

## CONFUSION AND UNKNOWN ABOUT CONCEPT MAPS IN ESIME-CULHUACAN IPN MEXICO

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**Abstract.** Today there are different models of teaching - learning for college and everyone agrees that the student has a higher level participatory. Sometimes the models are taken very fast by educational institutions and the teachers have a slow response, to resist change and in many cases confused by ignoring pedagogical techniques. Stay as single transmitter of knowledge instead of facilitator. This happens in the Computer Engineering career in ESIME-Culhuacan in the National Polytechnic Institute, Mexico. Six years ago changed the educational model traditional by one learner-centered in which concepts such as *learning how to learn, learning how to do*, new teaching tools and techniques, meaningful learning, concept maps and constructivism, generate a lot of confusion among teachers and they need to make a training plan to learn and employ such theories to obtain good results to use. In special mentions the interest in knowing concept maps it was commented that they are an extraordinary tool and simple, complete and proper, for teaching - learning process. As a result of the foregoing propose a plan of instruction that will serve as a solution to the current state where we are, introducing teachers in the study of meaningful learning and concept maps.

### 1 Introduction

In the various psychological approaches to learning, the ambit of meaningful learning by David Ausubel (Ausubel 1978) is the most widespread by psychologists and educators and within its theoretical framework their best exponent is concept map that elaborated in an appropriate way leaves clear the internal assignment of conceptualization (Ballester 2002). It is based on cognitive theory of meaningful learning and is a technique developed and proposed by Joseph Novak and collaborators at Cornell University. The concept maps are powerful tools that make using labels or slogans, concepts systematized of events and objects that surround us, including links that connect concepts, to form meaningful propositions for those who attribute this relationship construction.

In National Polytechnic Institute (IPN) Mexico, is located ESIME - Culhuacan that forms undergraduates of engineering career area and from six years ago adopted a new educational model (NEM) enabling it to provide graduates they can integrate the current globalized society. This model is focused on students and incorporates the constructivism as educational paradigm.

Despite that has begun to train their teachers more than 15 thousands teachers, so that, is very complicated and an enormous effort of the institution, we still lack much to learn and test. In this sense the knowledge and training about meaningful learning and in particular concept maps is still very poor.

In this work presents the errors and lack of knowledge about concept maps in our school, obtained through interviews and questionnaires and is intended to serve as a state of the art of our position on this issue, which in turn, serve to establish lines of research, training and is a representative sample of the state of our institution.

### 2 Confusion in concept maps at ESIME - Culhuacan

Being questioned and interviewed 35 of the 79 teachers who are part of engineering in computer career in ESIME - Culhuacan because those with more hours of discharge, time of seniority and status, as well as degree of doctorate and master showed the following results listed in table 1.

Questions	Answers				
	Yes	No	Regular	a little	Don't care
Are you concerned that their students learn?	32	0	0	0	3
Do you use any method to assess their teaching- learning process?	7	10	9	5	4
Do you know the theory of meaningful learning?	4	0	5	20	6
Do you know the theory of concept maps?	4	6	2	18	5

Do you know the new educational model of IPN?	4	2	9	19	1
Do you know teaching techniques?	24	0	8	3	0
Are used to teach in class?	17	0	15	3	0
Have you recently trained as a teacher?	26	3	6	0	0
Do you feel motivated to pursue teaching?	15	7	10	3	0
Are you motivated in your workplace?	7	15	7	6	0

**Table 1:** Questionnaire – interview to teachers from ESIME Culhuacan.

### 3 Test

The interviews were conducted between pairs scholars who have knowledge and experience in the subject of meaningful learning, and concept map of the area that corresponds interviewed, conducting queries displayed in Table 1 and deepened through chat informal according to their response for additional information on the origin of data and sort it by time, support, economics or need for any reason according to the answers.

As shown in the table most of the teachers concerned that their students learn what seems quite obvious, however, to deepen the interview we note that there is no clear idea about how to evaluate the process of teaching - learning? Who are making. Thus, by introducing them into the study of meaningful learning several aspects related to the acquisition of knowledge emerge as reflection.

They commented on their availability participation in a plan for training and if they want to get involved in the preparation, likewise, at the suggestion of the first review of this paper they showed that is a concept map for the preparation of a questionnaire and the organization and construction of knowledge related to the initial questionnaire and most were surprised how useful and practical it is a concept map and showed more interest.

As we look at the number of teachers interviewed represents approximately 44% and the other party does not suppose that makes a significant planning nor are trained to teach it only attends class in front of his group, so that, is unknown information that may be provided by these

Lastly were showed examples at random from diagrams of hierarchy, flow diagrams, concept maps and other graphics, to identify the type of representation that this was in addition to questions about the rules of construction, including those who said they were aware showed confusion and shyness to be used as teaching material.

### 4 Evaluation

As we noted there is ignorance and lack of learning about meaningful learning and in the case of concept maps there is much confusion, for this reason, deem it necessary induction course allowing train and raise awareness of the teacher of new tools proved and recognized to pursue teaching as part of an initial exercise.

For a future we believe that it will also be necessary establish a more comprehensive training program in the remaining areas including development and research in the field of concept maps and meaningful learning techniques for teaching, information technology and educational innovation among others if we want to be part of the globalized society and train high-level engineers and humans learn by themselves.

As for the numbers reflected in the table 1, 5% know the theory of meaningful learning, 25% know little and 7.5% not interested. In the case of concept maps, practically and the results are similar with respect to the NME, IPN almost identical. For education tools 24% and 21% know applies them in his class and 18% know them on a regular basis and 10% applies them regularly. The training is 32% in the teaching area and nearly 19% feel motivated to do their jobs. With regard to the identification of the rules of charts, only 10% managed to respond satisfactorily such representations and indicated possible uses in the exercise teacher

## 5 Argument

As a proposal we submitted a plan of action to follow through a concept map shown in Figure 1 below, which will serve as introductory and will exercise regimen to begin the subject by observing, studying and implementing the management process. Which will serve as introductory and will exercise regimen to begin the subject by observing, studying and implementing the management process with the participation of all teachers together to form the floor of the teaching career and that in turn can contemplate the inclusion or expansion as the case may be, towards the other areas of ESIME – Culhuacan.

For the resulting numbers reflect an ignorance very big if we consider that the percentage interviewed is half the existing taking into account the fact that teachers give class and just do not know its capabilities in the area and didactic and pedagogic only has supported by expertise in specialty topics of study for Teachers.

Likewise there is little academic staff it employs teaching techniques because of deficiencies and the effort that went into putting out. Ignorance and confusion about the rules, representations and implementation of concept maps demonstrated and leads us to reflect on the urgent training on these and other techniques as soon as possible to be incorporated into the background of teacher and keep it improve its performance professional.

Moreover tool to show the computational CmapTools were more concerned that relates to the area of engineering and several of them want to know more about meaningful learning and other models for teaching process.

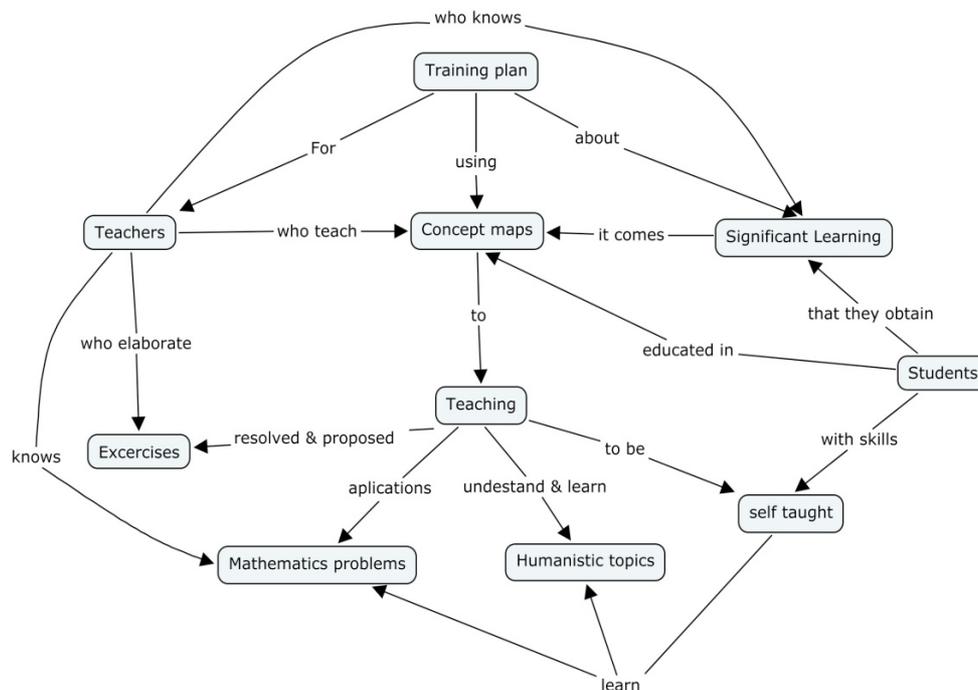


Figure 1: Concept map describing the proposed training program in concept maps for ESIME - Culhuacan.

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