Challenges of achievements in Knowledge Building at Prepa Ibero Puebla, the first three years

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In this paper, we present Universidad Iberoamericana Puebla's Preparatorias, three Senior High Schools in which Knowledge Building is a central part of the pedagogic methodology. We discuss the way this fact has impacted every day work at the schools and the adaptation process that has been faced at Prepa Ibero Puebla in order to find the best way for both the school and the students to take up Knowledge Building. Four stages of this process are described (from January 2008 to date) with focus in the continuous adaptation. Then, a general panorama of the current situation is represented in order to lay out with further detail the main achievements of the last few months as well as the most important challenges that have to be faced; these challenges are presented in three different categories: regarding the teachers, regarding the students and regarding the Institution itself. This discussion is especially important today, after the first class has graduated from both Prepa Ibero Puebla and Prepa Ibero Tlaxcala.

Introduction

The *Preparatorias of Universidad Iberoamericana Puebla*[1] are three Bachilleratos (preparatoria or bachillerato in Mexico consists of the three years of school previous to university) started by Universidad Iberoamericana Puebla[2]. There are three Prepas Ibero opened by Ibero Puebla: Puebla, Tlaxcala and Veracruz. The first to open were Puebla and Tlaxcala, they received their first students exactly three years ago (August, 2007). Prepa Ibero Veracruz opened one year later. The objective of this paper is to discuss the main achievements and challenges of the Knowledge Building efforts undertaken during Prepa Ibero Puebla's first three years. This is particularly relevant now our first class has graduated.

There are many characteristics that make Prepas Ibero special. They were created with a Knowledge Building perspective which shows in our curricula (which was created explicitly for our schools) and even in the way our schools are built and furbished: the size of the classrooms, the general space distribution and even the furniture acquired). The pedagogical model takes into account three main components: knowledge building, competence and St. Ignatius' pedagogical paradigm.

Knowledge Building at Prepa Ibero

[1] Here on referred to as Prepas Ibero or Prepa Ibero when talking about just one of the three

[2] Universidad Iberoamericana is referred to in short as Ibero. There are five Iberos in Mexico and they are all part of the Network of Jesuit Universities in Mexico.

During the past three years, the Knowledge Building efforts at Prepa Ibero have gone through several stages. The first stage is described by Cortes, Durana, Hernandez and Ortiz (2008): all students (just over 100, all in the first year of Preparatoria) participated in Knowledge Building/Knowledge Forum classes. There were theory sessions (50 minutes per week) where the students learnt the Twelve Principles and a 50 minute session week in and week out where they took part in a KF discussion on topics they chose themselves. The positive and negative results of this stage are discussed in depth the previously mentioned paper: The negative aspects were a quick loss of interest in the discussions and Knowledge Building was perceived by most of the students as something absolutely isolated. The positive were a clear improvement in the way they expressed their ideas, pertinence in the categories, thinking before publishing and the fact that they begun searching for the answers themselves.

In the second stage (August – December 2008), the work focused on two areas: new students and teachers. All new students participated in a 10 hour workshop that included a basic introduction to the Twelve Principles, Knowledge Forum and a very short discussion. For teachers there was a 90 minute weekly training session where participation and involvement varied from week to week. The problem here was teacher follow up, the students were familiar with the principles and knew how to use KF but most of them didn't use it again for many months.

The third stage (January – June 2009) intended to have students already working in Knowledge Building as part of their classes. Teacher participation in this stage varied greatly resulting in the fact that student participation turned out to be very different from group to group. During the whole school year (August – June) the older class had a 3 hours a week Knowledge Building subject where most of the knowledge building work concentrated.

By august 2009, Prepa Ibero Puebla had over 450 students in all three years. The approach to Knowledge Building changed again: All younger students learnt how to use KF in their informatics classes. Teacher training sessions on knowledge building became compulsory as an integral part of the permanent professionalization program. Knowledge Building as a subject was merged with others with the intention of making it be perceived as a way to work on an everyday basis rather than being something different than the rest of the curricula (look infra) and KF began to be used as a basic tool by several teachers.

The January – June semester has seen the most intense work on knowledge building at Prepa Ibero Puebla to date. The main challenges and achievements in this stage are the focus of the rest of this paper.

Achievements

- Teachers more involved in KB processes
- KBIP
- More open environment towards ideas in the whole school
- Construcción del Conocimiento como material y clase

A small but extremely able set of teachers (10 out of just over 60) have understood what is required to create knowledge building communities and are willing to try. They are an important part of what has been achieved. Together, they have created a real teacher community where ideas, practices, successes and failures are freely shared and discussed. This group need more time than the rest of the teachers to work together and do it willingly. It has been very difficult for them because they have been faced with a task that is new to all of them. This means advancements have to be closely monitored and the strategy continuously adjusted.

Prepa Ibero took part in four Knowledge Building International Projects (table 1) with good results. A more thorough evaluation of these projects is underway right now and the results can be presented on a later date.

Project	Schools and countries involved	Prepa Ibero students and teachers
World Healer 2: Ecological Footprint	-Pui Kiu College, Hong Kong -Victoria Shanghai Academy, Hong Kong -Prepa Ibero Puebla -Prepa Ibero Tlaxcala -Prepa Ibero Veracruz	Puebla: 25 students and 4 teachers Tlaxcala 20 students and 3 teachers. Veracruz 19 students and 4 teachers
Alternative Energies	-Pui Kiu College, Hong Kong -Confucian Tai Shing School, Hong Kong -IES Joanot Martorell, Catalonia -Prepa Ibero Puebla	Puebla 27 students and 4 teachers
Biotechnology	-Ski Videregående Skole, Norway -Prepa Ibero Puebla	24 students and 4 teachers
Adolescence	-IES Montserrat Barcelona, Catalonia -Prepa Ibero Puebla	26 students and 3 teachers

Table 1: Knowledge Building International Projects at Prepa Ibero January – June 2010

All in all, a more open environment towards idea sharing and improvement is perceived throughout the whole school. This is particularly clear in the older class where students are clearly more inquisitive. They conceive knowledge differently, are aware of the importance of their own input. The advances are clearly perceived in the improved nature of their work. Their written production is far better than before, they are more articulate and are continuously looking for opportunities to share and discuss their findings. In the past semester (January – June) many of their projects were presented in several forums in and out of school. It is relevant to note that all the recycling and other environmental actions at school come from students' ideas. Whether or not this means they will be more creative and innovative in the long term and if this will allow them to be better or more successful still remains to be seen.

As stated early, within Prepa Ibero's curricula there is a 3 hour a week subject for all 2nd and 3rd year students called *Knowledge Building*. At first, this subject acted as a workshop to promote creative work with ideas among its students. On assessment, it was found that even though creativity and innovation improved, they were perceived by students as something independent from the rest of the curricula. It was then decided to attach this time and space to other subjects in order to insure the inclusion of Knowledge Building as part of all school work. In the 2nd year, *Knowledge Building* class was joined with *Research* and in the 3rd year it was combined with one of the elective interest area subjects (*Health Sciences*, *Select Topics in Physics*, *Select Topics in Philosophy* and *Management*). This transformation seems to be working and we have decided to keep working this way for the time being. We envision this combined space (physical and temporal) as the place where students can bring problems and questions from all their subjects to be shared, argued, studied, built on, and understood together with the whole group.

Challenges

In theory, Knowledge Building is an integral part of Prepa Ibero and its pedagogical conception, but in practice this fact has been and remains problematic. Our work in this area has come across many challenges. I have divided these challenges in three main categories:

- Teacher recruitment & training
- Students
- Institutional

Teacher training

At first, most of our teachers were university professors which apparently guaranteed a very high standard and a highly competent teacher body. We were surprised by the fact most of this teachers weren't right for dealing with younger students in a more controlled environment (i.e. in spite of its open nature, Prepa Ibero is very different from university: a personal involvement with the students is required and teachers are subject to a higher degree of supervision, this proved too difficult for most of these university professors). We now know finding the right teachers for our schools is extremely difficult. We have had a surprisingly high teacher mobility index[3] and even if it tends to diminish now, it has nevertheless represented a terrible obstacle in all teacher training and professional development programs.

Another problem we have come across is what Diaz-Barriga (2005) calls a merely discursive change. Faced with an ever changing set of didactic, pedagogic and cognitive theories and approaches, the classroom teachers quickly adopt the new discourse but keep the same practices: They keep on doing things the way the always have, they just call them by a different name, and as soon as they find something that truly challenges their

[3] Only about 5% of the teachers that were working at school three years ago still remain there.

convictions and practices, they normally shut down: they either discard it as useless, too idealist or they simply stop listening.

The poor knowledge of English and an overall resistance to it has also been a hard obstacle to overcome, as well as a poor capacity for working with the new information technology. Most of our teachers have only a basic level of proficiency in English (this fact is especially problematic for international projects and for further readings) and are average or below average computer users.

Concerning the students

Trying to take 15 years old coming from many different schools after at least twelve years of formal education and getting them to jump on the knowledge building ship has been very difficult. By the time they reach our school they're full of vices and momentums. They are not used to questioning or challenging the information the teacher provides them with. They are used to expressing opinions and shallow views on everything but find it next to impossible to present a more thorough idea and sustain it with suitable arguments. Students are so unused to present original ideas that they resort to plagiarism as often as they're able to. Part of this fact is explained by sheer laziness buy we truly believe the problem is far greater. On the one hand, it´s the more secure way to do things, it appears safer to present ideas already developed by others in their own words; on the other, many of them have so many short comings in their language skills that they are unable to write truly original ideas.

In a very traditional school system where the teacher is an unquestionable character who possesses absolute truth and absolute power, students are used to accepting in a non critical fashion everything their teachers say. The mere idea that knowledge is something dynamic and ever changing seems impossible to grasp. When students are rewarded for being quiet and attentive and repeating word by word the *knowledge* that's taught to them, they are not comfortable disagreeing, questioning, saying they don't understand out loud.

Institutional implementation of the model