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READING COMPREHENSION IN PSYCHOLOGY: STUDENTS OF THE INSTALLED AND DISTANCE SYSTEMS

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Abstract: As teachers we repeatedly criticise undergraduate students for their poor preparation, serious difficulties in reading comprehension and the almost exclusive use of mechanical memorisation. In Mexico alone (INEE, 2009) 81% of students have minimal and insufficient competence in complex cognitive activities: analysis, synthesis and problem solving. The problem has been found in other Latin American countries (Cisneros, Olave & Rojas, 2012). For reading comprehension, a heuristic has been proposed for the strategic analysis of texts, which serves as a basis for teaching Methodological-Conceptual skills in Psychology students (Santoyo, 2001). Here we undertook the task of comparing the performance of students in the distance learning system of Psychology with students in the traditional system in the strategic analysis of texts. A sixth semester group of health psychology and a first semester group of experimental psychology participated. The procedure included a virtual course using the Moodle platform, where the analysis strategy was trained for both groups. The tendency of the distance group consisted of a steady increase to reach almost perfect performance. The face-to-face group showed more variability and did not reach such a high level. The differences between pre- and post-test were significant. This model offers a promising training experience, which aims to dislodge the copy-and-paste habit, and which must be tested in other subjects, or disciplines, that require the reading of empirical articles.

Keywords: Reading skills, virtual course, University students, Psychology.

INTRODUCTION

Technological changes are generating substantial innovations by promoting transformation in work, production and communication, and of course in education as part of the social system. What corresponds

is to make sure that the new technologies serve to substantially improve the teaching-learning process. For this, it is convenient to review the study methods used by university students. Well, it turns out that our students consider the reading process separate from the comprehension process. In the same way, they report that they do not use questions before reading to answer them with the text, nor do they consider it necessary to make use of their prior knowledge to relate it to the reading. For this reason they do not differentiate between reading a newspaper, a comic or a research article. In addition, the teacher must make the purpose of the reading explicit, that is, he must include detailed instructions on what is expected of the students when reading a text (Zarzosa, 1997). In a study with university students (Carrillo, 2007), less than 50% read and understand a text in its entirety, there is a lack of interest in reading that affects the intellectual and cultural level of the students. Cisneros, Olave & Rojas (2012), demonstrated that students use partial (paraphrase) and literal copying as comprehension strategies and resolution of open questions. But the worst thing was that the students of the last semesters did not improve their inferential capacity. In a study with university students (Carrillo, 2007), less than 50% read and understand a text in its entirety, there is a lack of interest in reading that affects the intellectual and cultural level of the students. Cisneros, Olave & Rojas (2012), demonstrated that students use partial (paraphrase) and literal copying as comprehension strategies and resolution of open questions. But the worst thing was that the students of the last semesters did not improve their inferential capacity. In a study with university students (Carrillo, 2007), less than 50% read and understand a text in its entirety, there is a lack of interest in reading that affects the intellectual and cultural level of the students. Cisneros, Olave

& Rojas (2012), demonstrated that students use partial (paraphrase) and literal copying as comprehension strategies and resolution of open questions. But the worst thing was that the students of the last semesters did not improve their inferential capacity.

Academic lag is one of the main problems facing higher education in Mexico. Among the main causes of lag, the “need to work”, “arrive late to class” and “absence” have been reported (Mares et al., 2013). In the virtual situation, for the open and remote system, the flexibility of the schedule and the accessibility allow students to work and dedicate their free time to study, which also renders non-attendance and arriving late without effect. Secondary causes are shared, such as “not studying enough” and the “lack of academic skills” of the students (op. cit.).

This context is what drives us to look for possible actions to solve, or at least minimise, the problems represented by the inadequate pre-university training of students who opt for a career in psychology. In order to promote meaningful learning, which goes beyond paraphrasing and identification, and which does not assume that more complex skills will emerge by themselves, the model of Evaluation, Intervention and Process Analysis (Santoyo & Cedeño, 1986) has been developed, from which a heuristic for the strategic analysis of texts that promotes complex skills is derived. This procedure explicitly seeks a relationship with the APA Guide for Certification in Psychology, considering that the skills promoted with this procedure, involved in the tasks of analysis, evaluation and comprehension, form part of the active process of reviewing specialised literature (Espinosa, Santoyo & Colmenares, 2010). These authors successfully applied the model with three readings, in first, third and fifth semester psychology students. In all their groups, they observed increases in their

scores as they analysed more readings, with differences between groups due to the semester taken. González & Rivas (2017) extended their methodology, for which they worked with a group of undergraduate psychology students at FES Iztacala, with first-semester students, as part of an internship in a laboratory course. The reading materials were from the area of stimulus control, in accordance with the syllabus of the subject. At the beginning of the course, the participants were given a list of the categories, without definitions, and an article by López and Morales (1989) asking them to analyse it with the proposed categories. The score obtained was the pre-test. Subsequently, they were given the definitions of the categories with examples, and the analysis was modelled with a digital presentation of Fuller’s (1947) article used by Espinosa et al. (2010). As course activities, the analysis of five other articles was requested. Finally, as a post-test, the grade obtained by re-analysing the article by López and Morales (1989) was taken as a post-test. The differences between pre- and post-test were significant.

This demonstrates the importance of training in methodological-conceptual skills, including those for reading comprehension of professional texts. The reading reports that students are asked to do are usually done mechanically and without making sense, abusing verbatim and uncritical copying. For these reasons, we took on the task of testing the strategic analysis of texts in our students.

Our objectives were a) to design an instructional experience for text analysis, adding a virtual course on a Moodle platform to the class; and b) compare the performance of students in the distance learning system of Psychology with the students of the traditional system in their performance in the strategic analysis of texts.

METHOD

Two natural groups from the Psychology degree participated, one of 16 students, from the sixth semester, from health psychology of the open system; and another group with 34 first-semester students of experimental psychology from the face-to-face system. The reading materials were from the area of psychology, according to the program of the corresponding subject. The face-to-face group had five readings, while the open and distance group had six readings. The categories of analysis were adjusted from Cepeda, Santoyo and Moreno (2010) and were the following: 1) Justification: arguments for why the study must be carried out; 2) Basic Assumptions: conceptual elements of the work; 3) Objective of the author; 4) Unit of analysis: the basic elements that constitute the object of knowledge; 5) Author's strategy: how the study was carried out; 6) Internal consistency: analysis of the logical structuring of the work components; 7) External consistency: evaluation of the importance of the research, the theoretical and practical implications, and the linkage of the work with the results of other research; 8) Conclusions of the author; 9) Reader's conclusion; and 10) Alternative courses of action: It is an alternative or creative proposal of the reader for new studies, approaches or experimental procedures.

Each category was scored as follows: for the cases in which it must identify or analyze, a score of 1, if it tries to answer but not correctly, and up to 3 if it does so correctly, and in those cases that require deduction, evaluate and integrate, there is also a score of up to 5, when you respond creatively and go beyond the text. With a total of 10 categories, the minimum score for an acceptable level of execution would be 30, so a precision index was calculated, dividing the score obtained by each student by 30.

The students had to read the categories with

examples, see the digital presentation of the analysis of an article (Fuller, 1947), and answer a questionnaire about the categorization and the examples. Among the questions in the questionnaire were: Which categories can you find as is in a text? Which categories do you have to build, develop or invent? What are the categories that require another or other texts to be completed? This activity had a 5% weight in the final grade, and was requested at the beginning of the course, before any of the readings. The questionnaire was fed back individually. In the same way, for all the readings, the feedback was personalized and the scores delivered individually. Passing the course represented 30% of their grade in the subject.

RESULTS

Participants' accuracy rate was calculated for each reading. The execution was graphed as the sessions progressed, as can be seen in Figure 1. For the distance group, the initial index was .39, and it grew to .93 for the last session. The differences between the first and the last evaluation were significant. The trend was a sustained increase to reach near perfect execution. For the face-to-face group, the average reached in the pre-test was 0.31, and it increases considerably after the modeling, and as the students have more practice, as can be seen in Figure 1. The post-test resulted in a higher score. lower (0.84) than the last practice session, with a more irregular trend. The differences between pre- and post-test were also significant (test $F= 6.713$, gl. 3, 33, $p = 0.004$).

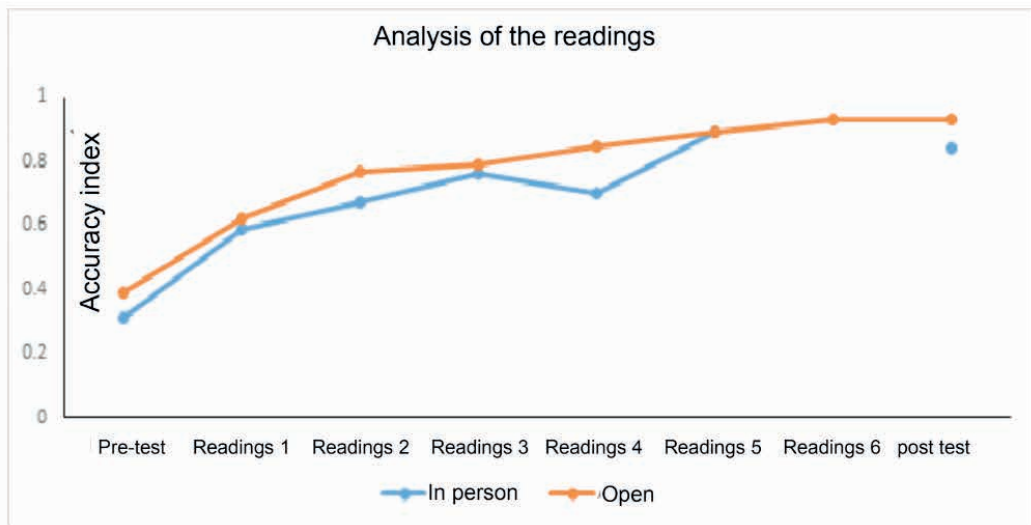


Figure 1. Shows the average accuracy rate for student readings from the two systems, before, during, and after modeling. For the pretest and posttest, the same reading was used, and the others are numbered as Readings 1 to 5 for the face-to-face system, and 1 to 6 for the open system. Source: self made.

The increase in the first analyzes was due to the categories that required only identification, which was mastered very quickly, and as the sessions progressed, the score in the evaluation tasks increased, and finally those of creative elaboration. We have to point out that the pre-test score for this face-to-face group was well below the scores achieved in the studies reported by Santoyo et al. (Espinosa et al. 2010; Santoyo, Colmenares & Morales, 2010), although higher. than the average for the first semester reported by Espinosa et al. (2010), but not higher than the third and fifth semesters of these authors. In contrast, the distance group presented a much higher average than the one reported by these authors.

DISCUSSION

The virtual course on the Moodle platform was successful, starting with no more than 40% accuracy in the analysis of the articles corresponding to their subjects, an increase of 24 and 31 percentage points was achieved for the first reading, and an increase of 54 and

53 points, respectively, for the posttest. The constant tendency in the increase of the index of precision as his experience in the analysis of texts advanced, was consistent with what was found in the studies cited above. To try to explain the high averages of the precision index in our work, one possibility is that the students of the open and distance system have more precision due to their history in the sixth semester compared to the first in the face-to-face system. Secondly, the type of students could also influence, Well, the first are older students, most of whom work, although not always in something related to Psychology. Finally, some are even studying a second degree; or are in the process of educating their children.

Perhaps a flaw of a methodological nature consists in the lack of control groups. It is one of the pending issues that we are trying to resolve in the short term. But our experience in teaching for many years gives us the confidence to argue that without training, the performance of the students does not reach the levels that the students did reach with our training, in almost all skills: analysis,

evaluation, synthesis and integration.. In the intervention in situations outside the laboratory, it is not always possible to wait until the end of the semester to evaluate a control group that could have benefited from the treatment. In any case, we prefer to measure over time, to document the changes in the manifestation of abilities,

We begin this work by saying that educational action must not be limited to information, but rather transcend action and problem solving. We hope that studies that seek to expand the strategic analysis of texts will follow this direction. By predicting the effects of its adoption, we assume an improvement over the writing of a theoretical review, and also of research projects and reports, with which a conjunction of knowledge, understanding and skills is sought, and this combination defines the concept of competence.. What we mean is that the training of a strategic analysis of texts, which leads to the mastery of another skill, is considered as transfer of learning. In our laboratory we have dedicated ourselves to this topic. González and Rivas (2015) designed a virtual environment that included, such as professional practice contexts, descriptions or short vignettes of case studies, case histories, and research problems. The results of said training, measured by a methodology exam, favored the post-test, with a 46% increase in overall satisfaction regarding their ability to present their methodological skills. In a subsequent study, González, Rivas, Mares, Rueda, and Rocha (2017) demonstrated that individual training in experimental psychology produces better results, not only in methodology exams, but also in group work for research projects. In the Psychology career, students have to learn science methodology, in addition, they must be prepared to carry out treatments and determine their effectiveness, Therefore, the teaching of statistics is a component that will only make sense within

the context of the research and intervention process. For this reason, we tried a didactic experience that covered both aspects, first, reading comprehension with the strategic analysis of texts, so that they were critical consumers of information, both theoretical, methodological and statistical, and second, that would allow them to solve problems in their field. (González and Rivas, 2022a). We have also used the strategic analysis of texts in other aspects of the training of Psychology students (González and Rivas, 2022b). In this work, the students reviewed published articles on clinical psychology problems, applied the analysis technique and used the virtual debate, where the students simulated the therapist-patient communication, in a first interview, to determine the psychological problem that affected the patient. In the near future, we plan to combine the various procedures with the strategic text analysis model.

The fact that students first identify, then evaluate, and finally contribute creatively reveals that only students who start out as critical consumers of literature end up as problem solvers. This critical attitude is what allows us to question all arguments about the effects of treatments, therapies, training, etc., on behavior. For a student to demonstrate that an intervention is effective, he needs to test it, even when it is a procedure carried out by the student himself. Viewed as a problem solver, the student must evaluate the problem, visualize a solution, and test whether the problem is actually solved. We want to see in each student a problem solver. The notion of transfer covers the importance of a context that allows the use of what has been learned to solve new problems. And finally, this realistic context must give the student greater power over the process of his own learning; the teacher stops directing a rigid and inflexible process, and the student makes the pertinent choices at each step of the learning process,

until leading to the transfer, solving a new problem (González & Rivas, 2016).

Finally, we are committed to a greater adoption of the strategy at all levels, not only because of everything said here, but also because it is explicitly designed to be in parallel with the APA guidelines, which are not only the standard in Psychology, but also it is being accepted in other disciplines to guide the presentation of papers in congresses, and even for the reception of research articles. Thus, training in the model will represent a great advantage for students who need to make reports of all kinds and for teachers who can carry out training of this kind. We will continue in search of the formula to achieve meaningful learning in our students.

greater number of studies are required, which, like this one, contribute to its development.

CONCLUSIONS

We have presented a study that increases the generality of the Strategic Text Analysis Model. In terms of extrapolation, we know that students in advanced semesters improve analysis and evaluation skills. We also know that the type of subject is not an impediment, as long as they include readings of empirical articles. We have seen that students can achieve a critical point of view when, after the analysis of the readings, the categories of the model are used for other tasks. For this reason, we do not doubt that with adjustments, the model will be adapted for the analysis of conceptual texts and methodological texts. In fact, it is a line of research that we are currently working on, from which we hope to have the results in the short term. One of the most meritorious characteristics of the model is its great capacity to promote research on its effectiveness in different situations. Our work is guided by the conviction that we have a perfectible strategy, and we seek the conditions that allow it to be established in conjunction with collaborative work or with other procedures. Since virtual education is a modality under construction, a

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