

# How In-Training Secondary Education Teachers Think. Avenues for Intervention.

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## Abstract

**Introduction.** The aim of this research is to analyse the thinking of teachers-in-training for compulsory secondary education, in order to facilitate the work of education and guidance at secondary schools.

**Method.** The participants were 265 students in the *CAP* program (course for the Pedagogical Aptitude Certificate)<sup>1</sup>. The instrument used was a survey we had created. We used frequency analysis, analysis of contingency tables (nominal by nominal), logistic regression analysis and loglinear models to analyse the data. In the frequency analyses we used: a) analysis of multiple responses, and b) analysis of frequencies of the first answer.

**Results.** Results include the following: a) most compulsory secondary school teachers-to-be consider that their activity should be academic, b) students' lack of interest and aggressions among students are the participants' main concerns regarding their future work, and c) participants think that the teacher's job consists of transmitting information; the students, therefore, must make use of skills that will enable them pass their subjects.

**Conclusion.** The following conclusions were drawn: a) these teacher beliefs, which we might refer to as attitudes, are one of the main causes of poor adjustment found at secondary schools, b) we must take these ideas into account when offering guidance and training to future teachers, and c) teachers are encouraging their pupils to use skills for passing their classroom subjects, while ignoring other personality factors.

**Key words:** *teacher thinking, secondary education, skills, guidance for teachers, teacher training*

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<sup>1</sup> In order to teach in public secondary school in Spain, the following requirements must be met:

- 1) Have completed a university degree, even if it is unrelated to the subject matter one will be teaching.
- 2) Have acquired the "Pedagogical Aptitude Certificate" (or recognized equivalent). The program involved comprises 85 hours of theory and 100 hours of student teaching in a secondary school.
- 3) Have passed the *oposición* (competitive exam) which corresponds to the subject matter one wishes to teach.

In the case of private secondary education the Pedagogical Aptitude Certificate is not required.

## **Introduction**

Recent contributions to the study of intelligence (Gardner, 1997, 1999, 2001; Goleman, 1998, 1999; Goleman & Cherniss, 2005; Sternberg, 1985, 1986, 1997, 1999, 2002, 2003a, 2003b, 2004, 2005; Salovey & Mayer, 1990) suggest that intelligence is not a general aptitude which develops equally in all aspects; on the contrary, there are different types of intelligence: emotional, practical, interpersonal, intrapersonal, linguistic, logical-mathematical, etc.

Current research (Gardner, 1999; Repetto, Pena, Mudarra & Uribarri, 2007) reveals that these last two types of intelligence (linguistic and logical-mathematical) are what we encourage and promote at school. These are what students need to pass the different subjects in the school curriculum; other types of intelligence are left alone. Two of the most neglected are intrapersonal and interpersonal intelligences, a truly senseless situation given the increasing number of coexistence problems at school, and not only in secondary education.

Schools should purposely develop these types of skills or intelligences (in addition to the other types mentioned), if there is any desire to lessen conflict at school. From our point of view, disputes at school are produced in part because students do not know how to use this type of intelligence.

We suggest that the fact that schools prefer certain intelligences to others is due to teacher beliefs regarding different aspects of school life; these beliefs are the object of study here.

### *Objectives*

The objective of this study is to analyze the thinking of teachers in training. Additionally, another aim is to provide information to guidance counselors on essential aspects for carrying out their practice in secondary schools. Such aspects include ideas, beliefs, etc., held by future secondary school teachers in relation to their future professional practice and to the training they receive toward that end. We feel that this is relevant, since ideas typically held by the teaching staff are essential to understand and take into account when guidance and orientation activities are being carried out in conjunction with teachers.

## *Hypotheses*

Hypotheses to be tested are as follows:

1. There are no differences in the following aspects in relation to gender or type of studies completed by participants in the study:
  - Motives which prompted them to begin their studies
  - Work expectations
  - Usefulness of their previous studies in future professional practice (as a teacher)
  - Their motivation for taking the *CAP* program (Spanish acronym for Pedagogical Aptitude Certificate, required for future secondary school teachers)
  - Their expectations regarding the *CAP* program.
  - Perceived problem areas in performing the teaching function.
  
2. Problem areas perceived by the participants in performing the teaching function are a function of:
  - The motives which led them to begin their studies,
  - Their work expectations,
  - Usefulness of their previous studies in future professional practice (as a teacher),
  - Their motivation for taking the *CAP* program, and
  - Their expectations regarding the latter.
  
3. There are no differences in how teachers think about functions that the secondary teacher should perform:
  - in relation to gender,
  - in relation to type of studies completed.

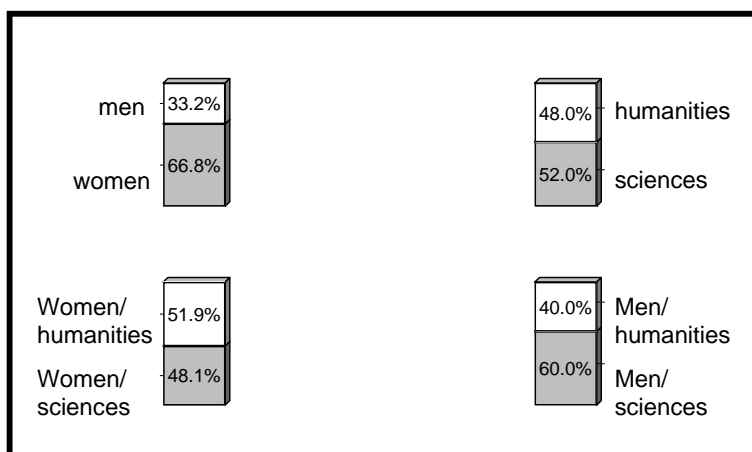
## **Method**

### *Participants*

265 students from the course for the Pedagogical Aptitude Certificate (*CAP*) participated in this study, organized by the University of Alicante. These were grouped according to

the type of studies they had completed, using categories proposed by Rivas, Rocabert and López (2000) in their SAVI program, with one exception: an additional category was included, as “bio-environmental” was separated from the “scientific-technological” category.

Gender and type of studies are presented in Figure 1. The differences between the percentages of women and men in relation to the type of studies completed are not significant, although the women tend more to have studied humanities, with the men tending more to studies of a “scientific” nature. Again, the data are not statistically significant.



**Figure 1.** Percentages of participants according to gender and type of studies completed.

### *Instruments*

The instrument used to carry out this study was a survey which all participants completed. The survey required participants to give their opinions.

### *Procedure*

Students responded to the survey on the first day of the CAP program, in order to avoid “contamination” from the class itself and its material.

### *Data analysis*

Statistical analysis of data was performed using SPSS v. 14 (Norusis, 1990; Lizasoain & Joaristi, 2003). For data analysis we used frequency analyses, analyses of contingency tables (nominal by nominal), logistical regression and loglinear models.

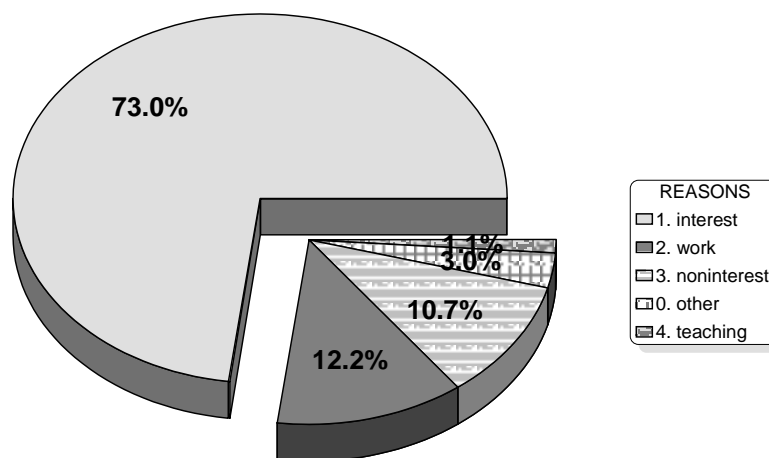
The following were used in frequency analyses: a) analysis of multiple responses, and b) frequency analysis of the first response. Here we report only data from the second analysis, since differences between the two types of analysis are insignificant.

## Results

### *Description of participant responses. Motivation for their choice of degree program.*

To begin, we collected the reasons which led participants to select the degree program which they had completed (see Figure 2):

0. Other (other, short degree program, prestige, recommended by ..., easy program)
1. interest in the subject matter
2. job possibilities
3. what I least disliked, just for something to study
4. I felt attracted to teaching

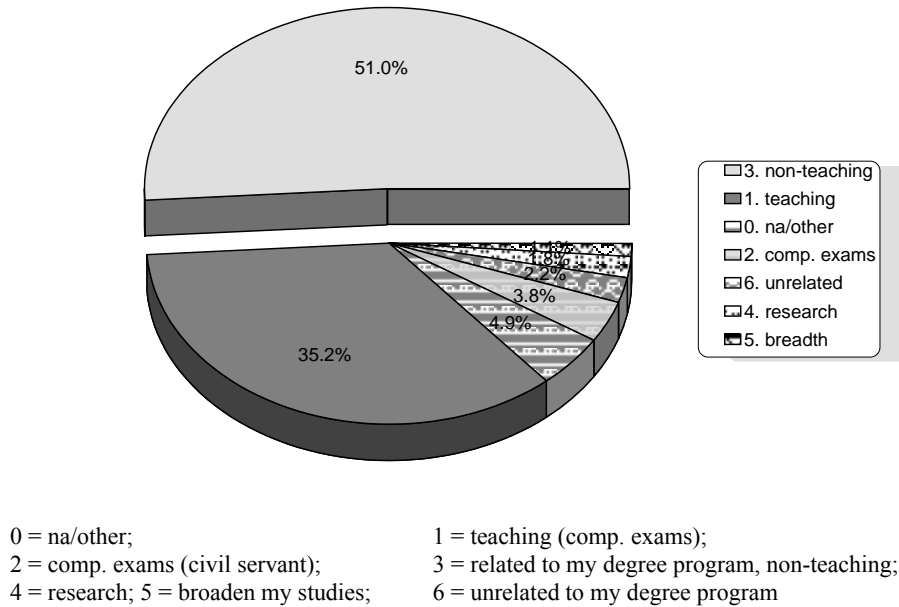


- 0= other (others, short degree program, prestige, recommended by ..., easy degree);  
1 = interest in the subject matter;  
2 = work possibilities;  
3 = what I least disliked, just for something to study;  
4 = I felt attracted to teaching

**Figure 2. Frequency Analysis. What reasons led you to choose your degree program?**

Note that the two reasons with the highest percentages are “interest in the subject matter” and “job possibilities” (Figure 2).

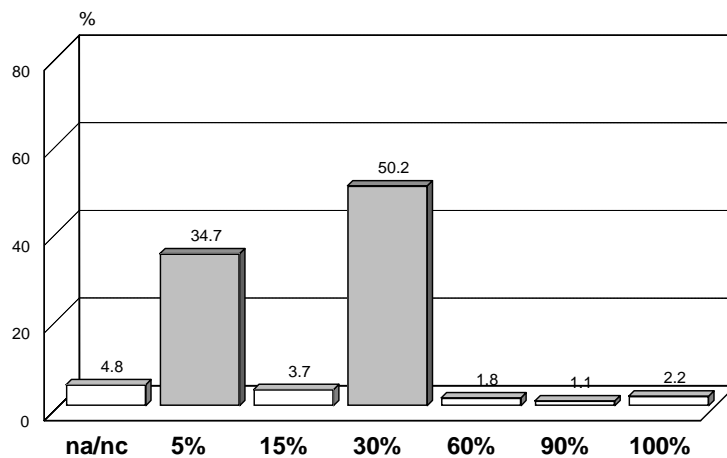
It should be emphasized that a significant percentage (10.7 %) began their degree program which little or no interest in it, and that only 1.1 % respond with “I felt attracted to teaching”, while we observe that a large percentage of CAP students (the course which seeks to prepare them for teaching) do intend to devote themselves to teaching (See Figure 3).



**Figure 3. Frequency analysis. What do you plan to devote yourself to when you finish the CAP program?**

*Description of Participant responses. Usefulness of their previous studies.*

Another question of interest for this study was what participants felt about the usefulness of their prior degree program for the teaching function. Results are shown in Figure 4.



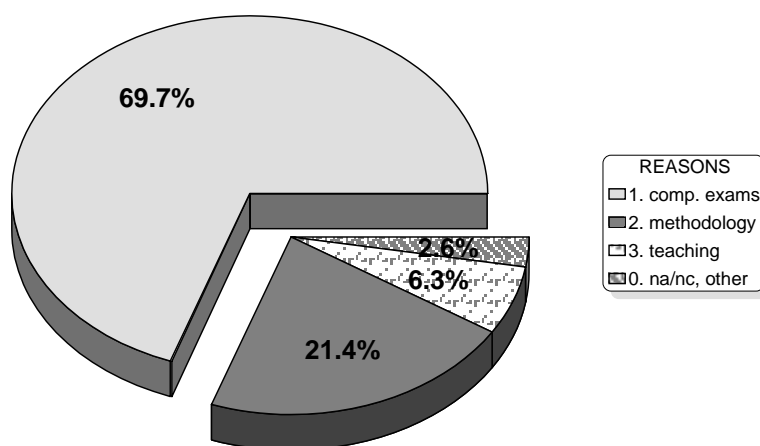
**Figure 4. Frequency analysis. What percentage of what you have studied in your degree program do you think will be useful?**

Participants are quite realistic, the large majority (84.9%) feel that the usefulness of their prior studies will be at most some 30 %. It is noteworthy that 34.7 % of participants feel that only 5% of what they have studied in their university degree program will help them in professional practice as a teacher.

*Description of Participant responses. Motivation for taking the CAP.*

We were able to group participant responses into four categories (Figure 5):

- 0 = no comment, n/a, other
- 1 = requirement for access to teaching jobs, wanting to have another job alternative
- 2 = to learn teaching methodology, ongoing professional development
- 3 = I like teaching



- 0 = na/nc, other;
- 1 = need to take competitive exams, have another job option;
- 2 = learn methodology, specialization;
- 3 = I like teaching

**Figure 5. Frequency Analysis. What are the reasons why you are doing the CAP program?**

Responses reveal that the majority of participants claim to be taking the CAP in order to complete the requirement for access to teaching jobs, or as a means to have another job option. Almost 70% (69.7) of participants have this as their main “incentive” for deciding to complete the CAP.



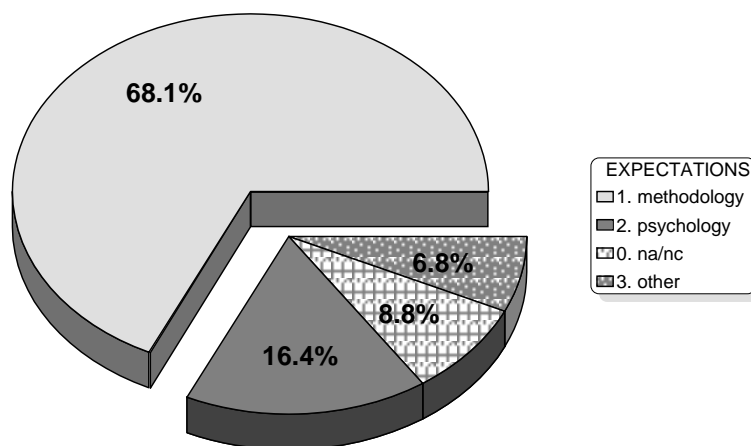
We also requested participants to identify in this study what their expectations were with regard to the CAP program (figure 6). Answers are grouped into three categories:

0 = no comment, n/a

1 = methodology, specialization, transmission of knowledge

2 = psychology of the student, how to face problems with students

3 = other (expand my personal prospects, find out what teaching is like, etc.)



**Figure 6. Frequency Analysis. What do you think you are going to learn in the CAP course?**

Most answers have to do with “acquiring resources” to transmit knowledge, and in a very distant second place are answers having to do with “understanding the adolescent”.

*Description of participant responses. Problem issues perceived in education.*

The 265 participants were requested to express what their main concerns were with regard to practicing the teaching profession. They were offered seven choices and were asked to indicate which three they considered to be most worrying. The choices were as follows, see Figure 7 for participant responses.

1 = aggression between students

2 = coordination among teaching staff

3 = existence of a competent school administration team

4 = students' lack of interest in the material

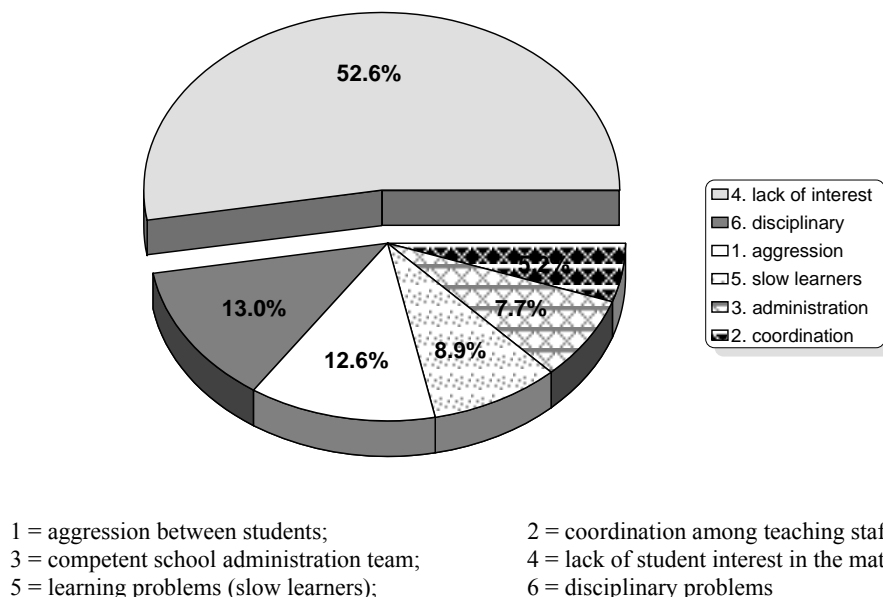
5 = learning problems (students slow to learn)

6 = disciplinary problems

0 = others, which ones?

No participant indicated any other choice in category “0”.

The following percentages represent frequency of the more important concerns, according to participants (Figure 7).



**Figure 7. Frequency analysis. What do you find most worrying about carrying out the teaching function?**

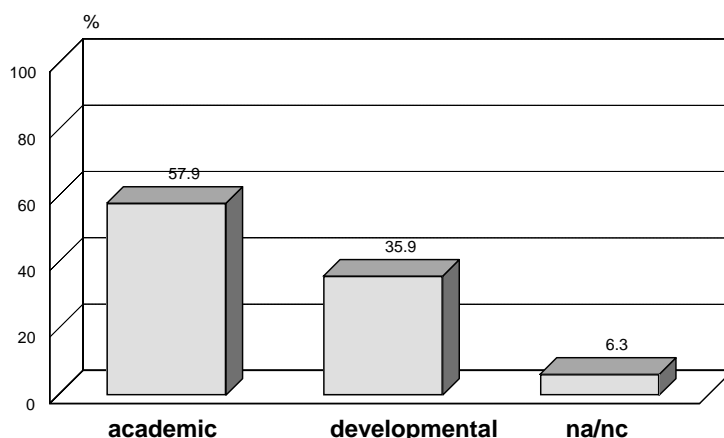
*Description of participant responses. The future teacher’s thinking about his or her future functions as a practitioner.*

Participants gave different responses:

1. encouraging the student’s interest in acquiring knowledge
2. teaching, transmitting knowledge, etc.
3. guidance and homeroom teaching
4. teaching those who are interested
5. maintaining discipline
6. teaching basic knowledge
7. developing the pupil as a person, educating the whole person, etc.
8. trying to ...
9. na / no comment

These responses were reclassified into three groups: na/no comment, academic and developmental (figure 8):

- “academic” variable: refers to all responses having to do with teaching, transmitting knowledge, preparing for higher studies, teaching those who are interested, maintaining discipline, teaching basic knowledge, etc.
- “developmental” variable: groups together those responses related to guidance and homeroom teaching, encouraging the student’s interest in acquiring knowledge, developing the student as a person, etc.



**Figure 8. Frequency Analysis. What is the main function of the secondary teacher?**

As can be observed, most participants feel that their function in education is essentially an academic one, with developmental aspects of secondary importance.

*Verification of the 1<sup>st</sup> hypothesis: type of studies*

Statistically significant results were found only for the following hypotheses:

- A) There are no differences in motivations for beginning their degree program with relation to type of studies pursued.
- B) There are no differences in work expectations with relation to type of studies pursued.

In both cases we reject the null hypothesis: differences do exist as a function of the type of studies chosen.

With respect to Hypothesis A, the following can be observed (table 1):

- participants with a science background give greater importance to job options than do participants from humanities,
- participants from humanities, at a much greater proportion than those from sciences, choose their degree program “just for something to study”
- participants from humanities choose their degree program at a somewhat higher proportion than those in sciences due to “interest in the subject matter”.

**Table 1. Results of the contingency table analysis. Reasons why the degree program was selected \* type of studies completed.**

		Value	Sig.	
Nominal by nominal	Phi	.292	.000	
	Cramer V	.292	.000	
	Contingency Coefficient	.280	.000	
	Pearson Chi-squared (df = 4)	23.059	.000	
	Likelihood Ratio (df = 4)	25.570	.000	
N° de casos válidos		265		
<b>Contingency table</b>		<b>carr_rec</b>		<b>Total</b>
		<b>Sciences</b>	<b>Humanities</b>	
Motivation	Interest in the subject matter (%)	47.4	52.6	100
	Work possibilities (%)	92.8	7.1	100
	What I least disliked, for something to study (%)	34.7	65.2	100

As for Hypothesis B (table 2), we see that:

- a considerably larger number of participants from humanities intend to take competitive exams in order to become teachers than do those from sciences,
- participants from the sciences, to a much greater degree than those from the humanities, do not intend to devote themselves to teaching.

For both the first hypothesis as well as the second, the Pearson test indicates that the relationship observed is not spurious but rather a genuine relationship that can be generalized to the entire population (Rodríguez & Mora, 2001).

**Table 2. Results of the contingency table analysis. What do you plan to devote yourself to when you finish the CAP? \* type of studies completed.**

		Value	Sig.	
Nominal by nominal	Phi	.401	.000	
	Cramer V	.401	.000	
	Contingency coefficient	.372	.000	
	Pearson Chi-squared (df = 6)	42.845	.000	
	Likelihood ratio (df = 6)	18.154	.000	
<b>Contingency table</b>		Carr rec		Total
		Sciences	Humanities	
Ded1	teaching (competitive exams) (%)	27.7	72.3	100
	Related to one's degree program, non-teaching	68.4	31.6	100

*Verification of the 2<sup>nd</sup> hypothesis: explanatory model*

The intent is to establish an explanatory model of the “teaching concerns” of future secondary teachers. That is, we seek to study the relationship between a dependent variable (num1: most important concern with regard to performing the teaching function) and a set of independent variables which are all of those used in this study.

Two procedures were used:

- loglinear model, similar to regression analysis but for qualitative variables; a saturated loglinear model in particular was used, due to its containing all possible effects (Gondar Nores, 2003), and
- multinomial logistical regression; through this procedure we can obtain a linear function of the IVs that allow classification of participants into the groups established by the DV values.

No model could be established; therefore we do not present the data obtained.

*Verification of the 3<sup>rd</sup> hypothesis: the teaching function*

The null hypothesis is assumed. Future teachers for the most part think that their function will be a fundamentally academic one, and this is independent of gender [ $\chi^2(2) = 2.269$ ;  $p = 0.33$ ] and type of studies completed [ $\chi^2(2) = 2.166$ ;  $p = 0.34$ ].

## Conclusions

The most important conclusion of this study is that students of the CAP program in general, and in particular, those students who intend to devote themselves to teaching, understand the teaching profession essentially as an activity which consists of transmitting data. One party—the teachers—act as information transmitter, while the other party—the students—act as receivers. This type of thought, which can be considered an attitude, could be one of the main causes of the poor adjustment found in secondary schools, both among the teachers as well as among students.

On the other hand, the immense majority of participants chose their degree program for reasons other than the practice of teaching; only 1.1 % made this selection, in contrast to the percentage of participants who say that they are going to devote themselves to teaching (35% as their first option, and over 70% as a possibility). Could this be due to not finding anything better? We also observe a significant percentage (11%) of subjects who express that they began their degree program without any particular interest in it.

With respect to the usefulness of their former studies for their practice as a teacher, participants are quite realistic, 85% of them think that at most 30% of the knowledge they have acquired for their degree will be useful in teaching practice. It is also true that those who estimate a higher degree of usefulness are those participants whose studies lead them to teaching in the area of vocational training (nursing, for example).

As for the reasons why they complete the CAP program, answers are in the line of “out of obligation”, which indicates the little importance given to the program. When asked what they expect to learn from the CAP program, student answers indicate that they expect to acquire working methods that will allow them to transmit knowledge.

Regarding the problem area which most worries them in the practice of teaching, the most common answer is “student lack of interest”, followed by a distant “disciplinary problems” or “aggression among students”. The teaching organization raises little concern among participants in this study. Nothing was found that would allow us to affirm that subjects differ in certain characteristics according to their concerns being of one type or another.

Finally, CAP students for the most part think that their future function as teachers will be “academic”, understood as a propaedeutic and knowledge-transmitting function.

This type of thinking leads to an educational model characterized by the following aspects (Zabala, 1999), as well as others:

- propaedeutic, selective, university preparatory,
- the teacher as applier of what must be learned (which is already laid out in the text book: content, lesson programming, times and evaluation),
- the teacher as unifier, through transmission of the same knowledge to all students.

This model may have, and in fact does have, very negative consequences, since it encourages attitudes of submission and dependency in apathetic students, and attitudes of resistance and rebellion in “eager” students, logically giving rise to a conflictive climate in the classroom. Creative work is noteworthy on account of its absence.

Logically, in order to change or try to change this type of thinking, the intervention to be carried out both in initial and ongoing teacher development (Lucas, 2007) should involve the teacher understanding education as development of the whole person—and not only those aspects which “are useful” for getting into University (in every aspect). The teacher as a developmental educator can no longer be only a teacher of subject matter, but he or she must also develop the whole person since education does not belong exclusively to those students who will pursue higher education (i.e. focus is not only on university-potential students). This means that the teacher must get involved in a strategic effort to determine what each student needs, so as to address the diversity found in the classroom (Zabala, 1999).

This type of thought encourages creativity and participation among students—among all students, intrinsic motivation for school work and cooperation among peers, so that students must pay attention to interpersonal relationships.

Given the above, this type of thinking must be seriously taken into account in the guidance work carried out by practitioners in Guidance Departments (GD) at secondary schools. The fact that the thinking behind this propaedeutic educational model (DO) is predominant in our secondary schools leads teachers, as we said in the beginning, to promote skills which

skills which will be useful to their students for passing the different subjects of the curriculum, while the other factors making up the student's personality are left aside.

Nonetheless, the main problems for which teachers request help from their GDs are lack of student interest, behavior problems, excessive number of failures, etc. Evidently, a type of teaching where teachers limit themselves to mimicking the "university" teaching model for students who not only are not university students, but most of them do not intend to enroll in University, cannot produce anything but boredom for most students, and this boredom translates into uninterest, disruptive behaviors, skipping class and other problem issues.

It is evident that from GDs and from Centers for Training, Innovation and Educational Resources (*CEFIREs*), a teaching model should be promoted which is based on development of the whole person, not an easy task since secondary teachers are quite reluctant to change, and often understandably so, yet it must be done. Otherwise, the existing problem situation at secondary schools will continue to increase. If developmental education is pursued, education will treat both academic aspects as well as relational aspects that should be intentionally developed. Thus, using methodologies which encourage these aspects (for example, cooperative learning techniques), we will encourage participation of students in the class dynamic, thereby developing interpersonal relationship skills.

As for initial teacher training, especially for Secondary Education, it is not possible to conclude this study without some reflection on the CAP itself. The Pedagogical Aptitude Course should no longer be a 200-hour "specialization" course which is done once one completes his or her university degree, and out of obligation, or in order to flesh out one's CV, since its usefulness is little or none (as spoken by the CAP students themselves).

If in the plan of studies for a bachelor's degree there is no material related to teaching, even in degree programs which have no other professional outlet, and the CAP program does not train persons to teach, how do teachers learn to practice their profession? By trial and error? We must not forget that a person with a degree in Biology, for example, has completed studies for practice as a biologist, not a secondary school teacher, and no one has trained him or her to do the latter.



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