# Please Indicate What the Question Is Asking You For: Testing High-School Students' Ability to Identify Task Demands and Its Impact On Question Outcomes

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**Abstract.** We tested high-school students' ability to identify question demands in a task-oriented reading situation. 59 high-school students read two texts and answered four questions per text. Half of them required students to select one option that reflected what the question asked them for before answering. Results indicated that there is a relationship between identifying the task demands and successful answering, especially for good and poor comprehenders. Strategic developmental differences were also found. Future research will need to deepen into how the identification of task demands impacts the search for information process and how the task model updating process takes place.

**Keywords:** question-answering; task-oriented reading; instructions; search for information.

## Theoretical background

When reading, students may have different goals in mind. They may read for gathering specific information or to search for information to answer questions. These can be regarded as *task-oriented reading situations* (OECD, 2002) and may differ from traditional reading. Rouet (2006) has adopted this approach and has proposed the TRACE (Task-based Relevance and Content Extraction) model for question-answering, which describes the steps that a learner follows when processing a task based on textual information.

A crucial component in the TRACE model is the construction of a task representation (i.e. which the goals to achieve are and which actions would be necessary). Recent research has indeed focused on the role of instructions and goals for reading tasks. For instance, McCrudden & Schraw (2007) have emphasized the impact of given instructions when working with texts, which enable students to determine relevant strategies for a particular task. This latter assumption implies that students are capable of understanding the goals that we set on them, which is not always the case. Cerdán & Gilabert (2007) made good and poor comprehenders read two texts and answer 10 questions. In half of them, students were asked to write down with their own words what the question was asking them for before answering. Poor comprehenders tended to include a greater number of misinterpretations in their question explanations and performed worse when asked to explain.

When constructing a task model two components can be differentiated: the *focus of the* task or information that needs to be retrieved and the *process* that the task calls for, or what to do with the extracted information (Rouet & Britt, submitted). Some students may or not be able to correctly identify these components, and this should impact task outcomes. So far we know of no studies that have addressed this question. The present investigation is precisely aimed at analyzing the relation between correctly identifying the above task components and successful answering in good and poor young comprehenders.

## Method

*Participants*

They were 59 high school students from a Spanish suburban area, 37 of them pertaining to grade 1 (mean age 12.4) and the other 22 to grade 4 (mean age 15.4). They were measured on comprehension level using a standardized comprehension test called TPC and selected as good (N=23) and poor comprehenders (N= 18) if their scores were above percentile 66th or below percentile 33th in their respective grades. The rest of the participants were classified as average comprehenders (N= 18).

*Materials*

We used two texts (i.e. Flu and Runners) and four questions per text. They were adapted from Pisa reading assessment materials. Questions and their corresponding processes could be classified using Pisa-2000 schema. First, questions prompting the students to *retrieve* specific units of information; second, questions that require students to *interpret* textual information. Finally, questions that make students *reflect* beyond the text. In the present study, we had 3 retrieve, 2 reflect and 3 integrate questions. For each of the questions, we designed a *question on the question (QonQ)*, consisting on a four-choice task that participants would be presented just after reading the questions and before answering. Students would be asked to indicate the only option that better reflects what the question is asking them for. The four choices were elaborated by manipulating both the process the question calls for (Correct or Incorrect Process) and the focus of the question (Correct or Incorrect Focus), or information to be extracted and/or used from the text (see figure 1).
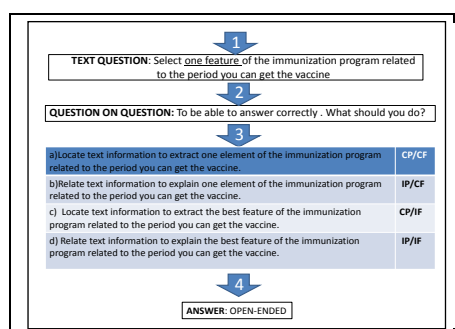


*Figure 1*: Task example

*Procedure*

The experiment lasted two sessions. Session 1 was used for assessing participants in comprehension level and session 2 was the actual experimental session. We used an on-line version of the TPC test with the *Read&Answer* software. *Read&Answer* presents texts and questions on the computer screen and allows the recording of reading and question-answering behavioral data. We also used *Read&Answer* in the experimental session. Participants first received training on the task and then were asked to first read the texts and then answer the corresponding questions. In half of the questions, they would also have to answer a *question on the question*. Participants were allowed to search the text at will to answer the questions.

## Analysis and Results

We performed Pearson correlations between *performance* on questions and *question on question scores* and found a significant relationship, $r = .46$, $p < .01$. We also performed separate correlational analysis between the above measurements for good and poor comprehenders. Positive and significant correlations were maintained for good and poor comprehenders, $r = .68$, and $r = .59$, $p < .01$, respectively, but they were not present for average comprehenders.

We then calculated one MANOVA with independent measures *grade* (1 vs. 4th) and *comprehension level* (good, poor & average) and dependent measures *performance on questions* and *question on question* scores. Results were only significant for the variable grade on the two dependent measures. Thus, older 4th grade students scored higher both in *questions* and in the *question on questions* than younger 1st grade students, $F(1, 53) = 12.98$, $p < .01$, *partial η2* = .19 and, $F(1, 53) = 17.68$, $p < .01$, *partial η2* = .25, respectively.

We finally calculated one additional MANOVA with independent measures *grade* (1 vs. 4th) and *comprehension level* (good & poor only) and as dependent measures, the *kinds of misidentifications on the QonQ task according to type of questions*. That is, whenever a student would incorrectly select an option on the QonQ task, it should be due to: a) a misidentification of process; b) misidentification of focus or c) both, in locate, integrate or reflect questions, respectively. Results were significant for the variable grade on *number of errors in both process and focus*, with younger participants misidentifying the two components of task demands in a greater extent in the three kinds of questions, $F(1, 37) = 5.63$, $p < .05$, *partial η2* = .14 and $F(1, 37) = 5.80$, $p < .05$, *partial η2* = .14 and $F(1, 37) = 6.76$, $p < .01$, *partial η2* = .16, respectively. Results were also significant for the variable comprehension level in the *higher number of poor comprehenders' selection of the wrong process option in reflect questions*, $F(1, 37) = 4.67$, $p < .05$, *partial η2* = .12.

## Conclusions

Our results confirm that: a) the correct identification of task demands has an impact on question outcomes, at least for poor and good comprehenders; b) there are developmental differences when students identify task demands, with older participants being more discriminative of what the task asks them for, both regarding the process and focus of the question and c) there seems to be some patterns of misidentifications on the QonQ task according to type of question, depending on comprehension level and grade. All of this deserves further interpretation in conjunction with on-line processing data. This is what we are currently analyzing, by looking in detail to the search for information and reading time data provided by the software *Read&Answer*.

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