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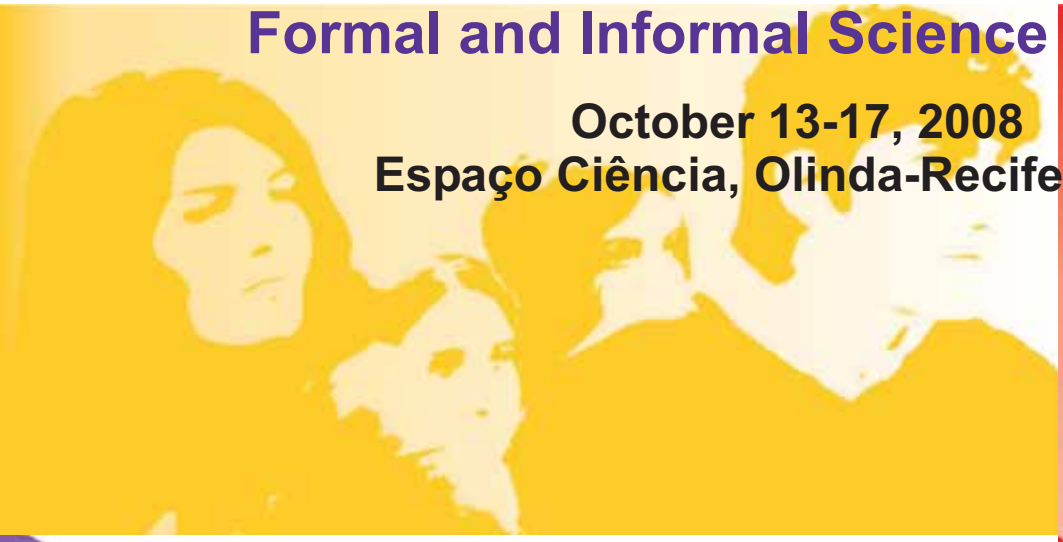

The Hands-on Science Network

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Senses Built up the Students about Themselves as Learners

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Abstract. This work has as its general aim to investigate the deep hopelessness that could be learnt from the speech of three sixth grade students of a public school of Guarulhos, an industrial town in metropolitan area of São Paulo (State of São Paulo, Brazil). The specific objectives were to investigate the senses built up by the students about themselves as learners and about the reasons of their actions in the classroom. This research is based on the Social-Historical Cultural Activity Theory and it will discuss the following theoretical aspects: sense and meaning; learning and development, emotions and feelings. The data were collected during the months from October and November of 2006 in a public school in the outskirts of Guarulhos. The researcher and three students took part of this research. The methodology chosen for this dissertation had as objective to raise students' senses in order to understand their situation of hopelessness. In order to understand such matters, the following items were used as research tools: classroom data collection and video session (that were not analysed) questionnaire and interview with the focal students. In the data analysis it was used as category: surveying of theme content of researcher and students speech, the lexical choices of the participants and the interpersonal relations during the interview, focusing the verbal and paraverbal aspects. The results reveal students´ lack of hope to learn in school context, as well as the lack of significance of school for them.

Keywords. Teaching-learning, Senses and Meanings, Emotions, Affection.

Comparison between Orientation of Kindergartens Students by Traditional Distance Learning and e-Learning

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Abstract. This work compares two groups of teachers of kindergarten orientated by distance learning with two different methodologies, in an annual university discipline called Seminar. The aim of Seminar is teach to teachers of kindergarten how to implement didactic projects in biology field in their schools. The first group was orientated by traditional distance learning, telephone and e-mail, and the other group was oriented using e-learning with a page in Moodle platform. Some students prefer the new system other prefer the personal contact. But in general the students agree that an interactive page in a learning platform is very helpfully.

Keywords: E-learning Platforms, Kindergarten, Science Education.

1. Introduction

In a course for Kindergarten teachers that consists in Pedagogic and Scientific complement, the last discipline is called Seminar. This discipline develops along one year and consists in practical work done in each college by the students. The evaluations of the students were made by the written report, according by the manual [1], and by oral presentation of work and oral discussion.

The aim of this discipline is to learn the kindergartens teachers how to plain an activity and how to teach science to young kids. The students also evaluate the impact of these actions in children and involved community.

The students (kindergarten teachers) live and work in several parts of the country including Atlantic Islands (Madeira and Azores). Because of these facts the distance learning is the only possibility to have these students in the some class.

The types of work development by the students were mentioned in other paper [2]. The discipline Seminar can be considered that had four parts. The first part is where the students must fill a sheet and is where they choose the theme and made a scheme of how they intend to implement it. The second part is the application of what they propose to do. The third part is

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writing of work done. The fourth part is the oral presentation and discussion of it.

2. Methodology used

Distance learning was used. In school year of 2007/2008 the system used was essentially traditional distance learning using the telephone, e-mail and videoconference. Last year (2006/2007) a page of Moodle was put at student disposition but there were very few seeing and none put questions. By inquiry in the end of the year the students mentioned that they did not like to use learning platforms, because almost of them did not trust in it [2]. So, in this school year (2007/2008) it was decided to use a different approach for the Seminar. A page was opened in Moodle platform with information, insert of documentation and several forums to discussion. This was also done to encourage the students to share experiences between them and help each other.

3. Development of work

3.1. First part – choose the theme

When the discipline started the professor made an oral session. During this session the objectives of the discipline were presented and the methodology that will be used during the year was explained. This year, 2007/2008 the professor teach them how to use Moodle platform and turn an obligation the inscription in platform of university. In previous year, 2006/2007, they could make their inscription in platform and in discipline or not. This year all the students were insert by the professor in the page of discipline.

Initially in discipline page were open a placard of news and a forum to personal presentation (Figure 1).

Every time the professor inserted something in platform the students received in their personal e-mail a message referring it.

In Placard of News some students asked questions and solicited material to decide the theme want to development.

In presentation forum the students were encourage to mention their names, place where they live and things they like to do in free time. Some of them inserted a photo. The intention is that they start to contact each other. This was a success and all students made their presentation.

After all of them made their presentation another window was open below with the photo of manual and their index. The PowerPoint used in first session was also inserting. Were open a forum to doubts (Figure 2).

Figure 1. Page open in Moodle platform with placard of news and presentation forum

Figure 2. Page showed to students in first phase

They only participated after the professor insert a post with title “There are any doubts”. After this incentive they start to put questions about the theme. But, almost them preferred to telephone to the professor to discuss the theme individually. The reason of this was because they didn’t want that colleagues follow what they will do and had a little ashamed that the colleagues think that their doubts were not proper.

The themes chose, in this phase by students were:

Year 2006/2007

- Pine forest
- Country plants
- Vegetables gardens
- Domestic animals: cows
- Feline animals such as cats

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- Domestic animal - dogs a
- Diversity of turtles
- Zino´s petrel (bird from Madeira island)
- Monk seal - preserve
- Animals in general

Year 2007/2008:

- Vegetable gardens - its importance
- The world of aunts
- Azorean biodiversity
- Wild mammals in Portugal
- Fish and relation with environment
- Abandoned dogs
- The Azorean buzzard
- Animals in general

3.2. Second phase – development of project

In the second phase the students send to the professor the scheme and what they intend to do. They send to the professor, individually, the proposal of their work to be approved. After all the works were approved the professor inserted in page the themes chosen and the name of student responsible for it. It was open a forum to discussion between students and between students and the professor. The entire students were incentive to participate in forums and to share experiences between them. This did not result as expected. The students revealed very individualist and did not like to participate and help the colleagues.

3.3. Third phase – write the work done

When they finished the work and began to write, it was opened another item with roles to write a work, like how to refer the authors in text, rules to made references, etc. Three forums were open at that time with the titles:

- "How to made references"
- "How to made index"
- "Other doubts".

In this phase they only began to participate after the professor have inserted some messages to encourage their participation. The written works were sent to the professor by post. Some students asked if they can send it using the platform. After the deadline to send written works some students (20%) inserted their work in platform in a way that colleagues can read it.

3.4. Fourth phase – oral presentation and discussion

After the deadline to send written works, all the received works had their titles published on the page and the data of oral presentation. The intention was that they assist to colleague's presentations.

The professor opened another item with title "Advises to oral presentation of the work" and a forum to discuss it. The participation in this forum was above our expectations.

In this phase, they put some doubts in other forums and revealed that almost of them were very nervous when wrote the messages.

The presentation was made with a computer program Microsoft PowerPoint, in university installation by continental students and by videoconference for island students.

Only 50% of students assisted to colleague's presentation.

4. Conclusions

The methodology applied in year 2007/2008 conducted that these students discussed more with professor the theme to choose and the possibilities to their disposition than in year 2006/2007.

During the reading of the works written by our students it were noted that the students did not follow exactly what was recommended such as rules to text reference and references in end of work. The reasons appointed by them were that they forgot to apply the rules but all of them said that understand them.

The inquiry done after the classification revealed that student preferred individual contact, but 50 % of them said that the page was very useful. The reason appointed by them to justify not discuss the work with colleagues and share their own experiences were because they had ashamed of it.

The development of the works done by the kindergartens teachers with their children in year 2007/2008 had more visits to places outside kindergarten. Another interested point is that this year almost of them invited experts on area (subject studied) to visit kindergartens, and in last year only few done that. Of course this allowed children learn more and be more interested in project development by their teachers.

5. Acknowledgements

To all my students.

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Appropriate Technology in Biological Sciences for Developing Countries – A Do It Yourself Program

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Abstract. Instrumentation plays an important role in the development of Biological Sciences. Educators and researchers in countries under development have difficulties with instrumentation due to inadequate training and lack of funds to purchase, install, maintain and repair their equipment. The objective of this Program is to divulge alternative techniques, models and instruments many of which are simple, low cost and can be built using parts and resources which are available locally. This information on how to do, is supplied in form of blueprints. This paper describes how the program works.

Keywords. Appropriate Technology, Biological Sciences, Equipment.

1. Introduction

One of the problems which countries under development confront is lack of appropriate technology to manufacture equipment used in science laboratories. This forces institutions to import ready-made equipment or to pay royalties for purchase of know-how. In the field of Biological Sciences, most of the equipment used in these countries is imported from diverse origins with precarious repair and maintenance facilities. The funds that educational institutions can spare to equip laboratories with equipment are always scarce and limited, and when the time comes to repair, the situation is worse due to lack of adequate planning and stocking of spare supplies. There is also a shortage of trained people to carry on the repairs. Various alternatives exist to fulfil the increased demand of equipment:

(1) Importation of equipment according to demand. This requires foreign exchange, payment of custom duties, necessity of ordering and stocking spares etc.
(2) Manufacture under payment of royalties. This also implies evasion of foreign exchange and the technology transfer is never complete.
(3) Manufacture locally. Although attractive it is not always feasible. First of all there must be an adequate demand for the product. There is a need of an investment to build the manufacturing unit, of technical know-how, and of a marketing infrastructure. Insufficient demand leads to increase in the price of the product.

The establishment of a local industry to satisfy the limited demand of equipment of a few research and teaching institutions in underdeveloped countries really poses the question if it would be feasible to manufacture certain types of equipment with a limited demand in an industrial scale.

An option would be to each user to construct some of the simple equipment he would need, making use of locally available resources.

This alternative approach of matching equipment to local constraints and resources lead us to implement a “DO IT YOURSELF” program for Biological Sciences. This project has as its principle aim to help educators and researchers, and teach them how to choose, test, calibrate and carry basic maintenance procedures on their equipment.

2. General objectives

(1) To encourage educators and researchers to know better the equipment they use.
(2) To help to substitute some of the imported equipment by constructing them using locally available resources.
(3) To advise equipment users on the choice, purchase and maintenance of their instruments.
(4) To divulge information on what has been published on how to construct instruments.
(4) To further an exchange between teachers and researchers with a view to solve common problems.

3. Specific objectives

(1) To develop low cost Instruments/ prototypes, and techniques.
(2) To prepare “blueprints” of developed prototypes and distribute them among users.
(3) Test, evaluate and improve prototypes of instruments which have already been developed.