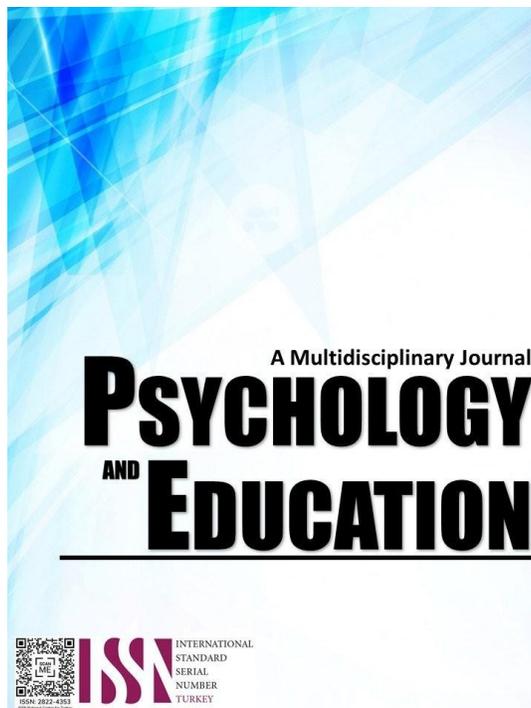


# THE IMPACT OF STUDENT TARDINESS AND SENSE OF BELONGING ON READING PROFICIENCY: INSIGHTS FROM PISA 2022 DATA



**PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL**

Volume: 45

Issue 5

Pages: 641-652

Document ID: 2025PEMJ4382

DOI: 10.70838/pemj.450506

Manuscript Accepted: 07-20-2025

## The Impact of Student Tardiness and Sense of Belonging on Reading Proficiency: Insights from PISA 2022 Data

Mary Gayle Gelig,\* Cindy Limalima, Ian Jarabelo  
For affiliations and correspondence, see the last page.

### Abstract

This study examined the students' behavioral and motivational factors that influenced their reading proficiency as observed in the Programme for International Student Assessment (PISA) 2022. Employing a quantitative approach through exploratory data analysis, the research investigated the roles of truancy, tardiness, grade repetition, curiosity, sense of belonging at school, and life satisfaction in explaining variations in students' reading scores across the 20 top and bottom-performing countries in 2020, selected using quota sampling. Subsequently, the data were analyzed using bipolar analysis to identify groupings, with descriptive statistics derived from cluster analysis. Then, independent samples t-tests evaluated the significance of differences in student factors between these groups. Finally, significant variables were subjected to regression analysis to determine their relative influence on reading proficiency. The findings revealed that tardiness and sense of belonging were higher in top-performing countries, whereas truancy, grade repetition, curiosity, and life satisfaction were more prominent in bottom-performing countries. Notably, tardiness emerged as the primary predictor of reading achievement, while sense of belonging indirectly influenced reading outcomes through its association with other student behaviors. These results underscore the importance of targeted interventions aimed at reducing tardiness and fostering a supportive school environment to enhance literacy performance. Addressing these key student factors could inform educational policies and classroom practices that promote improved reading proficiency across diverse educational contexts.

**Keywords:** *reading proficiency, student truancy, student tardiness, grade repetition, curiosity, life satisfaction, sense of belonging at school, PISA, Philippines*

### Introduction

Reading, be it a passive or active consumption and transfer of knowledge (Valdez et al., 2023), is valuable for a person's development, socialization, and living (Holden, 2004). Correspondingly, reading proficiency is fundamental to academic success and lifelong learning, serving as a vital indicator of a country's educational quality and socio-economic development (OECD, 2019). The Programme for International Student Assessment (PISA) provides a comprehensive measure of students' reading skills across participating countries, offering valuable insights into the factors that contribute to literacy achievement at the global level. Recent studies have emphasized that cognitive abilities do not solely determine reading performance but is also significantly influenced by behavioral and motivational factors such as attendance, curiosity, sense of belonging, and life satisfaction (Snow, 2002; Smith et al., 2021).

To assess such developments, the Program for International Student Assessment (PISA) of the Organization for Economic Cooperation and Development (OECD) actively evaluates 15-year-old students' cognitive competencies and readiness for social and economic participation in their triennial international assessment program. The program currently covers the domains of reading, mathematics, science, creative thinking, and financial literacy (OECD, 2024a). Additionally, it adopts a three-dimensional framework for assessing reading literacy: the reader, the text, and the task or purpose of reading. In the framework, the PISA cognitive assessment controls the text and task factors by varying the types of text and contexts in measuring the students' mastery of reading strategies. Meanwhile, the reader factors cannot be manipulated by the cognitive instrument and, thus, are assessed in additional personal background questionnaires (OECD, 2019, 2023a).

Despite extensive research on the determinants of reading achievement, there remains a need to understand how these factors operate within diverse cultural and educational contexts, especially in countries like the Philippines, where literacy rates and educational outcomes continue to face challenges (Idulog et al., 2023). Prior investigations have identified behavioral issues such as truancy and grade repetition as potential barriers to academic success, while motivational constructs like curiosity and sense of belonging at school have been associated with intrinsic motivation and positive academic outcomes (Jimenez & Velasco, 2023; Datu, 2016). However, limited research has systematically analyzed these variables within a comprehensive, comparative framework across countries with contrasting performance levels in international assessments like PISA (Bendanillo et al., 2023).

This study aims to fill the existing gap in the literature by exploring the influence of student behavioral and motivational factors on reading proficiency, based on PISA 2022 data. Specifically, it investigates how variables such as truancy, tardiness, grade repetition, curiosity, sense of belonging at school, and life satisfaction differ between the top- and bottom-performing countries and examines their relative impact on students' reading scores. The selection of these groups from both ends of the performance spectrum will facilitate an unbiased comparison to uncover disparities and identify potential drivers of success distinctly. In doing so, the study adopts a global perspective to analyze whether these factors affect individual reading performance and, consequently, the overall ranking of

their countries. Understanding these relationships can inform targeted educational policies and interventions designed to enhance literacy development, particularly in countries striving to improve their international standings in reading achievement.

### Research Questions

In particular, this study sought to answer the following questions:

1. What are the characteristics of the top- and bottom-performing countries?
2. Is there a significant difference in the student factors between the top-performing and bottom-performing countries in reading proficiency?
3. Which student factor(s) greatly influence the reading proficiency scores of PISA 2022?

### Literature Review

Reading comprehension in Research and Development (RAND) 's model of reading has three interrelated elements: the text, the activity, and the reader, altogether interacting in a larger sociocultural context. This model widely sets a precedent for the definition of reading comprehension in the growing literature on the factors influencing reading competence (OECD, 2019; Smith et al., 2021). Substantial research has attributed reading comprehension outcomes to inter-individual differences among the readers' attributes (Snow, 2002), which will be discussed in the following paragraphs.

#### *Student's School Behavior*

Students' academic performance and motivation are shaped by their behavior and attitude towards their schooling. With positive academic behavior, they are more likely to exert effort in managing their time and resolving their challenges, while those with negative behaviors are prone to procrastination, academic task avoidance, and lower academic achievement (Iqbal, Khan, & Ikramullah, 2023).

One of the student's performance predictors is their attitude towards their attendance. For instance, truancy, especially when done repeatedly, may negatively affect the student and their academic performance (OECD, 2019; Ramberg et al., 2019; Tomas et al., 2021), including their reading performance (Mwansa, 2021). Students' home and school environments influence their truant behaviors (Cadiz-Gabejan & Quirino, 2021; Kearsse-McCastler, 2019; Portner, 2014; Saudi, 2021). Hostile and impoverished environments and mental health challenges lead students to avoid school (Kearsse-McCastler, 2019). Comparably, their tardiness may not have a detrimental effect on them despite occurring frequently (Mollah, 2022). However, it still contributes to fostering negative attitudes toward the value of education (Baidoo-Anu, 2018; Subashini et al., 2022). Consequently, PISA 2018 results have shown that tardiness is associated with lower reading performance and socio-economic disadvantage (OECD, 2019).

Relatively, these attitudes may result in voluntary and involuntary grade-level retention (Kyereko et al., 2022). This measure is deemed to improve students' academic achievement as it provides students with an opportunity to enhance their adaptability to peers and circumstances, development, and course mastery needed for the next grade level (Mariano et al., 2024; Rathmann, 2020). However, these improvements could also be counterproductive (Valbuena et al., 2021) as they contribute to a higher teacher-student ratio, leading to constraints or misuse of learning resources and overall affecting students' and schools' performance (Owino, 2022). Also, its punitive and socially disruptive nature makes retained students experience worse outcomes in their well-being, motivation, and academic development and performance (Mariano et al., 2024; Rodríguez-Rodríguez, 2022). The comparison of the reading performance of promoted and retained students shows a significant gap, as retained students' proficiency was below the minimum level 2 requirement of Sustainable Development Goal 4 for secondary students to acquire (Serrão, 2021). It shows that students' reading skills may predict their odds of being retained (Go et al., 2023).

Students who retain their grade levels experience negative effects on their school satisfaction, and when their retention is successive, their life satisfaction eventually becomes affected (Rathmann et al., 2020), but could be mediated by their sense of belonging (Van Canegem et al., 2021). Hence, fostering a school environment where students feel safe and motivated is vital for them to progress in their schooling (Zequinão et al., 2020).

#### *Student's Motivation*

Curiosity induces students' desire to fill their knowledge and comprehension gaps (Pekrun et al., 2019; Vogl et al., 2019; Wade & Kidd, 2019), the process of which stimulates new queries that help further develop their knowledge and value (Hidi & Renninger, 2020). Conversely, Nurishlah et al. (2020) consider curiosity to be an outcome of people's tendencies for inquisition about their environment. In addition, James (1950) views curiosity as stemming from man's natural instinct to improve one's circumstances. For instance, it is found to be a vital intrinsic motivation for students from disadvantaged backgrounds to achieve high academic performance (Nurishlah et al., 2020), due to its capacity to foster academic success in students (Tang & Salmela-Aro, 2021). Furthermore, inquisitive behaviors are essential in reading motivation (Marfuatin & Ridwan, 2022), as demonstrated in their influence on the students' text-based interest and engagement (Sibarani & Pulungan, 2018) and their reading performance (Meutia, 2021; Ustabulut, 2021; Wulaningsih et al., 2024). Indeed, curiosity is associated with developed mental dexterity and agility (Asmin, 2020), enhanced memory recall (Fandakova & Gruber, 2021), active learning (Liquin & Lombrozo, 2020), academic motivation (Mahama et al., 2024), and strategic learning approaches (Binu et al., 2020), reinforcing its value in facilitating optimal learning (Loewenstein, 1994).

Sense of belonging may stem from either one's core need for belonging or their subjective situation-specific sense of belonging, the latter being reinforced by their perceived connection with social groups, influencing their well-being (Allen, Kern et al., 2021). The majority of the research on social belonging focuses on students in school settings (Reano, 2020), with Goodenow and Grady's (1993) definition being the most common: "the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment."

Recent studies have found that students' sense of belonging is not only shaped by their social interactions with people but also by their positive engagement and associations with academic subjects (Barotas & Palma, 2023; Dost et al., 2023; Kuttner, 2023). However, a sense of belonging at school is found to be weaker in students in socio-economically disadvantaged, rural, and public schools (OECD, 2019). Furthermore, in another study, students exposed to bullying demonstrated reduced performance in reading proficiency tests compared to non-bullied peers (Karpinski, 2022). Accordingly, schools are called to promote inclusive practices and eliminate exclusionary policies (Ancho et al., 2024; Gray et al., 2020; Lucas et al., 2021).

This influence of well-being on academic performance is particularly evident for 15-year-old students as they are at their adolescence stage (Esnaola et al., 2020), characterized by the development of one's independence and identity, exposing students to vulnerability and behooving parents and teachers to provide them guidance, support, and care (Cadiz-Gabejan & Quirino, 2021; Testa, 2022). While students' well-being influences their academic performance, the treatment they receive within the school environment also shapes their life satisfaction (Castelli et al., 2024; Idulog et al., 2023; Lucas et al., 2021). In turn, life satisfaction has been found to influence perceived academic performance directly (Izaguirre et al., 2022).

For instance, soft skills were positively related not only to self-regulated learning, motivation, and achievement emotions but also to life satisfaction in a study (Feraco et al., 2022). Furthermore, students with positive attitudes were found to have better reading comprehension in a study (Gunobgnob-Mirasol, 2019).

Reading competence is more than a cognitive activity, as it is a multifaceted outcome influenced by students' behavior and motivation. Truancy, tardiness, grade repetition, curiosity, motivation, and sense of belonging are closely related factors that shape students' engagement and attitude towards comprehending texts. A comprehensive understanding of these factors could contribute to designing interventions and strategies that could improve reading proficiency while fostering a positive educational climate.

## Methodology

### Research Design

This study used a quantitative exploratory research design to examine the differences in reading performance among students from two contrasting groups of countries. In this study, data were extracted from the Organization for Economic Cooperation and Development (OECD) Program for International Assessment (PISA) 2022 Database.

### Respondents

Using quota sampling, 40 countries were selected from the 81 participating nations in PISA 2022. Exactly 20 countries performed statistically above the OECD average in reading, namely, Singapore, Ireland, Japan, Korea, Chinese Taipei, Estonia, Macao (China), Canada, United States, New Zealand, Hong Kong (China), Australia, United Kingdom, Finland, Denmark, Poland, Czech Republic, Sweden, Switzerland, and Italy (OECD, 2023b), making them the top-performing countries in this effect. For equal comparison, the 20 poorest-performing countries among those that performed statistically below the OECD average, namely, Kazakhstan, Saudi Arabia, Thailand, Mongolia, Guatemala, Georgia, Paraguay, Baku (Azerbaijan), El Salvador, Indonesia, North Macedonia, Albania, Dominican Republic, Palestinian Authority, Philippines, Kosovo, Jordan, Morocco, Uzbekistan, and Cambodia, were selected to represent the reading performance in bottom-performing countries.

### Instrument

Data were sourced from PISA 2022 Context Questionnaires, which provided indices derived from questionnaire items through transformation or scaling procedures. These indices measured student factors associated with reading performance. The procedures for each are described as follows (OECD, 2024b; Schleicher, 2024):

#### *Student Truancy*

The percentage indicates the number of student respondents who had skipped any class or day of school in the two weeks before the PISA test. These students responded to either "One or two times", "Three or four times", or "Five or more times", indicated by a value of 1. A value of 0, on the other hand, indicates students responding to "Never". Indicators taking the value of 1 comprise the resulting percentage of student truancy.

#### *Student Tardiness*

The percentage indicates the student respondents who had arrived late for school during the two weeks before the PISA test. These students responded to either "One or two times", indicated by a value of 1, or "Three or more times", indicated by a value of 2. A value

of 0, on the other hand, indicates students responding to "Never". Indicators taking the values of 1 and 2 comprise the resulting percentage of student tardiness.

### *Grade Repetition*

The percentage indicates the student respondents who had repeated a grade during primary education, lower secondary education, or upper secondary education. Each educational level included three response items: "No, never", "Yes, once", and "Yes, twice or more". All responses were combined into an index, which took the value of 0 if the student did not select options 2 or 3 for any of the three levels, and the value of 1 if the student selected options 2 or 3 for at least one of the three levels. Indicators taking the value of 1 comprise the resulting percentage of grade repetition.

### *Curiosity*

The students responded to ten statements about behaviors, indicating their curiosity with ratings of their agreement: "Strongly Disagree", "Disagree", "Neither Agree nor Disagree", "Agree", and "Strongly Agree". These responses were scaled into the resulting index of curiosity, a transformed metric that has a mean of 0 and a standard deviation of 1 across OECD countries. A positive scale score reflects a response above the OECD average, and a negative scale score implies the response is below the OECD average.

### *Sense of Belonging at School*

The students responded to six statements about behaviors indicating their sense of belonging at school with ratings of their agreement: "Strongly Disagree", "Disagree", "Neither agree nor disagree", "Agree", and "Strongly agree". Similarly, these responses were scaled into the resulting index of sense of belonging at school, a transformed metric that has a mean of 0 and a standard deviation of 1 across OECD countries. A positive scale score reflects a response above the OECD average, and a negative scale score implies the response is below the OECD average.

### *Life Satisfaction*

The students were asked to rate their life satisfaction on a scale from 0, indicating "Not at all satisfied", to 10, indicating "Completely satisfied". The resulting number is the mean of the students' ratings.

## **Procedure**

Due to the COVID-19-related lockdowns and school closures, PISA 2022 temporarily bypassed standard sampling procedures, leading to variations in data collection among its participating countries. Consequently, some countries were included despite not meeting specific technical standards, such as low response rates. The PISA Adjudication Group assessed and reported these limitations and their potential implications for maintaining dataset reliability.

To minimize bias in this study, a threshold-based inclusion was used in which variables with five or fewer missing values per cluster, i.e., top-performing and bottom-performing countries, were retained. Mean imputation was then applied to handle the missing data. This approach was chosen for its ease of application and its ability to maintain consistent average values within each cluster. While mean imputation may reduce variance if used extensively, its application in the study was limited, given the small number of missing cases per cluster. Thus, the method helped ensure dataset completeness without significantly affecting statistical outcomes.

## **Data Analysis**

A bipolar analysis framework was used to compare reading performance across two opposing clusters, with Cluster 1 comprising the 20 top-performing countries and Cluster 2 containing the 20 bottom-performing countries. Bipolar analysis is a method of comparing two clusters that represent contrasting positions within a defined population in terms of certain variables. This analytical framework was applied by Montalbo & Pogoy (2010) to compare teacher characteristics in top and low-performing countries in another study.

First, descriptive statistics revealed the means of the student factor variables in the respective clusters, providing initial comparative insights on their impact on the reading performance across the clusters. Then, a t-test for independent samples identified statistically significant differentiating characteristics between the clusters. Lastly, regression analysis determined the major predictor of reading performance among the student factors.

## **Ethical Considerations**

This study adhered to ethical data usage standards in using publicly available PISA 2022 data. The dataset inclusion method ensured the integrity of the analysis in consideration of the sampling constraints imposed by the COVID-19-related lockdowns and school closures.

## **Results and Discussion**

As a preliminary procedure, Cluster 1 and Cluster 2 were compared through the means provided by descriptive statistics. Table 1 presents the respective means of the variables in each cluster.

Table 1. *Cluster Analysis of Top- and Bottom-Performing Countries in PISA 2022*

<i>Variable</i>	<i>Cluster 1</i>	<i>Cluster 2</i>	<i>Grand Centroid</i>
Score	501.9500	359.4000	430.6750
Truancy	28.6500	43.6600	36.1550
Tardiness	60.8550	51.0950	55.9750
Grade Rep	6.1350	13.6600	9.8975
Curiosity	-0.0435	0.1320	0.0443
Belonging	-0.0905	-0.1460	-0.1183
Satisfaction	6.6815	7.3150	6.9983

The results show that the top-performing countries have higher means of student tardiness and sense of belonging at school. On the other hand, the bottom-performing countries are shown to have higher means of student truancy, grade repetition, curiosity, and life satisfaction.

Both student tardiness and student truancy are indicators of student attendance, which has been linked to student outcomes in previous studies (Bendanillo et al., 2023; Oghuvbu, 2010). The dissimilarity between their respective influences on reading performance in the study may suggest that they are separate student behaviors with distinct sets of factors and effects. This contradicts the methodology of several studies that consider student tardiness and student truancy as a joint phenomenon linked to academic performance (Bendanillo et al., 2023; Moldero et al., 2024). Still, some other studies have explored one without the other, either as predicting factors or as resulting outcomes of other factors (Abubakar, 2023; Ali et al., 2023; Bassey, 2020). Therefore, to add perspective, future studies must be conducted on how student truancy and student tardiness separately manifest in high-performing and low-performing students, either as predictors or as resulting phenomena.

Previous studies attribute student truancy to multiple factors associated with the students' home and school environments (Abdullah, 2020; Ampofo et al., 2022; Trinidad, 2020). Students may avoid school due to poor relations with peers and teachers, respectively causing social anxiety and academic stress (Baskerville, 2020; Kearsse-McCastler, 2019). Conversely, peers may be a negative influence on students, with the latter being encouraged to engage in truant behaviors (Abubakar, 2023; Baier, 2016; Mendoza et al., 2024). Generally, student truancy may appear to be just a string of absences, warranting disciplinary action and censure. However, the aforementioned studies tackle the difficult reality for these students. Consistently truant students must be monitored not just for corrective measures but also for socioemotional checkups. In Philippine schools, the Guidance Office provides basic guidance services to the students, including personal concerns, among many others. However, with the avoidant and detached nature of truant students, it is possible that they do not even consider seeking the aid of the office. Therefore, as the functional mediating channel between the students and the teachers and parents, the Guidance Office must actively collaborate with teachers and parents in discussing ways to tailor ideal home and school environments for the students. This can be done through private consultations and/or large-group seminars. In line with this, teachers must create inclusive and engaging classes to minimize classroom-level factors behind student truancy.

Empirically speaking, the means of student tardiness of top-performing countries and bottom-performing countries do not largely differ from one another. Indeed, student tardiness must still not be taken lightly. School administrators acknowledge the challenge of dealing with students' tardiness, which varies across schools (Ali et al., 2023; OECD, 2019; Onolemhmemhem & Akpede, 2022). The socio-economic profile of the schools was found to be the largest difference, with students in socio-economically disadvantaged schools being more likely to be late for school than students in advantaged schools. Additionally, the negative attitude toward education was found to also influence tardiness (Baidoo-Anu, 2018; Bataineh, 2014; Subashini et al., 2022). As in student truancy, schools must go beyond just disciplinary action and investigate the underlying factors behind student tardiness in their respective contexts. As for teachers, they must create a classroom environment that fosters positive attitudes toward learning.

Previous studies have linked grade repetition with student truancy (Feniger et al., 2019; Kyereko et al., 2022), which was observed more in bottom-performing countries than in top-performing countries. The bottom-performing countries suffer from poor academic performance, which, in several studies, was found to be influenced by grade repetition, for reasons including the resulting delay of student achievement (Valbuena et al., 2021), imbalance of learning resources (Owino, 2022), and afflicted well-being (González-Nuevo et al., 2023; Mariano et al., 2024). On the other hand, Kyereko et al. (2022) found that some teachers and principals consider grade repetition an effective measure for academic improvement. However, along with the aforementioned studies, our data imply that grade repeaters are more likely to perform poorly in reading.

School policies and procedures for grade repetition should be reexamined and revised so that the measure becomes more effective than harmful for students. In the K to 12 Basic Education Program, the general policy for learner promotion and retention was that a Final Grade of at least 75 in all learning areas promoted students to the next grade level. Otherwise, students who failed in not more than two learning areas must pass remedial classes, or else they will be retained in the same grade level. The latter was the same for students who failed in more than three learning areas. However, teachers were encouraged to provide remediation to consistently low-performing students by the fifth week of any quarter to minimize the rate of failing students at the end of the school year (DepEd Order No. 8, s. 2015). In the DepEd Order No. 13, s. 2018, students who failed remedial classes and the subsequent instructional intervention were allowed to enroll in the next grade level with continuous tutorial services. Given these precedents that prove the department's capacity, the same level of attention must therefore be provided to the retained students. Repeating students should be closely monitored and

assessed for improvement to avoid successive retention, which leads to poor well-being, social alienation, and a low outlook on school activities (González-Nuevo et al., 2023; Kyereko et al., 2022; Owino et al., 2022; Rathmann et al., 2020; Van Canegem et al., 2021). This active remediation for repeating students alleviates the corrective nature of grade retention, which was found to cause worse outcomes in the students' well-being, motivation, and academic development (Mariano et al., 2024; Rodríguez-Rodríguez, 2022). Finally, reading should be a corollary of these remediation programs, as reading competence was found to have an influence on student retention (Go et al., 2023; Serrão, 2021).

In several studies, curiosity has been found to be positively linked to high cognitive functions (Asmin, 2020; Binu et al., 2020; Fandakova & Gruber, 2021) and intrinsic motivations influencing academic achievement (Mahama et al., 2024; Nurishlah et al., 2020; Tang & Salmela-Aro, 2021) and reading performance (Marfuatin & Ridwan, 2022; Sibarani & Pulungan, 2018). Likewise, life satisfaction has been established as a positive influence on academic engagement, either directly (Izaguirre et al., 2022) or as a mediating factor (Chen et al., 2023).

Interestingly, students from the bottom-performing countries recorded higher levels of curiosity and life satisfaction. This contrasts with findings in previous studies, which link better reading performance to higher curiosity (Meutia, 2021; Ustabulut, 2021; Wulaningsih et al., 2024) and life satisfaction (Gunobgnob-Mirasol, 2019). Specifically, curiosity motivates students to activate their cognitive abilities and apply strategic reading approaches, both of which contribute to enhanced reading proficiency (Hermoso & Valle, 2023; Wang et al., 2020). Meanwhile, life satisfaction has emerged as a predicting (Ocaña-Moral et al., 2021), correlating (Mulcahy et al., 2019), or mediating (Chung et al., 2022) factor in academic and reading performance, further supporting its influence on the students' reading development.

This contrast in findings may be attributed to the influence of the school environment on the students' curiosity and life satisfaction, as found in several studies. Safe and supportive educational environments foster students' self-efficacy and confidence, reflective and thinking patterns, and student autonomy and empowerment, all of which enhance curiosity (Dyche & Epstein, 2011; Maksum & Khory, 2020; Pekrun & Linnenbrink-Garcia, 2014). Similarly, the school environment plays a role in shaping students' life satisfaction as it determines how they are treated in school (Castelli et al., 2024), particularly during a developmental stage that requires guidance and support from parents and teachers (Testa, 2022). In the present study, students from the bottom-performing countries reported lower means of their sense of belonging in school, further supporting the impact of school environment on students' curiosity and life satisfaction through the quality of their school interpersonal relations. Given the links between these traits and reading performance, their prevalence in bottom-performing countries implies a disconnect between students' motivational resources and the environmental conditions that limit their academic potential.

Regarding curiosity, this could mean that students in these countries may possess academic potential due to high innate inquisitive behaviors, which is unfortunately undermined by their experiences in their school environments. With this, school authorities and educators must tailor school environments that effectively leverage this natural curiosity in fostering high student achievement. Drawing from the aforementioned studies on curiosity, the KWL (Know, Want to Know, Learned) is a teaching strategy that incites curiosity among students by activating prior knowledge before the retrieval of information. Though presently applied to several learning situations, the KWL method was initially introduced as a strategy for reading comprehension (Texas A&M University, n.d.). The KWL technique was found to have a positive impact on reading comprehension achievement (Asrori & Tjalla, 2021; Faudi et al., 2020; Marliasari et al., 2024; Syafi'i et al., 2020), especially for highly curious students (Meutia, 2021). However, in the Philippines, KWL in reading was found to be ineffective as a pre-reading, lower-order thinking activity (Ala & Derequito, 2022; Jimenez & Velasco, 2023). Therefore, KWL best maximizes Filipino students' natural curiosity when it is used for higher-order thinking and is utilized throughout the entire reading lesson.

The SQ3R (Survey, Question, Read, Recite, and Review) is a reading comprehension method that incorporates similar, more involved inquisitive patterns. Specifically developed to help college students read textbooks, the steps cover the entire duration of the reading process (Excelsior Online Writing Lab, 2023). Accordingly, the SQ3R method has been found to positively influence students' reading comprehension (Aziz, 2019; Cataraja, 2022; Hilaikal et al., 2023). Another active reading strategy is the DRTA (Directed Reading-Thinking Activity), which aims to increase curiosity about various texts and text types (Glass & Zygouris, 2006). This strategy involves not just inquiry but also student prediction (Crawford et al., 2005). Indeed, it has been found to significantly impact students' reading comprehension in several studies (e.g., Apriliana, 2022; Megawati, 2019; Satriani et al., 2022). Regrettably, there is a dearth of studies on the effectiveness of the aforementioned reading strategies in Philippine contexts, not counting those cited in this study (Ala & Derequito, 2022; Cataraja, 2022; Jimenez & Velasco, 2023). To further investigate the dissonance between our curiosity and our reading performance in the country, more studies should be conducted on the various pedagogical strategies used in Philippine classrooms.

With regard to life satisfaction, students in bottom-performing countries, despite their feelings of life satisfaction, may be disengaged from their schooling due to either complacency or misguided priorities. In response to this, school authorities and educators should consider developing school activities that redirect their sense of positive well-being to student achievement. To discourage students from complacency, goal-directed reading activities are recommended to implicitly teach them the importance and the process of setting and achieving goals, all in the context of reading. Goal-directed reading is the act of reading texts with a question in mind (Zou et al.,



2023). Definitely, this includes the reading strategies previously discussed and recommended to utilize students' curiosity. Indeed, as established in previous studies (Castelli et al., 2024; Maksum & Khory, 2020; Pekrun & Linnenbrink-Garcia, 2014), both curiosity and life satisfaction are fostered by healthy school environments, which hold the responsibility of guiding and caring for the students in their developmental stage (Testa, 2022). In pursuit of this responsibility, schools should also provide guidance to students with regard to their misguided priorities. In the Philippines, the Guidance Office is primarily responsible for this area of student concern, conducting student-centered programs ranging from counseling sessions to career seminars. However, in light of the findings on life satisfaction and reading performance of the Filipino students, it is imperative that the Guidance Office closely collaborates with teachers in extending values clarification to reading classes. Upon their consultation with the Guidance Office and the school administration, teachers may select particular texts that feature these values and prompt discussion and reflection among the students.

The students' sense of belonging at school is shaped by their social interactions at school and their engagement in class (Allen, Slaten et al., 2021; Dost et al., 2023; Kuttner, 2023). For example, Karpinski (2022) found that bullied students performed more poorly in reading than their non-bullied peers. Accordingly, Gray et al. (2020) stressed the influence and power of school policies in encouraging either inclusion or exclusion of the students. Therefore, with its authority, the school must take the first initiative towards an inclusive school environment through its policies and practices. In PISA 2018, the Philippines had the highest prevalence of exposure to bullying, which, in the survey, includes physical harm, threats, alienation, and gossip (OECD, 2019). This warrants the need to bolster efforts in establishing anti-bullying strategies in schools.

However, according to the OECD (2019), taking the appropriate measures for the particular kinds of bullying at school requires recognizing bullying in the first place. Teachers need to be trained by the school's Guidance Office in being cognizant and heedful of acts of bullying in classrooms. Even though it is the Guidance Office that ultimately deals with students' socioemotional concerns, the teacher still has the authority to evaluate the situation and only enlist other school offices when it is outside their capability and power. Additionally, teachers may encourage positive social interactions in the classroom through interactive activities in class. Communicative Language Teaching is a language teaching approach that leverages interaction in achieving communicative competence through activities like role-plays and group discussions.

After the preliminary data exploration, a t-test for independent samples was used to test the statistical significance of the variables in each cluster. Table 2 shows the t-value and the p-value for each variable, extracted through a t-test for independent samples.

Table 2. Significance of Student Factors on Reading Performance in PISA 2022

Variable	t-value	p-value	Interpretation
Truancy	-2.685	0.011*	Significant
Tardiness	2.894	0.006**	Significant
Grade Rep	-2.616	0.013*	Significant
Curiosity	-4.123	< .001***	Significant
Belonging	0.899	0.374	Not Significant
Satisfaction	-5.087	< .001***	Significant

\*p < .05, \*\*p < .01, \*\*\*p < .001

Among the variables in this study, the students' sense of belonging at school was found to have no significance as a differentiating characteristic of reading performance. This may be because their sense of belonging at school is not directly related to academic performance but is linked to mediating factors that, in turn, directly influence academic outcomes, as revealed in previous studies (Allen et al., 2021; Van Canegem et al., 2021).

Most studies on social belonging focus on students in school settings (Reano, 2020), and a student's sense of belonging at school is reinforced by one's perceived connection with social groups (Allen et al., 2021). In the discussion under Table 2, students' social groups, including peers, teachers, school officials, authorities, and family, are mostly involved in the recommended actions. This underscores the underlying role of students' sense of belonging at school in other student factors directly influencing reading performance.

First, in remedying student truancy and tardiness, an inclusive and engaging classroom environment that promotes positive feelings toward learning is ideal, conjoined with school-level student development programs. Second, proactive monitoring and assessment of the repeating students must be done to minimize successive grade retention that causes poor self-esteem and social alienation. Third, school environments must effectively maximize the students' natural curiosity in reading. Lastly, the students must be guided in their career outlooks and priorities to prepare them for their eventual integration into society.

Therefore, our findings on students' sense of belonging at school should not be taken as a basis for foregoing future actions of improving this area of academic concern. Instead, this should be considered as a precedent for further examination of the underlying factors behind overt data on academic issues.

Lastly, to determine the major predictor among the student factors of reading performance, we conducted a regression analysis on these variables. Table 3 presents the analysis of the variables:

The regression equation is

$$\text{Score} = 671.79 - 0.02 \text{ Truancy} + 2.78 \text{ Tardiness} - 2.15 \text{ Grade Rep} - 129.09 \text{ Curiosity} - 52.75 \text{ Satisfaction}$$

Table 3. Regression Analysis with PISA 2022 Reading Scores as Dependent Variable

Predictor	Coef	SE Coef	t	p
Constant	671.7949	158.437	4.2401	<.001
Truancy	-0.0187	0.482	-0.0388	0.969
Tardiness	2.7815	0.787	3.5364	0.001**
Grade Rep	-2.1545	0.705	-3.0541	0.004**
Curiosity	-129.0892	66.412	-1.9438	0.060
Satisfaction	-52.7467	18.428	-2.8623	0.007**
R = 85.3%	R-Sq = 72.7%	R-Sq(adj) = 68.7%		

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ 

Among the five student factors, it is revealed that student tardiness has the highest influence on the reading performance in PISA 2022. Altogether, these variables explain 72.7% of the variance in the PISA 2022 reading scores.

With the differences in cases of student tardiness across schools (Ali et al., 2023; OECD, 2019; Onolemhhem & Akpede, 2022), it is important that schools proactively investigate the trends and factors behind student tardiness in their respective contexts. Then, the school-level policies addressing this concern must reach all the way down to classrooms, where social relations and academic attitudes are fostered.

## Conclusions

This study underscores the significant role of behavioral and motivational factors—particularly tardiness—in influencing reading proficiency across countries, with findings indicating higher tardiness and sense of belonging in top performers and greater truancy, curiosity, and life satisfaction in lower performers. The results highlight the importance of addressing social and emotional aspects within educational environments, suggesting that targeted policies and classroom interventions promoting positive behavior and intrinsic motivation can enhance literacy outcomes. Incorporating these factors into national and school-level strategies is essential for improving reading achievement and closing performance gaps across diverse contexts. However, this systems-level recommendation may be restricted by the study's use of a cross-sectional design, reliance on self-reported data, and omission of contextual national and school-level variables. To better inform systemic reforms, future research should consider longitudinal approaches, multi-level models, and qualitative inquiry to explore how broader educational contexts influence student-level factors over time.

## References

- Abdullah, S. (2020). Causes of absenteeism and academic performance of low performing students of Esperanza National High School. *American Journals Publishing Center*, 8(1), 1-10. [https://www.researchgate.net/publication/342216688\\_Causes\\_of\\_Absenteeism\\_and\\_Academic\\_Performance\\_of\\_Low\\_Performing\\_Students\\_of\\_Esperanza\\_National\\_High\\_School](https://www.researchgate.net/publication/342216688_Causes_of_Absenteeism_and_Academic_Performance_of_Low_Performing_Students_of_Esperanza_National_High_School)
- Abubakar, A. I. (2023). Truancy: The Concept, Causes, Types, Implications and intervention Strategies for Students with Truancy. *Journal of Education*, 43(4), 1-16. <https://doi.org/10.1108/IJCHM-12-2021-1556>
- Ali, O. A., Osman, M. N. A., Mohamed, F. M., & Mohamed, A. A. (2023). Factors responsible students' lateness in secondary schools—A case study in A Howlwadag District, Mogadishu-Somalia. *East African Journal of Education Studies*, 6(2), 277–284. <https://doi.org/10.37284/eajes.6.2.1325>
- Allen, K.-A., Slaten, C. D., Arslan, G., Roffey, S., Craig, H., & Vella-Brodrick, D. A. (2021). School belonging: The importance of student and teacher relationships. In M. L. Kern & M. L. Wehmeyer (Eds.), *The Palgrave handbook of positive education* (pp. 525–550). Springer International Publishing. [https://doi.org/10.1007/978-3-030-64537-3\\_21](https://doi.org/10.1007/978-3-030-64537-3_21)
- Ampofo, E. T., Opoku, K., & Opoku-Manu, M. (2022). Truancy as predictor of poor academic performance among junior high school students in Ashanti Mampong Municipality of Ghana. *European Journal of Education and Pedagogy*, 3(2), 70-78. <https://doi.org/10.24018/ejedu.2022.3.2.164>
- Ancho, I., Payao, C., Balijon, M. (2024). Filipino students' adversity quotient and school connectedness. *International Journal of Public Health Research*, 14(1), 1832-1845. <https://spaj.ukm.my/ijphr/index.php/ijphr/article/view/442>
- Asmin, A. I. (2020). Observing the intellectual curiosity of English education students in the class. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 8(1), 46-58. <https://doi.org/10.24256/ideas.v8i1.1263>
- Asrori, M., & Tjalla, A. (2021). The content mastery service using KWL teaching model to improve students' ability to understand texts in junior high schools. *American Journal of Educational Research*, 9(1), 11-19. <https://doi.org/10.12691/education-9-1-2>
- Aziz, I. (2019). Implementation of SQ3R method in improving the students' basic reading skill. *EDUCATIO: Journal of Education*, 5(1), 97-106. <https://doi.org/10.29138/educatio.v4i1.179>
- Baskerville, D. (2020). Truancy begins in class: Student perspectives of tenuous peer relationships. *Pastoral Care in Education*, 39(2), 108–124. <https://doi.org/10.1080/02643944.2020.1788125>

- Barotas, L. & Palma, R. (2023). Student reading motivation: Attitudes, engagement and strategies. *Asian Journal of Education and Social Studies*, 38 (1), 9-24. <https://doi.org/10.9734/ajess/2023/v38i1815>
- Bassey, I. (2020). Truancy and secondary school students' academic performance in English language. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3606216>
- Bendanillo, A., Cansancio, A. R., Dungog, F. M., Quezon, M. C., Rubin, I., & Sermon, K. (2023). Factors affecting lower academic performance of grade 11 STEM students of ECT Excellencia Global Academy Foundation, Inc. *Science and Education*, 4(2), 874-885. <https://openscience.uz/index.php/sciedu/article/view/5128>
- Binu, K. G., Vijay, V. S., Anusha, M. M., Anoop, C. V., Bhat, S., & D'Souza, R. (2020). Influence of epistemic curiosity on the study approaches of first year engineering students. *Procedia Computer Science*, 172, 443-451. <https://doi.org/10.1016/j.procs.2020.05.097>
- Cadiz-Gabejan, A., & Quirino, M. (2021). Students' reading proficiency and academic performance. *International Journal of English Language Studies*, 3(6), 30-40. <https://doi.org/0.32996/ijels.2021.3.6.4>
- Cataraja, G. D. (2022). Effect of SQ3R method on the students' reading comprehension. *International Journal of Languages and Culture*, 2(1), 34-41. <https://doi.org/10.51483/ijlc.2.1.2022.34-41>
- Chen, C., Bian, F., & Zhu, Y. (2023). The relationship between social support and academic engagement among university students: The chain mediating effects of life satisfaction and academic motivation. *BMC Public Health*, 23(1), 2368. <https://doi.org/10.1186/s12889-023-17301-3>
- Chung, H., Kim, J., Jung, E., & Park, S. (2022). An international comparison study exploring the influential variables affecting students' reading literacy and life satisfaction. *International Journal of Educational Psychology*, 11(3), 261-292. <https://doi.org/10.17583/ijep.8924>
- Dyche, L., & Epstein, R. M. (2011). Curiosity and medical education. *Medical education*, 45(7), 663-668. <https://doi.org/10.1111/j.1365-2923.2011.03944.x>
- Fandakova, Y., & Gruber, M. J. (2021). States of curiosity and interest enhance memory differently in adolescents and in children. *Developmental Science*, 24(1), e13005. <https://doi.org/10.1111/desc.13005>
- Faudi, F., Erlisa, L., Putri, I., Lidza, M., & Orensi, C. (2020). The effectiveness of KWL Strategy for reading comprehension. *English Language Study and TEaching*, 1(1), 28-32. <https://doi.org/10.32672/elaste.v1i1.2554>
- Feniger, Y., Gorodzeisky, A., Krumer-Nevo, M. (2019). Who pays the price for parental education-occupation mismatch? Evidence from an Israeli City. *SAGE Open*, 9(1). <https://doi.org/10.1177/2158244019835916>
- Go, A. T. M., Alcalá, S. M. E., & Plastina, M. G. V. (2023). Grade repetition in the Philippines: A multilevel approach. [https://animorepository.dlsu.edu.ph/etdb\\_math/26](https://animorepository.dlsu.edu.ph/etdb_math/26)
- González-Nuevo, C., Postigo, Á., García-Cueto, E., Menéndez-Aller, Á., Muñoz, J., Cuesta, M., ... & Fernández-Alonso, R. (2023). Grade retention impact on academic self-concept: A longitudinal perspective. *School Mental Health*, 15(2), 600-610. <https://doi.org/10.1007/s12310-023-09573-2>
- Gunobgunob-Mirasol, R. (2019). Vocabulary Size, Reading Motivation, Reading Attitudes and Reading Comprehension Performance among Filipino College Learners of English. *International Journal of Evaluation and Research in Education*, 8(1), 64-70. <https://doi.org/10.11591/ijere.v8i1.15335>
- Hermoso, B. E., & Valle, A. M. (2023). Pupils' reading motivation, strategies, and performance: Basis for reading intervention program. *International Journal of Research Publications*, 126(1). <https://doi.org/10.47119/ijrp1001261620224975>
- Hidi, S. E., & Renninger, K. A. (2020). On educating, curiosity, and interest development. *Current Opinion in Behavioral Sciences*, 35, 99-103. <https://doi.org/10.1016/j.cobeha.2020.08.002>
- Hilaikal, F., Wahyudin, A. Y., & Ayu, M. (2023). The implementation of sq3r in helping students' assessment in reading class at Sman 1 Adiluwih. *Journal of English Language Teaching and Learning*, 4(1), 53-57. <https://doi.org/10.29303/jjpp.v9i4.2634>
- Holden, J. (2004). Creative reading: Young people, reading and public libraries. Demos.
- Idulog, M. V., Gadiano, R., Toledo, E., Hermosada, M., Casaldon, H., Mariposa, M., ... & Bautista, R. (2023). Filipino students' reading abilities: A note on the challenges and potential areas for improvement. <https://doi.org/10.57092/ijetz.v2i2.128>
- Iqbal, M. Z., Khan, T., & Ikramullah, M. (2023). Toward academic satisfaction and performance: The role of students' achievement emotions. *European Journal of Psychology of Education*. Advance online publication. <https://doi.org/10.1007/s10212-023-00751-z>
- James, W. (1950). *The principles of psychology*. New York: Dover Publications.
- Jimenez, C., & Velasco, C. (2023). Pre-reading activities and reading comprehension in an English as a second language classroom. *International Journal Of Social Science Humanity & Management Research*, 2(07). <https://doi.org/10.58806/ijsshmr.2023.v2i7n11>

- Kyereko, D. O., Smith, W. C., Hlovor, I., & Keney, G. (2022). Understanding grade repetition from the perspectives of teachers and principals in basic schools in Ghana. *International Journal of Educational Development*, 93, 102633. <https://doi.org/10.1016/j.ijedudev.2022.102633>
- Liquin, E. G., & Lombrozo, T. (2020). Explanation-seeking curiosity in childhood. *Current Opinion in Behavioral Sciences*, 35, 14-20. <https://doi.org/10.1016/j.cobeha.2020.05.012>
- Loewenstein, G. (1994). The psychology of curiosity: A review and reinterpretation. *Psychological bulletin*, 116(1), 75. <https://doi.org/10.1037/0033-2909.116.1.75>
- Lucas, R., Cordel II, M., Teves, J., Yap, S., Chua, U., & Bernardo, A. (2021). Addressing the poor reading performance of Filipino learners: Beyond curricular and instructional interventions. *Angelo King Institute for Economic and Business Studies*, 2-4. [https://animorepository.dlsu.edu.ph/res\\_aki/110](https://animorepository.dlsu.edu.ph/res_aki/110)
- Mahama, I., Asamoah-Gyimah, K., & Dramanu, B. Y. (2024). Examining the interrelationships among curiosity, creativity, and academic motivation using students in high schools: A multivariate analysis approach. *Open Education Studies*, 6(1), 20240001. <https://doi.org/10.1515/edu-2024-0001>
- Maksum, A., & Khory, F. D. (2020). Effect of learning climate, thinking pattern, and curiosity on academic performance in higher education. *Problems of Education in the 21st Century*, 78(1), 102. <https://doi.org/10.33225/pec/20.78.102>
- Marfuatin, D. F., & Ridwan, I. (2022). Exploring curiosity factors on students' motivation for reading English at first grade of SMP IT Al-Khatimah. *Jurnal Pendidikan Tambusai*, 6(2), 16492-16496. <https://doi.org/10.31004/jptam.v6i2.5099>
- Marliasari, S., Yuliany, E. H., Yuliani, S., & Saraswaty, D. R. (2024). The effectiveness of know-want-learn (KWL) Technique to Improve Students' Reading Comprehension. *Holistics Journal*, 16(1). <https://doi.org/10.24256/ideas.v6i2.512>
- Mariano, L. T., Martorell, P., & Berglund, T. (2024). The effects of grade retention on high school outcomes: Evidence from New York City schools. *Journal of Research on Educational Effectiveness*, 1-31. <https://doi.org/10.1080/19345747.2023.2287607>
- Maw, W. H., & Maw, E. W. (1962). Children's curiosity as an aspect of reading comprehension. *The Reading Teacher*, 15(4), 236-240. <http://www.jstor.org/stable/20197506>
- Meutia, R. (2021). The effect of KWL strategy, QARs strategy, and curiosity on students' achievement in reading comprehension. *International Journal of Advanced Research in Education and Society*, 3(3), 138-151. <https://myjms.mohe.gov.my/index.php/ijares/article/view/15697>
- Montalbo, I. C., & Pogoy, A. M. (2010). An empirical analysis of the impact of the teacher factor on student performance across countries based on the 2003 TIMSS mathematics scores. *CNU Journal of Higher Education*, 4(1), 1-11. <https://doi.org/10.70997/2546-1796.1063>
- Mulcahy, E., Bernardes, E., & Baars, S. (2016). The relationship between reading age, education and life outcomes. *LKMco–The education and youth "think and-action" tank*, 1-13. <https://cfey.org/wp-content/uploads/2019/03/The-relationship-between-reading-age-education-and-life-outcomes.pdf>
- Nurishlah, L., Budiman, N., & Yulindrasari, H. (2020, February). Expressions of curiosity and academic achievement of the students from low socio-economic backgrounds. In *International Conference on Educational Psychology and Pedagogy- " Diversity in Education" (ICEPP 2019)* (pp. 146-149). Atlantis Press. <https://doi.org/10.2991/assehr.k.200130.101>
- Ocaña-Moral, M. T., Gavin-Chocano, Ó., Pérez-Navío, E., & Del Carmen Martínez-Serrano, M. (2021). Relationship among perceived stress, life satisfaction and academic performance of education sciences students of the University of Jaén after the COVID-19 pandemic. *Education Sciences*, 11(12), 802. <https://doi.org/10.3390/educsci11120802>
- OECD. (2019). *PISA 2018 Results (Volume III): What School Life Means for Students' Lives*. OECD. <https://doi.org/10.1787/acd78851-en>
- OECD. (2024). *PISA 2022 Results (Volume III): Creative Minds, Creative Schools*. OECD. <https://doi.org/10.1787/765ee8c2-en>
- OECD. (2024). *PISA 2022 Technical Report*. OECD. <https://doi.org/10.1787/01820d6d-en>
- Oghuvbu, E. P. (2010). Attendance and academic performance of students in secondary schools: A correlational approach. *Studies on Home and Community Science*, 4(1), 21–25. <https://doi.org/10.1080/09737189.2010.11885294>
- Owino, V. O., Ajowi, J. O., & Onderi, H. (2022b). Effects of class repetition on pupils' academic performance in public primary schools in Alego Usonga Sub-County, Kenya. *Zenodo* (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.7144816>
- Pekrun, R., & Linnenbrink-Garcia, L. (Eds.). (2014). *International handbook of emotions in education* (1st ed.). Routledge. <https://doi.org/10.4324/9780203148211>

Policy Guidelines on Classroom Assessment for the K to 12 Basic Education Program, DepEd No. 8, s. 2015, How are learners promoted or retained at the end of the school year? 17-19. <https://www.deped.gov.ph/2015/04/01/do-8-s-2015-policy-guidelines-on-classroom-assessment-for-the-k-to-12-basic-education-program>

Portner, C. (2014). Effects of parental absence on child labor and school attendance in the Philippines. *Review of Economics of the Household*, 14, 103-130. <https://doi.org/10.1007/s11150-014-9266-5>

Rathmann, K., Loter, K., & Vockert, T. (2020). Critical events throughout the educational career: the effect of grade retention and repetition on school-aged children's well-being. *International Journal of Environmental Research and Public Health*, 17(11), 4012. <https://doi.org/10.3390/ijerph17114012>

Reano, M. (2020). U.S. Filipinos in higher education: Sense of belonging, validation, well-being, and campus culture as predictors of GPA and intent to persist. <https://eric.ed.gov/?q=Filipino&ffl=subImmigrants&id=ED656242>

Rodríguez-Rodríguez, D. (2022). Grade retention, academic performance and motivational variables in compulsory secondary education: A longitudinal study. *Psicothema*, 34(3), 429-436. <https://doi.org/10.7334/psicothema2021.582>

Schleicher, A. (2024, March 19). The PISA happy life dashboard: Visualising key indicators on student well-being from the PISA survey. Exceptional meeting of the PISA governing board. The PISA Happy Life Dashboard: Visualising Key Indicators on Student Well-Being from the PISA Survey, Virtual conference. [https://one.oecd.org/document/EDU/PISA/GB\(2024\)1/en/pdf](https://one.oecd.org/document/EDU/PISA/GB(2024)1/en/pdf)

Serrão, A. (2021, July). The impact of grade repetition in student performance in reading literacy. In *Conference Proceedings. The Future of Education 2021*. <https://conference.pixel-online.net/files/foe/ed0011/FP/7500-SAS5240-FP-FOE11.pdf>

Smith, R., Snow, P., Serry, T., & Hammond, L. (2021). The role of background knowledge in reading comprehension: A critical review. *Reading Psychology*, 42(3), 214-240. <https://doi.org/10.1080/02702711.2021.1888348>

Snow, C. (2002). *Reading for understanding: Toward an R&D program in reading comprehension*. Rand Corporation.

Syafi'i, M., Nurdin, N., & Fitriingsih, F. (2020). The effectiveness of know-want-learned (KWL) strategy in improving reading comprehension of the eight grade students of SMP Negeri 14 Palu. *Datokarama English Education Journal*, 1(1). <https://doi.org/10.24239/dee.v1i1.5>

Tang, X., & Salmela-Aro, K. (2021). The prospective role of epistemic curiosity in national standardized test performance. *Learning and Individual Differences*, 88, 102008. <https://doi.org/10.1016/j.lindif.2021.102008>

Texas A&M University. (n.d.). *Reading strategies: The KWL method*. Academic Success Center. <https://asc.tamu.edu/study-learning-handouts/reading-strategies-the-kwl-method>

Tomas, M., Villaros, E., Galman, S. (2021). The perceived challenges in reading of learners: Basis for school reading programs. *Open Journal of Social Sciences*, 9, 107-122. <https://doi.org/10.4236/jss.2021.95009>

Trinidad, J. (2020). Material resources, school climate, and achievement variations in the Philippines: Insights from PISA 2018. *International Journal of Educational Development*, 75. <https://doi.org/10.1016/j.ijedudev.2020.102174>

Ustabulut, M. Y. (2021). As a predictor of attitude towards reading habit: curiosity and exploration. *International Journal of Education Technology & Scientific Researches*, 6(15). <http://dx.doi.org/10.35826/ijetsar.360>

Valbuena, J., Mediavilla, M., Choi, Á., & Gil, M. (2021). Effects of grade retention policies: A literature review of empirical studies applying causal inference. *Journal of Economic Surveys*, 35(2), 408-451. <https://doi.org/10.1111/joes.12406>

Valdez, S. J. P., Esteban, J. F., Vinluan, J. B., Ramat, G. A., & De Guzman, M. P. V. (2023). Reading as valued by Filipino secondary students: Its role in life. *International Journal of Advanced Multidisciplinary Studies* 3(7). <https://www.ijams-bbp.net/archive/vol-3-issue-6june/reading-as-valued-by-filipino-secondary-students-its-role-in-life/>

Van Canegem, T., Van Houtte, M., & Demanet, J. (2021). Grade retention and academic self-concept: A multilevel analysis of the effects of schools' retention composition. *British Educational Research Journal*, 47(5), 1340-1360. <https://doi.org/10.1002/berj.3729>

Vogl E., Pekrun R., Murayama K., Loderer K., & Schubert S. (2019). Surprise, curiosity, and confusion promote knowledge exploration: Evidence for robust effects of epistemic emotions. *Front Psycho*, 10. <https://doi.org/10.3389/fpsyg.2019.02474>

Wade S., & Kidd C. (2019). The role of prior knowledge and curiosity in learning. *Psychon Bull Rev*, 26, 1377-1387. <https://doi.org/10.3758/s13423-019-01598-6>

Wang, X., Jia, L., & Jin, Y. (2020). Reading amount and reading strategy as mediators of the effects of intrinsic and extrinsic reading motivation on reading achievement. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.586346>

Wulaningsih, R. D., Rahid, D., & Miarsyah, M. (2024, January). The relationship between curiosity and reading comprehension ability with science literacy in high school students. In *AIP Conference Proceedings* (Vol. 2982, No. 1). AIP Publishing.

Zequinão, M. A., Oliveira, W. A., Pâmella, M., Cidade, P., Pereira, B., & Cardoso, F. L. (2020). Physical punishment at home and



grade retention related to bullying. *J Hum Growth Dev.* 30(3), 434-442. <http://doi.org/10.7322/jhgd.v30.11111>

Zou, J., Zhang, Y., Li, J., Tian, X., & Ding, N. (2023). Human attention during goal-directed reading comprehension relies on task optimization. *Elife*, 12, RP87197. <https://doi.org/10.7554/eLife.87197.3>

### **Affiliations and Corresponding Information**

**Mary Gayle Gelig**

Cebu Normal University – Philippines

**Cindy Limalima**

Cebu Normal University – Philippines

**Ian Jarabelo**

University of San Jose

Recoletos – Philippines