Science literacy and disciplinary literacy in Science technology Engineering and Mathematics (STEM) are very important for students to be able to acquire knowledge and practice the theories in their field. Some use science literacy to refer to understanding the nature of science and knowledge about scientific processes, while disciplinary literacy means competency in reading, writing, and thinking processes in science (Spires, Kerkhoff, Agraham, Thompson, Lee, 2018).

Table 3 illustrates the average rank and the rank of discipline context used in Reading and Writing Skills as perceived by Grade 11 STEM students.

Table 3
DISCIPLINE Contexts in STEM

Discipline context	Learning Competencies	AVE. RANK	RANK
Earth Science	LC1		
	LC2	18	5
	LC3		
	LC4		
	LC5	7.75	2
Calculus	LC6		
	LC7		
	LC8		
	LC9		
	LC10		
Biology	LC11	10.71	3
	LC12		
	LC13		
	LC14		
Chemistry	LC15	11	4
	LC16		
	LC17		
Physics	LC18	6.75	1
	LC19		
	LC20		

When the learning competencies were grouped according to the use of discipline contexts in Reading and Writing Skills, based on the perceptions of the STEM Grade 11 students, the highest in rank was Physics, the second was Calculus, the third was Biology the fourth was Chemistry and the last was Earth Science. The Learning Competencies (LC) focused in Physics are, LC17 which is to solve measurement problems involving conversion of units, expression of measurements in scientific notation, LC18 which is to use the least count concept to estimate errors associated with single measurements, LC19 which is to construct velocity vs. time and acceleration vs. time graphs, respectively, corresponding to a given position vs. time-graph and velocity vs. time graph and vice versa and LC20 which is to solve problems involving one dimensional motion with constant acceleration in contexts such as,

but not limited to, the “tail-gating phenomenon”, pursuit, rocket launch, and free-fall problems.

However, even if Physics is the highest in Rank in terms of use in the instructional materials in Reading and Writing Skills subject in STEM, it did not mean that most of the materials made use of it as discipline contexts. Based on the responses of the students, 81.56% answered NO and only 18.44 % answered YES in LC17 which is to solve measurement problems involving conversion of units, expression of measurements in scientific notation, 75.32% answered NO and only 24.68 answered YES in LC18 which is to use the least count concept to estimate errors associated with single measurements, 70.39% answered NO and only 29.35% answered YES in LC19 which is to construct velocity vs. time and acceleration vs. time graphs, respectively, corresponding to a given position vs. time-graph and velocity vs. time graph and vice versa and 61.56% answered NO and only 38.18% answered YES in LC20 which is to solve problems involving one dimensional motion with constant acceleration in contexts such as, but not limited to, the “tail-gating phenomenon”, pursuit, rocket launch, and free-fall problems.

Humanities and Social Sciences (HUMSS)

Social studies is the integrated study of the social sciences and humanities to promote civic competence. Within the school program, social studies provides coordinated, systematic study drawing upon such disciplines as anthropology, archaeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology, as well as appropriate content from the humanities, mathematics, and natural sciences (Curriculum Guidelines for Social Studies Teaching and Learning A Position Statement of National Council for the Social Studies, 2008).

Table 4 illustrates the average rank and the rank of discipline context used in Reading and Writing Skills as perceived by Grade 11 HUMSS students.

Table 4
Discipline Contexts in HUMSS

Discipline context	Learning Competencies	AVE. RANK	RANK
Community Engagement	LC1	15	6
	LC2		
	LC3		
	LC4		
	LC5		
Creative Nonfiction	LC6	12.33333	5
	LC7		
	LC8		
Creative Writing	LC9	10.33333	3
	LC10		
	LC11		
	LC12		
Discipline and Ideas in Social Science	LC13	6.5	1.5
	LC14		
	LC15		
	LC16		
Introduction to World Religions	LC17	6.5	1.5
	LC18		
Philippine Politics and Governance	LC19	12	4
	LC20		

When the learning competencies were grouped according to discipline context based on the perceptions of the HUMSS Grade 11 students, the highest in rank was Discipline and Ideas in Social Science and Introduction to World Religions, the second was Creative Writing, the third was Philippine Politics and Governance the fourth was Creative Nonfiction and the last was Community Engagement. In Discipline and Ideas in Social Science, the specific learning competencies are LC 10 which is to clarify the relationships between social sciences and applied social sciences, LC 11 which is to identify characteristics applied social sciences, LC 12 which is to cite differences among the applied social sciences, LC 13 which is to value rights, responsibilities, and accountabilities, LC 14 which is to compare and contrast the various Social Science disciplines and their fields, main areas of inquiry, and methods, LC 15 which is to trace the historical foundations and social contexts that led to the development of each discipline. The results imply that grade 11 HUMSS students perceive that ideas in Discipline and Ideas in Social Science are used in the instructional materials in Reading and Writing Skills and that they are able to apply their knowledge in Reading and Writings Skills in understanding Discipline and Ideas in Social Science.

Just like the results in STEM, results in HUMSS also illustrate inconsistency in the use of discipline contexts in the Strand. Although Discipline and Ideas in Social Science and Introduction to World Religions are the highest in Rank in terms of use in the instructional materials in Reading and Writing Skills class in HUMSS, it did not mean that most of the materials made use of them as discipline contexts in the subject. According to the result, when the YES and the NO columns are compared, the students mostly answered NO as to the use of the discipline contexts in the subject. Based on the responses of the students, 74.23% answered NO and only 25.77% answered YES in LC 10 which is to clarify the relationships between social sciences and applied social sciences, 72.16% answered NO and only 27.84% answered YES in LC 11 which is to identify characteristics applied social sciences, 72.16% answered NO and only 27.84% answered YES in LC 12 which is to cite differences among the applied social sciences, 86.60% answered NO and only 12.37% answered YES in LC 13 which is to value rights, responsibilities, and accountabilities, 80.41% answered NO and only 19.59% answered YES in LC 14 which is to compare and contrast the various Social Science disciplines and their fields, main areas of inquiry, and methods, and 72.16% answered NO and only 27.84% answered YES in LC 15 which is to trace the historical foundations and social contexts that led to the development of each discipline.

Accountancy, Business and Management (ABM)

Reading, writing and numeracy skills are foregrounded in how the pedagogical content knowledge is mediated. Having (critical) literacy in the business education classroom presents the opportunity for students to participate, discuss, argue and make assumptions about economic and business activities and informed decisions as consumers. Reading the business news on a regular basis helped student teachers to participate as future educators who have become skilled in critical thinking and to make connections to society, the economy and the environment (America, 2014).

Table 5 illustrates the average rank and the rank of discipline context used in Reading and Writing Skills as perceived by Grade 11 ABM students.

Table 5
Discipline Contexts in ABM

Discipline context	Learning Competencies	AVE. RANK	RANK
Applied Econ	LC1	5.5	2
	LC2		
Business Ethics	LC3	9.5	4
	LC4		
Business Finance	LC5	3.5	1
	LC6		
Business Math	LC7	12	5
	LC8		
	LC9		
Foundations of Accountancy and Business Management	LC10	7	3
	LC11		
	LC12		
	LC13		
Organizational Management	LC14	16.5	7
	LC15		
	LC16		
	LC17		
Principles of Marketing	LC18	13.2	6
	LC19		
	LC20		

When the learning competencies were grouped according to discipline context based on the perceptions of the ABM Grade 11 students, the highest in rank was Business Finance, was second was Applied Economics, the third was Foundations of Accountancy and Business Management, the fourth was Business Ethics, the fifth was Business Math, the sixth was Principles of Marketing and the last in rank was Organization and Management. The specific learning competencies in Business Finance are LC5 which is to explain the flow of funds within an organization through and from the enterprise and the role of the financial manager and LC6 which is to explain the major role of financial management and the different individuals involved.

Even though Business Finance is the highest in Rank in terms of use in the instructional materials in Reading and Writing Skills class in ABM, it did not mean that most of the materials made use of it as discipline contexts in the subject. According to the result, when the YES and the NO columns are compared, the students mostly answered NO as to the use of the discipline contexts in the subject. Based on the responses of the student, 65.22% answered NO and only 34.78% answered YES in LC 5 which is to explain the flow of funds within an organization – through and from the enterprise—and the role of the financial manager and 69.57% answered NO and only 30.43% answered YES in LC 6 which is to explain the major role of financial management and the different individuals involved.

Home-economics (HE)

Vocationalizing the common-core subjects has received great attention throughout the years in the VET schools, especially after shifts in reforms and changes in curriculums. Ultimately, it is the teacher's responsibility to choose the content and method of his or her teaching, i.e., the teacher decides the importance of vocationalization in the common-core subjects (Isaksen, 2018).

Table 6 illustrates the average rank and the rank of discipline context used in Reading and Writing Skills as perceived by Grade 11 HE students.

Table 6
Discipline Contexts in HE

Discipline context	Learning Competencies	AVE. RANK	RANK
Bread and Pastry	LC1		
	LC2		
	LC3	8.4	2
	LC4		
	LC5		
	LC6		
	LC7		
Food and Beverage	LC8	8.6	3
	LC9		
	LC10		
	LC11		
House Keeping	LC12		
	LC13	7	1
	LC14		
	LC15		
	LC16		
Tourism Promotion Services	LC17		
	LC18	13.4	4
	LC19		
	LC20		

When the learning competencies were grouped according to discipline context based on the perceptions of the HE Grade 11 students, the highest in rank was House Keeping, the second was Bread and Pastry, the third was Food and Beverage Services and the last was Tourism Promotion Services. The detailed learning competencies in House Keeping are LC11 which is to explore on opportunities for Housekeeping as a career, LC12 which is to identify the customer's needs and wants through consumer analysis, LC13 which is to conduct consumer/market analysis, LC14 which is to explore ways of generating business ideas from ones' own characteristics/attributes and LC15 which is to generate business ideas using product innovation from trends, and emerging need.

Though House Keeping is the highest in Rank in terms of use in the instructional materials in Reading and Writing Skills class in HE, it did not mean that most of the materials made use of it as discipline contexts in the subject. According to the result, when the YES and the NO columns are compared, the students mostly answered NO as to the use of the discipline contexts in the subject. Based on the responses of the students, 86.21% answered NO and only 13.79% answered YES in LC11 which is to explore on opportunities for Housekeeping as a career, 89.66% answered NO and only 10.34% answered YES in LC12 which is to identify the customer's needs and wants through consumer analysis 75.86% answered NO and only 24.14% answered YES in LC13 which is to conduct consumer/market analysis, 68.97% answered NO and only 31.03% answered YES in LC14 which is to explore ways of generating business ideas from ones' own characteristics/attributes and lastly 79.31% answered NO and only 20.69% answered YES in LC15 which is to generate business ideas using product innovation from trends, and emerging need.

Information, Communication and Technology (ICT)

Information and communication technology (ICT) may be defined as "a diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information" (Alkamel, & Chouthaiwale 2018).

Table 7 illustrates the average rank and the rank of discipline context used in Reading and Writing Skills as perceived by Grade 11 ICT students.

Table 7
Discipline Contexts in ICT

Discipline context	Learning Competencies	AVE. RANK	RANK
Animation	LC1	5.2	1
	LC2		
	LC3		
	LC4		
	LC5		
Computer Systems Service	LC6	11.8	3
	LC7		
	LC8		
	LC9		
Programming Net Technology	LC10	10.4	2
	LC11		
	LC12		
	LC13		
	LC14		
Programming Java	LC15	12.6	4
	LC16		
	LC17		
	LC18		
	LC19		
	LC20		

When the learning competencies were grouped according to discipline context based on the perceptions of the ICT Grade 11 students, the highest in rank was Animation, was second was Programming Net Technology, the third was Computer Systems Service and the last was Programming Java. The highest rank has these specific learning competencies namely LC1 which is to explain the core competence in Animation, LC2 which is to explore job opportunities in animation, LC3 which is to assess one's personal competencies and skills: characteristics, attributes, lifestyle, skills and trait, LC4 which is to perform safety procedures in using hand tools, equipment and paraphernalia and lastly LC5 which is to perform calculation needed to complete task using the four mathematical fundamental operation (addition, subtraction, multiplication and division).

Even if Animation is the highest in Rank in terms of use in the instructional materials in Reading and Writing Skills class in ICT, it did not mean that most of the materials made use of it as discipline contexts in the subject. According to the result, when the YES and the NO columns are compared, the students mostly answered NO as to the use of the discipline contexts in the subject. Based on the responses of the students, 76.47% answered NO and only 23.53% answered YES in LC1 which is to explain the core competence in Animation, 61.76% answered NO and only 38.24% answered YES LC2 which is to explore job opportunities in animation, 91.18% answered NO and only 8.82% answered YES LC3 which is to assess one's personal competencies and skills: characteristics, attributes, lifestyle, skills and trait, 70.59% answered NO and only 29.41% answered YES LC4 which is to perform safety procedures in using hand tools, equipment and paraphernalia and finally, the only Learning competency that has a number in YES is the LC5 which is to perform calculation needed to complete task using the four mathematical fundamental operation (addition, subtraction, multiplication and division) has a result of 32.35% in NO and 67.65% in YES.

In summary, the discipline context that obtained the highest rank in terms of their use in Reading and Writing Skills as perceived by grade 11 students in each strand are Physics for STEM, Discipline and Ideas in Social Sciences and Introduction to World Religions in

HUMSS, Business Finance in ABM, House Keeping in HE and Animation in ICT. Based on the results, these suggest that senior high school students perceive that Reading and Writing Skills use the discipline contexts in STEM, HUMSS, ABM, HE and ICT.

Although, it did not mean that the instructional materials in the different strands maximized their use since most of the teachers taught students from different strands, they had to prepare different examples, discussions and activities that would present the relevance of the Reading and Writing Skills subject to the strands their students. This implication motivated the researcher to further study whether the instructional materials are relevant to the strands' performance standards.

Level of Relevance of the Printed Instructional Materials in Reading and Writing Skills to their Performance Standards

This part of the research presents the level of relevance of the printed instructional materials in different strands to their performance standard based on the Department of Education Curriculum Guide as perceived by the grade 11 students.

Science Technology Engineering and Mathematics (STEM)

The STEM field represents future career opportunities for today's adolescents and will require strong foundations in STEM disciplines as well as competence in applying this knowledge to solve problems. To develop an understanding of these disciplines, students require advanced literacy skills; students must be able to "read, reason, investigate, speak and write about the overarching concepts within these subjects (Mc Conachie et al 2006).

Table 8 illustrates the level of relevance of the instructional materials used by teachers in Reading and Writing Skills to the performance standards of discipline contexts in STEM as perceived by Grade 11 STEM students.

Table 8
Level of Relevance of the Printed Instructional Materials in Reading and Writing Skills to Science Technology Engineering and Mathematics (STEM)

Performance Standards	MEAN	INTERPRETATION
Earth Science	2.79	Moderately Relevant
Bio	3.06	Moderately Relevant
Calculus	2.974545455	Moderately Relevant
Chemistry	3.025974026	Moderately Relevant
Physics	2.883982684	Moderately Relevant

The instructional materials used by teachers in Reading and Writing Skills are moderately relevant with a mean of 2.79, to the performance standards in Earth Science. which are: PS1 which is to make a plan that the community may use to conserve and protect its resources for future generations and PS2 which is to prepare a plan that the community may implement to minimize waste when people utilize materials and resources.

This is followed by moderately relevant mean of 3.06 to the performance standards in Biology which are PS8 which is to develop a presentation (e.g. roleplaying, dramatization and other forms of multimedia) to show how an organism maintains homeostasis through the interaction of the various organ systems in the body.

The third, fourth and fifth in rank came out to be are all moderately relevant as well but with lower numerical equivalence in terms of relevance to their performance standards.

Humanities and Social Sciences (HUMSS)

In social studies, students are expected to identify patterns in historical processes, perceive relationships in human–environment interaction, understand patterns involved in the movement of people and identify cultural patterns. Studying history thematically is an example of using patterns to organize curriculum. Rather than studying history chronologically, students might investigate historical patterns thematically, such as U.S. identity or war and conflict (Houseal, Gillis, Helmsing, & Hutchison 2014).

Table 9 illustrates the level of relevance of the instructional materials used by teachers in Reading and Writing Skills to the performance standards of discipline contexts in HUMSS as perceived by Grade 11 HUMSS students.

Table 9
Level of Relevance of the Printed Instructional Materials in Reading and Writing Skills to Humanities and Social Sciences(HUMSS)

Performance Standards	MEAN	INTERPRETATION
Community Engagement	3.195876289	Moderately Relevant
Creative Nonfiction	3.18556701	Moderately Relevant
Creative Writing	3.024054983	Moderately Relevant
Discipline and Ideas in Social Science	3.234536082	Moderately Relevant
Introduction to World Religions	2.984536082	Moderately Relevant
Philippine Politics and Governance	2.969072165	Moderately Relevant

The instructional materials used by teachers in Reading and Writing Skills are moderately relevant with a mean of 3.195876289, to the performance standard in Community Engagement which are PS1 which is to synthesize the integrative experience of implementing community-action initiatives applying social sciences' ideas and methods, followed by moderately relevant with a mean of 3.18556701, to the performance standards in Creative Nonfiction which are PS2 which is to clearly and coherently use a chosen element conventionally identified with a genre for a written output, PS3 which is to clearly and coherently use multiple elements conventionally identified with a genre for a written output, PS4 which is to competently deliver an artistic presentation summarizing and analyzing the form, theme and techniques of a chosen creative nonfictional text. The third, fourth and fifth in rank came out to be are all moderately relevant as well but with lower numerical equivalence in terms of relevance to their performance standards.

Accountancy and Business Management (ABM)

Business education (BE) lecturers do not normally focus on literacy practices, since literacy is generally regarded as a focus of the business communication module. Both Jackson (2009) and Ivanič et al. (2009) comment that reading and writing skills are reserved for the language specialist who has little expert knowledge of subject discourses.

Table 10 illustrates the level of relevance of the instructional materials used by teachers in Reading and Writing Skills to the performance standards of discipline contexts in ABM as perceived by Grade 11 STEM students.

Table 10
Level of Relevance of the Printed Instructional Materials of Reading and Writing Skills to Accountancy and Business Management (ABM)

Performance Standards	MEAN	INTERPRETATION
Organization and Management	2.83	Moderately Relevant

Applied Econ	3.10	Moderately Relevant
Business Ethics	3.18	Moderately Relevant
Business Finance	3.08	Moderately Relevant
Business Math	3.24	Moderately Relevant
FABM	2.99	Moderately Relevant
Principles of Marketing	3.00	Moderately Relevant

The instructional materials used by teachers in Reading and Writing Skills are moderately relevant with a mean of 2.83, to the performance standards in Organization and Management which are PS1 which is to apply management theories & concepts in solving business cases and PS2 which is to analyze the various environmental forces affecting the firm and summarize these using Political Economic Social and Technological Analysis and Strengths, Weaknesses, Opportunities and Threats Analysis frameworks. The second in rank is moderately relevant with a mean of 3.10, to the performance standards in Applied Economics which are PS3 which is to apply tools and techniques for business opportunities like the SWOT/TOWS analysis, PS4 which is to conduct a survey of macro and micro environments affecting business in a locality, PS5 which is to conduct a socioeconomic impact study on consumers suppliers; investors government households and international trade leading to options in venturing into a business.

The third, fourth, fifth and six in rank are all moderately relevant to the performance standards in Business Ethics as presented in the table.

Home Economics (HE)

Home economics education extends this knowledge of concepts, principles and theories to the practice of life skills that enables individuals and families to deal effectively with the demands of everyday life such as finding a job, keeping a budget, problem-solving, time management, social and citizenship skills, family planning and developing a positive self-image, among others (Dictionary.com; UNICEF, 2003) as cited by (Gabriel, Bantang, Chua, Dare, Malicdem, 2017).

Table 11 illustrates the level of relevance of the instructional materials used by teachers in Reading and Writing Skills to the performance standards of discipline contexts in HE as perceived by Grade 11 STEM students.

Table 11
Level of Relevance of the Printed Instructional Materials in Reading and Writing Skills to Home Economics (HE)

Performance Standards	MEAN	INTERPRETATION
Bread and Pastry	3.16091954	Moderately Relevant
Food and Beverage	3.206896552	Moderately Relevant
House Keeping	3.2	Moderately Relevant
Tourism Promotions	3.362068966	Highly Relevant

The instructional materials used by teachers in Reading and Writing Skills are moderately relevant with a mean of 3.16091954, to the performance standards in Bread and Pastry Production which are PS1 which is to demonstrate core competencies in bread and pastry production, PS2 which is to demonstrate core competencies in preparing and producing bakery products, PS3 which is to demonstrate competencies in preparing and producing pastry products, PS4 which is to demonstrate competencies in preparing and presenting gateaux, tortes and cakes, PS5 which is to demonstrate competencies in preparing and

displaying petits fours and PS6 which is to demonstrate competencies in presenting desserts. The second in rank is moderately relevant with a mean of 3.206896552, to the performance standards in Food and Beverage which are PS7 which is to demonstrate competencies in food and beverage services and PS8 which is to demonstrate knowledge and skills in food and beverage service related to its concepts, job opportunities, future career preparation, and market demand.

Finally, the third is considered as moderately relevant with a mean of 3.2, to the performance standards as well but with a lower numerical equivalence.

Information and Communication Technology (ICT)

Competencies in the design of ICT-enabled education settings refer to planning and organizational skills around elements that lead to the construction of ICT-enabled education settings for meaningful learning and comprehensive education for students. Competencies relating to implementing ICT-enabled learning experiences in education settings relate to skills that facilitate the design and planning of an education setting and that are then reflected in a teacher's education practice (Valencia-Molina, Serna-Collazos, Ochoa-Angrino, Caicedo-Tamayo, Montes-González &Chávez-Vescance, 2016).

Table 12 illustrates the level of relevance of the instructional materials used by teachers in Reading and Writing Skills to the performance standards of discipline contexts in STEM as perceived by Grade 11 ICT students.

Table 12
Level of Relevance of the Printed Instructional Materials in Reading and Writing Skills to Information and Communication Technology (ICT)

Performance Standards	MEAN	INTERPRETATION
Animation	2.905882353	Moderately Relevant
Computer Systems	2.735294118	Moderately Relevant
Programming	2.857843137	Moderately Relevant

The instructional materials used by teachers in Reading and Writing Skills are moderately relevant with a mean of 2.905882353, to the performance standards in Animation which are PS1 which is to create/provide quality and marketable products and/or services for the animation, PS2 which is to prepare an activity plan that aligns with that of a practitioner/entrepreneur's in animation, PS3 which is to create a business vicinity map reflective of the potential animation market within the locality/town, PS4 which is to perform accurate measurements and calculation based on a given tasks and PS5 which is to demonstrate an understanding of the concepts and underlying principles of preparing and interpreting technical drawings in animation. The second is moderately relevant with a mean of 2.735294118, to the performance standards in Computer Systems which are PS6 which is to demonstrate common competencies in computer systems servicing, PS7 which is to prepare an activity plan as of a practitioner/entrepreneur in computer systems servicing, PS8 which is to create a business vicinity map reflective of the potential computer systems servicing market in the locality/town and PS9 which is to accurately measure and calculate based on a given tasks. The last is rank is moderately relevant to its performance standards in Programming but had a lower numerical equivalence.

When all insights are considered, the highest level of relevance in terms of Reading and Writing Skills printed instructional materials as perceived by grade 11 students to each strand are Biology for STEM, Discipline and Ideas in Social Sciences in HUMSS, Business Math in ABM, Tourism Promotions in HE and Animation in ICT.

The results imply that the students see the relevance of Reading and Writing Skills to their specialized subjects, however, based on the perceptions of the students, the ideas presented in the instructional materials in Reading and Writing Skills are not sufficient to help the students comprehend the concepts in their specialized subjects since the Reading and Writing Skills is a core subject which generally focus patterns of reading and strategies in writing academically and not 100% geared towards the performance standards of the strands and specialized subjects.

V. CONCLUSION AND RECOMMENDATION

Conclusions

The researcher came to the following conclusions based on the study's findings:

1. Physics for STEM, Discipline and Ideas in Social Sciences, and Introduction to World Religions in HUMSS, Business Finance in ABM, Housekeeping in HE, and Animation in ICT are the discipline contexts that received the highest rank in terms of their use in Reading and Writing Skills as perceived by grade 11 students in each strand. According to the findings, senior high school students believe that Reading and Writing Skills are used in STEM, HUMSS, ABM, HE, and ICT discipline contexts.
2. Biology for STEM, Discipline and Ideas in Social Sciences in HUMSS, Business Math in ABM, Tourism Promotions in HE, and Animation in ICT have the highest level of relevance in terms of printed instructional materials as perceived by grade 11 students.

Recommendations

The following are recommended based on the study's findings and conclusions::

1. Reading and writing skills printed instructional materials should include concepts centered on the specialized subjects of the students' strands and should assist students in grasping the concepts in their strand.
2. Teachers of Reading and Writing Skills should assist students in recognizing and appreciating the subject's relevance to their specialized subjects by having modules evaluated by the senior high school department or authorized persons before being used in class, and by having modules focused in strand-based instructional materials that include instructions on how to use them effectively.

Other recommendations:

3. Teachers in Senior High School must examine and update instructional materials on a regular basis to ensure that their content and activities are relevant to the performance standards of the topics in each strand.
3. Other researchers should look into the connection of other senior high school core subjects to each strand.

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