High Impact Reading-Writing: Development of ICT-Based Enhancement Material for Grade 7

Raymund C. Francia*

For affiliations and correspondence, see the last page.

Abstract

This research study is focused on developing an interactive reading comprehension material that is ICT-based for English 7 classes that can serve as an enhancement or intervention activity. It is centered in developing the material, testing, and finalizing along the Phil-IRI standardized materials. In this study, the researcher employed the Design and Development Research employing the survey questionnaire through google forms, purposive sampling, and the ADDIE model of instructional material development. The findings revealed that developed material is centered on the needs of the students that are primarily knowledge of the language structure, vocabulary development and monitoring of comprehension with WAM of 3.79-3.74 described as strongly needed; the feature of the ICT-based material need to be attractive to the students, supports independent learning, and has simplified activities with WAM of 3.88 – 3.85 described as highly preferred; and in its acceptability as to content, technical, and aesthetic aspects were all highly acceptable with total WAM of 3.62. Thus, the developed material can be utilized in all the Grade 7 students in the school. Taking part in the series of studies conducted in DepEd to attain communicative competent and multiliterate basic education graduates, this paper focused on the development of an ICT-based reading comprehension material that is high impact in its nature for the learning of the students in Grade 7.

Keywords: High Impact, Reading Comprehension, ICT-Based, Design and Development Research

Introduction

The K-12 Basic Education Curriculum emphasizes language as the basis of all communication and the fundamental tool of cognition to produce communicatively competent and multiliterate graduates. Reading is vital to the intellectual, social, and emotional growth in all key learning areas (K to 12 English Curriculum Guide 2013). The legislation (Article 14, Section 7 of the 1986 Philippine Constitution) requires more English than Filipino in the curriculum for communication and education. In nations like the U.S., fourth and eighth students' English reading comprehension falls below basic.

Paris (2019) reported that the Philippines fared in the low 70s in the 2018 Programme for International Student Assessment (PISA), a test for 15-year-olds in 79 nations (OECD). The Philippines ranked 79th in reading, with a score of 340 out of 487. This year's PISA, announced on December 3, focused on reading. PISA defines reading literacy as “understanding, utilizing, evaluating, commenting on, and engaging with texts” PISA results reflect learners' achievement on the National Achievement Test, thus DepEd acknowledges the significance of correcting difficulties and gaps in basic education in the Philippines. DepEd will lead Sulong Edukalidad by implementing aggressive reforms in four key areas: (1) K to 12 reviews and updating, (2) improvement of learning facilities, (3) upskilling and reskilling of teachers and school heads through a transformed professional development program, and (4) engagement of all stakeholders for support and collaboration. DepEd said, "No Filipino learner should be left behind; it takes a country to educate a child." DepEd calls on the entire country to help improve basic education in the Philippines.

Some local children can't read easily or answer questions accurately, said Amontay National High School professors. These pupils have low English comprehension, writing, and test scores. Low English MPS scores from the 1st through 3rd quarters were all below 75%. Teachers found it difficult to assess student outputs in modular instructions because they couldn't comprehend the language structure, the responses were distant from what was asked/expected, and some students' comprehension problems were unaddressed.

Loewus (2016) admitted that there aren't enough materials to learn and master word usage in a one-hour lesson for kids with diverse demands and attention spans. Leu et al. (2014) called ICT-related reading alterations "new literacies of online research and comprehension.” Online reading within hypertext, like email or web pages, is analogous to paper reading. Differences between problem-solving reading and
online reading reside in the techniques required. Online reading demands abilities in seeking, assessing, and integrating information to develop a new comprehension beyond the original material. Online reading skills encompass traditional reading and interactive ICT skills, they said.

In this research, the researcher wanted to develop ICT-based creative reading enhancement material with self-assessment, sounds, writing exercises, visuals, and spiral presentation of the contents to help students acquire and reinforce sentence structure abilities. With ICT (Maduabuchi & Vivian, 2016), descriptive statistical analyses revealed that the most important prospects of using ICT in teaching reading comprehension included: the obvious improvement in vocabulary building and usage... as well as the excitement about reading comprehension lessons often expressed by the students, which facilitated students' learning process and promoted meaningful learning, among others. Students may improve their reading comprehension, language grammar, and sentence formation, in addition to contextual subjects, using this content.

As laid by predominant English language status from international to local context above, this study centered on developing an ICT-based enhancement material for reading comprehension of Grade 7 generally aimed for an increased reading comprehension. It specifically gave light to the following questions:

1. What are the basic students' needs in reading?
2. What are the features of the high impact ICT-based enhancement material?
3. What is the acceptability level of the developed high impact ICT-based reading material in terms of its:
   3.1. contents;
   3.2. technicality; and
   3.3. aesthetic qualities?

**Literature Review**

This section presents three (3) thematic discussions introducing the following aspects: (a) basic student’s needs in reading; (b) features of high impact ICT-based Enhancement materials and, (c) acceptability level of the enhancement material. These topics are briefly discussed to introduce the related studies anchored to the key concepts of the paper. These served as the bases of the researcher to framing the overall design of the study. Likewise, this section depicts the conceptual paradigm of the study.

**Basic Student Needs in Reading**

Reading is a key way we learn about our world. Reading process has gotten less attention from researchers and teachers than reading. The emphasis has been on the language to be understood, not the person who understands. Conceptual knowledge, instinctive fundamental abilities, and procedures make up reading comprehension. Conceptual knowledge includes topical, lexical, and textual comprehension. Decoding words and building proposals from word strings may be automated. Reading methods and comprehension tracking are examples. Even though readers have the same core abilities and conceptual understanding, they might have different levels of comprehension. Decoding and encoding are linguistically distant language features that impact children's reading ability, according to Nation (2019). Reading skills are multifaceted. Vocabulary, fluency, phonics, and phonemic awareness are included. Phonemic awareness is knowing that words have several sounds. It involves retaining sounds, combining them into words, and separating them again. Phonics is the relationship between a letter and its sound in written language. Additionally, orthographic depth measures a language's grapheme-phoneme correspondence. Whether a word's pronunciation can be inferred from its spelling depends. Deep orthographies are less apparent, and the reader must learn irregular word pronunciations.

Reading deciphers written material from spoken language. Reading means understanding written speech, he says. Meaning is sought. To understand speech, children must learn their culture's symbols. Children connect visuals to sound units. Phonics relates letter symbols to sounds. These sound-symbol interactions create words. Most languages relate sign to sound but not meaning. Comprehension has phonologically aware sublexical and lexical components. Morphological awareness includes conjugation and derivation. According to modern psycholinguistics study, the reader requires metalinguistic information to understand the text. Metacognition is when a reader evaluates language use. And, vocabulary and word comprehension aid comprehension. The lexical quality hypothesis (O'Connor, 2016) states that knowing words' spelling, pronunciation, morphology, and meaning improves reading. Sentence comprehension needs word recognition. Reading a paper begins with identifying each word, much as translating visual information into spoken. The reader must interpret each sentence's meaning and facts to understand the book. This evaluation requires the reader's prior knowledge.
Reader chooses the appropriate interpretation. Several studies link various variables to reading comprehension.

Yang (2016) mentioned linguistic variables that help students’ reading comprehension includes language, graphics, letters, words, phrases, and sentences, as well as local cohesion, paragraph structure, discussion subject, inference, and global knowledge. Read with global and regional language approaches.

**ICT-based Reading Material**

ICT has become a source of teaching and learning, particularly in reading, according to Margareta et al. (2017). Reading using ICTs has various benefits, as Yunus et al. (2010) noted both benefits and drawbacks of utilizing ICT in teaching ESL reading and writing. The study's conclusions showed that employing ICT in teaching ESL reading and writing was seen to have the most significant benefits for grabbing students' attention, improving their learning process, enhancing their vocabulary knowledge, and encouraging meaningful learning. Another study on the application of ICT to the teaching of reading is connected.

According to Alberth (2013), using ICT can virtually make up for deficiencies in English teaching and learning, such as a lack of exposure to the language, a lack of activities, and a dearth of learning resources. It has been demonstrated to be beneficial for teaching and learning English, but in order to adapt to this shifting environment, it is crucial to do a need analysis. The simple usage of a computer, however, is no longer enough to please today’s kids, claim Sandiyasa et al. (2014), since youngsters have grown more computer proficient than their parents. Just using a computer may potentially be as boring as memorizing grammatical rules. In order to handle this situation, computer-assisted language learning, or CALL, is utilized. This method of language teaching and learning typically takes the shape of an appealing presentation, reinforcement, and evaluation of the knowledge through the use of text, image, audio, and video. The application may be utilized in the classroom where, thanks to the package's appealing layout, kids are more eager to complete assignments from their teachers.

**Development and Acceptability of the ICT-based Reading Material**

Anything done by the author, teachers, or learners to supply sources of linguistic input and to utilize those sources in ways that enhance the possibility of intake is referred to as materials development. Tomlinson said that there are a number of factors that must be taken into account while developing training materials. According to the four essential criteria, the learning materials must have an effect, make the learner feel comfortable and confident, and the learner must believe that what is being taught is pertinent and helpful.

According to Kristanto et al. (2017), instructional materials should be sufficient to meet the skills and related to the curricular requirements (standard of competency and basic competency). Additionally, Tomlinson (2011) suggests the following guidelines for materials production based on theories and principles of second language acquisition: (1) Materials should be impactful through novelty, variety, attractive presentation, appealing content, and a manageable challenge. (2) Materials should make learners feel at ease through plenty of white space and texts that are relevant to their world. (3) Materials should help learners develop confidence through exercises that are just a little bit beyond their current proficiency. (4) Materials should facilitate learners' self-investment by involving them in learner-centered discovery activities.

The criteria for good reading materials are established based on the material development principles put forth by Kristanto et al. (2017) and Tomlinson (2011) above, i.e., the reading materials should be (1) relevant and adequate to achieve the competencies; (2) achieve impact through novelty, variety, attractive presentation, appealing content, and achievable challenge; (3) help learners feel at ease; (4) help learners develop confidence; and (5) facilitate learners' self-instruction.

Similarly, Bunch (2012) said that studies have shown that the contents and characteristics of educational materials were seen as the most important elements since they emphasize involvement and meaning-making. On the other hand, goals must be established that are precise, quantifiable, achievable, pertinent, and time-limited. The language used must be carefully chosen, and the review process must advance. For the benefit of the students and in compliance with the required positioning (formatting) of the text, images, sounds, videos, and general layout, they added the need for the content to be used in the simplest way possible. Everything needs to be cohesive and helpful in understanding and valuing other parts.
**Theoretical Framework**

The notions of bottom-up, top-down, and participatory reading are widespread. It's all about the words, phrases, sentences, and syntactic structures of the text in bottom-up theory. One way to make sense of text is to break it down into its constituent words, phrases, and sentences. Assemble little parts into larger ones in order to decipher the meaning of written text. In the bottom-up hypothesis, if the reader doesn’t understand the text, he may be unable to decipher the meaning of a word. The reader is steered by the text. Then, top-down theory. Goodman's top-down concept is based on the fact that reading is a psychological guessing game (Carrel, 1989). Prediction, selection, and confirmation are all part of the reading process, which relies on the reader's prior knowledge and the text itself. With more accurate predictions, the reader will need less visual perceptual input in order to comprehend the content. Top-down theory has been criticized for placing too much emphasis on prior knowledge and overlooking the need of reading the actual text. Schema theory, also known as interactive theory, attempts to strike a balance between the two. It combines theories from the bottom-up and the top-down in an investigation of language understanding through information processing.

Reading and language acquisition are intertwined. It's Skinner's opinion that children should be exposed to a wide variety of languages, including their own. Language, in the view of behaviorists, may be taught like any other conditioned response. There is just one human language under the surface according to the Universal Grammar idea. He claims that humans are born with the aptitude to acquire languages and that syntactic features are "created" in the brain. Chomsky argues that infants and toddlers acquire language through an internal mechanism. There is no way to scientifically establish one's "innate" beliefs.

**Methodology**

This research employed the design and development as its research design. According to Ulrich and Eppinger (2011) this research design is the set of activities which starts with conceiving an opportunity and concludes in utilizing a material. This cyclical process design aims at developing a solution to a perceived challenge and accomplish a learning related goal. This leads to an improved learning engagement and mastery of specified set of skills according to the Institute of Education Science and National Science Foundation (2013). Additionally, survey questionnaire was also employed in the data gathering process to stand in a strong and valid data during the Pandemic period. The researcher engaged in utilizing a survey questionnaire for student responses and printed questionnaire for the teacher validation.

This academic endeavor was realized in Amontay National High School, Pitogo, Quezon. There were 158 participants to this study which was composed of 120 Grade 7 learners, 30 teachers from junior and senior high school, five (5) instructional material developers, and three (3) artist. The participants were selected through purposive sampling, under criterion-based sampling category. This sampling approach is employed when strategically seeking information directly relevant on the objectives of the study. These validators were primarily selected since they are all directly related to English language subject or an expert in design and development of instructional materials. Frey, Botan and Kreps (2000) & Suri (2011) have stressed the prioritization of the necessary and directly related characteristics of the target respondents related with the objectives of the research. Meanwhile, the researcher revised the instrument used by Villenes et.al (2018) and included relevant aspect for validating an ICT-based reading material. This modified instrument was also subjected for consultation and validation. Hence, the used validation questionnaire was composed of three (3) components such as content, technical, and aesthetic qualities) with fifty (50) item statements.

Meanwhile, presented in Figure 2 is the research paradigm which shows the overall process of the material development. This follows the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model which is generally used in the design and development of instructional materials. Drljaca et al. (2017) cited that this model suits studies that develop materials for e-courses serving as learning materials and interventions. In the analysis phase, the researcher was immersed in reviewing and preparing all the necessary materials and documents for design and development process. The design phase was consisted in identifying the reading comprehension materials contents, physical design, presentation of information in the material. In the development phase, all the games materials were developed. The implementation phase followed, which constituted the first draft preparation and initial evaluation through try-out. This further includes first revision and improvement. Then evaluation as the final phase, concludes with the validation of the developed ICT-based reading material based on its content, technical and aesthetic qualities.
Results and Discussion

This section illustrates the research findings as anchored on the research problems identified in this study. It also includes interpretation and discussion of each finding.

Part I. Basic Student Needs in Reading

Table 1. Frequency Distribution of Basic Student Needs in Reading and Comprehension

<table>
<thead>
<tr>
<th>Statements</th>
<th>WAM</th>
<th>Verbal Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1. improve my knowledge of the topic.</td>
<td>3.62</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.2. understand the vocabularies in the text.</td>
<td>3.54</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.3. comprehend how the words are used.</td>
<td>3.71</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.4. learn the connection between sentences.</td>
<td>3.68</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.5. learn the relationship of paragraphs.</td>
<td>3.72</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.6. monitor my understanding of the concepts.</td>
<td>3.74</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.7. learn to construct my own propositions.</td>
<td>3.47</td>
<td>Needed</td>
</tr>
<tr>
<td>1.8. decode the actual use of words in the text.</td>
<td>3.86</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.9. hear the words I am reading.</td>
<td>3.31</td>
<td>Needed</td>
</tr>
<tr>
<td>1.10. read fast and with ease.</td>
<td>3.33</td>
<td>Needed</td>
</tr>
<tr>
<td>1.11. see the connection of the text in my culture.</td>
<td>3.52</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.12. have an increased motivation to read.</td>
<td>3.72</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.13. read simplified texts.</td>
<td>3.73</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.14. understand the whole language structure.</td>
<td>3.79</td>
<td>Strongly Needed</td>
</tr>
<tr>
<td>1.15. visual and symbol connections.</td>
<td>3.45</td>
<td>Needed</td>
</tr>
<tr>
<td>Total</td>
<td>3.62</td>
<td>Strongly Needed</td>
</tr>
</tbody>
</table>

Table 1 shows the frequency distribution of basic student needs in reading and comprehension. It has found out that 11 statements were verbally described as strongly needed, 4 were needed, and none for not needed and strongly not needed. Likewise, most of the student in reading and comprehension classes/activities need to understand the whole language structure the most, followed by understanding the vocabulary text, and monitor understanding of the concepts, and read simplified texts. It could be put forward from this that majority of the Grade 7 students does not have a complete grasps or confident knowledge in the English language structure, lack knowledge and application of the vocabularies they encounter, has blurred understanding of the things they read, and encounter reading materials that are not fitted to them or their interest. These has to be resolved.

In reference to Nation (2019), in the study it mentioned that students of different characters have varying needs but from all of these, vocabulary and language knowledge has to be prioritized since these are the primary foundations of language building, utilization, and understanding. This helps students to monitor their understanding gradually. Yang (2016), added the need for exploration and utilization of simplified materials suiting each student need for an increased comprehension. If necessary, the teacher / facilitator has to revise and personalize. With this, the material to be develop need to have simplified text, vocabulary and language development part and activities for increased comprehension.

Part 2. Features of the High Impact ICT-based enhancement material

Table 2. Frequency Distribution of features of the High Impact ICT-based enhancement material

Table 2 presents the frequency distribution of the features of the High Impact ICT-based enhancement material. It could be seen clearly that all the statements were verbally described as strongly preferred. From these, an ICT-based material should be attractive in all aspects, statement 1.1. with a weighted mean of 3.88, ranks the first. It was followed by facilitating in independent learning with WAM of 3.87, and having simplified activities with the WAM OF 3.86. The total average WAM, 3.78 is also described strongly preferred. It could be surmised from these that student wanted to engaged in ICT-based reading comprehension material that is attractive, catchy, individualizing learning, helps independent learning, with quizzes, with sounds, visuals elements, easy to understand, support comprehension, simplified, spiral progression, supportive of language needs, and can be used anywhere. These requires an all-flexible material for reading comprehension using electronic devices that are already present and owned by most of the students.

Relevant to the study of Margareta et al. (2017), Yunus et al. (2010), Alberth (2013), and Sandiyasa et al., (2014), the computer literacy of the students nowadays should be explored in a way convenient for them to learn in their own learning zones following their own learning demands and supports be present as needed. With this, the reading comprehension material

Raymund C. Francia
to be developed need to cater individual and independent learning ability of the students that are supportive to their language and comprehension needs in and out of the classroom.

Part III. Acceptability Level of the Developed ICT-based Enhancement Material for English Reading Comprehension

Table 3. Weighted Mean, Verbal Description and Rank of the Acceptability in terms of Content, Technical, and Aesthetic Quality of the Developed material.

<table>
<thead>
<tr>
<th>Content Quality</th>
<th>WM</th>
<th>VD</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Objectives</td>
<td>3.81</td>
<td>HA</td>
<td>2</td>
</tr>
<tr>
<td>2. Content and Features</td>
<td>3.92</td>
<td>HA</td>
<td>1</td>
</tr>
<tr>
<td>3. Language Used</td>
<td>3.59</td>
<td>HA</td>
<td>3</td>
</tr>
<tr>
<td>4. Learning Evaluation</td>
<td>3.52</td>
<td>HA</td>
<td>4</td>
</tr>
<tr>
<td>Technical Quality</td>
<td>WM</td>
<td>VI</td>
<td>R</td>
</tr>
<tr>
<td>1. Technical Standards</td>
<td>3.66</td>
<td>HA</td>
<td>2</td>
</tr>
<tr>
<td>2. Facilitation and Usability</td>
<td>3.75</td>
<td>HA</td>
<td>1</td>
</tr>
<tr>
<td>Aesthetic Quality</td>
<td>WM</td>
<td>VI</td>
<td>R</td>
</tr>
<tr>
<td>1. Layout and Design</td>
<td>3.88</td>
<td>HA</td>
<td>2</td>
</tr>
<tr>
<td>2. Visuals and Texts</td>
<td>3.82</td>
<td>HA</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>3.74</td>
<td>HA</td>
<td>---</td>
</tr>
</tbody>
</table>

Table 3 shows the weighted mean of the acceptability test for the ICT-based enhancement material in reading comprehension for English in terms of content, technical, and aesthetic quality. It shows that all statements in all aspects of acceptability fell in the range of 3.51 – 4.00 verbally described as Highly Acceptable. It is worthy of notice that in content, the material has the highest WAM in content and features; in terms of technical quality, the material has the highest WAM in facilitation and usability; and in terms of aesthetic quality, the material has the highest WAM in layout and design. It could be surmised that the material developers give the highest importance to what students can learn in the material and how these can be learned in the easiest way that attracts the student in their learning journey.

With reference to the study of Bunch et al., 2012; Tomlinson 2011. Students like novelty in their learning that is to learn and be exposed to something that they have not encountered yet. Student like learning opportunity in the most convenient way while attracting and entertaining them. However, all of these should have relevance to the objectives of the curriculum. From this, it puts forward that the developed material can be utilized already in Grade 7 reading comprehension subject activities since it has a highly acceptable content quality, technical quality, and aesthetic quality.

Conclusion

Based on the results of the study, it concluded that: (1) Students’ needs have to addressed primarily the need to understand the whole language structure, understand vocabulary, and monitor understanding of concepts. (2) The High Impact ICT-based reading comprehension material has to be attractive in all its aspects and carries flexibility in utilization for individual learner and has varied features. (3) The developed High Impact ICT-based reading comprehension material is highly acceptable and can be utilized in the Grade 7 students in their classes or intervention activities.

Moreover, it recommended that: (1) The ICT material to be developed as well as other reading programs may be give the highest priority to understand English language structure, vocabulary, and gradual concept development. (2) All reading comprehension materials may be created around the flexibility, independence, attraction, and novelty needs of the learners. (3) The developed material may be utilized and can be adopted even in higher grade levels.

References


Raymund C. Francia
Loewus, L. (May, 2016). Quality learning materials are scarce for English-language learners.


Affiliations and Corresponding Information

Raymund C. Francia
Amontay National High School
Pitogo, Quezon, Philippines