BEING AND BECOMING RESEARCHERS

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RESUMEN

El grupo INACMES (Investigación-Acción, Currículo y Multimedia en Educación Superior) Categoría A, presenta logros y evidencias de un proyecto financiado por COLCIENCIAS que pretende aplicar una teoría y un método para iniciar la formación científica de loseducadores en proceso de formación en la Universidad de Caldas. Se explicita la manera cómo los nuevos educadores establecen el vínculo entre la pedagogía, la investigación, el currículo y los procesos de enseñanza aprendizaje. Los logros permiten precisar los alcances científicos de quienes se inician como investigadores y se sugiere que el currículo universitario puede contribuir al avance del saber pedagógico desde contextos educativos particulares. En este caso, los profesores que se vinculan a la investigación desde la universidad.

PALABRAS CLAVES: Investigación curricular, formación inicial en investigación, formación inicial de educadores.

INACMES (Action-research, Curriculum and Multimedia in Higher Education) is a group sponsored by COLCIENCIAS which has been classified under Category A. This piece of work includes the achievements of a method and a theory used to initiate the scientific formation of novice educators enrolled in the Modern Languages Program at the University of Caldas in Manizales. The project was carried out since 2004 until 2005. The extent to which novice teachers link the terms pedagogy research, curriculum and the teaching learning process is explored. The findings express concern over prescriptions from so-called beginning researchers and suggest that curriculum in higher education can contribute to the advance of pedagogical knowledge from a particular educational context which is the research work inside the formative process at the university.

KEY WORDS: Curriculum research, beginning researchers, beginning teachers.

Revista Latinoamericana de Estudios Educativos. Volumen 1, Julio - Diciembre 2005, págs. 148-159

PROBLEM AREA

Nowadays, our teaching practice at the University is undergoing significant changes. Instead of a teaching practice based on routines, we are becoming a process whose pedagogical principles will be defined primarily by practical and theoretical knowledge. One of the most important aims of the graduate Licenciatura curriculum is to prepare reflective teachers of Basic Education. At present, Colombian students are trained through theory based courses or seminars and little practice (Muñoz and Quintero, 1999). Problems emerge from this type of training: Lack of integration of theory and practice. Lack of time devoted to research work. Frequent use of isolated techniques. No use of field work. Absence or philosophical paradigms. Mechanical practice of step by step and instruments. A high rate of teachers´ attrition induced by lack of incentives. Teachers continue trying to adopt what others suggest is the best for their practice. However, most of the time, it is difficult to transfer what experts suggest should be done in our classrooms. Additionally, certain adverse conditions impede implementation of a good educational research project such as overcrowed classrooms, deficient funding for supplies, equipment or facilities and inadequate instructional materials.

In short, these are the most recurring practical limitations in order to introduce research processes: a) Educational research is not applied as fast as it should be. b) Quite often theoretical isolated courses are not easily transferable to new situations in the field of practice. c) There is a lack of model classrooms where the teacher-trainee can observe appropriate reflective-action-research processes. d) A lack of institutional policies related to the role of educational research. e) A lack of sources and time both for teacher-trainees and advisor to give systematic and appropriate feedback. f) Moreover, there is a marked lack of relationship between the previous training and the field of practice. g) Furthermore, one can observe prejudices and misconceptions about teachers' research.

RATIONALE

It is important to promote educational research processes into practice in order to face new perspectives of education related to the development of science, technology, society, culture, and the teaching-learning processes. The notion of reflective-action-research is meaningful and potentially helpful to educators at large. Scientists talk of an information revolution which is leading towards the creation of knowledge society.

Although educational theory has contributed to a great deal to the advancement of knowledge, it has not made a significant impact on learning and teaching practice in the Colombian curriculum programs. Most teachers are unaware of recent theories, principles and research methods, partly because of their greater emphasis on their own disciplines, partly because of the extremely specialized terminology of scientific discourse, partly because of the financial and administrative restrictions.

Gaining the expertise needed to do effective educational projects is difficult. Over the years teachers have been and still are being criticized for inadequate training, lack of understanding of the nature of scientific evidence, overemphasis on descriptive studies, and so on. As just noted, this project has been written, so that it can help teachers carry out an organized sampling of scientific knowledge about pedagogical practicum in the classroom. It is a source of practical ideas and suggestions that might be used during the time that teachers teach and students learn.

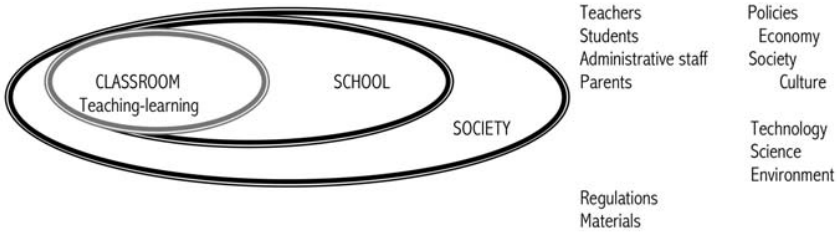
It is important to promote research processes into higher curricular practices in order to face:

- The New perspectives of education related to the development of science, technology, society, culture, and teaching-learning processes
- The new reform involves new teachers, students and advisors in the construction of an integrated body of pedagogical knowledge. Teacher training formation plays a crucial role in the quality of education
- To identify personal meanings about pedagogical contexts oriented to improve and qualify teachers' action
- The reflective-action-research cycle can be applied by teacher-trainees and advisors for their own educational activities
- The reflective-action process is a very important step in the professional maturation of the teacher-trainee, who is studying at the University to be a future teacher at public and private institutions.

THE COLOMBIAN CONTEXT

Just at the beginning of the third millennium, it may be said that, in economic, social and cultural terms, progress has brought in all over the world, given the advances in

science and technology and the growing importance of knowledge. Many Latin American countries have emerged from underdevelopment and emancipation (Freire, 1993). Standards of living have continued to rise, albeit there are considerable differences from country to country and from region to region. Colombia participates in the race for competition under the pressure of technological progress and modernization. This fact causes tremendous implications: unemployment, competition among nations, uneven distribution of opportunities, the use of renewed knowledge, poverty and violence. We accept that the less-developed countries cannot easily solve their financial and their organizational level. Maybe, this is the origin of a considerable amount of frustration and disenchantment of most citizens. The graphic below shows the relationship between the classroom, the school and society.



Nowadays, in our Colombian context, universities train students to become teachers in public or private institutions covering the different levels of the educational system: pre-school primary school, high school, special education and higher education. The Colombian society has experienced the problems derived from the low quality of the educational system. How can research be made more relevant to curricular practices? Following the educational reform, educators in Colombia have begun to rethink a new model of development, which would lead to integrate theory and practice, curriculum and research. Phrases such as reflective teacher, research teacher, pedagogical research, science, technology, solving problems, human inquiry, innovation, qualitative and quantitative approaches take place in everyone's vocabulary.

Issues from all over the world tell us permanently that each country has its own particular set of circumstances. In the earlier days of educational reform (the days of active learning, instructional design, quantitative methods) research was directed almost exclusively toward the expert professionals. It is now oriented more toward teachers which are defined as having interest and motivation.

The kinds of necessary research, the required theoretical insights, and the ways that scientific findings should be translated into curricular practices are issues that have not yet been resolved. Educational research and curriculum in Colombia must be conducted with the purpose of improving the quality of educational practices. Educators need to improve the conditions and the quality of learning for an increasing number of students. Accepting its limitations and its critical points of view, the reflective-action research cycle must help to identify problems and to illuminate new alternatives and pathways that lead toward new theories and redefine educational goals.

EDUCATIONAL RESEARCH IN COLOMBIA

Colombia has a multitude of social, economical, political, pedagogical and technological problems to solve. Teachers cannot waste precious time and talent on trivial studies. Many different types of research are applicable to educational practice. Weinert (1997: 266) says: *"The practical application of research consists of more than the instrumental use of research findings. In addition, science and research have an educational function; that is, they provide individuals with knowledge about themselves and the world, and allow individuals to act rationally".*

What is the relationship between research and curriculum? What about educational research in the teacher training programs? What is the relationship between pedagogical practice and research processes at school? We do not agree with the traditional dilemma: to *work as a teacher, is enough to have a wide set of technical procedures without research training*. In other words, the dilemma means that it is possible to have a good pedagogical training without any specific educational research formation. On the other hand, we do agree with some scientific communities that affirm that there is a gap between curriculum, pedagogical practice and research processes.

Research is concerned with the process of inquiry. Action research may be defined as a collaborative and critical inquiry by professionals about their own teaching practice. The most relevant aspect of a research process is to identify personal meanings about pedagogical contexts in which educators are situated. Teachers, students and teacher-trainees may be able to identify the broad problem areas that are most closely related to their interests and professional goals. What works, where, how and

why? In this commitment, it is important to reject rivalry between teachers and researchers in order to construct an integrated body of pedagogical knowledge.

STUDENT'S NAIVE IDEAS ABOUT RESEARCH PROJECTS

- An enthusiastic inexperienced research learner becomes eager to start his educational project
- A novice student is usually anxious. He listens impatiently to advisors who ask: "have you defined your problem clearly? Is the study important to education? Are the findings likely to be worthy? Do you possess the basic skills to develop the investigation? Have you written an interesting theoretical framework? Do you have enough time, sources and money? Can you obtain administrative support, guidance, and cooperation?" if not, what can you do?
- A naïve researcher accepts the first idea that is suggested to him. The first ideas are often naive. For example: to think that a project will solve all the problems at school.
- He can see research problems in every thing he reads
- In a graduate program, sometimes, courses and academic activities are not applied as fast as it should be
- Hundreds of students have completed all work for a curriculum plan, but their thesis or graduate project because there is a marked lack of relationship between previous training and the field of practice
- Naive researchers employ sophisticated terminology and procedures
- The graduate student's questions would require many years to solve
- Many novice researchers spend months or years in gathering data. The end result is a formless, frustrating store of data
- He weakens his research design by making changes for the administrative convenience

Why did we adopt the reflective-action research into curriculum practices?

We have tried to make both theoretical principles and methodological procedures available as a support for the beginning teacher-trainee. The action research cycle can be applied by teacher-trainees for their own educational activities. Scientific issues related to the formation of teachers as researchers have concerned some theorists

all over the world. Lewin (1946), Denzin (1994), Ebbutt (1985), Elliott (1998), Dewey (1960), Freire (1973), McKernan (1998), Stenhouse (1983) provide a justification of action research in education.

Kemmis & McTaggart, (1988:92) say that action research provides a way of working which links theory and practice into the one whole-ideas-in-action. *"Action research is a form of collective self-reflective enquiry undertaken by participants in social situations in order to improve the productivity, rationally, and justice of their own social and educational practices, as well as their understanding of these practices and the situations in which the practices are carried out".*

"The combination of action and research renders that action a form of disciplined inquiry , in which a personal attempt is made to understand, improve and reform practice". (Hopkins, 1985:32; Ebbutt, 1985:156)

Donald Schön, (1983) argues that the problems professionals face cannot be solved by the formulas of "technical rationality". Reflective practitioners, be they physicians, architects, or teachers –or, one might add, craftspersons or artists- face "situations of practice" characterized by complexity, uncertainty, instability, uniqueness, and value conflict. Dewey (1960), also explains that problems arise from the practical experiences of living. Reflective thought is a search for a kind of understanding that enables one to act wisely and intelligently in a dynamical world. Reflective thought is not a matter of transfusion of knowledge by copying the objects of the environment in terms of their fixed images. Knowledge is constructed by creative minds.

METHOD

The method we have used to carry out our research process followed the stages of the reflective-action research cycle: observing, questioning, reflecting, decision-making, planning, acting, reflecting, writing in an ongoing process. The target population was a group of ten teacher-trainees developing the last year of the curriculum Licenciatura Program in public high schools and primary schools. While processing data, participants learnt to combine different techniques and instruments such as transcripts, diaries, autobiographies, triangulation, sociograms, and quantification of speech (talking units), categories of meaning, class observations, case study, life histories, records,

documents, interviews, letters, pedagogical files, surveys, descriptive statistics and experiments.

These are the steps of action research, adapted from Lewin (1946)

A GENERAL IDEA	?	A difficult problem requiring resolution.
PLANNING	➔	How to solve the problem.
ACTING	➔	A field change experiment focusing upon the plan. Action refers to the implementation of the strategic plan.
OBSERVING	➔	Collecting data on the effects of the changes. It includes an evaluation of the action by appropriate methods and techniques.
REFLECTING	➔	Evaluating regarding the effectiveness of actions. Reflecting on the results of the evaluation and on the whole research process.

⬇

Identification of a new problem and a new cycle.

FIELDWORK

To complete this tasks, every day after the class, the teacher-trainee filled in the following chart:

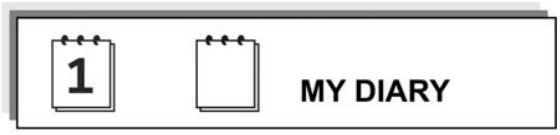
Description	**Interpretation and Reflections**	**Action plans**
(intervention points) (Narrative field notes, maps, diagrams, drawings, photos, etc.)		

FINDINGS

After a very long process, as teacher-trainees advanced in their action-research project, they began to comprehend deeply the reality of the school life. They started very shyly to get in touch with all of the situations of the school. However, progressively they became more collaborative and self-confident. They were able to bring their problems into a clearer focus. They were very creative in their observations, their descriptions as well as in their interpretations of the data collected during the fieldwork. They became more reflective of what concerns their own role as beginning teachers, and they were more assertive in decision-making. The participants finally became more critical and were able to draw better conclusions. Their writing ability improved a great deal. They also went deeper inside the different pedagogical situation not only in their specific field of work which is the classroom, but also in the educational institution as a whole. In short, they became more coherent in the way of thinking, feeling and acting.

The results are significant in that they confirm the hypothesis that action research is an effective method of improving educational practice and conducing the teacher-trainee to write pedagogical knowledge. The participant team has demonstrated that using the reflective cycle (planning, acting, observing, reflecting and writing), it is possible to improve their own teaching practice and contribute to the advance of pedagogical knowledge in a particular context. Rather than starting from theories on students' learning and then applying them to practice, this material deals with reflective-action-research by teacher-trainees themselves for solutions to problems in the Colombian classroom.

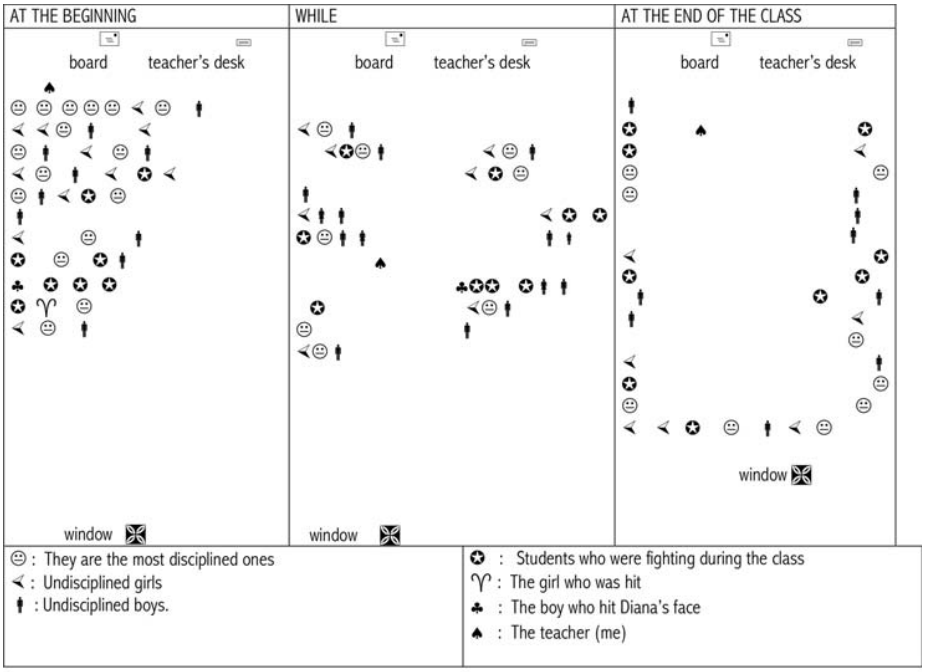
The following is an example of a diary where teacher-trainees applied the action-reflective cycle in a public school.



Date: March 23 – 2000 Time: 11:40 – 1:00 p.m.
Level: eighth grade
Topic: Test yourself: write about yourself (A grammar class)

DESCRIPTION:

I told them that today they would have the opportunity to test themselves. I said "OK, now we'll have a little quiz. It's not an exam. Take out a piece of paper and write the following instruction:" I wrote on the board: write a composition about yourself according to the questions. What's your name? What's your nationality? Who do you live with? Etc. The students took about 15 minutes. After the exam, we developed that on the board in order to let the students realize about their own mistakes.



REFLECTION: *When I always enter the classroom, the students are never prepared or better ready to start. So, I get upset because it is all a mess and it's difficult to start a class with such noise. It's known that boys are more undisciplined, they can not remain in the place they are; they also get tired faster than girls.*

At the end of the class, they were really anxious to go home and asked me to let them go earlier, but I couldn't. "Rules are rules and I can not break them". The problem is that teenagers always want to go against the rules.

INTERVENTION POINTS FOR THE NEXT CALSS:

- *I think that we can not underestimate our students, but we have to be very demanding with them.*
- *To do an introduction about 'there is-there are'.*
- *To organize the classroom.*

CONCLUSIONS

The reflective-action process is a very important step in the professional maturation of the teacher-trainee, who is studying at the university to be a future teacher at public and private institutions.

After evaluating its advantages, we realized that this proposal can be aimed at beginning teachers who are engaging in research. Although, this training program has been designed specifically in response to teacher-trainees' problems and needs in their last curricular stage, it can be readily translated and adapted to educational contexts of other training programs which are engaging in research. It may be used by teachers, trainees, researchers, practitioners who are interested in applying research activities in order to improve their own practice, skills and conditions of learning and teaching in a systematic way. Teachers are in an ideal position; on the one side they can create an advanced knowledge on the basis of their concrete, practical experience; on the other side, they can actively improve the environment, context or conditions in which their practice take place.

Having in mind the real needs and problems set out before, we consider of particular importance for our Colombian Schools to make of reflection-action-research an important part of curriculum reforms. Observing, questioning, describing, taking notes, interpreting, reflecting, planning, acting, and writing are competences to be gradually included as a routine in the daily work of teacher trainees as future teachers. Despite of several strengths and weaknesses of their own particular situations according to their perceptions about research processes, their experience and reflections involved in their pedagogical practice, they could be aware of the importance of research processes to improve real teaching contexts.

The participants in this study also shared that there are serious time constraints. They often complain that they don't have enough time to accomplish what they want to investigate in their everyday practice. Translating scientific results into practical pedagogical situations is not a simple task. Nonetheless, a variety of different proposals for solving the research-practice problems have arisen from the present project. In the same way, several attempts to derive practical applications from research findings have emerged in order to use the results in educational practice.

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