

Note taking – A strategy to reinforce interdisciplinary learning process.

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Abstract

One of the techniques and strategies that are used by pupils and students during their learning process in the classroom and at home is the note taking process. This process will not only be discussed as a strategy and technique included in the group of techniques and strategies of cognitive nature, but it will also be discussed as a truly intellectual and linguistic process.

This study is based on an intertwining of qualitative and quantitative studying methods, because different authors and many works have been read and consulted in the fields of didactic and cognitive psychology. In the meantime a questionnaire has been conducted with a sample of 270 pupils and students from secondary schools, high schools and universities in Tirana, in order to better see this process in their everyday practice, how close and how intricate a part it plays in the process of learning, what are some of the difficulties encountered, how can they be noted, or what are some suggestions that could be made regarding this process.

Key words: taking note strategy; reading difficulty; linguistic factors; interdisciplinary interaction, abbreviations; symbols.

Problems of research / Research focus

Studying does not mean to learn by heart what is always served as new information. The learning process implies the conservation of information and knowledge in the same way that it has been learned in order for it to be ready for use whenever needed. To this end the quality of information that is being taken in, the methodology or the way to take it in, favors not only the recording of the information, but also the conservation and retrieval of knowledge in the long term. The strategies used to note or spot, separate, understand, integrate and memorize knowledge are fundamental to the quality of the learning process. These strategies help to find and localize key information in order to avoid a student coming back to the same information and also to ease its memorization.

But what are strategies? According to different didactics scholars they are defined as components, techniques, tactics, plans, intellectual actions, cognitive or functional abilities, and as ways to find the right solution during the learning process (ASDIFLE, 2003)

Methodology of Research

For the aim of this study, a questionnaire was posed to pupils of secondary education, high schools and students in the faculties of law and foreign languages at the University of Tirana, in the Albanian capital. The number of sample chosen is 270 individuals and about 67 individuals for each phase of the education system. Through the questions that were addressed to these categories of pupils and students we aim at shedding light on the space and role that the note taking technique or strategy has during their learning process and whether they prepare before hand to be successful at this strategy, what are the ways used to take notes, and whether they used abbreviations or symbols. There were also questions on what character or type the used abbreviations and symbols were, and if they were borrowed there is a question on what is the major source for this borrowing. Are they made up or are they mixed? Are they

a unique set in use by all or are they individual? Do the students feel that they have a codified system of abbreviations and symbols?

Instrument and Procedures

The questionnaire questions were closed-ended questions so as to make it easier to collect and process the outcomes data. This method enables collecting answers about many topics in a short period of time and it provides access to a great number of students.

The questionnaires were completed by the students in classrooms where the authors of this study were present. In terms of the time allowed, they were given all the time needed. This particular method was chosen as a very effective one for the collective administration of the questionnaires, which makes it possible to avoid outside influence on individual answers and to remove any doubts the respondents might have concerning certain questions. The questionnaire was conducted in December 2012 and it was completed by 270 students.

It must be highlighted that the data collected through the questionnaire have a quantitative nature.

Data Analysis

To enter the data the first step was creating graphs in which different categories of possible answers were grouped. And since the questionnaire was neither digital nor electronic the data was entered manually. To minimize human errors in this process, all the data analyzed were first entered into the tables printed on paper and then into the computer. Both data transfer processes were double-checked to continue with calculating the percentage of the given answers. The descriptive method and the frequency analysis were used for the graphs. The questionnaire items deal with the following: If students take regular notes during the lesson (Fig.1) or during the learning process at home (Fig. 2); if they do preparatory needed learning (Fig. 3); if they use different techniques as applying abbreviations and different symbols (Fig. 4); if the knowledge they have in foreign languages and in subject areas like in maths, physics etc, help them to enrich the scope of the abbreviations and the symbols (Fig. 5); if they invent them on their own (Fig. 6); if they are able to read their peers' notes without any difficulty (Fig. 7); if there is a table or a glossary of common symbols' in the Albanian language placed at their disposal (fig.8); if it is necessary to have a common system on abbreviations and symbols for each subject area (Fig. 9). The students had to choose between three possible replies, Yes, No, Sometimes.

Results of research

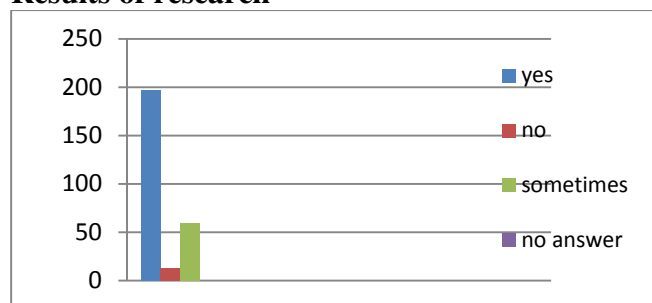


Fig. 1 yes- 197, no-13, sometimes – 60, no answer – 0. Pupils and Students were asked if they took notes during class and they could answer by saying yes, no, and sometimes.

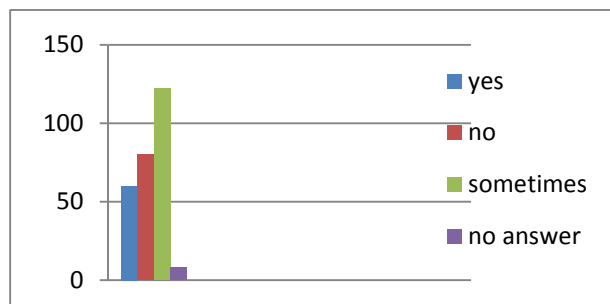


Fig. 2 yes-60, no-80, sometime 122, no answer-8.
 Students and pupils were asked whether they take notes while reading and studying at home.

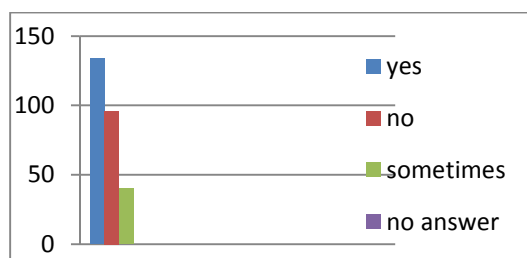


Fig. 3 Yes-134, no-96, sometimes-40, no answer-0
 This graph reflects the answers of pupils and students when asked on whether they prepare before hand, and whether they prepare the adequate measures to implement this strategy.

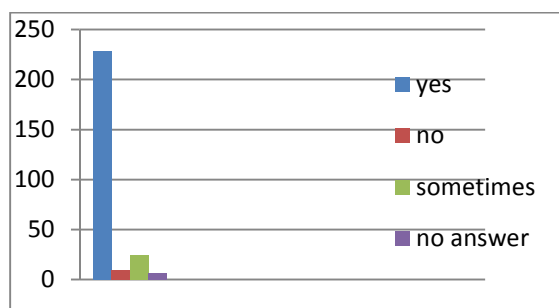


Fig. 4 Yes-229, no- 10, sometime- 24, no answer- 7.
 Pupils and students were asked whether they used abbreviations and symbols during their note taking process.

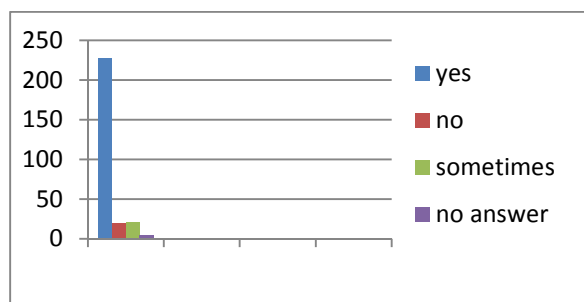


Fig. 5. Yes-227, no-19, sometimes-20, no answer-4. The question reflected in the graph sheds light on whether the knowledge of the student in scientific languages such as mathematics, physics has helped them enrich their abilities in using abbreviations and symbols.

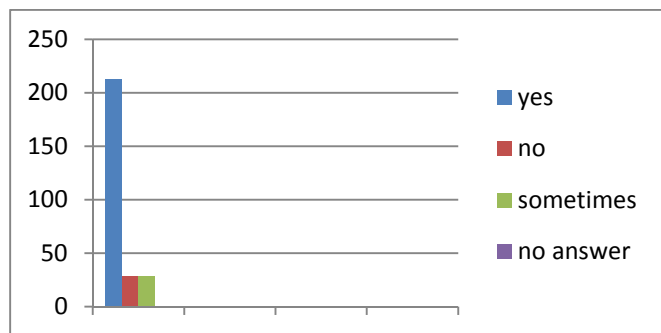


Fig. 6 Yes- 213, no- 28, sometimes 28, no answer-1. Pupils/students were asked if they have the ability to use abbreviations and symbols they have invented.

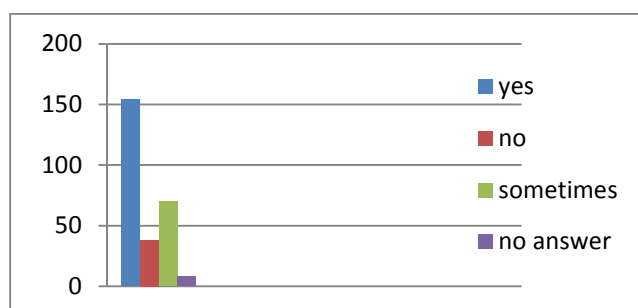


Fig. 7 Yes- 154, no- 38, sometime- 70, no answer-8. The graph shows data regarding a question on difficulty encountered during reading and understanding of the content of the notes taken by a friend.

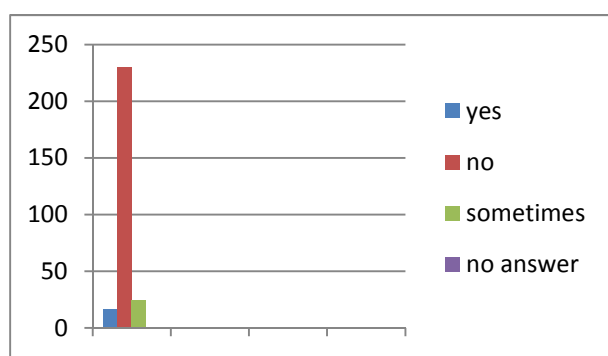


Fig. 8 Yes-16, no- 230, sometimes- 24, no answer-0

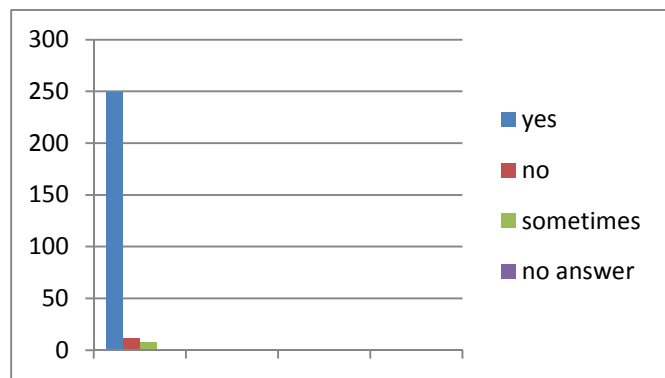


Fig. 9 Yes-249, no-12, sometimes-8, no answer-1 The graph shows the answers given regarding the necessity of a common system of abbreviations and symbols in the Albanian language.

It can be noted, from the comparison of the two graphs (fig. 1 & fig.2) that this process is more used during class than while studying at home. At home the studying conditions are completely different. In this context, the pupil/student can put more at the disposal of his learning process in terms of time and literature, while in class both these factors and elements are served in small amounts and that is why pupils/students believe it is very useful to use note taking in order to gather the information relayed through the lecturing of the teacher or professor during class.

Note taking means establishing the necessary conditions. We can see from the graph (fig.3) that the majority of pupils/students have undertaken preliminary measures to implement the note taking process in an adequate manner. They clarified that they are equipped with the necessary means, such as pens, notebooks, and there are even some who read the new lecture before coming to class. This element, which at first glance might seem ordinary, is quite important because one of the strategies suggested by didactics scholars and psychologists in the field of cognitive psychology relates specifically with the preparation phase of the pupil and the establishment of the right environment regarding the discussion of an issue and the transmission of new knowledge in a specific discipline.

Taking notes does not mean writing word for word what has been said by the teacher during class. Being conditioned by time which is predetermined and limited, it is impossible for the pupil/student to remain loyal to every word that has been said by writing it down. To this end they are obligated to use other techniques in order to overcome this difficulty and one of these techniques is the use of abbreviations and symbols used by the student or pupil. It is noted from the graph that almost all the pupils/students use abbreviated words and symbols during their note taking. Only a very small part of them do not use such means (fig.4).

The question reflected in the graph above was accompanied by the request to provide a few examples of abbreviations and symbols used by the pupils/students in order to be able to analyze the nature of these means.

♂boy, Σ in general, \times for, α , \neq different, differing, differs, \in is part of, + and, & and, # parallel, @ in, \Leftrightarrow on the contrary, vice versa, / or, \leftrightarrow on the contrary, \uparrow up, \downarrow down, ζ – double or even, E-intensity, F- force, S- surface, \ddot{e} -is, nqs -if, fls –speak later, VKM- Council of the Ministers Decision, psh –for example, xber –composed of, mqs- since, chemical symbols, the most used word with a capital letter, klm –fare well, flm- thanks, vert8 -really, and, or, nr -number, is -is, = equals, the same, el -element, dmth-i.e., srz- seriously, fun-function, skgj –no problem, vtm alone, nj-tj-each other, I-more important or exception from rule, sh -example, ush -exercize, kl - class N° - number; f° - page, \Leftrightarrow i.e. \Leftrightarrow Reciprocal, Σ sum of..., $>$ larger, // parallel, ♀ female ♂male.

If we closely analyze these written elements we could group them according to the nature of the abbreviation into words contracted to initials, a group of letters and in conventional signs and symbols.

Symbols

We use a symbol to sign a concept, idea, or logical connection such as: Σ sum of... \gt larger, \parallel parallel, ♀ female ♂ male. We note that the nature of symbols used by pupils and students has not been invented by them entirely, but they have been taken as are by subjects of scientific fields and mainly from mathematics and physics, such as E-intensity, F- force, S- surface, Σ , € is part of, $=$ equals. The same is true for, $+$ and, \neq different, differing, differs, $\%$, $>$ $<$ on the contrary, $=$ equal, the same, $/$ for each, \wedge over, high, Δ includes, A labor, V speed, h time, _____bring about, s -seconds, min –minutes.

This claim is not only seen in the nature of the symbols used but is also confirmed even by the pupils when answering whether in order to enrich their array of symbols, they have been helped by knowledge they might have in exact sciences like physics and mathematics. (fig.5)

This proves what was said before and as a result we can add that exact sciences are a timeless and complete resource for the creation of a glossary of standard abbreviations and symbols. Pupils and students are capable when taking notes in class but also at home, to sign the information that is being transmitted to them in a social subject by using symbols of an exact science in a very short period of time. At this juncture we are dealing with a momentary crossing from one discipline to the other and at this point exactly in a certain way we have an intertwining of the interdisciplinary knowledge.

Abbreviations

As regards abbreviations we note that the majority of them have a more personal nature. (fig.6)

These are mainly represented wither with the use of conventional signs (\leftrightarrow on the contrary, \uparrow up, \downarrow down, \checkmark and, or@ in,) or abbreviation of words into letters (ç – double, ë –is, nqs -if, fls –speak later, VKM- Council of Ministers Decision, psh –for example, xber –composed of, mqs- since, klm –fare well, flm-thanks, vert8 –really, nr - number, is –is, el -element, dmth-i.e., srz- seriously, fun- function, skgj –no problem, vtm-alone or only, nj-tj, I more important or exception to a rule, sh -example, ush -exercise, kl – class). We have also noted that among these abbreviations there is also use of foreign words such as “is” for the translation of the same verb into Albanian which is a longer word, thus the English version is used since the two words have the same meaning and are different only regarding the length. We also noted that in addition to abbreviating words, numbers are always used such as in the case of ver8-true, where the number offers the rest of the phonological sound of the word, while the other words are simple abbreviations of the words maintaining some of their letters and phonemes. We mentioned above that each word has its form expressed by phonemes where each carries of linguistic and grammatical function. By shortening a certain word, we are in fact intervening in the structure of its phonemes, while maintaining the same content. Could this mean that these words can be used everywhere and by everyone in their abbreviated form? Are they understandable by all and in every other context?

To this end students and pupils were asked whether they faced difficulty in reading the notes taken and in understanding the full meaning of the notes of a friend. (fig.7)

It can be noted that the majority of the students have difficulty in reading the notes of a friend and they have presented reasons for this: everyone uses their own symbols which change from

individual to individual, the writing is not decipherable, abbreviations and symbols are personal, there are mistakes, the note taking method is different, and there might be a lack of coherence.

We thus reach the conclusion that the abbreviations of words, i.e. the shortening of phonemes and morphemes composing it, maintain the meaning of the content only in the context where this transformation is done and we cannot accept for any reason that this transformation can accompany the given word in every context in which it might be used.

That is why in the majority of published articles and studies, a part of the authors are careful in representing either in the beginning or the end of the text, the abbreviations and symbols that they have used in their work by presenting them in the form of a table or a mini glossary. We have seen that this process remains closely personal and everyone can create their own system of abbreviations and symbols.

But is this the only way? Is it necessary to have a common system of abbreviations and symbols which can be used in fields and texts of various natures and which could be taught and learned during the education cycles the pupil goes through?

To this aim the pupils and students were asked whether a table or a glossary of common symbols in the Albanian language had been placed at their disposal to help them (fig.8)

Discussion

According to La Rochefoucauld in his study entitled “*Réflexion ou sentences et Maximes morales*” (1665), note taking is one of the strategies of the learning process. It serves to complete the information through additional explanation, examples, clarifications, to note what has been presented as most important by the teacher, and they also serve to increase concentration during class. Note taking methods are quite various, although the systematic use of a codified system of abbreviations and predetermined symbols enables one to take good notes, by not focusing on a word for word writing but on the structure of ideas.

A pupil with good qualities in the use of techniques and strategies in the learning process clearly understands that in order to get to the message, idea or the new information, he/she needs to rely mostly on the context in which all the elements that will lead to the new knowledge are presented.

Different authors in the teaching field, such as O’Malley and Chamot (1990) in *Learning Strategies in Second Language Acquisition*, Cambridge, Cambridge University Press, Rubin (1989) *How learner strategies can inform language teaching*, in *Proceedings of LULTAC*, Institute of Language in Education, Department of Education, Hong Kong), have presented several classifications regarding the strategies and techniques that are used during the learning process by pupils and students. Among them there are meta-cognitive strategies (planning, directed attention, selective attention, self-management, problem identification, etc.), while there are also cognitive strategies which include an interaction of the material to be studied with its intellectual processing, such as repetition, grouping, *note taking*, deduction, induction, etc.

In order to better and clearly understand the meaning of *note taking* not just as a phrase, but also as a term in the field of didactics, there is a need to clarify the meaning of the word “strategy”.

Paul Cyr and Claude German, *Les stratégies d’apprentissage*, 1998, have defined strategies as ways of behavior, techniques, tactics, plans, intellectual conscious operations, cognitive and functional abilities, and as techniques for the solution of visible problems in the individual that is in the learning process. They are seen as a group of operations implemented or applied by the pupil/student in order to absorb, benefit from, integrate and reuse new information and knowledge.

Based on this definition and on the groups of strategies according to O'Malley and Chamot (1990), we can claim to call the process of note taking a technique, intellectual conscious operation, and cognitive and functional ability, which is applied by the pupil in order to gain and reintegrate new information and knowledge.

Taking into consideration Saussure's theory (Saussure, 1969) we can note that notes taken by pupils and students, even though they are not represented in the form of phonemes or morphemes in order to have meaning, carry meaning for as long as the student is able to decode them and gather from them the information that he or she needs. This implies that these abbreviations and symbols become equal to linguistic units that carry meaning in communication such as morphemes and phonemes.

Note taking methods and techniques are quite various. However, the systematic use of a predetermined system of abbreviations and symbols makes the process easier. We do need to take into consideration that this system should not be based on a word for word approach, but on ideas and structures.

One of the ideas that might come as a result of the answers given in the survey is specifically the possibility of having a common system of abbreviations and symbols in the Albanian language. The graph in figure 9 very clearly reflects the opinion of students and pupils regarding this suggestion. The majority of them, some 249 students and pupils, wish to have at their disposal a glossary of basic and unique abbreviations and symbols in the Albanian language.

Note taking during the learning process requires the establishment of its own environment that goes towards standardization, since it is an unavoidable phenomenon. Pupils/students always have the tendency to develop this ability on their own by establishing personal systems and forms of abbreviations and symbols. They are not only limited to instantaneous creation at the moment of note taking, but also involve knowledge from various fields, thus transforming the note taking process into an interdisciplinary field.

Conclusions

Note taking during the learning process includes the understanding of the information and its treatment in such a way that it can be reused at will and when necessary. In this way the student/pupil does a restructuring and reorganizing of the information, by giving his/her own choice?

Note taking process during class or when studying at home is complex and in close relation with other factors both cognitive and socio-affective.

Depending on the nature of the abbreviations and symbols use, the note taking process is present as an interdisciplinary process. Abbreviations and symbols used are not just invented by the pupil/student, but they are also borrowed from other subjects, as well borrowed by foreign languages.

Note taking is and remains a strategy that is in function of the learning process. It realizes the connection of what is being received as new information with previous knowledge and it is also one of the aspects for the realization of interdisciplinary learning processes.

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