



RESEARCH ARTICLE

WHAT DEGREE OF CERTAINTY DOES PUPILS' HAVE IN 3RD IN 4TH YEARS, FOR EACH LEVEL OF REPRESENTATION, BY GENDER, AGE: CASE OF PUBLIC SCHOOLS OF LIBREVILLE?

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ABSTRACT

After highlighting the fact that it is more important for Surface Structure (SS) than for other levels of Text Base representation (BT) and Situation Model (MS). In this study, we seek to ascertain the degree of certainty for each of these three levels of representation. To do this, we gave to 127 pupils, taken from 3rd and 4th years, material conceived on the principle of phrase recognition, of the analysis of variance applied to the collected results, indicating that pupils are "quite sure" of their answers I. The three levels of representation. But, this degree of certainty is higher for the statements of the SS than for those of the BT and the MS. Older pupils have a higher degree of certainty than younger pupils. The pupils are hesitant, they are "unsure" for the degree of certainty of the answers given to the MS. Also, they should be fully aware of the strategies they have in place to learn, allowing them to constantly evaluate their metacognition, in order to improve their academic performance.

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INTRODUCTION

Since 2005, the Gabonese education system has a new didactic approach: The Approach by Skills (CPA), which is a curricula program based on basic skills. This program allows elementary school teachers to evaluate from new inferences, thus understanding pupils' understanding of the teaching / learning process. Teachers evaluate pupils by asking questions, and they answer questions verbally and / or in writing. The assessment, of the acquired knowledge, is carried out by the teacher in all the subjects whatever the school level. But when pupils answer these questions, are they sure of the answers they provide? Jans and Leclercq (1997) emphasized that: "Knowing how much you know" is valuable in defining your own learning strategies, deciding on your actions, and getting to know yourself better. In addition, the degree of certainty provided by the pupil, in addition to his answers, allows him to question his self-confidence on his own, to continually evaluate an important aspect of his metacognition. Accordingly, a metacognition allows pupils to be more active in their learning, that is to say, to mobilize all his resources to live successful learning experiences. To achieve this, he must know his manner of learning, be aware of the steps followed and the means used to acquire knowledge, solve problems and perform tasks (Gagné, Leblanc and Rousseau 2009),

Studies have shown that metacognitive processes could be beneficial to pupils from several grade levels by Grabe and Mann (1984) 4th and 5th years by Garner (1982) 6th and 7th years. Also, the problem is whether the degree of certainty will be a function of the three levels of representation x described by van Dijk and Kintsch (1983). For these authors, the Premier level, called surface structure (SS) represents the words of the text and the syntax used. The second level, called the text base (BT) consists of semantic processing. At this level, prior knowledge comes in very little. The third level is the situation model (MS). At this stage, the individual builds an "original model" of the situation described by the text. It involves a significant amount of prior knowledge. We formulate the following general hypothesis: the degree of certainty corresponding to each level of representation is a function of sex, age group, and grade level.

Dependent Variables:

- **Gender:** Girls and boys
- **Age group:** Pupils in a class are divided into three categories according to their age [*Good*: 6 to 8 years; *Slow Developer*: 9 to 10 years; *Very Slow Developer*: 11 years old and over];
- **School level:** the same pupils are seen in 3rd and 4th years.

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MATERIAL AND METHODS

Population: all 303 pupils in the 3rd year out of three schools (ENS A; ENSET A; ENSET B) were selected, to reflect the reality of, public school classes in Libreville. But at the end of the experiment, in December 2016, in 4th year, there were only 127.

Equipment: Construction of the equipment: With the help of Fifteen teachers from 3rd year classes of the schools selected for this work, we built six small texts, following the example set by White and Brouillet (2005) The texts have been modified somewhat to adapt the vocabulary to that of Gabonese children in order to understand the three levels of representation using a sentence recognition task (see Appendix N1 and N2). For each text, we have constructed five different statements, which vary from the point of view of the level of representation they evaluate, according to the following model:

Text N °1- "Nick decides to go to the movies. He grabbed the newspaper and opened it. He wants to see what is on the bill" (Experimental text).

The first type of statement: the phrase "original" which is inserted into the recognition test as it was supposed to be represented at the three levels, surface, text base and situation model. "He catches the newspaper and opened it".

The second type of statement: the statement in the form of paraphrase which implies a minimal change in the words order, see the changing of a word (the paraphrase is therefore identical to the sentence of the text and of the situation model, but differs in the surface structure, "he's looking for what's on the bill".

The third type of statement: a sentence that has a high probability of being generated by the reader from the described situational context. They are consistent with the original sentences of the text from the point of view of the situational model, but differs in terms of surface structure and text base, "Nick wants to go see a movie", "Nick buys the newspaper". To verify that the pupil does not respond by chance, two other statements were added: A statement outside the text but contextually appropriate, "the price of movie tickets is expensive", contextually connected. A statement external to the theme and context of the text, it serves as a baseline for the analysis of recognitions, "Nick went swimming at the Omni sport pool", distant distractor. These last two statements are not retained for the calculation of the data. The texts are finally submitted to the appreciation of an adult jury : composed of 15 Pupils Educational Consultants 1st year of NS E d e Libreville "who are former primary school teachers" ; and a jury of children, composed of 9 pupils 2 CE2, 2 in CM1 and CM2 2 (children are not part e of pupils selected for the experiment). The six selected texts are those considered the most homogeneous. Finally, the teachers in the selected classes themselves tested the material before administering it to their pupils.

Experimental procedure: Training phase: she allowed pupils to become familiar with the material and ask questions, which was no longer possible during the experimental phase.

- **Learning phase:** The handover is done in the usual classroom. Just before this phase, answer sheets are

distributed to the participants. Then the following instruction is given: "I am going to read you a statement. You have to listen very carefully and repeat it after me ". Repetition helps control and maintain constant attention.

- **The immediate recognition phase:** The following instruction is given: "I am going to read another series of sentences. For each of them, you must say by checking on the sheet that I gave you, at first, if it can belong or not to the statement that you just heard. And in a second step, you must specify if you are: Not sure, Not quite sure, absolutely sure."

Presentation, analysis and interpretation of the results

The answers were coded according to the table below:

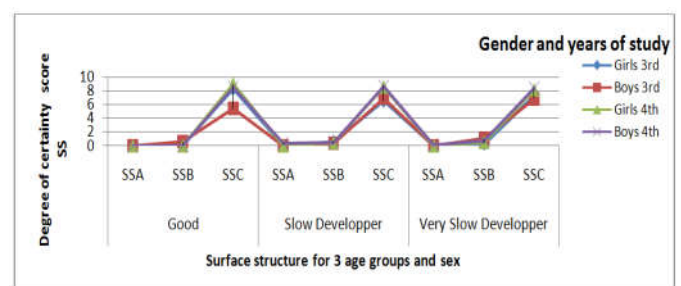
Table 1. Cree corresponding to the three levels of representation (SS, BT, MS) and the three degrees of certainty (not sure, not quitesure, quite sure)

Surface structure (SS)	Text base (BT)	Situation Model (MS)
SSA = Surface structure Not sure	BTA = Text base Not sure	MSA = Situation model Not sure
SSB = Surface structure not quite sure	BTB = Text Base Not quite sure	MSB = Situation model Not quite sure
SSC = Surface structure Absolutely sure	BTC = Text base Absolutely sure	MSC = Situation model Absolutely sure

In what follows, we present the scores obtained in the degree of certainty by the pupils in the 3rd and 4th years. When answering questions related to each of three levels of representation: Surface Structure (SS), Text Base (BT), and Situation Model (MS). We carried out an analysis of variance with statistical software. We only present the significant results. But all the results are presented on the charts. Regarding the gender variable, the results are not significant.

Degree of certainty for Surface Structure (SS)

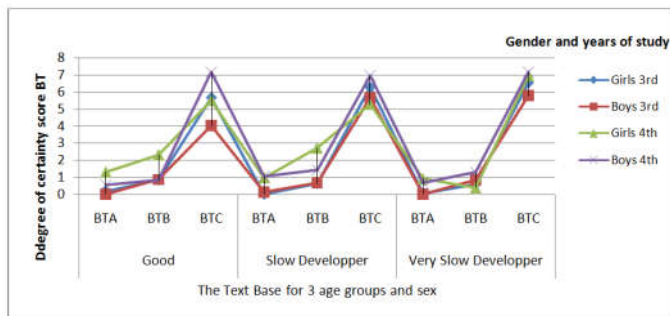
Graph 1. Degree of certainty for Surface Structure of girls and boys by age, 3rd and 4th years



- **Certainty of pupils in 3rd year** there is a difference between levels of certainty $F_{(2,584)} = 360,453$; $p < .000$. The answers given by the pupils to the Surface Structure "quite sure" (SSC) (mean = 7,282) are higher than the answers "not sure" (SSA) (mean = 0) and "unsure" (SSB) (mean = 0,547).
- **Certainty of pupils in 4th year** the overall results reveal that pupils are "quite sure" Answers they give at the Structure Surface, $F_{(2,242)} = 248.41$; $p < .000$. The degree of certainty is higher in SSC (mean = 8.813) than in SSA (mean = 0.99) and in SSB (M = 0.469).

- The comparison of the degree of certainty of pupils in 3rd and 4th years indicates a non-significant difference.

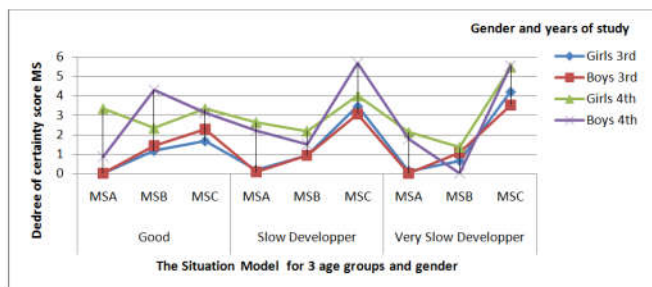
Degree of certainty for the Text Base (BT)



Graph 2. Level of certainty for the Basic Text of girls and boys by age, 3rd and 4th years

- **Certainty of pupils in 3rd year** the overall analysis reveals a difference between the degree of certainty $F_{(2,584)} = 250,081$; $p < .000$ is raised to the BTC (mean = 6.141), which is low to the BTA (mean = 0.063) and BTB (mean = 0, 734).
- **Certainty of pupils in 4th year** the overall analysis indicates that there is a difference $F_{(3,363)} = 217,991$; $p < .000$. The average scores are higher for BTC (mean = 6.844) as BTA (mean = 0.984) and in BTB (mean = 1.734).
- **Comparing the degree of certainty of pupils of 3rd class and 4th years** there are significant differences $F_{(1,125)} = 1246.902$; $p < .000$ between the degree of certainty of girls, which is high in 3rd year (mean = 6.485) in 4th year (mean = 6.333). Apart from this difference which does not go in the direction of an evolution of the degree of certainty at the level of the BT; the other comparisons reveal that there is an evolution. In fact, the results for boys indicate a difference $F_{(1,125)} = 1106.444$; $p < .000$; the degree of certainty is higher in the 4th year (mean = 5.683) than in the 3rd year (mean = 7.269). Similarly, the overall analysis reveals a significant difference $F_{(5, 605)} = 118.571$; $p < .000$. Pupils are "quite sure" of the answers they give at the level of BT in 4th year (average = 6.844) than in 3rd year (average = 6.141).

Degree of certainty for the Situation Model (MS)



Graph 3. Certainty for the girls and boys Situation Model by age, class of 3rd and 4th year

- **Certainty of pupils in 3rd year** the overall analysis reveals differences $F_{(2,584)} = 99,517$; $p < .000$. The

degree of certainty "absolutely sure" is higher for the MSC (mean = 3.5) than for the ASM statements (mean = 0.079) and MSB (mean = 0, 969).

- **Certainty of pupils in 4th year** the overall analysis reveals differences $F_{(3,363)} = 91, 421$; $p < .000$. The degree of certainty "absolutely sure" is set higher for the MSC (mean = 5.172) than for the forward MSA (mean = 2.282) and MSB (mean = 1.922).
- **Comparison of the degree of certainty of pupils in 3rd and 4th years** the overall analysis reveals that there is a difference $F_{(5, 605)} = 28.856$; $p < .000$ for the degree of certainty "absolutely sure" Pupils, which is lower in 3rd year (mean = 3.5) in 4th year (mean = 5,172). Moreover, the increase in the results obtained during the two years and the age that there is a difference $F_{(10, 605)} = 1.953$; $p = 0.036$. Indeed, there is a difference between pupils "Good" $F_{(1,124)} = 195, 636$; $p < .000$; between pupils "Low delay" $F_{(1,124)} = 656, 379$; $p < .000$; and between pupils very slow developer" $F_{(1, 124)} = 777, 140$; $p < .000$. All these results show that pupils are "quite sure" 4th year in year 3, the answers they give to the situation model level. The interpretation will be on the degree of certainty pupils when answering questions from different levels of representation, during the two years of experimentation.

Interpretation and discussion of results

The results obtained reveal that the degree of certainty is not different whatever the gender, we also obtained these results in our previous work (Gheloube 2003, 2017). Pupils are "absolutely sure" for answers they give to the three levels of representation, even if we notice that they are higher than the data for the SS and for the use of BT and MS. It is also important to note that at the MS level, pupils who are slow (very slow and slow developer), therefore older relative to the age of the class, have a higher degree of certainty than the younger people (good), which is not the case for the level of representation where there is no significant difference. These results partially support the hypothesis that the degree of certainty changes with grade level, and with age, as one result indicates the opposite. Overall Pupils are "absolutely sure" of the answers they give at the SS level, less sure of some of the ones they give to BT, let alone those given at the MS level. It seems that the answers given by the pupils concerning the MS, which are the result of the interaction between the information of the text and the knowledge of the pupil, to consider as inferences, are not easy to produce. Pupils are hesitant about the certainty of MS answers because even if the answer given by the pupil is correct, he does not check the degree of certainty "absolutely sure". It seems that pupils underestimate their certainty, they doubt the answers (related) to MS and not those of the SS. It seems that pupils underestimate their certainty, they doubt answers (related) to the MS and not those of the SS. They are less certain of the answers produced by knowledge-related MS. They have a doubt about the certainty of correctly producing the knowledge related to this level of representation. We can consider that pupils are aware of their abilities. We find in these results, the description made by the authors of the metacognition, not ably that of De Boeck and Giasson (2003) which indicates that metacognition refers to the knowledge that someone has about their cognitive functioning

and their attempts to control this process. Awareness of the accuracy of the answer ensures that the pupils in our study are cautious, so they pay attention to what they produce as answers. This caution translates into very low MS scores compared to other levels of representation. We can also consider that in a situation of immediate recognition, pupils are hesitating because they do not always succeed in constructing the inferences, because this information is not necessarily in the text, pupils must quickly build a representation by not referring only to the information contained in the text, but also to use the information contained in their long-term memory, so they must elaborate the inferences to be able to answer correctly. But, they have difficulties in doing so, so it seems that the production of knowledge is related to the degree of certainty. This leads pupils to be cautious about the responses they provide at the level of the situation model. In sum, unlike the level of representation, which revealed significant results solely by the effect of grade level, the degree of certainty also indicates the influence of age. Indeed, even if pupils have the same grade level, the data show a difference between younger children, who have a lower degree of certainty, compared to older children. In addition, the data show that children are aware of their ability. This is also emphasized by Jans and Leclercq (1997) "Knowing how much you know" is valuable in defining your own learning strategies. However, despite the known reforms, the school system has not yet been able to integrate this practice into its teaching / learning process, which would allow the pupil to put in place strategies to produce MS responses, with a degree of very high certainty, which should certainly improve school performance in Gabonese schools.

Conclusion

This work concerns the study the degree of certainty according to the level x of pupil representation. The results obtained indicate that pupils are "absolutely sure" Answers they give for the statements of the SS than for those of the BT and the MS. it is also indicate of that at the MS level, pupils at the same grade level who are slow (Very Low Developer and Low Developer), therefore older, have a higher degree of certainty than younger pupils (Good). The degree of certainty is not taught, yet it occurs when the pupil has to answer a question. The data collected seem to indicate that pupils evaluate their responses " intuitively". We can say that if this ability "to evaluate the answers" is taught, it will allow pupils to achieve better results in school learning.

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- The Inspector and the Directors of the different schools for having allowed us to carry out our work in the various establishments.
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- Primary School Teachers and all the pupils for participating in this study.

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Attachments

Nex N ° 1: The texts

Text N ° 2: Ondo wants to go fishing. He is preparing his fishing rod and bait. He goes to the river with his friends.

The first type of statement: He is preparing his fishing rod and bait.

The second type of statement He goes to the river with his friend.

The third type of statement: Ondo decides to fish with his friends, Ondohasthe necessary to make a good fishing.

The 4th type of statement, Verification

Statement outside the text: the place where they want to go fishing is not far.

Exterior to the theme: Ondo went to see the game.

Text N °3: Bella decides to clean up.She has the necessary equipment. She dusted all the furniture.

The first type of statement She has the necessary equipment.

The second type of statement: It removes dust on all furniture.

The third type of statement: "Bella wants to clean the house", "Bella takes a rag"

The 4th type of statement, Verification

Statement outside the text: his mother asked him to clean up.

Exterior to the theme: Bella wants to ask her older sister to help with her homework.

Text N °4: Steve and his friends go to the fair for the first time.

There, they discover several games. They are all happy.

The first type of statement: They discover several games.

The second type of statement: They are all happy.

The third type of statement: "Steve and his comrades visit the fair", "Steve and his friends have the opportunity to play several games".

The 4th type of statement, Verification

Statement outside the text: Entry to the park is not free.

Exterior to the theme: Steve and his friends go shopping in Mbolo.

Text N °5: The teacher puts an activity on the board. She asks the pupils to take their equipment and get to work. Pupils perform.

The first type of statement :She asks the pupils to take their equipment and get to work.

The second type of statement "The teacher makes a homework assignment for her pupils", "the teacher tells them what they need to do"

The third type of statement: The pupils perform.

The 4th type of statement, Verification

Statement outside the text: The job starts when the signal is given.

Exterior to the theme: The teacher asks the pupils to line up.

Text N °6: During the holidays. The Moussavoufamilygoes to the village. To get there, she takes the bus to the bus station.

The first type: The Moussavoufamilygoes to the village

The second type of statement: She takes the bus to the bus station.

The third type of statement: The Moussavoufamilydecides to spend a few days away from the city», «for this, the Moussavou family buys tickets for the trip"

The 4th type of statement, Verification

Statement outside the text: The price of seats has increased.

Exterior to the theme: The Moussavou family decides to go to the restaurant.

Nex N °2. EXAMPLE Answer Sheet: Text 2

1st statement: Belongs to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
Does not belong to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
2nd statement: Belongs to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
Does not belong to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
3rd statement: Belongs to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
Does not belong to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
4th statement: Belongs to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
Does not belong to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
5th statement: Belongs to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
Does not belong to the statement	<input type="checkbox"/>	not sure	<input type="checkbox"/>	not quite sure	<input type="checkbox"/>	absolutely sure	<input type="checkbox"/>
