EVALUATION OF STUDY COMPETENCE IN PUPILS BETWEEN 12-14 YEARS OLD

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Abstract

There are three main study areas of guidance needs for pupils in Compulsory Secondary Education (CSE) which are academic development, personal and social development and the area of professional career.

The area of academic development is where the knowledge to be acquired by the pupils, attitudes towards efficient learning in schools and the skills of efficient study are inculcated, the latter being the objective of our study.

The research was taken from a sample of 80 school children between twelve and sixteen years old in a Secondary School in Santiago of Compostela (Spain). After analysing the results obtained we can see several motivations that justify the need to improve learning and study skills used by pupils. Normative arguments exist, needs that are exhibited by pupils and by teachers, especially tutors, of a scientific nature (connection with academic work) and to develop new strategies taking into account the contributions to the pedagogic research in this field.

In this sense the application of an innovative programme of skills and study strategies in communication could be of interest.

Key words: Evaluation; competencies; academic development; intervention strategies

Introduction

There are three main study areas of guidance needs for pupils in Compulsory Secondary Education (CSE) which are academic development, personal and social development and the area of the professional career.

The area of academic development is where the knowledge to be acquired by the pupils, attitudes towards effective learning in schools and the skills of efficient study are inculcated, the latter being the objective of our study.

The aim of the development of study abilities and school learning is to achieve academic success through the control of techniques, resources and elements of learning and the study objectives of the pupils.

According to Heimlich and Pitleman (1990) this pedagogic objective includes a series of school activities that cover understanding and fast reading, the elaboration of forms, graphs, summaries, conceptual maps, notetaking, diagrams of concepts, etc.

Among the main problems and lackings that exist for pupils in Compulsory Secondary Education with respect to study are the following:

1º- Lack of an effective school work method

2º- Deficient planning of school learning time.

3º- Lack of adequate attention and concentration.

4º-Insufficient continued effort and perseverance in studies.

5º- Lack of motivation for school learning.

6º- Difficulties in the elaboration and interpretation of schemes, graphs, summaries, synoptic charts, etc.

7º-Inexistence of comprehension and speed in the reading process.

8º- Socio- emotional alterations that influence school learning negatively.

9º- Lack of sufficient memory.

1. Strategies of school learning and orientation in study

Preoccupation about the strategies of educative learning is not new, but over the last few decades a greater interest has existed through the belief that by improving the methods and work systems of pupils, this would have a repercussion on their highest performance level. (Hernández Puna and Mondejar, 1990).

In the last few years, this interest has increased especially due to the contributions of cognitivism which has modified the emphasis of the psychopedagogy of learning giving the student a more active role in the learning-teaching process. In the current situation the main preoccupation is about how to learn and assimilate information rather than the simple contents of learning.

The strategies of educative learning represent a series of methods for introducing a study project. On a learning level, these are series of resources that pupils know how to use, so as to learn in an efficient and better way (Beltran, 1996).

For Nisbet and Shucksmith (1987) the strategies of learning are integrated sequences of methods that are chosen with particular aims and for Mayor (1993). It is student behaviour that tries to influence how they processed the information, for example, how they underlined the main ideas in a text.

Generally the strategies are methods that are used in a school context to reach particular objectives of educative learning. In this sense it is necessary to point out the differences between other similar terms, such as tactics, techniques, styles and skills of learning and the cognitive styles (Bernard, 1988).

With reference to the contents of strategies of educative learning we must distinguish between large and small strategies.

In the former, general and very transferable intermediaries are used, being differentiated between *focus* and *study* orientations and *articulation* strategies, *regulation* and of an *affective- motivational* nature.

In the micro strategies of learning the intermediary used an specific and barely transferable to other situations of learning and we could also point out the strategies of *repetition* and *elaboration*.

The focus of orientation of the study of pupil learning mainly comes together around two currents. The first one reinforces the term "*Study techniques*" and the second emphasizes the concept of " *learning to learn*".

The first tendency backs up of the concept of *study* interpreting it as a training in a series of skills, resources and techniques for its development.

The second current puts a greater emphasis on *school learning* that is understood as a task that looks for a meaning and a full understanding (Mayor and others, 1993).

The perspective of the learning of *study techniques* is based on te psychology of learning and the behavioural orientation of Skinner, Bloom, Covington and et al and they emphasize the development of skills with relative independence of the educative aims, trying to train pupils in techniques and reinforcing the mechanisms of learning, with the aim that they can choose the particular skills (strategies) for the specific tasks that they are going to undertake. The greatest inconvenience that this perspective presents is that the pupil can know a lot about study skills but not be involved at all in style and working practice.

The tendency of *learning to learn* has its origins in the human psychology of Rogers and Kelly, but it is necessary to point out Gibbs (1986), Entwistle (1988), Marton et al (1984), Schemck (1988) etc.

Of the current that we call *learning to learn* is necessary to underline the importance of objectives and meanings and less the orientation of study techniques. In this tendency the learning of techniques and study skills is not so important but rather that the pupil explores his own potential and develops learning strategies for the search of understanding and meaning (Kirby, 1984).

Gibbs (1986) is the main representative factor of this current which is favoured by basing itself on the conceptual development of the pupil rather than learning by heart; comprehension rather than speed, in the search for their own learning strategies better than mecanical appliance of the skills and techniques that are taught and the meaning and personal understanding of what one does, rather than in the simple devices and so on.

Anong the most important authors of this tendency we can point out Entwistle (1981), Gibbs (1986) etc. Gibbs developed a programme of how to teach how to learn basing himself especially on the pupil and he interprets that the most outstanding task with which he is faced is the development of a learning model and its nature . According to this author we have to base ourselves on the skills that the scholar has to achieve, his transformation and extension, being the tutor the teacher that stimulates these gradual modifications through discussion groups linked and based mainly on the experiences that the pupil has in each study tasks.

Martin and Ramsden (1986) made a comparison between the focus of the study techniques and learning to learn and they observed that the former is less effective in the long term and more popular at the beginning. However, both bring about the integration of questions that are common to both, in such a way that both context and experience as well as a model and a systematic programme of learning strategies are necessary.. Nisbet and Shucksmith (1987) show that the pupil needs to be helped to identify his own problems and to offer him help through learning models.

In the pedagogic practice of teachers they shouldn´t be resigned only to teaching what to learn but they should pay more attention to teaching how to learn (learning process), in such a way that teaching integrates not only teaching contents but also the way of achieving them, as pointed out by Nisbet and Schucksmith (1987) when they say that the most important way to learn is " learning to learn" and the most outstanding knowledge is one´s own.

Considering the pedagogic consecuences of the use of learning strategies, the *first* one is based on using the initial didactic organizers that are the previous resources that are used as a cognitive bridge for the relationship of new knowledge with those that pupils have in their cognoscitive structure. These elements try to fill the existing gap between what the learner knows and what he needs to know and for this reason a basic scheme , a conceptual script, a graph can be used.

The *second* consecuence has to do with learning focuses understood as the way in which pupils learn that they are in direct relationship with the determination shown by the people towards study and we should make reference to superficialty which is characterized by trying to fulfil the requisits of the activity only. The strategic focus is characterized by success in studies and the complex focus by giving a personal context and by the wish of understanding the complete meaning of what is being studied.

Selmes (1988) studies in depth the components of the aforementioned focuses and shows that the factors united to the superfitial focus are the predominance of passivity,

memorization and isolation of ideas among the pupils and in the complex focus the personal integration of contents and the search for interconnections.

The strategegic focus according Entwistle (1988) complements the aforementioned and it is characterized by the desire for success in studies with the use of a minimal effrt and of any type of resources.

2. Antecedents and current situation of research into the area of study skills.

The raising of the quality of the strategies of educative learning is essential in the improvement of the process of learning- teaching and the LOGSE considers in its articles 1.1 c) 19.c) and 20.4 the need for pupils to learn for themselves and to achieve suitable skills and abilities of intellectual work.

On the other hand both teachers and pupils are conscious of the difficulties that the latter possess when they study where problems arise linked to the lack of attention and necessary concentration, poor planning of study and work time, lack of methodology and efficient study techniques (understanding and rapidity in reading, summaries and plans, note taking……) lack of instrumental knowledge, etc.

Studies made by Yuste (1987) and García Nieto (1989) conclude that pupils with highest marks obtain simultaneously higher marks in attitude toward study, motivation and work planning, in such a way that pupils with a greater academic performance also develop aspects of motivational and cognitive nature in a greater range than those considered as school failures and having learning difficulties.

The pupils that can understand the strategies and study techniques and learning often use methods that include the active review of their own studies, the revision planning and checking up of the efficiency of their abilities, with their natural use of mtivation, with knowhow abilities and the metacognition in their process of learning.

On the other hand Entwistle (1988), Selmes (1988), Novak and Gowin (1988) show that the cognitivism and pupils own experience that learn how to access to two essential pillars in the strategies of educative learning.

On psychopedagogic intervention programmes on study and learning strategies that introduce improvement processes we take a reference from Alvarez et Al (1988) where we can see the main influence in study techniques and less on the context and school curriculum .

The second learning programme and study is by “De la Torre” (1992) that prefers to understand the aspects which refer to metacognition, knowhow, meaningful learning and so on.

On ways of specifying the teaching in learning strategies and study the most important are the intensive courses given by new teachers for them or in schools which for a certain time (e.g a week) teach methods and techniques. After this time this knowledge is shown to the pupils but without special control. This is the normal system and the least effective.

Short courses for teachers are another way that are guided towards this, so that they develop it with their pupils, the teachers being different institutions or just one which applies for the course.

When this stage of teaching of the teachers or tutors is over these are the ones in charge to integrate the programme of strategies of study learning in the school. This initial preparation is followed by a control phase with frequent meetings with the course teacher and the tutors participating so as to evaluate the improvements. This type of activities can lead to more successful results than the previous ones.

To reach a good quality in a learning programme in the strategies of school learning the collaboration of different teachers on different levels in a school and its coordination is totally necessary. The most suitable type of teaching is when an expert coordinates the elaboration and carrying out of the contributions of the leader and the tutors.

3. Research elaboration

If we start from the problems which exist in pupils from CSE referring to the study these generate into a series of needs in the field of knowledge, of the attitudes and abilities that will be used to have a complete analysis when they are explored and to show the pedagogic proposals of change and improvement.

The *objectives* of this research are the following:

1º-To analyse the elements of diagnosis of learning abilities and study of its ulterior application to the pupils concerned.

2º-To determine the elements and relevant factors which influence their efficient learning.

3º- To find out the coefficient of validity and the reliability of the test taken.

4º-To diagnose the needs of strategies and learning abilities and the study of pupils of the first years of CSE.

5º- To relate the needs of teaching for studying with a proposal of an intervention programme to improve learning and studying abilities.

The *result sample* was made up of a group of 70 school children (37 boys and 33 girls) between 12-16 years old in Santiago (Spain). Although this school is in a rural area, the pupils come from here and from semi urban areas, with a socio-economic, cultural

level below or close to the medium. This origin in a more or less favourable way, according to the case, the environment which influences the learning process.

The main variables analysed were the year, the sex and the age with relation to the items that appear in each one of the questionnaires.

For the *research* we use the techniques and study habits, questionnaire by Alvarez González and the intellectual work and study questionnaire, middle level by C. Yuste from TEA and CEPE respectively, scientific proofs of validity and reliability that are accredited.

The C.H.T.E. has the individual and group diagnosis of some aspects as an aim that influences the study tasks to make the prediction of its influence in the tasks of learning easier and, consequently they elaborated and carried out some programmes that modify the negative aspects and reinforce the positive ones.

The aspects that were taken refer to three general areas: physical and environmental conditions, the planning and structuration of time and a general idea of basic techniques. This is divided into seven parts which are a common study attitude (predisposition, interest and motivation), study area (fixed study place), health (personal organism), workplan (study-planning), study techniques (how to study), exams and exercises (work rules), works (plans, resources, development and presentation).

The C.E.T.I., follows the valoration of the pupils attitude towards studying in general and towards teachers in particular; indicating the internal environment to be able to study and the positive motivations that force them to do it.

The areas and aspects that are valued are the following.: previous conditioning of study (valoration of the attitudes of the pupil towards study), the external environment (considering as a condition for studying, silence, order, etcetera, estimation (the way in which the person distributes his occupations on a short or long ter), personal work (evaluating suitable and active that is his work method, the capacity of concentration in study and the way he takes in the lessons) and the spontaneity (appreciating the honesty of the person when he answers the questionnaire).

To analyse the information obtained from these questionnaires we use the computer programme windows SPSS.

4. Data analysis and interpretation of results

From the sample the 52, 9 % are male pupils and the 47.1 are female pupils. Most of these pupils are between 12 and 14 years old (48.6 % 13 years old, 32.9 % 12 years old and 12.9 % 14 years old), existing a very small representation of pupils between 15

and 16 years old (the 2.9 respectively). A 40 % of the sample makes the 1º years of CSE and the 60% makes 2º of CSE.

A global study of the data obtained confirms the heterogeneity of the sample, considering that the percentages are divided without great differences in the different categories of answers. Besides a limitation is added and it is that the C.E.T.I. considers an intermediary category where a high number of answers is collected, with very high percentage that are only explained by the lack of position or as an alternative to " no say no answer".

In an analysis of the items that are grouped in this questionnaire according to the theoretical factors that are shown, the ones that are related to the spontaneity reveal that the almost all answer sincerely and they don´t answer trying to hide possible pullbacks. Taking this into account and after analysing the items which correspond to other factors we can say that the environment and attitudes in general are favourable. On the contrary, we can say the same about the items that correspond to planning, method and concentration; if they aren´t excessively high marked in negative aspects are disguised under high percentages in the immediate category of " sometimes".

When we analyse the *factorial analysis* of the data obtained we find that facing the seven existent theoretical factors twenty three factors appear empirically which count for an accumulated 82.68% of the variance. However most of the items are found in the first twelve which come for 54.259% of the variance, the last being the most isolated.

This great difference between the number of theoretical and empiric factors is explained largely because, in words of Yuste Hernanz, C (1986:38)"…. The choice or classification in six factors as well as the spontaneity is made in a subjective way by comparing and analysing the empirical differences which other authors have written.

Going back to the questionnaire of habits and study techniques, in view of the results obtained in the *analysis of percentages* for each of the items that make up the questionnaire, on the whole we can confirm that the items that referring to attitudes and study places are well evaluated. A good mark is also achieved in the items that correspond to the physical state. On the contrary, the items that refer to study techniques and work are the ones which show up the lowest points.

In the *factorial analysis* made twenty empirical factors are achieved that explain the 79.67 % of the percentage that is piled up in variation, facing the seven theoretical factors that existed previously. The majority of the items fall into the first three factors, being distributed between the seventeen rest, two or three items according to the case. The variety of the type of items identified with the theoretical factors that fall into the first empirical factors with those theoretically established.

We think that in both elements the size of the sample could influence the results of the factorial analysis taken if you consider the high number of items that every questionnaire contains. As well as this we can add the lack of stability which the people occasionally showed, in spite of the supervision of the questionnaire control and in the case of C.H.T.E. can also influence the fact that it presents categories of split answers (yes/ no).

Considering the previous information we plan a *programme proposal* that is open to posterior modifications and suggestions that can arise from the continuous reflection in the educative process:

- **Objectives**
  - To diagnose and to know abilities and study resources of the pupils collaborating.
  - To elaborate an applied programme to the techniques of study and learning.
  - To show and debate environmental factors that influence school learning.
  - To make practical exercises about different study techniques.
- **Contents**
- Study evironment.
- Personal and social factors.
- Study questionnaires.
- Study techniques and intellectual work.
- Techniques and elements of valoration.
- **Methodology**

  The activities that are performed in the different sessions will include a short talk about the thematic conten and tasks to make, personal applied and group work about different techniques of study and the posterior debate and discussion.

5. Conclusion

The motivations that justify the need to improve the learning and study skills are several. Normative arguments exist, needs shown by pupils and teachers, especially tutors, of scientific nature (a connection with the academic progress) and to develop new strategies taking into account the contributions of the psychopedagogic research in this field.

The strategies and skills of learning and study can be perfected and that is why work with pupils is needed in an organized way during a long time and integrated in the school curriculum. The tutor teacher must have the responsibility of orientating them of guaranteeing its fuctioning and keeping an eye on ists working.

The abilities and skills must be taught in an interrelated way from the techniques and more classic methods until the metacognitive and metaunderstanding abilities.

In the development of intervention programmes about methods and strategies of study and learning the collaboration of tutor teachers of schools must be considered, the context analysis and the contents of the school curriculum. For this it's necessary to

make an evaluation of the needs to consider the claims of pupils and teachers and in this way to determine the objectives to achieve.

The contents of the tasks, must be elaborated in the same way and the tutor must work his own contents for each school level and school area.

Starting how the needs felt and expressed by tutors and other teachers apart from the results achieved in the analysis of percentages that show the needs expressed by pupils. It seems evident that the question lies in the lack of techniques and strategies to carry out an efficient study and a successful learning process. In this sense the use of a programme of abilities and study strategies considered previously can be useful.

If the proposal of the programme can fit into "the study techniques" in no moment we have the intention of playing up this idea against the "learning to learn" but to provide the use of elements and techniques that make the reflexive searching of the own learning strategies easier. This action will be enriched by a continuous study and evaluation of the programme considering the processes and learning levels that were reached.

References

1. Alonso, C.M. y otros (1994). *Los estilos de aprendizaje.* Bilbao: Mensajero.
2. Álvarez González, M. y otros (1988). *Métodos de estudio*. Barcelona: Martínez Roca.
3. Ausubel, D.P. y otros (1983). *Psicología educativa*. México: Trillas.
4. Beltran Llera, J.A. (1996). *Procesos, estrategias y técnicas de aprendizaje*. Madrid: E. Síntesis.
5. Bernard, J.A. (1988). "Las estrategias de aprendizaje. Una agenda para el éxito escolar". *Revista de Enseñanza*, 6, 135-148.
6. Burón, J. (1993). *Enseñar a aprender. Introducción a la metacognición.* Bilbao: Mensajero.
7. Buzán, T.(1996). *El libro de los mapas mentales.* Barcelona: Urano.
8. Comellas, M.j. (1997). *Las habilidades básicas del aprendizaje*. Barcelona: EUB.
9. Covington, M.V. (1985). "Strategic thinking and the fear of failure". En J.W. Segal y otros. *Thinking and learning skills*. Hillsdale: Erlbaum.
10. Dansereau, D.F. (1985). "Learning strategies research". En J.W. Segal y otros. *Thinking and learning skills*. Hillsdale: Erlbaum.
11. De la Torre, J.C. (1992). *Aprender a pensar y pensar para aprender*. Madrid: Narcea/MEC.
12. Entwistle, N. (1981). *Short inventory of approaches to study*. Edinburg: University of Edinburg.
13. Entwistle, N. (1988). *La comprensión del aprendizaje en el aula*. Barcelona: Paidós/MEC.
14. Entwistle, N. y Marton, F. (1989). "Introduction the psychology of student learning". *European Journal of Psychology of Education*, 4 (4), 449-452.

15. García Nieto, N. (1989). “Incidencia de la metodología de estudio en el rendimiento escolar”. *Revista de Ciencias de la Educación*, 140, 471-480.
16. Gibbs, G. (1986). *Teaching student to learning*. A student-centred approach. Milton Keynes: Open University Press.
17. Goetz, E.T. y Alexander, P.A. (1988). *Learning and study strategies: Issues in assessment, instruction and evaluation*. San Diego: Academic Press.
18. Heimlich, J.E. y Pittelman, S.D. (1990). *Los mapas semánticos*. *Estructuras de aplicación en el aula*. Madrid: Visor/M.E.C.
19. Hernández Pina, F. (1998). *Aprendiendo a aprender. Técnicas de estudio.* Barcelona: Océano.
20. Kozulin, A. y Rand, Y. (2000). *Experience of mediated learning.* Pergamon: Nueva York.
21. Lemaitre, P. y Maquere, F. (1987). *Técnicas para saber aprender*. Bilbao: Deusto.
22. MacAleese, R. (1998). “Mapas conceptuales y adquisición del conocimiento: un enfoque cognitivo”, en Vizcarro, C. y Leon, J.A. *Nuevas tecnologías para el aprendizaje.* Madrid: Pirámide.
23. Mayor, J. y otros (1993). *Estrategias metacognitivas. Aprender a aprender y aprender a pensar*. Madrid: Síntesis.
24. Monereo, C. (1990). *Enseñar a aprender y a pensar en la escuela*. Madrid: Aprendizaje.
25. Nisbet, J. y Shucksmith, J. (1987). *Estrategias de aprendizaje*. Madrid: Santillana.
26. Novak, J.D. (1998). *Conocimiento y aprendizaje: los mapas conceptuales como herramientas facilitadoras para escuelas y empresas.* Madrid: Alianza.
27. Novak, J.D. y Gowin, D.B. (1988). *Aprendiendo a aprender*. Barcelona: Martínez Roca.
28. Podall, M y Comellas, M.J. (1997). *Las estrategias de aprendizaje aplicadas al campo verbal y matemático*. Barcelona: Laertes.
29. Prieto, m.D. (1989). *Modificabilidad cognitiva y PEI*. Madrid: Bruño.
30. Puente, A. (1994). *Estilos de aprendizaje y enseñanza.* Madrid: CEPE.
31. Ontoria, A. y otros (1999). *Mapas conceptuales. Una técnica para aprender*. (8ª edición). Madrid: Narcea.
32. Ontoria, A. y otros (1999). *Potenciar la capacidad de aprender y pensar.* Madrid: Narcea.
33. Rodríguez, L. (1997). *El mapa cognitivo-semántico.*Córdoba: UNED.
34. Schmeck, R.S. (1988). *Learning strategies and learning styles*. Nueva York: Plenum Press.
35. Schnotz, W. Y otros (1999). *New perspectives on conceptual change.* Elsevier Science: Amsterdan.
36. Selmes, I. (1988). *La mejora de las habilidades para el estudio*. Madrid, MEC: Paidós.
37. Sobrado, L. y Ocampo, C. (2000). *Evaluación Psicopedagógica y Orientación Educativa* (3ª Edición). Barcelona: Estel.
38. Torre, J. (1992). *Aprender a pensar y pensar para aprender. Estrategias de aprendizaje*. Madrid: MEC/Narcea.
39. VV. AA. (1999). “Los mapas conceptuales” . *Revista Aula de innovación educativa*, nº 78, enero.

40. Winstein, C.E. y Mayer, R.E. (1986). “The teaching of learning strategies”. En M.C. Wittrock (Ed.). Handbook of research on teaching. Nueva York: McMillan.
41. Wood, L.E. (1987). *Estrategias metacognitivas*. Barcelona: Labor.
42. Yuste, C. (1986). *Cómo estudiar (I y II)*. Madrid: CEPE.
43. Yuste, C. (1987). *Cuestionario de estudio y trabajo intelectual. Manual técnico*. Madrid: CE

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