INTRODUCTION

The aim of this paper is to present an AR study on the discourses of supervision in the context of teacher training development in a School of Education in Portugal.

Our work as supervisors of student teachers in their school year of teaching practice in schools made us realize that there was a need to develop critical self-awareness of the verbal behaviours of teachers who work as mentors.

In this paper we aim to address the questioning process during conferences (Waite, 1995) with a special focus on the number and category of questions asked by mentors and their trainees.

The need to develop the reflective ability both of student teachers and those directly involved in their training through a process where they could become active participants led us to a project developed in AR cycles on the basis of a qualitative paradigm.

This paper is divided into 6 main sections. Section 1 numbers the research questions, section 2 discusses the relevance of AR in such a study, section 3 outlines the connection of questioning, the reflective paradigm in teacher development and AR, section 4 leads through the main procedures, section 5 highlights some data and section 6 goes through some possible conclusions at the moment.

1 - RESEARCH QUESTIONS
As supervisors of teachers we believe that the *quality of questions* in the learning environment may promote relevant information about the reflective ability of trainers and trainees.

We considered then two main hypothesis:

1 – the mentors can be involved in an AR process if we face them with their own practice and make them responsible by different reflective strategies concerning their work

2 – the trainees can learn how to reflect and develop that ability during their last year at the School of Education, through a questioning process promoted by their trainers, both at the oral and written levels.

According to these we asked five research questions:

1 – Do mentors give their trainees the opportunity to express themselves while they work?

2 – What kind of questions do they ask?

3 – Which are the changes in the supervision process that we can consider as consequences of the involvement of the participants in an AR project?

4 – Do the journals written by trainees have a better level when there are some guidelines and when the trainees receive feedback from their trainers?

5 – Is there any consequence of all these supervision activities in the lessons taught by trainees?

In next section we go through some of our theoretical references in the field of AR.

### 2 – WHY IS IT APPROPRIATE TO USE AR?

“Action research is a participatory democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory world view which we believe is emerging at this historical moment. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities”. (Reason and Bradbury, 2001:1)
Although AR has been widely discussed by researchers from different areas and also applied in a number of studies mainly within social sciences and particularly in Education, there are however some who consider it messy and who have some problems to believe in a methodology which has little to do with traditional or conventional research.

As Reason and Bradbury pinpoint AR is a democratic process which seeks to bring together action and reflection, theory and practice.

These are reasons enough for us to apply it in the context of a study designed to understand the relationships between mentors and trainees when they talk to each other and to help them develop a different interaction while they work together.

When we mention action and reflection, authors as Schon with his theory of the epistemology of practice (1983, 1987) Van Manen (1977,1991) writing about four levels of reflection, Dewey (1910) who influenced them both and many others, are just some of the names that come to our minds.

In AR both the researcher and those involved in the project may be subjects and objects of the study, depending on the type of involvement.

In this case we report a practical AR project (Carr and Kemmis, 1993) since the participants were co-responsible in the development of AR cycles but they depended on the researcher to organize the collaborative meetings and facilitate the information needed.

It could be said that it was not an emancipatory nor a technical AR approach but though it counts on a real participation of teachers who are concerned with their own discourses and want to improve them we have no doubts in considering it a practical approach.

Along AR cycles things are always changing and one never knows exactly what’s going to happen next, because the object of study is not a static one mainly if we address discourses with its verbal and non-verbal components.

Aiming at understanding a specific reality – the question and answer process – with the power relationship it embodies, to improve it through self-awareness of the participants, AR seemed the most appropriate methodology.

Besides that it is not the first time we make this choice.
3 – WHAT IS THERE IN COMMON BETWEEN AR, THE REFLECTIVE PARADIGM AND QUESTIONING?

As Durham (1997) and Pedrosa de Jesus (1997,1995) pinpoint , to ask questions is one of the strategies used to promote reflection and raise stimulating learning environments.

It seems to be relevant that teachers span the different categories of questions while they teach because it’s important that students get used to hear high level questions so that later they may also ask them. If students are exposed to good models of questioning during their school life they may develop a better questioning competence and become adults who act more thoughtfully and reflectively (...) and understand the nature and significance of reflective experiences and of the types of knowledge they use (Van Manen, 1991,100).

Naturally, reflection needs time and so do questions, mainly those ones included in higher levels. As Rowe (1969) and Pedrosa de Jesus (1987) emphasize pupils need some time to organize their thinking and select the most adequate answer to a given question. It seems quite difficult to finish this mental process in less than 3 to 5 seconds.

In 1987 and 1991 one of us, Pedrosa de Jesus studied this problem with Portuguese teachers and concluded that teachers usually only allowed pupils an average thinking time of one second (1987,96). It could be said that time is a relevant factor both in the reflective and in the questioning process, although some theories of the teacher as reflective practitioner argue that to be a reflective practitioner a teacher needs to be able to reflect in action.

In fact, the amount of things happening at the same time in the classroom requires a constant decision making where intuition plays an important role. But is intuition a non rational and non reflective process or, on the other hand, is it a sudden reaction grounded on previous references, experiences and feelings?

Where then lies the border if there is any, between our emotional and our rational structure? These questions Damásio (1994) asked himself seem to be quite appropriate among teachers and action researchers.
Actually, both of them have to reflect deeply on the activities in which they are involved but at the same time they need to be quick and good decision makers and this last ability is very much grounded on intuition.

Our previous experience with AR made us realize that there is a strong connection among these concepts – questioning, reflection and AR and thrusted us forward another project: the one we are reporting here.

**4 - AR CYCLES AND SOME PROCEDURES**

As we stated before we adopted AR and Case Study procedures within the qualitative paradigm.

Four mentors and 34 student-teachers from two different schools were involved along three school years.

During the first school year (2000/01) a pilot study was developed to deepen our knowledge of the context. We collected then some data through interviews with all the participants, journal writing from the student-teachers, video and audio recording meetings where mentors and trainees were involved and video and audio recorded lessons taught by the trainees.

This first AR cycle allowed us some conclusions, being one of them the need to design a training course for mentors. This course lasted for 50 hours between October 2001 and February 2002. The discourse analysis of teaching and supervision interactions was the main content with a focus on questions its levels and categories. The mentors also received some information about the reflective paradigm and AR methodology.

Besides this formal training and along all AR cycles there were regular meetings between the researcher and the participants to reflect on the activities undertaken and plan the following ones. Once again data were collected through the same procedures and tools.

Some of the tools used to improve the trainees’ teaching practice were designed by their mentors in collaboration with the researcher.

The trainees themselves designed an evaluation questionnaire to assess their mentors verbal behaviours.

**5- DATA ANALYSIS**
1-The journals
To analyse the content of the student-teachers’ journals four different categories were defined:

   a) Statements about the teacher
   b) Statements about the students
   c) Statements about the classroom
   d) Others.

These were found through an interactive process between the real data and a theoretical frame by Van Manen (1977, 1991) about the levels of reflection.

2- The interaction in the conferences
To analyse the discourse during the conferences the number of mentors’ and trainees’ turns was counted as well as the number of questions asked by them. The goal was to observe which side was the power to speak. Afterwards, questions were categorized according to four different categories found, once again, in a dialectic process between real data and theory. This time our theoretical reference besides Van Manen was also Pedrosa de Jesus. The four categories of questions considered were:

   a) Confirmation/cooperation questions
   b) Elicitation/description questions
   c) Interpretation questions
   d) Evaluation questions.

In the first category, confirmation/cooperation questions, the mentor or the student teacher seeks confirmation of what is said or he/she asks for permission to keep talking. In the second one, elicitation/description they want to know about the overall aspects of the lessons taught; classroom management, critical incidents, positive and negative issues are questioned. According to the next category, interpretation questions, the mentor or the student teacher connects the observation data with different features of the educational system. Hypotheses to act differently and to understand what happens are raised. Both the interaction between theory and practice and a non threatening confrontation of the student teacher with himself/herself are considered. The last category, evaluation, means that the mentor elicits critical
analysis of what happens and challenges the reflection about the way we reflect. The student teacher wants the mentor to evaluate his/her performance.

3- The interviews

The interviews were all analysed according to Bardin’s (1975) content analysis procedures.

4- The four cases

We studied four different cases. Each one included one mentor and her trainees. We tried to improve their critical thinking, their questioning competence and reflective habits simultaneously. Now we are going to focus on questions asked during the conferences held each week by each group.

As Jófili (1996) states teachers must try being as democratic as possible to involve the pupils in decision making (pag.74) and so must mentors. This also means involving all the speakers in the interaction and allowing the others time to think and ask.

In spite of the training process our mentors asked most of the questions during the supervision conferences with their student-teachers (see tables) These asked only some of them. In case B there is the biggest discrepancy, because while the mentor asked 274 the trainees only asked 13 questions. In case A the trainees asked the greatest amount , (121) and so did the mentor(463).

In what concerns the levels of questions only the mentors A and D asked Evaluation questions, the highest level we considered and from the trainees the ones in case D asked 5 Evaluation questions.

However, all the mentors asked a great amount of Interpretation questions which we consider as challenging the reflective thinking of their trainees.

Comparing these findings with the ones gathered in the pilot study we can say that there was some development on the questioning process of mentors since most of the questions asked by them before were level one and two and just a few were level three, Interpretation and none was on level four, Evaluation. By that time, the trainees asked only a few Confirmation/Cooperation questions (level one)
Looking at cases A and D in more detail we can see that both these mentors discussed the importance of the questioning strategies with their student-teachers on the basis of some informative texts read by everyone at home. They also helped their trainees to apply some classroom strategies to improve the questioning procedures. At the same time the student-teachers received weekly feedback about their journals.

The mentors reflected on their own verbal utterances, mainly questions, by listening to some of their recorded supervision conferences aiming at improving the supervision discourses. The mentors A and D were strongly motivated to help student-teachers to ask better questions both during the conferences and the lessons they taught to young children. They were also deeply involved in their own professional development. They prepared the supervision conferences, they thought about questions to ask and they read the information they received from the researcher. They participated in the project from 2000 till 2003 while the other two only participated till 2002.

They both considered the relevance of theory and practice put together to improve their teaching and supervision activities. They had a strong belief in training and a will to change since they were aware of some problems in their own discourses.

Changes are slow but they could do some in two to three school years, working hard and being really involved in the project.

6- Discussion

Although the study is not concluded yet we can report some conclusions. The mentors involved in the study became aware of their supervision discourses listening to some of them and thinking of the questions they asked. They also improved some aspects of their verbal interaction with trainees and showed a strong belief about the relevance of theory/practice interaction to improve their supervision process. The weekly feedback delivered to their trainees about their journals seemed to improve the reflective competence of the participants in the research project.
Some of the trainees also seemed to develop their questioning ability both
during the supervision conferences and in the classroom interaction
However, they improved their reflective and questioning abilities
differently; some of them developed their reflective writing and oral level of
questioning, others only developed their oral questioning competence.
We can state that both mentors and trainees were aware of the importance
of their professional development and some of the opinions collected
through the interviews illustrate these findings:

  Mentor A: We can improve our supervision practice if we prepare things
based on theoretical information …we can improve the level (July,2002).
  Mentor A: I liked to be involved in the AR project …I did it with pleasure ..I
would like to have more time to work on it (July, 2003).
  Mentor D: I think I learned how to reflect better (...) this experience
opened some doors… some different ways of doing things(June,2002).
  Mentor D: When we prepare things we reflect deeply on our work (June,2002).
  Mentor D: Reading about research experiences keeps us attentive to so
many things that happen in the classroom context …those readings monitor
our practice (July,2003).
  Mentor D: As a supervisor the texts I read helped me a lot because my
reflections with trainees were better …and I think this is obvious.(July,2003).

These and other similar opinions expressed by the mentors make us
seriously believe in AR although it is considered messy and sometimes
inconclusive once we find it we may easily fall in love forever.

REFERENCES
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