Question-text interactions in the assessment of reading

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ABSTRACT

In this reflective paper, the author explores interactions in reading within a teaching-learning situation. Focus is given to questions and how they enhance interaction, particularly in samples from textbooks analysed by the author.

Keywords: reading, assessment, interaction

INTRODUCTION

The multifaceted nature of reading as a human activity involves various types of interactions. For our present purposes, we will narrow down the scope to just a few that may be especially relevant when considering our students as readers. And, if we speak of readers, the literary giant Jorge Luis Borges naturally comes to mind: many of his fiction and non-fiction writings revolve around ideas related to reading itself. To illustrate some possible interactions readers may engage in, let us indulge in a few brief references to some of Borges' short stories.

Reader-text interactions involve linguistic, cognitive, and affective dimensions. In "The Writing of the God" (Borges, 1949), a priest tries to decode the spots on a tiger's fur, in the belief that it is a sacred text. His interaction with the text is supposed to move from physical observation, *word recognition*, to divine revelation that unveils the secret of the universe, *intertextual representation*. These are concepts that we are going to discuss later.

Next, ***reader-context*** interactions, in which readers' cultural background influences their interpretation of a text, and vice versa. In the short story "Tlön, Uqbar, Orbis Tertius" (Borges, 1944), the protagonist's background shapes his understanding of the text, and the text itself has an impact on the protagonist's reality. The fictional world the text creates gradually invades his world. This can be easily related to the *personal questions* we are going to develop below.

Finally, ***reader-author*** interactions. In everyday life, a reader attempts to infer the author's message, purpose, style, strategies, among other features. In "The Bribe" (Borges, 1975), a university professor figures out the author of an article, but not his true purposes. And this is one of our objectives regarding reading, developing students' critical eye for what they read, enabling them to read beyond what is actually written on a page.

As can be seen from the stories, our main objective here is to foster a range of interactions between our students and texts in teaching and assessment situations. A practical way to do this is through tasks. Interestingly, in the stories the tasks are self-imposed: it is the protagonists themselves who choose and commit to their missions; however, in classrooms (especially in assessment), tasks are externally imposed by us, the teachers, leaving students with little room for choice. This presentation

is about one of these tasks, questions, and their interactions with texts in terms of representation levels and cognitive processing demands. While the main focus is on the assessment of reading, we will inevitably refer to reading instruction as well, given that teaching and assessment are two sides of the same coin.

WHY QUESTIONS?

Some previous studies on secondary schools in Tucumán (Abboud, 2017, 2021), which analyze classroom observation reports, textbooks and tests, demonstrate that questions are by far the most used reading comprehension task.

In Abboud (2017), 48 secondary classroom observation reports were examined in terms of the reading tasks used. Results are presented in Figure 1 below.

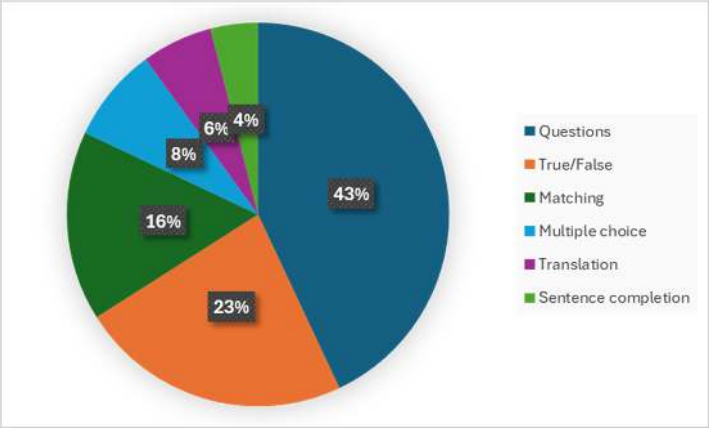


Figure 1. Reading comprehension tasks from secondary classroom observation reports (Abboud, 2017).

As shown in Figure 1, the reports analyzed indicate that the percentage of use of questions (43%) almost doubles that of the second most-used task, True/False (23%). The third task is matching (16%). The remaining tasks account for minimal proportions.

An analysis of five of the most frequently used textbooks in the 2009-2016 period also demonstrates the prominence of questions. Table 1 below shows the top ten textbooks used in the 48 classrooms observed.

No.	Textbook	Courses	% of use
1	*What's Up 1*	6	10%
2	*What's Up 2*	6	10%
3	*Champions 1*	4	7%
4	*My life 1*	4	7%
5	*Solutions Elementary*	4	7%
6	*Sign Up*	3	5%
7	*We can do it 1*	2	3%
8	*Access 2*	2	3%
9	*Engage 1*	2	3%
10	*English Plus*	2	3%

Table 1. The top ten mostly used textbooks in participating schools. (Abboud, 2017).

The textbooks that are highlighted were analyzed, and the results are shown in Figure 2.

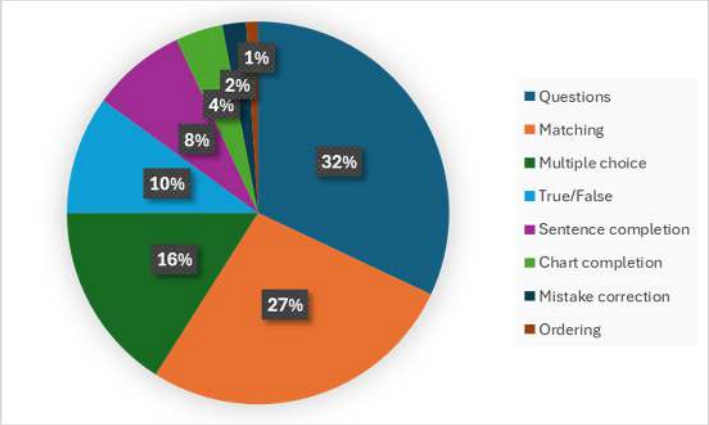


Figure 2. Reading comprehension tasks from five textbooks used in secondary schools (Abboud, 2017).

Results from the analysis of textbooks (Figure 2), again show that questions are the most common reading comprehension task (32%), followed by matching (27%) and multiple choice (16%). The remaining tasks account for significantly smaller shares.

In Abboud (2021), 53 achievement tests were analyzed. The use of reading comprehension tasks is displayed in Figure 3

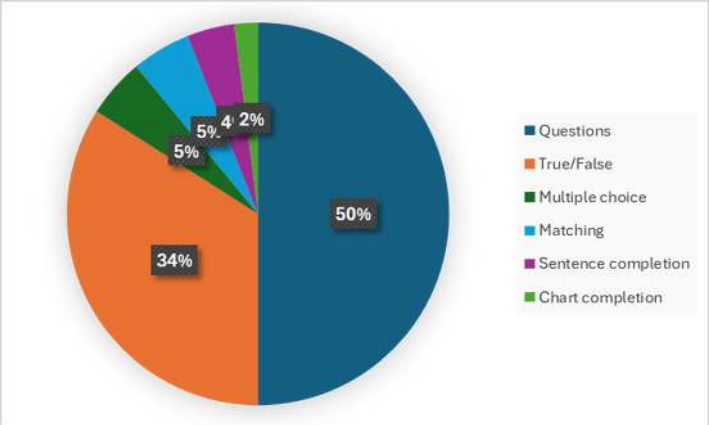


Figure 3. Reading comprehension tasks from 53 secondary school tests (Abboud, 2021).

In the tests analyzed, half of all the tasks are questions (50%) followed by True/False (34%). The rest share minimal proportions.

The overwhelming presence of questions in classroom practice and tests justifies the selection of this particular task for this presentation.

Our focus here is, then, question-text interactions in terms of the levels of text representation demanded to answer the questions successfully. We will refer time and again to students, as we believe that tasks can direct "learners' attention to certain aspects of the input" (Reinders, 2010, p.72). Our approach draws from two perspectives, which we will try to integrate. From a pedagogical perspective, we will examine types of questions (form and content), based on Larsen-Freeman (2013), which, in turn, follows Stevick (1959)'s proposal. From a cognitive perspective, we will explore the levels of text representation, based on the reading model proposed by Khalifa and Weir (2009), to enrich the analysis of question content.

Most of questions presented as examples refer to the text transcribed below, taken from Eales and Oakes (2011)'s *Speakout. Elementary. Students' Book* (p.14):

BBC Fawlty Towers

Fawlty Towers is a hotel in a BBC TV comedy. The manager's name is Basil Fawlty and he's married to Sybil. Polly and Manuel work at the hotel. Polly is British and Manuel is Spanish. Manuel speaks a little English but he sometimes has problems with his translations! The hotel is terrible and Basil often gets angry with his staff and guests!

Types of questions: form

Regarding form, questions can be:

- ***Yes/No*** ("Is Fawlty Towers a hotel?"). As the name implies, these questions can be simply answered with a yes or no. Sometimes, though, for reasons other than checking reading comprehension, we expect a fuller answer, including the subject and the corresponding auxiliary verb ("Yes, it is").

- ***Alternative*** ("Is Manuel Spanish or British?"). They are considered simpler, since the answer is one of the given alternatives.

- ***Wh-*** ("What is Fawlty Towers?"). Of course, some authors (Nuttal, 1996; Alderson, 2000) make a distinction among *wh*- questions, but for the present purposes, this classification will suffice.

Types of questions: content and text representation levels

According to content, questions are classified as *Stage I*, *II* or *III* by Larsen-Freeman (2013), following Stevick (1959):

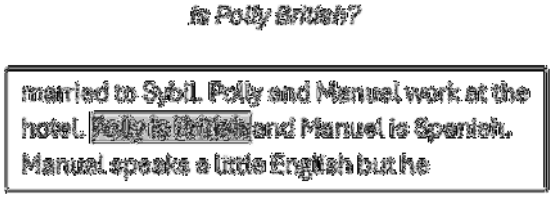
- Stage I questions can be termed *literal*, as the answer is found in the wording of the text.

- Stage II questions can be considered *inferential*, as the answer has to be inferred from what is presented in the text.

- Stage III questions can be labeled *personal*, as the answer has to relate students' lives to the text.

To analyze content, we must start examining how questions interact with texts. Therefore, we will complement the above classification by incorporating the levels of text representation, based on Khalifa and Weir (2009)'s cognitive processing levels.

Literal questions: Sample 1 presents an example of a literal question, together with the key passage −that is, the part of the text that contains the information needed to answer the question− which is highlighted.

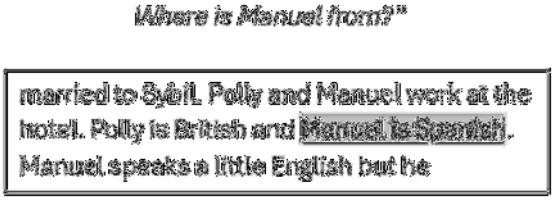


Sample 1. Example of a literal question at word recognition level.

We can zoom in on Sample 1 and see that the cognitive process required is just "word recognition", as Khalifa and Weir (2009) put it. In this example, it seems that just matching word shapes might be

enough. There is no need for students to understand the meaning of words or to work out morphological or syntactic structures. The text representation demanded is then only at the *decoding* level.

Another example of a literal question is presented in Sample 2.



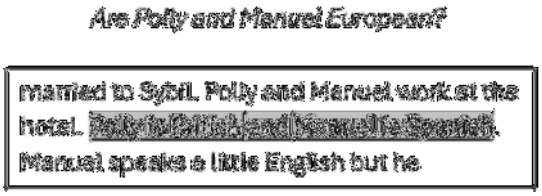
Sample 2. Example of a literal question at propositional level.

The question in Sample 2 requires students to achieve propositional meanings, as recognizing words is not enough. Students need to access the meaning of the words and structures in the question and the key passage. These processes, termed "lexical access" and "syntactic parsing", respectively, in Khalifa and Weir's model, are needed in order to get to propositional meanings, which are also at the decoding level.

As we have seen, literal questions, involving word recognition, lexical access, syntactic parsing and propositional meaning, correlate to the lowest level of text representation, that of decoding. This initial stage is precisely what the priest is engaged in when trying to read the tiger's spots at the beginning of Borges' story. Decoding is necessary for successful reading, but it is not enough. So, let's now turn to inferential questions.

Inferential questions: We will use four examples of inferential questions, each illustrating distinct cognitive processes across different levels of text representation.

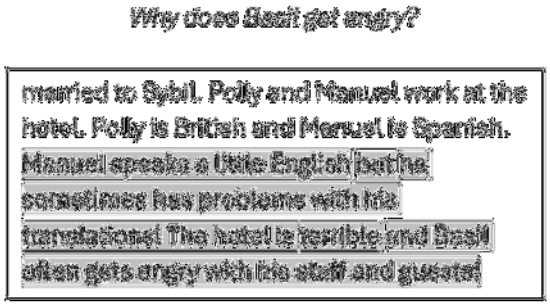
Sample 3 presents an inferential question that requires processing at partial text representation level and certain background knowledge.



Sample 3. Example of an inferential question at partial text representation.

The concept of "European" in the question needs to be connected to the terms "British" and "Spanish" in the text. The inferencing process here involves integrating meaning from the question and from two subsequent clauses in the key passage. This requires processing at the level of partial text representation. Additionally, this type of inference draws on background knowledge (or possibly content previously covered in class) related to geography, enabling students to associate the continent with two of its constituent countries.

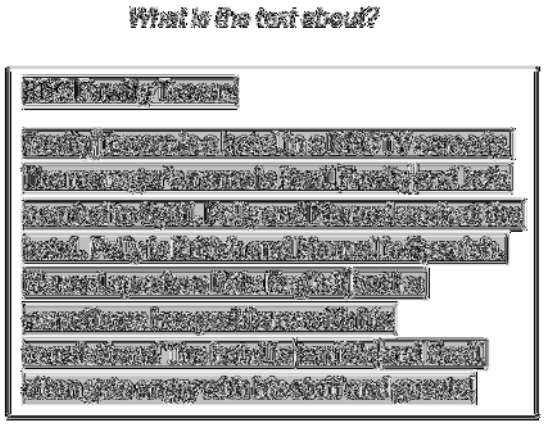
Sample 4 offers a second example of an inferential question.



Sample 4. Example of an inferential question tapping into mental model at partial text representation.

The question in Sample 4 points to a broader key passage ("broad" and "narrow" are terms used by Bachman and Palmer, 1996, when discussing the scope of relation between input and response). Here, the cognitive demand involves constructing a "mental model", as Khalifa and Weir (2009) describe, as information is found across sentences (Manuel can't speak the language quite well and the hotel is awful). This process again operates at the partial text representation level.

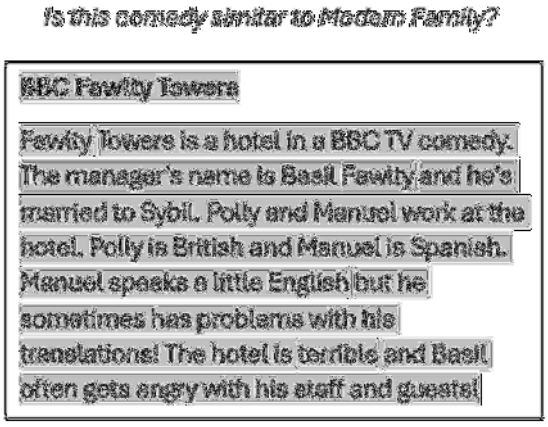
Sample 5 presents a question typically asked in EFL classrooms.



Sample 5. Example of an inferential question at textual representation level.

As its wording implies, the question in Sample 5 deals with comprehending the text as a whole, integrating information across sentences to form a coherent model at textual representation level. Another inferential question that may engage the textual level has to do with identifying the author's intentions or rhetorical effects, such as "Why does the author include details about the hotel?". This is related to the need to interpret purposes underlying texts, something the university professor in Borges' story fails to do.

The following question, in Sample 6, aims at something bigger than the text.



Sample 6. Example of an inferential question at intertextual representation level.

Sample 6 presents a question that challenges students to infer meaning extending beyond the textual content. What is required here is an additional text related to the sitcom *Modern Family*. It is assumed, of course, that students read about it and/or watched a video clip of the sitcom in class (in that case, the task involves a multimodal text, opening up the stimulating possibility of combining different text formats to assess reading comprehension in tests and support it during lessons). The underlying idea, we assume, is for students to connect Manuel's L2 difficulties in *Fawlty Towers* with Gloria's similar problems in *Modern Family*. This mental activity requires drawing information across texts, engaging students at an intertextual representation level.

Assessing intertextual representation is not always straightforward in tests. Procedures like the one we saw with *Modern Family* contribute to promoting positive washback. The term *washback* refers to the impact assessment has on teaching and learning. In Sample 6, the question connects the text presented in the test to a text they read/watched in class. If this is the case, then the washback can be considered positive because:

- Students can see a clear connection between instruction and assessment.

- They are more likely to review notes and reading material if they know these will support exam success.

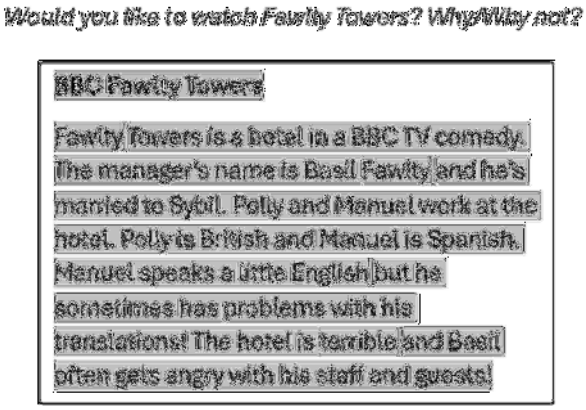
- This procedure may foster metacognitive awareness (thinking about what to study, why and how).

The three effects listed under positive washback are directly aligned with the behavior we aim to promote in our students.

Another example of a question tapping into intertextual representation is "what type of text is it?". Students must relate the text in the test to others they read in class and recognize certain features that are considered typical of the genre. This level of comprehension is crucial in academic reading, in which students are expected to read different texts and authors for comparison, contrast, criticism, among other academic purposes. It is also the ultimate goal of Borges' priest, as he struggles to relate the sacred message to his broader multi-sourced understanding of life.

In short, just as literal questions tap into the decoding level, inferential questions may activate distinct cognitive processing at the partial, textual, and intertextual levels of representation. Now, we turn to personal questions.

Personal questions: A question like the one presented in Sample 7 below elicits a personal response from students.



Sample 7. Example of a personal question at textual representation level.

In Sample 7, the question requires comprehending the text as a whole, operating at the textual representation level. However, it requires more than just this, involving our students more actively by asking for their opinion. It is as if the text appeals directly to the reader's own reality, influencing their personal perspective, just like the fictional world invading the reader's reality in Borges' story.

When questions ask for students' personal reaction, a common doubt arises among us, teachers: Can we actually assess our students' reading ability by asking personal questions? This distrust is generally based on the misconception that, in such cases, any answer is acceptable and, therefore, none can be wrong. If personal questions are seen as unreliable, why include them? We include them because:

- When learners relate content to themselves, they engage more deeply with the text.

- This type of question activates higher-order processing (like textual and intertextual level representation).

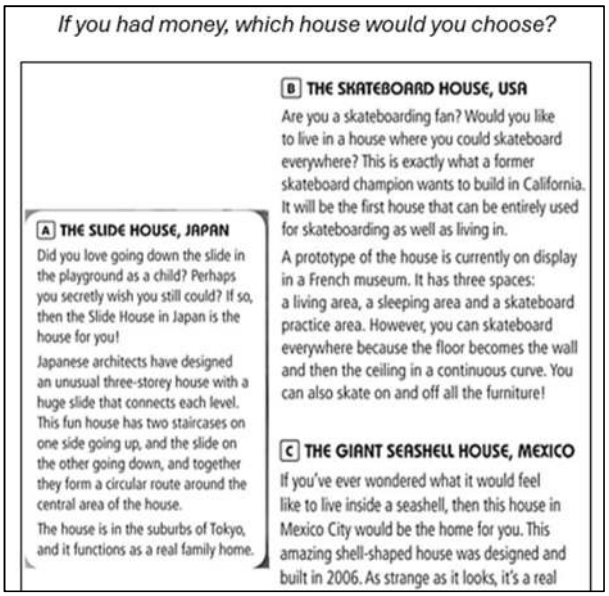
To successfully include personal questions in the assessment of reading comprehension, we need to bear certain details in mind. Here are some key tips:

- Keep questions aligned to students' language level, age and background. This involves picturing the expected answer and figuring out if our students can actually produce such a response.

- Design personal questions that require students to provide textual evidence.

- Use rubrics that assess both comprehension and expression: Include criteria for language, relevance, and the effective use of textual support. Rubrics? Aren't they for speaking and writing? Yes, they are, but we need them here because we should pay attention to both comprehension and production.

Personal questions can also target intertextual level of representation. Sample 8 offers an example.



If you had money, which house would you choose?

A THE SLIDE HOUSE, JAPAN

Did you love going down the slide in the playground as a child? Perhaps you secretly wish you still could? If so, then the Slide House in Japan is the house for you!

Japanese architects have designed an unusual three-storey house with a huge slide that connects each level. This fun house has two staircases on one side going up, and the slide on the other going down, and together they form a circular route around the central area of the house.

The house is in the suburbs of Tokyo, and it functions as a real family home.

B THE SKATEBOARD HOUSE, USA

Are you a skateboarding fan? Would you like to live in a house where you could skateboard everywhere? This is exactly what a former skateboard champion wants to build in California. It will be the first house that can be entirely used for skateboarding as well as living in.

A prototype of the house is currently on display in a French museum. It has three spaces: a living area, a sleeping area and a skateboard practice area. However, you can skateboard everywhere because the floor becomes the wall and then the ceiling in a continuous curve. You can also skate on and off all the furniture!

C THE GIANT SEASHELL HOUSE, MEXICO

If you've ever wondered what it would feel like to live inside a seashell, then this house in Mexico City would be the home for you. This amazing shell-shaped house was designed and built in 2006. As strange as it looks, it's a real

Sample 8. Example of a personal question at intertextual representation level.

Sample 8 shows a task where students read three texts about different houses. The question, "If you had money, which house would you choose?", requires students to integrate information across texts, and their answers must include textual evidence.

So far, then, we have seen in Samples 1 and 2 how literal questions tackle the decoding level. Samples 3 to 6 present inferential questions that prompt students to interact with the text at partial, textual and intertextual levels. Finally, Samples 7 and 8 demonstrate how personal questions can engage student interaction at the textual and intertextual representation levels.

Following, we share some research data on the use of question types and representations levels

Research data

The data presented here come from four different studies:

- Questions asked by teachers: 169 questions collected at a teacher training course in Tucumán (September 2022). One hundred and five EFL teachers participated. The prompt was: "Write 1-3 questions you would ask your students about this text" (the same *Fawlty Towers* text used in our samples).

- Questions asked by AI chatbots: 40 questions generated using a very similar prompt to the one used for the study above (Abboud & García, in print).

- Secondary school tests: 81 questions found in 12 tests from public and private secondary schools (A1-A2 levels).

- University ESP tests: 112 questions found in 32 tests from five English for Specific Purposes (ESP) university courses (Abboud, 2024).

These datasets come from sources with their own particular characteristics. However, to explore overall tendencies, it may be useful to present the global distribution of question types across studies.

It is important to note that the English proficiency level of students in the studies summarized here is around A1/A2, according to the Common European Framework of Reference (CEFRL). The only exception is the ESP courses, where students typically reach an approximate CEFRL B1 level in reading by the end of the program.

Regarding question forms, Figure 4 shows an obvious tendency towards one type.

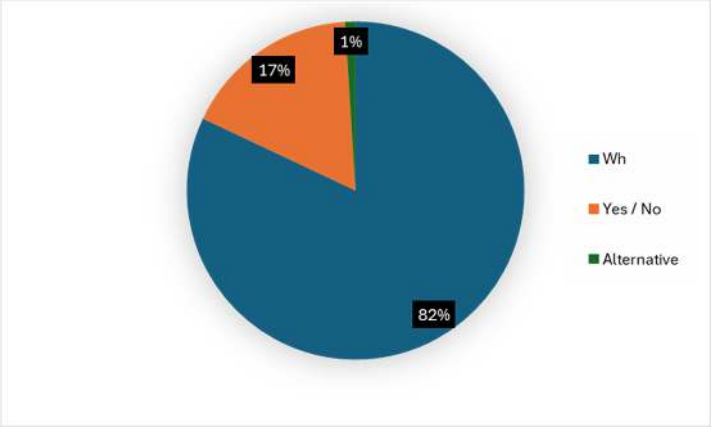


Figure 4. Global distribution of question form types.

There is a clear overuse of Wh- questions (82%), with scarce presence of Yes/No questions (17%) and an almost complete absence of Alternative questions (1%).

Figure 5 below shows the results for question content types.

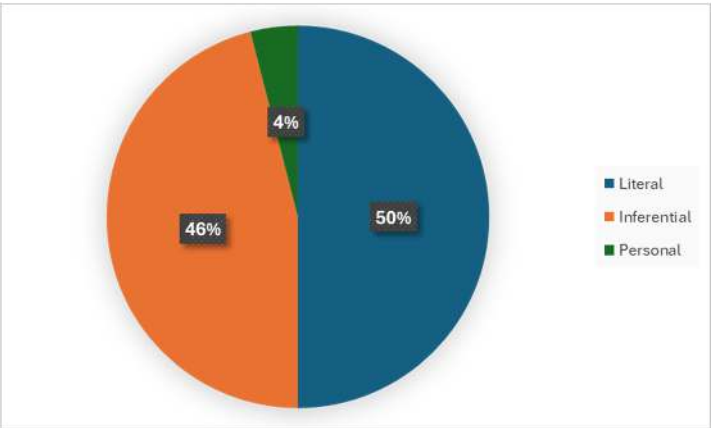


Figure 5. Global distribution of question content types.

There is a virtual omission of personal questions (4%) and a balanced use of literal (50%) and inferential questions (46%). We further analyze these two dominant types as we map them onto the text representation levels, next.

The global distribution of text representation levels is shown in Figure 6.

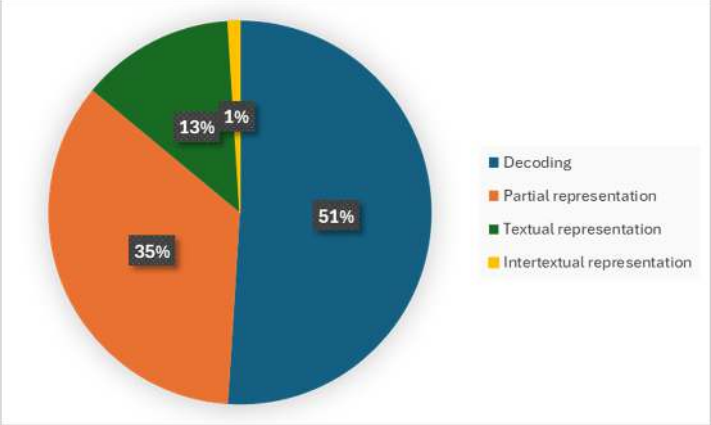


Figure 6. Global distribution of text representation levels activated by the questions analyzed.

The distribution of text representation levels, as displayed in Figure 6 above, reveals interesting tendencies. Decoding (51%) represents the majority of questions. Partial representation (35%) is the second-largest level. Textual representation (13%) is present in a much smaller percentage of questions. Finally, intertextual representation (1%) shares the smallest proportion in the distribution.

PEDAGOGICAL IMPLICATIONS

Figure 6 above visually emphasizes the predominance of lower-level processing, highlighting an imbalance in the cognitive demands of the questions analyzed. Decoding, which focuses on basic processes, such as word recognition, lexical access, syntactic parsing and propositional meaning, and partial representation, which requires students to connect ideas or infer meaning from limited portions of texts, make up the vast majority (86%) of the questions analyzed. Textual representation, which demands understanding of a text as a whole, and intertextual representation, which requires relating texts to others, together add up to just 14% of the corpus.

These findings stress the need to systematically design a variety of questions to activate distinct levels of cognitive processing.

The approach adopted here offers a practical framework as a starting point for diversifying questions for teaching and assessment purposes by combining the three form types with the three content types. Then, additional refinement is necessary to fully address the range of representation levels. This framework can be considered a flexible template that teachers may adapt to suit their specific needs, objectives, students' proficiency level and teaching and assessment contexts. Figure 7 presents a diagrammatic display of the proposal.

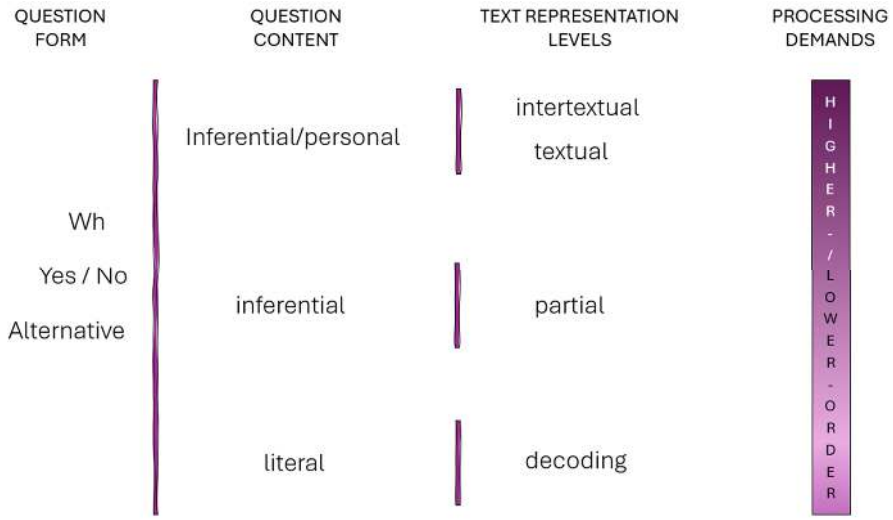


Figure 7. Framework of correlation between question types, text representation levels and processing demands.

The framework is organized into four columns in Figure 7. The first column addresses question form, differentiating among Wh-, Yes/No, and Alternative questions. The second column details question content, with literal, inferential and personal types. The third column displays the text representation levels, ranging from decoding to partial, textual and intertextual representation. The fourth column shows the cognitive demands continuum, from lower-order to higher-order processes. Lines within the framework indicate the relationships among these dimensions. The solid line connecting form and

content signifies that any form can be paired with any type of content. For instance, a Wh- question may be literal, inferential or personal; likewise, Yes/No and Alternative questions can also align with each of these content categories.

The connections between content and text representation levels reflect more specific correspondences. Furthermore, these relationships are all correlated to specific points within the cognitive demand continuum, from decoding (lower-order processes) to intertextual (higher-order processes). Literal questions, such as Samples 1 and 2, involve only the decoding level at the lower-order end of cognitive demands. Inferential questions, like Samples 3-6, can demand partial, textual and intertextual levels, each moving up the cognitive demand continuum toward higher-order processing. Finally, personal questions, like Samples 7 and 8, can be readily used to address textual as well as intertextual levels pushing toward the higher-order processing end of the continuum.

The application of this framework serves not only the cognitive purposes just discussed but also pedagogical purposes. The main pedagogical function fulfilled is setting challenges that students can realistically achieve. If we use simple questions in our classroom, weaker students will feel they can do something with the language. If we use complex questions in our classroom, stronger students will feel they can demonstrate what they know. Thus, students at all levels might find classes worthwhile (Stevick, 1959; Larsen-Freeman, 2013). This is for the classroom setting.

Now, for assessment situations, placing simpler questions at the beginning contributes to building student confidence. This allows students to feel they can successfully answer some questions, which encourages them to tackle the more complex items. It also helps students gradually build comprehension of the text by beginning with word recognition and moving forward (or upwards).

This gradual increase in complexity may, in a way, replicate in testing situations what warm-ups do in classroom situations: prepare students topically and linguistically for what lies ahead.

CONCLUSIONS

The very nature of reading makes it quite complex, and full of sides. The data shared here seem to point to a need for incorporating a broader spectrum of question types in our lessons and tests, which can diversify how students interact with texts.

A variety of interactions can foster stronger student motivation and activate different cognitive processing levels. Any successful reader is expected to interact with texts, contexts and authors effectively, which entails meeting demands from lower-order decoding processes (like working out the patterns of the tiger's spots), through textual representations (identifying an author's purposes, without failing, as the university professor does) up to higher-order intertextual processes (integrating information across multiple sources: tigers, colleagues and their articles, sacred texts, the universe).

It is true that we cannot impose on our students the vast, complex tasks that Borges' protagonists try to fulfill, nor can we expect them to achieve a cosmic understanding of the universe through the texts we assign. However, we, as teachers, possess the power to effectively impose a variety of question types in teaching and assessment situations. By doing so, we enhance our students' reading experiences and contribute to their engagement with texts across a wider, richer range of interactions.

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