Teaching teachers senses in exercise: Incidence and impact on academic performance of pre-university students

Agelica Loaiza Lopez

Mg. University teaching. Aconcagua University, Chile.
Spec. of Education Research for College Teaching Contexts

Abstract

This article expresses the findings in descriptive exploratory research on the meanings surged in teachers, from their teaching praxis, and its impact on the academic performance of pre-college students (Pre-Icfes) in Continued Education Program provided by Santiago de Cali University, Colombia. The project included a quantitative, qualitative methodological framework, which allowed to learn some perceptions about teaching presence in teaching practice from education paradigms per competences, opinion provided by students at the time of being taught, and its impact on academic performace in the program. Results found provide a researching contribution, which from its reflexive importance, allows to holistically appreciate the theme within learning process. Also as a pedagogical background, both to design teacher training proposals, and prepare workshops or teacher training courses oriented on research line.

Key words: Learning, Education per competences, Teaching, Peagogic praxis, Pre-college.

Introduction

From education systems, current knowledge society is promoting education per competences, which impact institutional philosophy, and academic programs of the various academic entities, in order to promote student high quality performance. Hence, didactics are a part of this paradigm centered on trainees, from education pillars: "Learning to know, Learning to know how to do, to learn to Be and Cohabitate". Delors (1996). This pedagogic ideal allows to found these formation processes in students, performance in agreement with requirements of current globalized and glocalized world.

The state-of-the arts show several researches revealing presence of this study. According to background found, there are contributions made since ancient times on didactics presence in pedagogy, and since the 90s and early this century, for education per competences. Therefore, this research corresponds to didactics field under the above mentioned education paradigm, within pre-college education context. This type of education is aimed at episteme learning and qualified per competences, where the student is prepared no only to take evaluation, or State Icfes Test (indispensable requisite to enter higher education) but also, for his future university life.

Work spaces limited from these scenarios, allows to detect how teachers conceive didactics in their education praxis, and how studens perceive them in class. Therefore, the problem statement was centered in determining, within a term of six months, didactic meaning surged in teachers pedagogic practice, and its impact on academic performance of students taking Pre 01 of pre-college formation (Pre-Icfes), in Continued Education Program provided by Santiago de Cali University, Colombia.

From this notion, importance and motivation to select the topic, was supported on being able to conceive it as a proactive and hollogramatic way, aimed at achieving academic purposes in any teaching – learning process. Therefore, emphasis is made on determining such didactics parting from development of competences (habilities, skills, values and attitudes), and their influence on academic performance of students taking the above mentioned program; emphiasis was also made on promoting teacher analysis and reflection alternatives on the need of experiencing didactic sense in current learning processes; which from pedagogic praxis, are the main contributors to achieve quality education.

Materials and methods

As a result of importance assigned to didactic meaning found in selected population, and the need of performing a contextualized study, researchers worked parting from an exploratory, descriptive, transversal, non-experimental design,

with a mixed and qualitative approach influenced by pedagogy founded on education per competences. They explain the teacher work regarding thought move toward creation, cognitive innovation, and academic performance at the classroom from didactics in pre-college programs. Therefore, the research prepared from methodological framework did not intend to manipulate analysis units (didactic sense, pedagogic practices, and academic performace), and did not participate in the phenomenon to be analyzed.

For Hernandez, Fernandez and Baptista (2010:150):

> Non-experimental research is systematic and empirical research, in which independent variables are not manipulated because they have already happened. Inference on relationships among variables are made with no intervention or direct influence, and such relationships are observed as they happen in their natural context.

Therefore, this design was selected as a research strategy, since for this case qualitative analysis units had already happened in the researching context, and their presense was determined as events had happened to be analyzed later according to their characterization with the quantitative analysis unit.

Likewise, an exploratory descriptive design was used, which become a means to achieve researching purpose, where "an approach to the reality was intended" Jofré claims (2013). As Hernandez, Fernandez and BAptista (2010:79-80) also stated: "Exploratory studies few times are an end in themselves, in general, they determine trends, identify potential relationships among variables, and establish the 'tone' of subsequent more rigurous researches".

In this manner, it was wanted, at a single time, to identify didactic senses surged in teaching practive and their impact on the students academic performance; by contacting them through quantitative, qualitative (mixed) approaches, which allowed to objectively see the status and characterization of analysis units in such population; as well as approach to subjective reality, by means of these designs along the research process, providing a posteriori the respective data analysis through statistical system Statistical Package for the Social Sciences (SPPS).

The context where the research was made corresponds to a higher education level within the Continued Education Program (pre-university), where population was formed only by teachers and a group of students registered in the above mentioned course, at Santiago de Cali University, Colombia. The research included 10 teachers of Physics, Chemistry, Social Studies, Philosophy, Mathematics, Language and English; and 33 young male and femate students; (30 attended); they participated in this project in group 01, on Satudays, for one month, within a semester schedule respectively.

Upon preparing the type and general design of this research, according to stated objectives, data from each member of the above mentioned population, was collected. This census was realized, because of existence of a single group of students, which they researched guided, while performing his specific cathedra; therefore, access to them was easy and through planned selection, as well as the one for teachers. Therefore, the population selection process was not considered as a sample, any type of sampling was applied either, since its total was taken together with teachers working in the same schedule as students, and in other of the respective program, providing each academic area where instruments were applied according to the type of research. Both were registered at the time of researching, which allowed to obtain relevant pertinence and data reliability.

Regarding qualitative measurement instrument of the analysis unit, the coordinator of the pre-university formation program – Santiago de Cali University, Colombia, was requested results from simulacrums performed in March this year, which provided current information on academic performance of students registered in the respective course.

The instrument took into account the intention of the research, and therefore, the intention of the methodology. The survey was the tool, and it was designed in order to collect data on diagnostic, integral and heterogeneous basis. For such purpose, a teacher perception survey was administered, composed of 17 appreciations parting from a Likert scale, where those surveyed elect the scale or attitude level which better would meet their perception. It was aimed at directors of the program. Together with this document, accompanied by such closed questions and divided into six dimensions, three open question were also presented, according to qualitative categorias from a FODA matrix, (Strengths, Opportunities, weaknesses, and threats), according to proposed objectives and comprehension of researching reality; accurate data was collected on presense of learning categories which encourage formation of ability, skills, values and attitudes related to didactics and from which it was expected to establish in the respective teachers.

The other survey was on student perception on teacher performance. It was realized parting from the same criterions as the teacher survey, which not only allowed coherence between researching pruposes and dimensions, but also the students power to clear and objectively answer according to teacher performance in these courses. Likewise, as an instrument, to allow, from statistical analysis, to compare them respectively.

In order to collect detailed information on population, according to studying units of the object to be studied, it was necessary to internally establish validity and reliability of instruments, to ensure credibility of the same, and results obtained as well. This work included participation of an expert jury, including

researcher teachers of the research program of this university, and a group of students of the program taking other courses, who were not included in the population to be investigated. Their appreciations resulted in certain modifications, specially on items writing; finally, an improved survey and apt for application was obtained.

Statistical analysis

Information quantitatively collected is processed through SPSS statistical program. Where data of scalar survey allowed to comprehensibly handle exploratory descriptive designs, according to research analysis units, expressing distributions of absolute and relative frequency, central trend measurements (median) and variability measurements (standard deviation), which made it possible to organize and store information in registry forms, where bi-varied charts were expressed, graphic representations were determined and established in Excel, such as bars, cakes, diagrams, which allowed interpretation of each questions collected in such instrument, in order to be described, analyzed, and at the same time obejectively representing study reality. From a same appreciation, (Behar and Yepes, 2007:46-47), state that: "descriptive statistics cosists of information organization on useful and understandable basis, through preparation of charts, tables, graphics, and reducing collected data through some indicators which facilitate interpretation", other authors state:

> Data qualitative analysis includes organizing data collected, transcribing them to a tex when necessary, and code them. Coding includes two planes or levels: in the first, units are coded in categories; in the second one, categories are compared among themselves, to group them into topics, and establish possible links. (Hernandez, Fernandez and Baptista, 2010:448).

Therefore, we proceed from a conceptual categorization parting from a FODA matrix (see chart of qualitative analysis), which expressed a weakness, an opportunity, a strength, and a threat, when relating and comparing positive and negative aspects. The first ones being opportunities and strengths (OF), and the second ones weakenesses and threats (DA).

Both of them were coded, in such a manner that answers were organized by means of frequencies (times when similar answers were given), and parting from them, possible links between the respective categories and opportunities to be interpreted, and concluding were considered and demonstrated. Therefore, analysis from the qualitative approach was established, for expressed answers to be described, signified, related and conceptual and contextually interpreted, allowing to compare them to quantitative results, in order to describe, complement and reflext purposes to be investigated.

Results

In meeting purposes of the research, results achieved allowed to recognize a minimal and regular presence of didactics, as well as certain incongruences between what teachers claim to do from education paradigms per competences, and students perception at the time of receiving classes, and how they impacted academic performance within the program. While qualitative data allowed to take opinions provided by teachers and students in a FODA matrix, by reviewing each comment expressed in categories of such matrix; perceptions were found, expressed according to strengths and opportunities, these being positive appreciations, while weaknesses and threats were negative appreciations.

In a first level, quantitative results were organized parting from population classification into general data, followed by results of teacher perception survey, and student perception survey regarding teacher performance, according to pedagogic, methodologic, ethic, motivation, material availability, evaluative, aspects, and academic areas, and impacted by didactics. They are described below by descriptive graphics.

Comparison between teachers and students

The following graphics show relationships between answers given by teachers and students:

Graphic 1. Question comparison: Teachers present motivation expressed regarging goal achieving, competences and components, composing the program curriculum.
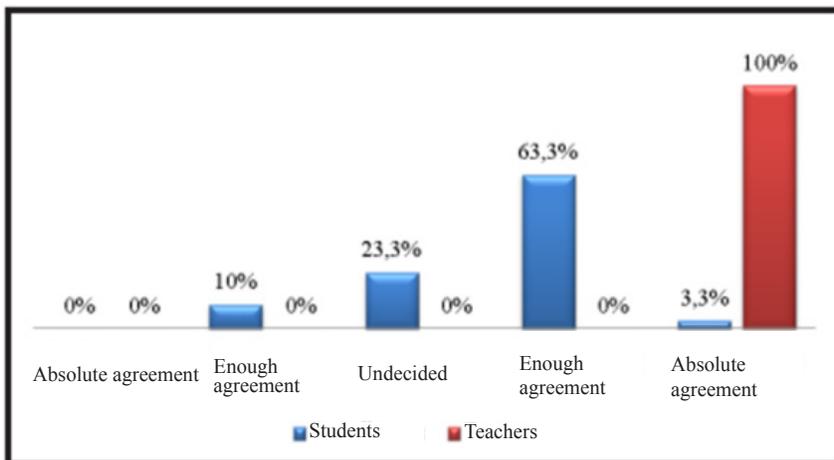

Source: own preparation based on survey

Graphic 2. Question comparison: Learning based on pedagogic model, Learning to Learn.
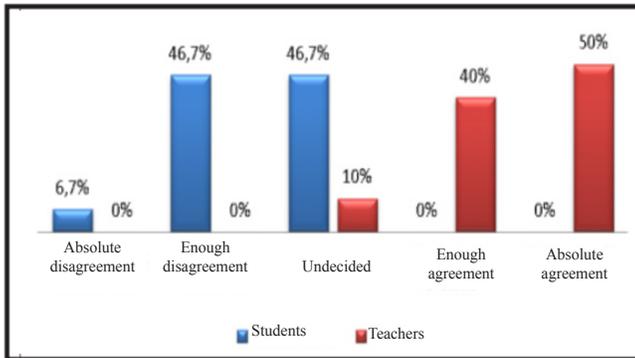
Graphic 3. Question comparison: Teachers apply pedagogic strategies planned and oriented to acquisition of meaningful learning.
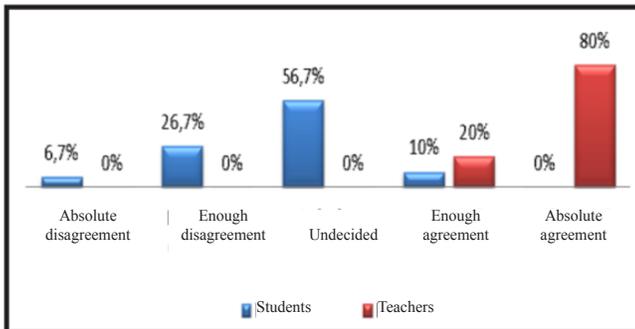
Graphic 4. Question comparison: Teachers promote and involve themselves in classes with conceptual quality and methodology, promoting individual learning and group learning, according to student capability and values.

ΣΟΦΙΑ – SOPHIA
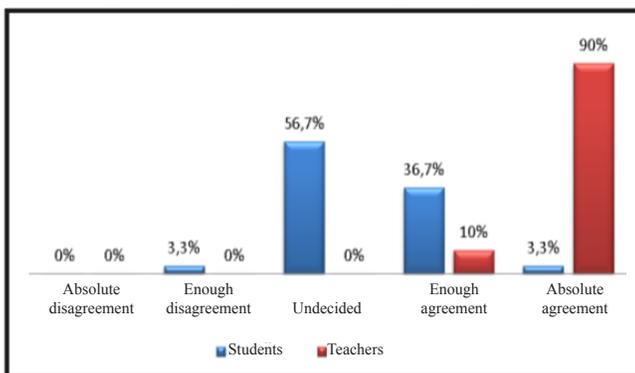
Graphic 5. Question comparison: Unit development, takes into account quantitative and qualitative process evaluation in order to build short and long term learning.
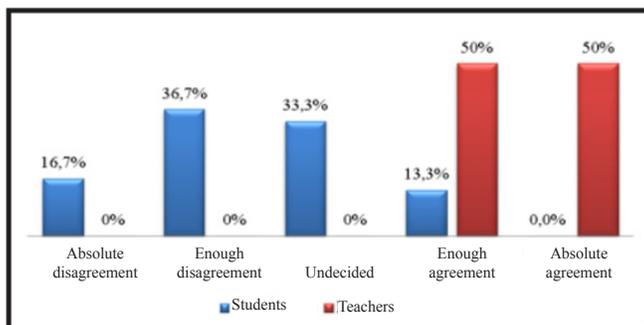
Source: own preparation based on survey

Graphic 6. Question comparison: Didactics presence in teaching learning process.
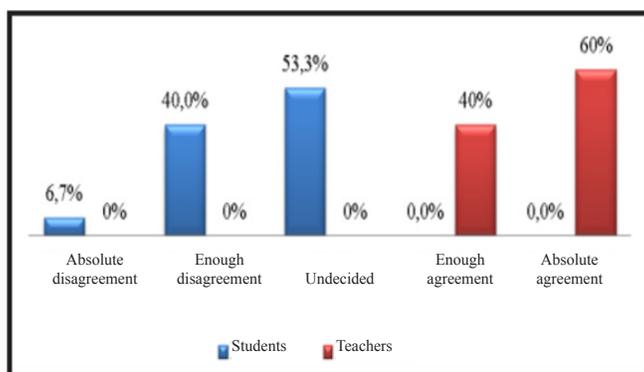
Source: own preparation based on survey

Analysis unit indicators

The following tables show coding performed for Likert scale, analysis units, pedagogic practice, didactic senses, academic performance, and Icfes scale.

Table 1. Indicators according to Likert scale.

Indicator	Values
Low	0- 3,3
Middle	3,4 – 6,6
High	6,7 – 10

Source: own preparation based on survey

Table 2. Pedagogic practices

Pedagogic practices	Frequency	Percentage
Low	0	0%
Middle	26	86,70%
High	4	13,30%

Source: own preparation based on survey

Table 3. Didactic senses

Pedagogic practices	Frequency	Percentage
Low	0	0%
Middle	30	100%
High	0	0%

Source: own preparation based on survey

Table 4. Indicators according to Icfes scale.

Performance	Values
Low	0- 30
Middle	30,01 - 70
High	70,01 - 100

Source: own preparation based on survey

Table 5. Didactic senses

Pedagogic practices	Frequency	Percentage
Low	0	0%
Middle	26	86,70%
High	0	13,30%

Source: own preparation based on survey

Graphic 7. Indicators of analysis unit, didactic senses, and pedagogic praxis.
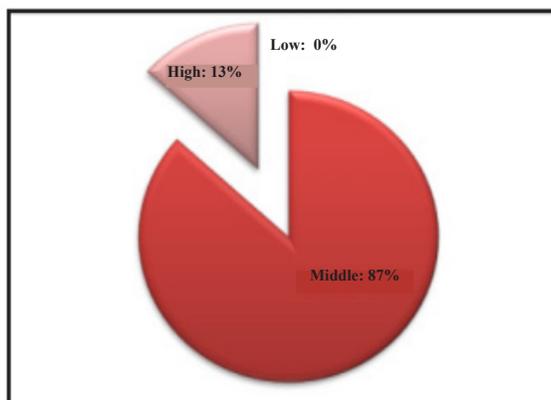
Source: own preparation based on survey

Graphic 8. Indicators of academic performance
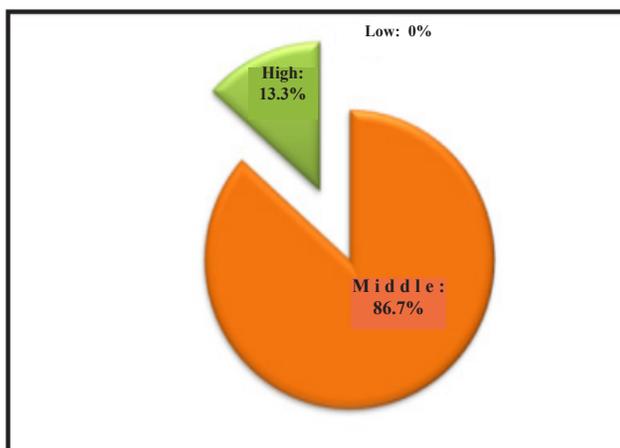
Source: own preparation based on survey

Results from evaluation preIcfes. Pre-university formation program, Santiago de Cali University, Colombia.

Below are the results of PreIcfes simulacrum evaluation, according to dimensions, objectives and established analysis units.

Quantitative analysis unit: academic performance

In measuring student academic performance, results of simulacrum evaluation for each area were taken into account. The following are some descriptive statistics for each area.

**Table 7.** Results from evaluating simulacrums academic performance

	Biology	Physics	Chemistry	Social studies	Philosophy	Math	Language	English	Elective
Average	60	50	57	64	50	54	60	68	42
Deviation average	13	12	12	11	10	11	8	18	18
Minimal Standard	35	35	35	30	35	33	43	37	13
Maximum	84	80	80	81	69	85	73	102	80
Quantil 1	54	41	48	58	41	46	56	57	27
Medium	63	47	57	68	52	53	61	68	37
Quantil 3	70	57	65	70	58	63	65	77	58

Source: own preparation based on survey

Parting from these evaluation results, it is observed that, in average, the areas in which students achieved better academic performance were English followed by Social Studies, and those of lower academic performance were Physics and Elective.

It is also seen that the area showing higher variability, that is, very different grades/marks, was elective, since grades ranged between 13 and 80. In addition, a half of students made grades over 63 for Biology, 47 for Physics, 57 for Chemistry, 68 for Social Studies, 52 for Phylosophy, 53 for Mathematics, 61 for Language, 68 for English, and finally, 37 for Elective.

In a second level of answers, qualitative FODA matrix is presented in which teachers and students express their perceptions.

Teachers FODA matrix

Chart 1. Didactic impact during academic activities of the program.

Chart 2. Teaching according to learning processes per competences.

Students FODA matrix

Chart 3. Didactic impact during academic activities of the program.

Chart 4. Teaching according to learning processes per competences.

Graphic 9. Academic performance of the various courses given in the program
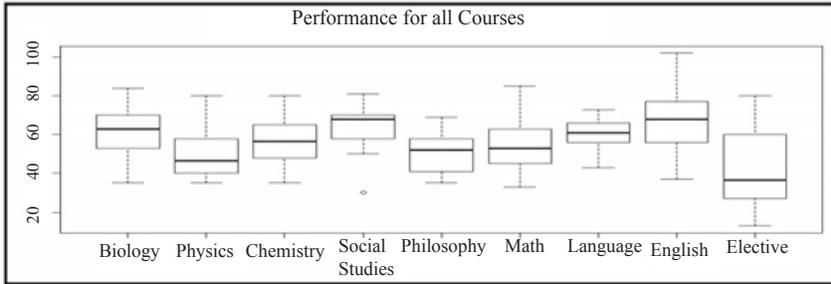
Source: own preparation based on survey

CHART 1

FODA MATRIX	CODE	CATEGORIES (More frequent answers)	MENTION FREQUENCY
STRENGTHS	1	* work units at each module by presenting real situations, serve as a reinforcement for topics already seen, and to improve academic performance	4
	2	* Competences and thoguths are developed through didactics	3
	3	* Learning is increased by using daily experience and methodologies producing critical thoughts and reflective	1
	4	* Learning environment are made more pleasant and interesting	2
	5	* Developing reading skills applied to the context	3
OPPORTUNITIES	6	* Encouraging creative thought which allows producing meaningful learning, and a good life project	1
	7	* Working with other resources or materials which support teaching process	1
	8	* Receiving training or pedagogic workshops where didactics is worked in connection between the academy and the society	2
	9	* Recommend major complexity in some module components, and thematic axles are continued in order to improve methodologies	3
	10	* Lacking technical resources and audioviosuals availability causes didactic activities to be decreased	3
WEAKNESSES	11	* Students may show low learning level because of lacking didactic work	2
	12	* Hours assigned to some courses are short for all topics to be covered at the classroom, which results in not using didactics	5
	13	* No continuity of didactic process since some didactic expert teachers may leave.	1
THREATS	14	* Students withdrawal because of unsatisfaction regarding learning, and go to another pre-university programs	1
	15	* Competence by other pre-university programs using better methodologies	1
	16	* To continue using those modules requiring more conents and didactic schemes	3
	17	* Diversity of teaching processes by teachers	2
	18	* Lack of training and share/discuss performance evaluations, limits didactic impact in education practice	2

CHART 2

FODA MATRIX	CODE	CATEGORIES (More frequent answers)	MENTION FREQUENCY
STRENGTHS	1	* Resolution of problem situations aided by cognitive processes	1
	2	* More participation and meaningful learning	3
	3	* Reinforce methods to improve learning	2
	4	* Produce good academic outcome	3
	5	* Creativity is promoted by real life examples	1
	6	* Pedagogic activities are performed with these methodologies	3
OPPORTUNITIES	7	* Learning ways which students like to learn	2
	8	* Allow students to question, reflect, develop skills and draw conclusions	2
	9	* Provide topics associated to common situations for students	3
	10	* Lack of basic skills of students makes learning scope difficult	4
WEAKNESSES	11	* It is difficult for students not having studied for years, to learn faster than the rest of students	1
	12	* Fear of taking classes because of being concerned about what the group may say	2
	13	* Resistance to change by some teachers in front of current pedagogic methods, makes learning not to be the best.	3
	14	* That some teachers do not recognize deficiencies of methodologies implemented in class	3
THREATS	15	* Lack of student attendance during courses	4
	16	* Lack of enough class hours for certain courses affects content development	1
	17	· That the program does not perform the necessary training according to progress of tests and pedagogy	2

CHART 3

FODA MATRIX	CODE	CATEGORIES (More frequent answers)	MENTION FREQUENCY
STRENGTHS	1	* They expanded knowledge in a simple way through daily life examples to present any topic	3
	2	* They allowed students more participation in class	9
OPPORTUNITIES	3	* Clear stragegies were presented by some teachers	6
	4	* Some courses call attention and improved student learning	12
	5	* Teachers should be encouraged and trained on the use of didactics and methodologies	10
	6	* Teachers should give the importance they deserve in class	4
WEAKNESSES	7	* Perform classes using more practical activities, and tailored to student learning needs	10
	8	* Changing teaching method by some teachers	3
	9	* Teachers should present several methodologies, to be chosen according our way of learning	2
	10	* Include them to be more worked in groups	2
	11	* Little participation of didactics in class	16
	12	* Student fear about mistaking by decreasing their participation in class	2
THREATS	13	* Lack of methods or skills by most teachers on didactics need in classes	5
	14	* Some classes turn monotonous because of didactics lacking	2
	15	* There are certain classes showing low academic level, and teachers limit to only handle the module by giving non-justified answers	3
	16	* non-updated resources, or absent, by most teachers	2
	17	* Ignorannce about didactics may make teachers not to update their classes	4
	18	* Some teachers telling their personal life, make topics to be learned in class fall short of time	2
	19	* Continuance with attitude of lack of attention, non-motivation and disregarding because of didactic acitivities	6
	20	* Teaching with no daily transcendence	8
	21	* That students do not learn, or fail simulacrums or State tests	10

CHART 4

FODA MATRIX	CODE	CATEGORIES(More frequent answers)	MENTION FREQUENCY
STRENGTHS	1	* There was motivation by some teachers for class learning from these processes	7
	2	* Communication strategies improved	4
OPPORTUNITIES	3	* Promotion of general competences and specific	5
	4	* Topics were easier to understand	3
	5	* Certain teachers tried to implement it in their classes	3
	6	* More integration among classmates	4
	7	* They promoted self steem and enthusiasm at achieving proposed goals	1
	8	* Their proper application educate us from the academic and personal point of view	1
	9	* Better attitude by teachers to accept change in front of these teaching processes	4
	10	* To create awareness and reinforce in teachers importance of pursuing sociocognitive processes with students	6
WEAKNESSES	11	* Teachers should be evaluated regarding their teaching skills and change for their benefit and ours	8
	12	* Clarify doubts through explanations on our daily life to better learn	3
	13	* Promoting integration between students and teachers	3
	14	* Learning through these processes would be greater	6
	15	* Some people were not interested in these processes, but just comply with their work schedule, and forgot their teaching duty	7
	16	* These processes were not presented in all courses	5
THREATS	17	* Some teachers were concerned just about teaching contents	11
	18	* Some teachers were outdated, and did not know how to use didactics	2
	19	* Lack of topics integration	1
	20	* Lack of learning applied to daily life	1
	21	* There were two classes where the teacher talked just about his personal life, and explained topics related to the courses in a very general way	2
	22	* There was little learning in certain classes	1
	23	* Students disregarding attitude may adversely impact these processes	3

Discussion of results

Didactic senses surged in pedagogic exercise by teachers and their impact on students academic performance in pre-university program, express quantitative and qualitative information, which allow to verify basic and sporadic use of them within classes. Regarding the quantitative ones, there is a dichotomy between teachers' and students' perceptions. While teachers claim being performing educative paradigms per competence, students think otherwise. To better explain, when we reviewed answers given by both populations about those teachers showing motivation regarding achieving goals, competences and competent individuals involved in the program curriculum, graphic 1 shows a clear difference between opinions given by teachers and students, where all mentors fully agreed that they presented expressed motivation to objective achieving. Otherwise, Sudents have perceptions between enough agreement, undecided, and enough disagreement. Therefore, in spite of a minority opining otherwise, more than a half of students hold a positive scalar posture, very similar to the one expressed by teachers.

Regarding comparison of the question on learning, based on the pedagogic model –Learning to Learn, graphic 2 shows a great difference among answers by the participants. While teachers absolutely and enough agree that they use this technique, most students are undecided and fairly disagree. Therefore, these answers do not agree. Which means that there is no coherence between the parties, and in our opinion, methodologies have not been in accordance with the model of the program curriculum; otherwise, students would have been clear at weighting learning processes in one aspect of the scale, or in the same rank stated by teachers.

For the question on those teachers performing planned pedagogic strategies, and oriented to acquisition of meaningful learning, graphic 3 shows how teachers again answered as being absolutely and enough in agreement that they realize planned pedagogic strategies, and oriented to acquisition of meaningful learning. And, otherwise, students answered as being undecided in fair disagreement and absolutely disagreement that theachers do not perform this type of strategies. Therefore, these answers show a duality of perceptions, since if this aspect were clear, both parties would have chosen the same scale of attitude.

Regarding the question on teachers who promote, and pleasantly involve in classes, with conceptual quality and methodology which facilitate both individual and group learning, on meaningful basis, according to students capabilities and values, graphic 4 shows that 90% of teachers absolutely agrees that they are interested in modifying their teaching methods according to student needs. While 56.7% of students are undecided, and 36.7% in enough agreement with this aspect. These results show that a minority agree about what

teachers selected. However, what showed by a half class, does not agree about what teachers stated. That is, there are different perceptions about this item.

Graphic 5 compares the question on those teachers who, when developing theme units, take into account cuantitatuve and qualitative process evaluation in pro of building learning in the short, middle and long term. In this case, 50% of teachers absolutely and enough agree abut this issue. While 36.7% of students fairly disagree about the fact that teachers take into account these types of evaluation. Therefore, it is clear to see that the parties do not agree, otherwise, the students would have selected the same scale expressed by teachers.

Meanwhile, in graphic 6, the question on inclusion of didactics in teaching – learning processes, the students consider that in their pre-university classes, 53.3% are undecided that didactics is included in class pedagogic processes. While 60% of teachers absolutely agree that they include didactics in their praxis. Therefore, it is concluded that there is no agreement between the parties on this aspect. Otherwise, the student could have had the same appreciation as teachers, showing homogeneity of didactic senses during classes, and therefore in learning processes.

Regarding indicators, according to Likert scale and Icfes, analysis scales units of pedagogic practice, didactic senses, and academic performance, middle level trend was observed. These results show an homogeneous performance among the three indicators, therefore, within the formation paradigm per competences within the pre-university, didactics are somehow incipient and minimal in the above mentioned pedagogic processes. Reasons justifying these findings may be caused by those teachers who exercise their praxis on routine basis at the classroom, and perhaps are not interested in renewing them, and consider that their performance is in accordance with these paradigms. In this sense, it is easy to see the confusion degree of teachers, since the students challenge them, because teachers express minimal use, or almost absent. It would be worth to mention how teachers were trainted from the pedagogic point of view – to achieve their master's degree – or, perhaps ignorance about these trends because they lack of methodological updating. Any way, whatever the reason is, it is obvius the lack of didactics in praxis performance of this pre-university.

Now, regarding qualitative aspects, both, teachers and students expressed their appreciation, this one is even more obvious since they were able to state their perception in a FODA matrix (Strengths, Opportunities, Weaknesses, and Threats), where they answered to two pedagogic dimensions from positive aspects and negative.

Regarding positive aspects of the first dimension: Didactics impact during academic activities of the program, both, teachers and students coincided in their appreciation as strengths, in highlighting the importance of working with real situations, and those classes who drawed attention to improve learning. For

opportunities, both parties expressed the importance of training teachers on using didactics and technology, by connecting them with the academy and the society.

Regarding negative aspects such as weaknesses, teachers mentioned lack of technology and audiovisuals in courses development, which resulted in decrease of didactic activities, while the students referred to outdated resources or absent, in most teachers, which adversely impacted development of courses. Nothwitstanding, both parties stated that low level of learning could be caused by lack of resources, and didactic work in classes. Minimal application of didactics by teachers, is a negative factor in formation of the pre-university.

As for threats, there were various perceptions. Teachers considered existing diversity in teaching processes by teachers, and lack of training and discussions in performance evaluations, as factors limiting didactics impact within education practice. While the students, estimated that non-attention, non-motivation and lack of interest could continue because of didactic activities, thus affecting learning and academic results from simulacrums and state tests.

Regarding positive aspects of the second dimension: Teaching according to learning processes. Both parties agreed as a strength in that it facilitated learning. As an opportunity to explain topics associated to common situations for students. However, there were differences; students stated that teachers should be evaluated about their teaching performance and change, for mutual benefit. While teachers considered existence of pedagogic activities including these methodologies.

About negative aspects, teachers and students expressed as weaknesses, resistance to change by some teachers in front of current pedagogy, which adversely affects learning. The students also claimed that some teachers taught just contents, perhaps because they were outdated, and did not know how to do it. While teachers considered as a threat, non-attendance and lack of interest by some students, adversely affecting these processes. Some students, expressed lack of commitment by some teachers to innovate their practice, negatively affecting classes by continuing teaching in the same manner.

According to the above, it is necessary for the pre-university program to promote pedagogic activities including actions in pro of innovation, parting from the above mentioned paradigm. Likewise, it would be helpful to present improvement plans before each performance evaluation. In this manner, a tracking control could be implemented to produce better results, both, regarding teachers and academic performance by students. It is also important to encourage teachers to get training through diplomate, or graduate studies which accredit their profession.

Conclusions

According to results obtained, it was possible to establish didactic sense surged in pedagogic practice by teachers, and its effect on academic performance by students taking Pre 01 pre-university formation. Teacher perception regarding use of these didactics within their performance was also known. Analysis of results from teacher perception survey, as well as student perception, and results from simulacrums, methodologically justified aspects or quantitative and qualitative approach of the research.

Results for teachers in pedagogic, methodologic, ethic, motivation, and material availability matters, demonstrated that most of them fairly and absolutely agreed in learning and using them in their praxis. Regarding student answer to their perception survey on teacher performance, they showed a point of view very different from the one expressed by teachers. While in the above mentioned aspects, teachers were confident about their performance, the students sometimes were undecided and in disagreement, and other times they coincided that they should be experienced in class.

Parting from this presentation and comparison of results where an intermediate level regarding the analysis unit of pedagogic senses was clearly expressed, some students recognized it, and other did not identified it as such, from the formation paradigm by competences within the pre-university. Seemingly didactics are somehow incipient or regular in the above mentioned pedagogic processes.

Analyzing the quantitative unit of academic performance, results achieved in simulacrums by the students, evidenced what was mentioneced, by making a middle level academic performance according to the scale used by the state test. Hgher scores were achieved in English, 67%; followed by Social studies, 64%; and third score by Biology and Language 60%, while Chemistry, Mathematics and Philosophy made 57%, 54% and 50%, respectively. The lowest scores were for Physics, 49%, and Elective (questions including competences of each discipline), 41%.

According to these results there is no academic trend toward a higher level. It is only seen a medium academic performance where English, Social Studies and Language were the highest percentage scoring courses; this situation is compared to the students' concept when asked about the courses with more presence of didactics in learning process; they mentioned them on the scale of fairly and absolutely in agreement with this aspect.

Coincidence for these courses, show existence of didactics surged from pedagocic praxis given by teachers in these areas. Nothwitstanding, they are not enough for a high level academic performance, according to purposes of model per competences and scores required by state tests. Therefore, it is necessary

more learning experiences from these methodologies for students to achieve competent and competitive performance to enter higher education, and also to serve as a connection to future university academic formation.

In fact, it is considered that results from these simulacrums show a dichotomy between perceptions by teachers and students. Teachers express full conviction of being applying didactics stated for education per competences, in their pedagogic praxis. Although they are contradictory regarding results of these evaluations, since academic performance was medium level but not superior as it would be expected for this type of formation; while in students, there was a direct relationship to the perspective they expressed in front of qualitative analysis units included in the student perception survey regarding teacher performance. The above means that didactics in these courses have not been consolidated as it should be, since little or low experience of them, together with lack of pedagogic praxis updating and innovation by most teachers, (who, in spite of being sure about their application in classes), demonstrate academic results.

According to this research, determining didactics in pre-university formation, allowed to see how much, actors involved in these academic encounters, conceived and used them in their pedagogic processes. Perceiving in most academic areas, an act which promotes learning with medium performance from curricular requirements per competences and components, (referring to strategies, skills, ability, values and aptitudes), that the student should acquire to resolve requirements stated in Icfes State Tests Saber 11.

In spite of the fact that results do not show a high level of didactics used in teaching learning process, both, students and teachers consider them as pertinent within such courses. Before these perceptions, it is clear that there is a positive attitude by these actors; students recognize the great benefit for learning, and therefore they acquire them in class; while some teachers consider them as "tools," (which would not be suitable because it is not a material, but an event that produces and encourages skills), to achieve expected learning; although it is hard for them to accept didactics and being coherent with facts in such pedagogic practices, it is for teachers an element which helps their praxis.

This research evidences the importance of the above mentioned didactics in any education process. At the extend that when determined in the population, it was possible to establish from expressed reality, its incidence and impact in pre-university academic formation, at the extent of turning, not only into a research reference, to continue inspecting didactics advantage in order to strengthen and increase in teacher training, but also a reflexive documentation, which encourages teachers to restate our classroom job.

Current society provides us with an educative paradigm where it becomes necessary to fully implement didactics from formation per competences, at the extent of transforming traditional teaching practice, which situation is not easy, taking into account that traditional teaching has governed for years (with positive results, o not so positive), but it would not be impossible, either, because many teachers are already being trained, and new educator generations are getting such training, which is a very favorable contribution for education sector.

Development per competences in Colombian education has been strengthened as a result of standards provided by Tuning Latin America Project, from Latin and European education entities. Therefore, from the Ministry of National Education, the Colombian Institute for Promotion of Higher Education-ICFES is the entity which most promotes them, through state tests, and higher education quality academic tests (Ecaes).

Current demand to enter higher education, as compared to previous times, is very high. Therefore, schools, universities, and pre-university academic programs, should walk hand-by-hand with didactics surged parting from these paradigms, although from the context covered by this research, some progress was noted, as demonstrated through results from simulacrums. However, a change in traditional pedagogy is required in order to achieve full transformation, which not only results in higher performance in these tests, but also, improvement in front of performance evaluations to be administered to teachers in next courses, to achieve a high quality integral education.

Finally, this project contributes to didactic research, and invites us to reflect and remember Mantinand (1986, cited by Astolfi, 1994:19): "It is necessary to prepare new didactics which remove eyepatches used to analyze teaching situations and guide teacher intervention methods, as well as curricular decisions". Education systems of a globalized society require learning that achieve holistic feature of all pedagogic processes through didactic, axiologic and humanizing means. Therefore, we, the teachers, should become visionary, synergic, capable of transforming our praxis of conformism and routine (those giving continuance to weak steril teaching), into change toward new education paradigms, which are transcendently governing formation of this Century citizens.

Bibliographic references

Astolfi, J. (1994). Didáctica plural de las ciencias: análisis contrastado de algunas publicaciones de investigación. Revista Investigación en la escuela, 24, (19). Recuperado de: http://www.investigacionenlaescuela.es/ index.php/revista-investigacion-en-laescuela? pid=175&sid=460:didctica_plural_ de_las_ciencias_anlisis_contrastado_de_ algunas_publicaciones_de_investigacion.

Behar, R y Yepes, M. (2007). Estadística. Un enfoque descriptivo. Facultad de Ingeniería. Universidad del Valle. Departamento de producción e investigación de operaciones. Capítulo 1.Tercera edición. [s.n]. Pag.46 -47.

Delors, J. (1996). Cuatro pilares de la educación "La educación encierra un tesoro" Informe a la UNESCO de la Comisión internacional sobre la educación para el siglo XX, Madrid:España.

Hernández, Fernández y Baptista (2010). Definición del alcance de la investigación a realizar. En J, M. Chacón (Eds.), Metodología de la investigación. México, Editorial Mc Graw-Hill. 5ª edición.

Jofré, E. (Comunicación personal, Junio de 2013). Docente de Postgrado Universidad de Aconcagua. Santiago, Chile.

Ministerio de Educación Nacional. Disponible en: http://www.mineducacion.gov.co/1621/ w3-channel.html

Correspondencia: angelica2003_@hotmail.com