



## Improving Reading Comprehension Skills in English for Grade 4 Pupils through Microsoft Immersive Reader

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### Abstract

*Reading comprehension has been a persistent challenge for many learners, especially in public schools where resources and access to technology-based support are limited. The study aimed to improve the reading comprehension skills in English of twenty-two (22) Grade 4 pupils at Bawa Elementary School through the use of Microsoft Immersive Reader during the first quarter of the 2023-2024 school year. Participants were selected using simple random sampling. A two-group experimental research design, consisting of a control and an experimental group, was employed. Data from pretests, posttests, and surveys were analyzed using paired sample t-tests, independent sample t-tests, and means. Results indicated that although the experimental group's post-test mean score (20.27) was higher than the control group's (17.27), the difference was not statistically significant ( $p = .171$ ) suggesting that the 30-day intervention and small sample size may have limited measurable gains. Nevertheless, the experimental group's significant improvement and pupils' positive behavioural perceptions suggest potential for technology-based interventions when implemented over a longer period.*

### Keywords:

reading comprehension, English, Grade 4 pupils, Microsoft Immersive Reader

### Article History

#### Editors:

Marie Paz E. Morales, PhD

#### Received:

August 28, 2024

#### Revised:

August 15, 2025

#### Accepted:

August 19, 2025

### Introduction

Reading comprehension has long been regarded as a crucial and essential means to students' academic success, personal development, and career readiness (Miñoza & Montero, 2019). Globally, research emphasizes that strong reading comprehension skills enable learners to make inferences, synthesize information, and critically analyze texts which are essential competencies in today's knowledge-driven society (Rutzler, 2024). Acknowledging its significance, pupils' continuous development, improvement, and strengthening of reading comprehension remain a priority in reading and language education (Schwartz, 2025). With the growing integration of digital tools, many educators are turning to technology to support and enhance reading comprehension especially for struggling readers, particularly using Microsoft Immersive Reader to promote literacy skills (Microsoft Learn, 2024).

Across Southeast Asia, regional efforts are being made to address foundational learning challenges, including reading comprehension, through the digital transformation of education systems. The ASEAN Declaration on the Digital Transformation of Education Systems (ASEAN Secretariat, 2022) and the ASEAN Socio-Cultural Community's 2025 Policy Brief (Pascua-Valenzuela, 2025) call for inclusive, technology-enhanced, and future-ready learning environments that improve core competencies such as literacy. Countries such as Singapore, Malaysia, and Indonesia have made significant advances through immersive learning platforms, adaptive digital tools, and virtual instruction, aiming to improve reading engagement and comprehension (Cho, 2024; Kemp, 2023).

Despite this progress, ASEAN still faces infrastructure gaps, high connectivity costs, and uneven teacher readiness—particularly in rural areas (UNICEF, 2021; World Bank, 2022). SEAMEO INNOTECH (2023) highlights that many teachers in the region lack sufficient training in digital pedagogy, which is essential for fostering effective comprehension instruction using technology. These region-wide challenges provide a critical context for understanding how countries are working to improve reading comprehension and digital integration at both national and local levels.

In the Philippines, reading comprehension remains a persistent challenge. The 2018 Programme for International Student Assessment (PISA) revealed that Filipino students ranked the lowest in reading comprehension, with many performing poorly in determining the main idea in moderately long texts, noting information based on explicit yet sometimes complex criteria, and pondering the purpose and structure of texts when explicitly prompted. This result has a profound impact, as reading comprehension is crucial for language acquisition, understanding, and mastery of content in all other subjects (Adapon & Mangila, 2020; Albano, 2021; Filart, 2019). The problem became even more apparent during the COVID-19 pandemic when students' reading proficiency significantly declined due to prolonged school closures and the shift to remote learning (Schult et al., 2022; Velarde & Catoto, 2022).

At the local level, Bawa Elementary School mirrors the national reading literacy crisis. The Philippine Informal Reading Inventory (Phil-IRI) pretest conducted at the start of SY 2022-2023 revealed that 47.62% of the Grade 4 pupils were categorized as “frustrated” in reading comprehension, with only 14.29% reaching the “independent” level. While many pupils could decode words accurately, they struggled significantly with understanding and interpreting the text. These results are consistent with existing studies, which emphasize that students’ ability to comprehend what they read directly impacts their overall academic success (Nanda & Azmy, 2020). Without targeted interventions to improve comprehension skills, these deficiencies could lead to significant learning gaps and long-term challenges for pupils.

Research suggests that integrating technology into reading instruction can help address comprehension gaps (Jamshidifarsani et al., 2019). Tools like Microsoft Immersive Reader have been designed to enhance reading by breaking text into more digestible parts, providing translations, and allowing personalized reading experiences (Microsoft Education, 2024). While there is growing interest in using such tools in Philippine classrooms, recent international studies present mixed evidence on their effectiveness.

Hidayat (2024) reported comprehension gains among Indonesian high school students who used AI-powered platforms, although outcomes depended on learner motivation and teacher guidance. Romig and Jetton (2023) found that repeated reading delivered online improved oral fluency among U.S. elementary students, but did not result in clear comprehension improvements. Oakley (2024) further emphasized that most digital reading fluency tools prioritize fluency drills over deep comprehension, with few studies rigorously evaluating higher-order skills such as inference and synthesis. This misalignment between tool design and comprehension goals raises questions about their broader effectiveness. Such mixed results suggest that the success of digital reading tools depends on implementation context, instructional integration, and duration of exposure.

While these studies offer valuable insights, their findings may not fully translate to the Philippine context, particularly in rural public schools. Factors such as varying levels of teacher readiness to integrate digital tools, limited ICT infrastructure, intermittent internet access, and differences in classroom pedagogical practices may influence the effectiveness of Microsoft Immersive Reader compared to other settings. These contextual elements could either enhance or hinder the tool’s impact, underscoring the need to investigate its performance under local conditions.

In the Philippine context, however, few studies have explored how such tools impact reading comprehension among elementary learners in rural public schools. Much of the existing literature focuses on large urban settings, leaving a gap in understanding how these tools can be effectively applied in smaller, rural educational contexts where resources are often limited.

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In line with this, the study seeks to address the gap by investigating the impact of Microsoft Immersive Reader on the reading comprehension skills of Grade 4 pupils at Bawa Elementary School. The focus on this intervention stems from the urgent need to improve literacy rates in the country, particularly in English, which is a critical subject for future academic success and global competitiveness.

### **Research Questions**

The study generally aims to improve the reading comprehension skills in English of Grade 4 pupils at Bawa Elementary School by utilizing Microsoft Immersive Reader during the first quarter of the 2023-2024 school year.

The study specifically answers the following questions:

1. What is the reading comprehension level of the Grade 4 pupils in the control and experimental groups before and after the use of Microsoft Immersive Reader?
2. Is there a significant difference in the reading comprehension levels of the control and experimental groups before and after the use of Microsoft Immersive Reader?
3. Is there a significant difference in the reading comprehension level of the control and experimental groups after the use of Microsoft Immersive Reader?
4. What are the behavioural perceptions of the pupils towards the use of Microsoft Immersive Reader?

### **Hypotheses**

At a 5% level of significance, the following hypotheses will be tested:

1. There is no significant difference between the pre-test and post-test scores of both the control and experimental groups.
2. There is no significant difference between the control and experimental groups' post-test scores.

### **Framework of the Study**

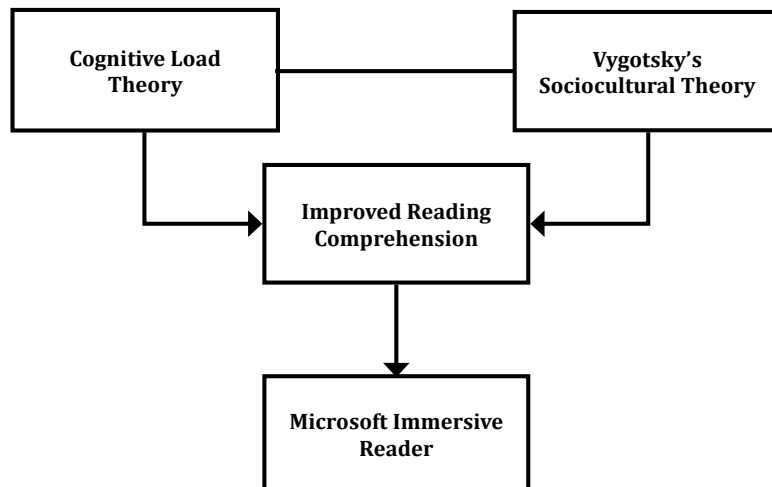
This study is grounded in Cognitive Load Theory, which posits that learning is most effective when information is presented in a way that minimizes unnecessary cognitive demands. By breaking down complex texts and providing multiple modes of input (visual and auditory), Microsoft Immersive Reader reduces cognitive load and facilitates better comprehension (Cathy, 2020; Sweller, 1988).

Additionally, the study draws on Vygotsky’s sociocultural theory, highlighting the roles of tools and social interaction in learning. Microsoft Immersive Reader is a digital tool that mediates pupils’ interaction with text, supporting their comprehension through text-to-speech and vocabulary assistance (Tzuriel, 2021; Vygotsky, 1978).

This study hypothesizes that when used appropriately, technology can significantly improve reading comprehension among elementary pupils by providing the necessary scaffolds to facilitate learning.

**Figure 1**

*Framework of the Study*



The diagram shows that Cognitive Load Theory and Vygotsky’s Sociocultural Theory serve as complementary theoretical foundations for this study. At the center of the framework is the Microsoft Immersive Reader, which serves as the technological tool that mediates the reading process. By reducing cognitive load and providing scaffolding, the Immersive Reader facilitates improved reading comprehension among elementary pupils.

**Methodology**

***Research Design***

This study employed an experimental methodology to assess the improved level of reading comprehension skills in English among Grade 4 pupils who use Microsoft Immersive Reader. Before the study, the entire Grade 4 class at Bawa Elementary School was divided into control

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and experimental groups. A pretest is administered to establish these groups. Their scores are organized in ascending order and divided into two groups: odd and even. The Grade 4 pupils with laptops (experimental group) are matched with pupils with no laptops (control group) to establish the equality of each group's mean score. After matching, the control and experimental groups equally include eleven (11) pupils. Parents are informed before the experiment that their child, a Grade 4 pupil at Bawa Elementary School, will undergo treatment and assessment to enhance their reading comprehension skills in English using Microsoft Immersive Reader. An external observer who is the School English Leader monitored the intervention to reduce teacher-researcher influence.

### ***Sampling Procedure and Participants***

Simple random sampling is employed in this study as all twenty-two (22) pupils enrolled in Grade 4- Jose Rizal for S.Y 2023-2024 are included. Since there is a single class or section of Grade 4 in Bawa Elementary School, the entire class population is involved and is split into two groups: experimental and control. The scores in the pretest are used to select them randomly. The scores are arranged from highest to lowest and are grouped into odd and even groups. The Grade 4 pupils with laptops (experimental group) are paired with pupils who have no laptops (control group) to determine the equality of each group's mean score. The control and experimental groups are equally composed of eleven (11) pupils after pairing.

### ***Research Instrument***

Pretests and posttests in English, as well as survey questionnaires, serve as data-gathering tools in the study. The teacher-made tests consist of 35 multiple-choice questions, with a table of specifications ensuring the content distribution within the scope of the topic coverage, based on the Learning Competencies in English for Grade 4. At the same time, the survey questionnaire on pupils' behavioural perceptions towards using Microsoft Immersive Reader consists of 10 items on a 5-point Likert scale. These instruments are initially subjected to content validation by the District English Consultant, District English Leader, and School English Leader as a prerequisite for their actual use and administration to the research participants.

### ***Data Collection***

A 35-item multiple-choice pretest is given to the Grade 4 pupils to determine their reading comprehension before the intervention. One point is given for every correct response in the test. The intervention involves using Microsoft Immersive Reader with a repeated-reading strategy, where pupils read the same passage three times per session, twice a week for 30 days, with each session lasting 50 minutes. They use features such as line focus, text spacing, syllable separation, and read-aloud to support decoding and comprehension. Pupils read independently, while the teacher-researcher supervises implementation with minimal assistance. An external observer who is the School English Leader ensured adherence to the protocol to limit researcher bias.

After 30 days, the Microsoft Immersive Reader will be utilized for experimentation and a post-test will be administered to test the effectiveness of the intervention material. The pupils take this test for one hour. After administering the test, the teacher-researcher surveys the use of the survey questionnaire and interviews Grade 4 pupils to gather their views on the use of Microsoft Immersive Reader. The interview takes approximately ten minutes for each interviewee. The pre- and posttests, as well as the survey results are collated and tallied for data analysis. From these, the effectiveness of Microsoft Immersive Reader is described, along with the drawn conclusions and reflections, to improve Grade 4 pupils' reading comprehension skills in selected English lessons.

**Data Analysis**

To address the first research question, frequency counts, percentages, and means will be used to assess the reading comprehension levels of Grade 4 pupils in both the pretest and posttest of each group, as well as to analyze their gain scores. The following describes the accumulated scores of Grade 4 pupils in their pre- and posttests.

<b>Competency Level</b>	<b>Score Range</b>
<b>Outstanding</b>	<b>29 - 35</b>
<b>Above Average</b>	<b>22 - 28</b>
<b>Average</b>	<b>15 - 21</b>
<b>Below Average</b>	<b>8- 14</b>
<b>Poor</b>	<b>0 - 7</b>

For the second research question, paired sample t-tests will be used to determine the significant differences between each group's pre- and post-test scores. For the third research question, an independent sample t-test will be employed to compare the significant score differences between the experimental group and the control group.

For the fourth research question, the mean will be calculated to assess the pupils' behavioural perceptions of using Microsoft Immersive Reader. The verbal descriptions for the computed means will be determined based on the Likert Scale as follows:

<b>Mean Score Range</b>	<b>Interpretation</b>
4.21 - 5.00	Strongly Agree
3.41 - 4.20	Agree
2.61 - 3.40	Slightly Agree
1.81 - 2.60	Disagree
1.00 - 1.80	Strongly Disagree

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All calculations will be performed manually and using statistical software such as MS Excel or a spreadsheet.

### *Ethical Considerations*

Full consent for the pupils to take part in this research study is obtained from the parents or guardians of Grade 4 during the Homeroom Parent-Teacher Conference through signed consent and assent letters. The teacher-researcher clearly specifies and explains to them the nature and extent of the data to be collected as well as the actual procedure of data collection to ensure the safety, security interests, and rights of the pupils. The actions, answers, and scores related to the study are kept private, anonymous, and confidential. Any information provided by the participants in the tests, surveys, and interviews is used exclusively for the purposes of this study.

## Results and Discussion

### *Reading Comprehension Performance Levels Before and After the Intervention*

The primary objective of the study is to assess the reading comprehension level of Grade 4 pupils in both the control and experimental groups before and after using Microsoft Immersive Reader.

**Table 1**

*Frequency Distribution of the Scores of the Grade 4 Pupils in Pretest*

Reading Comprehension Performance Level		Frequency	Percentage (%)
		PRE	PRE
Control Group	Outstanding	0	0
	Above Average	1	9.1
	Average	5	45.4
	Below Average	4	36.4
	Poor	1	9.1
Total		11	100
Experimental Group	Outstanding	0	0
	Above Average	1	9.1
	Average	4	36.4
	Below Average	5	45.4
	Poor	1	9.1
Total		11	100

*Note.* Legend: 0-7 = Poor, 8-14 = Below Average, 15-21 = Average, 22-28 = Above Average, 29-35 = Outstanding

Table 1 presents the distribution of pretest scores in reading comprehension for both control and experimental groups. Notably, no Grade 4 pupil in either group achieved the Outstanding level. This suggests that both the control and experimental groups faced similar challenges in attaining high reading comprehension levels in English. For the above-average category, only one pupil in each group (9.1%) achieved this level, indicating that a small portion of pupils demonstrated strong reading comprehension skills. A larger portion of pupils (45.4% in the control group and 36.4% in the experimental group) were categorized as average, suggesting a moderate comprehension level in English.

Additionally, many pupils fell into the below-average category (36.4% in the control group, 45.4% in the experimental group), highlighting the need for interventions to improve comprehension skills. Both groups had one pupil each (9.1%) in the Poor category, reflecting challenges in understanding English texts. From these results, it can be concluded that both groups possessed reading comprehension skills before exposure to the Microsoft Immersive Reader intervention.

**Table 2**

*Frequency Distribution of the Scores of the Grade 4 Pupils in the Posttest*

Reading Comprehension Performance Level		Frequency	Percentage (%)
		POST	POST
Control Group	Outstanding	0	0
	Above Average	3	27.3
	Average	5	45.4
	Below Average	2	18.2
	Poor	1	9.1
Total		11	100
Experimental Group	Outstanding	2	18.2
	Above Average	3	27.3
	Average	3	27.3
	Below Average	3	27.3
	Poor	0	0
Total		11	100

*Note.* Legend: 0-7 = Poor, 8-14 = Below Average, 15-21 = Average, 22-28 = Above Average, 29-35 = Outstanding

Table 2 shows a noticeable improvement in the experimental group's scores after using Microsoft Immersive Reader. Two pupils (18.2%) reached the outstanding level, whereas none in the control group did. This suggests that the Microsoft Immersive Reader had a positive influence on the reading comprehension performance of the experimental group. Both groups had three

pupils (27.3%) in the above-average category, indicating that introducing Microsoft Immersive Reader did not significantly alter performance at this level. In the average category, fewer pupils in the experimental group fell under the average category (27.3%) compared to the control group (45.4%), suggesting that the control group performed better at this level. In the below-average category, the control group had fewer pupils (18.2%) than the experimental group (27.3%). This may imply that while the intervention helped some pupils excel, others in the experimental group struggled to do so. Lastly, no pupils in the experimental group were in the Poor category post-intervention, in contrast to one pupil (9.1%) in the control group, implying that the intervention may have helped prevent poor performance. These patterns can be interpreted through Cognitive Load Theory, which suggests that learning improves when extraneous cognitive demands are reduced. Microsoft Immersive Reader's simultaneous visual and auditory presentation of text may have lowered the processing burden on pupils, allowing them to allocate more cognitive resources to understanding the content (Cathy, 2020; Sweller, 1988).

### *Performance Differences in the Control Group and Experimental Group*

The second objective of this study is to determine whether there is a significant difference in reading comprehension levels between the control and experimental groups before and after using Microsoft Immersive Reader.

**Table 3**

*Significant Difference in the Reading Comprehension Level of the Control Group Before and After the Use of Microsoft Immersive Reader*

	Mean Difference	N	DF	Sig. Level	t-Value	Critical value (two-tailed)	p-value
Control Group (Pretest)	14.00	11	10	.05	-2.529	.030	.015*
Control Group (Posttest)	17.27						

Note. \*p < .05. \*\*p < .01

Table 3 shows the computed mean scores for the control group in the pretest and posttest. The mean scores were 14.00 for the pretest and 17.27 for the posttest, establishing a mean difference of 3.27 points. A t-test was conducted at a .05 significance level to assess the significance of the improvement. The absolute value of the computed t (-2.529) exceeded the critical value of .030, leading to the rejection of the null hypothesis since the p-value (.015) was less than .05. This indicates a statistically significant improvement in the reading comprehension performance of the control group from pretest to posttest.

**Table 4**

*Significant Difference in the Reading Comprehension Level of the Experimental Group Before and After the Use of Microsoft Immersive Reader*

	Mean Difference	N	DF	Sig. Level	t-Value	Critical value (two- tailed)	p-value
Experimental Group (Pretest)	13.27						
Experimental Group (Posttest)	20.27	11	10	.05	-6.205	.000	.001**

Note. \*p < .05. \*\*p < .01

Table 4 displays the pretest and posttest mean scores for the experimental group, which underwent the Microsoft Immersive Reader intervention. The pretest mean score was 13.27, which increased to 20.27 after the intervention, resulting in a mean difference of 7 points. A paired sample t-test was conducted at a .05 significance level to determine the significance of this improvement. The absolute t-value (-6.205) exceeded the critical value of .000, leading to the rejection of the null hypothesis since the p-value (.001) was less than .05. This strongly indicates that the implementation of Microsoft Immersive Reader significantly enhanced the reading comprehension performance of the experimental group. This improvement aligns with Vygotsky's Sociocultural Theory, wherein tools serve as mediators in learning. Microsoft Immersive Reader functioned as a scaffold within the pupils' zone of proximal development, providing text-to-speech, vocabulary assistance, and pacing control to help them engage with texts they might otherwise find challenging (Tzuriel, 2021; Vygotsky, 1978).

### ***Comparative Analysis of Control and Experimental Groups***

The third objective of the study seeks to analyze whether there is a significant difference in the reading comprehension level of the control and experimental groups after using Microsoft Immersive Reader.

Table 5 shows the post-test mean scores for both groups after implementing the Microsoft Immersive Reader intervention. The control group scored a mean of 17.27, while the experimental group scored 20.27. An independent sample t-test was computed at a 0.05 significance level to assess whether these differences were statistically significant. The calculated t-value (-1.122) was below the critical value of .275, and the p-value (.171) exceeded the .05 significance level. Thus, the null hypothesis was not rejected, indicating that there was no statistically significant difference in reading comprehension performance between the two groups.

Table 5

*Significant Difference in the Reading Comprehension Level of the Control and Experimental Groups After the Use of Microsoft Immersive Reader*

	Mean Difference	N	DF	Sig. Level	t-Value	Critical value (two- tailed)	p-value
Control Group (Posttest)	17.27	22	21	.05	-1.122	.275	.171
Experimental Group (Posttest)	20.27						

Note. \*p < .05. \*\*p < .01

This suggests that the 30-day intervention may have been too brief to demonstrate significant improvements. It is also possible that both groups received similar classroom instruction which lessened the difference in results. Additionally, the small sample size (n = 22) may have limited the reliability of the findings.

Despite this, survey and interview results revealed that pupils perceived Microsoft Immersive Reader as engaging and helpful for decoding and maintaining focus while reading. These findings align with those of Hidayat (2024), who emphasized learner engagement as a key factor in comprehension gains, and Oakley (2024), who noted that short-term digital interventions often support fluency more than deep comprehension. Romig and Jetton (2023) likewise observed that repeated reading delivered digitally may improve reading speed and confidence but not always lead to immediate comprehension gains.

These mixed results reflect the complexity of improving reading comprehension through technology. Although statistically significant effects were not observed, pupils' positive perceptions suggest that tools like Microsoft Immersive Reader may be practical when implemented over a longer period and combined with strong teaching support.

### ***Behavioural Perceptions of Pupils***

The fourth objective of the study is to gather insights into the pupils' behavioural perceptions of using Microsoft Immersive Reader.

Table 6 presents the behavioural perception of the Grade 4 pupils towards using Microsoft Immersive Reader to improve their reading comprehension in English. Based on the results, the Grade 4 pupils responded strongly to the 10-item survey questionnaire.

Table 6

*Behavioural Perceptions of the Pupils Towards the Use of Microsoft Immersive Reader*

No.	Behavior During the Classroom Instruction and Use of Microsoft Immersive Reader	Mean	Interpretation
1	The Microsoft Immersive Reader helps me easily comprehend reading texts.	4.27	Strongly Agree
2	The Microsoft Immersive Reader motivates me to participate in the reading activities being conducted.	3.72	Agree
3	The Microsoft Immersive Reader caters to my reading comprehension needs.	4.45	Strongly Agree
4	The Microsoft Immersive Reader develops my literal, inferential, and critical thinking skills.	4.00	Agree
5	The Microsoft Immersive Reader provides me comfort in reading.	3.81	Agree
6	The Microsoft Immersive Reader facilitates my understanding of the given reading activities.	4.18	Agree
7	The Microsoft Immersive Reader provides me with reading texts according to my reading comprehension level.	3.54	Agree
8	The Microsoft Immersive Reader exposes me to a wide variety of literature.	3.63	Agree
9	The Microsoft Immersive Reader improves my reading comprehension skills.	3.81	Agree
10	I recommend the use of Microsoft Immersive Reader in English subjects.	4.00	Agree
<b>Grand Mean</b>		3.94	Agree

Note. Legend: 1.00-1.80 = Strongly Disagree, 1.81-2.60 = Disagree, 2.61-3.40 = Slightly Agree, 3.41-4.20 = Agree, 4.21-5.00 = Strongly Agree

The Grade 4 pupils strongly agreed that the Microsoft Immersive Reader helped them easily comprehend reading texts and catered to their reading comprehension needs with a mean of 4.45 and 4.27, respectively. When asked why they found these statements strongly agreeable, Pupil 11 shared *"I really liked how the Microsoft Immersive Reader highlighted the words and read them. It helped me understand better. The words were talking to me, and I could say them correctly. It was fun to follow along."* This means that the Microsoft Immersive Reader's interactive features, such as text highlighting and pronunciation assistance, significantly contributed to a more engaging and comprehensible reading experience for the Grade 4 pupils.

In addition, the Grade 4 pupils agreed that the Microsoft Immersive Reader facilitated their understanding of the given reading activities, developed their literal, inferential, and critical thinking skills, and recommended the use of the Microsoft Immersive Reader in English subjects, with a mean rating of 4.18 and 4, respectively. According to Pupil 5, *"I liked using Microsoft*

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*Immersive Reader because it made reading and learning fun and exciting for me. I could follow along with reading and each time I typed my answers using the new comment button, I could see myself getting better.*" This indicates that the Grade 4 pupils found the Microsoft Immersive Reader to be a valuable tool for enhancing their reading experience, making it a highly recommended intervention.

Additionally, the Grade 4 pupils agreed that the Microsoft Immersive Reader improved their reading comprehension skills, provided them comfort in reading, and motivated them to participate in reading activities with a mean of 3.81 and 3.72, respectively. Pupil 8 supported this by saying *"I felt more comfortable using Microsoft Immersive Reader. It helped me better understand the stories, and the words were easier for me to comprehend. When I saw the words being highlighted, it made me want to read more. It felt good to participate in reading activities through Microsoft Immersive Reader."* This denotes that the Grade 4 pupils perceived significant benefits from utilizing the Microsoft Immersive Reader.

Furthermore, the Grade 4 pupils agreed that Microsoft Immersive Reader exposed them to a wide variety of literature and provided reading texts according to their reading comprehension level with a mean of 3.63 and 3.54, respectively. Pupil 10 supported these and said *"The different stories the Microsoft Immersive Reader presented grabbed my attention to read. Adding to that were the words I knew and easily understood as I read them. I liked that the stories considered my knowledge and understanding abilities as I found the stories matched what I learned.* This means that the Grade 4 pupils perceive the Microsoft Immersive Reader as valuable in exposing them to many English stories, considering their reading comprehension abilities.

Finally, the overall Agree response with a mean of 3.94 signifies the Grade 4 pupils' positive perception towards the Microsoft Immersive Reader intervention. Pupil 1 had this to say *"Microsoft Immersive Reader encouraged me to continually read in order to get better at understanding what I read."* This pinpoints the favourable effect the Microsoft Immersive Reader had in improving their reading comprehension skills. From the perspective of Cognitive Load Theory, pupils' reported comfort and ease of comprehension suggest that the intervention reduced unnecessary processing demands. In line with Sociocultural Theory, the digital tool also served as an interactive mediator, fostering motivation and active participation in the reading process through features that matched pupils' current abilities.

### **Conclusion and Recommendation**

The primary objective of this study was to examine the effectiveness of Microsoft Immersive Reader in improving the reading comprehension skills of Grade 4 pupils in English. The results offer valuable insights into how technology-assisted interventions can support literacy development at the elementary level. By providing empirical evidence of learner gains and positive engagement, this research addresses a key gap in the literature. It affirms the potential of digital tools in early-grade language education.

Although the difference between the experimental and control groups was not statistically significant, there was a meaningful improvement in comprehension scores from the pretest to the posttest within the experimental group. This suggests that the use of Microsoft Immersive Reader may support comprehension growth when integrated with classroom instruction. Pupils also reported positive experiences with the tool, particularly appreciating features that helped them focus and decode unfamiliar words. These findings support theoretical models that highlight the importance of learner engagement, multisensory input, and repeated exposure in reading development.

These findings should be interpreted within the Philippine rural school context, where varying levels of teacher readiness, infrastructure limitations, and intermittent internet connectivity may influence the tool's effectiveness compared to other international settings. Such conditions could moderate the speed and extent of measurable gains, underscoring the importance of sustained implementation and targeted teacher training.

This study reinforces the idea that technology, when used purposefully, can enhance cognitive engagement and reading outcomes. As such, educators are encouraged to explore Immersive Reader and similar tools not only as assistive technologies but as integral components of reading instruction. Repeated reading strategies, paired with digital supports, may be especially beneficial for learners who require scaffolding in comprehension.

At the policy level, the findings imply a need for greater support in integrating accessible EdTech tools into the curriculum especially in public elementary schools.

It is recommended that the DepEd, through its Digital Rise Program, formally integrate similar accessibility-focused reading tools such as Microsoft Immersive Reader into the classroom lesson plans. This alignment would reinforce the program's ICT Assisted Teaching and ICT Assisted Learning components, ensuring that both teachers and pupils benefit from capacity-building, appropriate software, and adequate infrastructure. Targeted professional development should equip teachers with the technical and pedagogical skills needed for effective use, while infrastructure investments particularly in low-resource rural schools should guarantee stable device access and internet connectivity for sustained implementation.

However, the study is limited by its small sample size and single-site implementation, which constrain the generalizability of its findings. Future research should involve larger, more diverse populations and examine long-term impacts across grade levels and subject areas. Moreover, studies on how teachers adapt and sustain the use of digital reading tools in everyday instruction would deepen our understanding of best practices for integrating these tools.

While not statistically conclusive, this study presents strong practical and perceptual evidence that Microsoft Immersive Reader can enhance reading comprehension in early grades. With thoughtful implementation, supportive training, and policy alignment, technology-enhanced

reading instruction can become a powerful tool for addressing literacy challenges in Philippine basic education.



### Acknowledgments

The researcher extends immeasurable appreciation and deepest gratitude to Dr. Quennie Ann J. Palafox, SEPS, Planning and Research; Dr. Janeia Fran G. Fider, her principal; and her fellow teachers at Bawa Elementary School for their help and support in this study. Special thanks are also given to her Grade 4 learners, who were the inspiration and the reason that this research was made, for their active participation and to their parents, too, for their cooperation and support.

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