

USING INSTRUCTIONAL MATERIAL TO ENGAGE LEARNERS IN OPEN DISCUSSIONS

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ABSTRACT

Developments in Educational Technology during the last three decades, has provided both learners and instructors with a rich source of instructional material. Although we welcome the increasing use of digital material in the classroom environment, we argue that the learner is still remains as a passive actor in the educational process. In this work we support the idea that instructional material should be used so that the learner is actively engaged in the classroom by participating in *open discussions*. We here present the lessons learned from a recent case study. A discussion on how to enhance the “engaged learning” approach is presented.

Keywords: Instructional Material, Exploratory Learning, Open Discussion.

INTRODUCTION

Instructional material has been traditionally either used during lecture presentations or been publish in the computer network for the learners to use at their convenience. Our experience indicates that learners do not profit fully from this way of delivery of instruction material. Here in this paper, we argue that instructional material should be used only as a media to encourage active participation of the learner in the educational process.

According to the Bologna Declaration, European higher education institutions are expected to meet quality targets that will enable them to become again the leaders in the global arena. In our modest opinion the key to this search for excellence rests on the shoulders of the instructors that need to shift from an “expository teaching” approach to an “exploratory learning” paradigm. Technology is here to help us by converting classrooms into venues of open discussion.

This work is the result of a cooperation between the authors (sister and brother respectively) working into different campus with difference academic background. Encouraged by the accomplishments of many academicians which we had the opportunity to meet in several conferences in the last three years, we are now in the position of sharing our own findings. During the last year, the classroom scenarios for the Padova campus were developed using mainly electronic communication.

BACKGROUND

Cooperative learning is receiving wide attention in many educational institutions. As suggested by Mills *et al.* (1998) it is possible to engage all learners in the process of acquiring knowledge through constructive dialogue. Experience in the last decade, points at the advantages of engaging learners in discussions in class on material, provided by the instructor or in even requiring them to prepare their own learning material.

No matter how fancy and sophisticated multimedia techniques are, students are expected to follow the guidelines given as passive agents. This situation leads inevitably to the same boring environment that lectures and textbooks are always blamed for. In the reproted case study shows clearly that by encouraging students to prepare the own educational material, a creative environment where the learner takes a fully active role and make “learning fun” is created (Inelmen, 2002).

The preliminary results from an evaluation of the questionnaires made among graduate students reported in (Inelmen and Inelmen, 2006) -drawing support from the recent findings in “activity theory” which looks at the education process as the interrelation of different systems (school, home, street, etc) – highlight the fact that although the members of the class showed that they were satisfied in general they had doubt about the possible relevance of the material delivered with their future professional life.

Based on a meta-analysis in the English literature, Albanese and Mitchell (1993) suggest that the use of “problem based learning” approach in clinical medical education enhances both the performance of the graduates and the enjoyment of the faculty. Nevertheless the same authors warns the readers about the fact that there appeared to be gaps in their cognitive knowledge base that could affect practice outcomes.

In the same work mentioned in the previous paragraph, the authors comment on “the costs [of the approach] may slow its implementation in schools with class sizes larger than 100. Furthermore students in a few instances scored lower on basic sciences examinations and viewed themselves as less well prepared in the basic sciences than were their conventionally

trained counterparts. Graduates tended to engage in backward reasoning rather than the forward reasoning .

In a story the Nasreddin Hodja went to the pulpit to give a sermon. "Dear congregants," he said, "do you know what I will be talking about today?" The members of the congregation replied, "No, we don't." The Hodja said, "If you don't know, then how can I speak?" and he walked away. The next day when the Hodja asked if they knew what he would talk about, they said, "Some of us do, and some of us don't." "In that case," said the Hodja, "let those who know tell those who don't." And once again he left the pulpit.

METHODOLOGY

Doing research in a higher education environment is not an easy task. There are too many variables and the samples can not be compared effectively. Nevertheless we resort to "action research" techniques as suggested by Knight (2002). According to this author the typical stages in such a technique are: awareness of the problem, exploration of the problem, study of the problem, suggestions for action, monitoring of action.

Following the advice of the author we have taken the case of in the medical education environment where the first author is affiliated for the study reported in this paper. The problem is the relative lack of motivation of the learners to participate in class-work. We were interested in the possibilities of creating an enhanced environment where the learners would participate in the discussions following the expositions by the first author.

We compare the outcomes in different educational environments as we introduce new strategies to encourage participation of the learners. Evaluations are based on written testimonials of the learners. These evaluations made as more confident as to the fact that learners were interested in being treated as experts and not as novices while trying to make sense of the cases presented by the instructor. In the following we present the educational environment where the study takes place (an ongoing process)

The University of Padua is well known for its Faculty of Medicine. It was only recently that the faculty became involved in Distance Education after exploring the experiences gained in various conferences in Europe. Discussions on constructivist approach to learning are at the heart of the learning process. We here share the encouraging experiences gained as given in the following paragraphs.

Lessons have been carried out for Medical students (6th course) in the Faculty of Medicine and Surgery of the University of Padua (Italy), during the academic semester October 2005-February 2006. The general topic of the lessons was Geriatrics: it is an integrated course inside the main course of Internal Medicine. The students were 100, divided in 2 groups: Channel A (50) and Channel B (50). At the beginning of the first lesson the students were told about the program and were invited to use the available network.

The titles of the lessons were the following: 1) Malnutrition in elderly 2) Clinical case of malnutrition in elderly 3) Anemia in elderly 4) Clinical case of anemia in elderly 5) Successful aging. For the first 2 lessons (1-2) we spent 2 hours: in the first hour we showed the clinical case. We divided the students in 3 groups and they discussed their opinions about the case under our coordination.

RESULTS

In this section we report observations made during the research work. Our study covers basically three sections. In the *first evaluation period* the outcomes of 7 students specializing in geriatrics were reported as: one optimum, three medium and three poor. The students gave the following negative comments at the end of the second term of the 2005-2006 academic year:

i have no time to make the thesis during the academic year. too many things to do in the ward.
this is a very strange way to attend to a lesson. i do not know about it so i am confuse.
nobody told me that the way of teaching would be this one.
i do not know how the exam would be. i am anxious.
i am anger. i want to have a traditional lesson.
i want to be free during the lesson. i do not want to be disturbed with questions.
i do not think that this way will be good for me to learn.
it is too much complex for me. i wonder if i need this type of lessons.

These comments are now being considered while preparing the curriculum for the 2006-2007 academic year. During the *second evaluation period* the following journal was recorded by the instructor:

today 3 nov 2006 friday lesson restrain in elderly 46 students out of 100 present in the classroom channel B method face to face without discussion (traditional) slides ok 45 minutes comments of the students positive everybody was interested for the unusual argument attention ok participation ok at the end they wanted to make many questions about ethics . they wanted to

know more about chemical restraint. they seemed very very satisfied. absolute silence during the lesson liberty last slide comments: the man is a dead man who becomes free the man is the patient who wants to be free they were very active and wanted to go on out of the hour of lesson questions outside the classroom also today 17 november channel a lesson : restrain in elderly, 26 students out of 100 method face to face, with poor exposition, asking them if they were able to understand without my exposition. discussion *during* the lesson slides ok 45 minutes their first question was: “ will you give us the slides? “the same question was done in the other channel although they knew that they would have the material and slides they prefer to take notes: about 90 %. two students recorded the lesson. the same in the other channel. i divided the students in 3 groups. in the classroom today about 60% took notes although they new that slides would be available

while the first group was almost silent the second and the third groups were polemic and discussed very animatedly. one student of the second group was very angry and aggressive because he didn't understand the meaning of the slide on psychiatrics. I told him that a psychiatric patient is not a geriatric patient. attention was good but they were more interested in taking notes than seeing the slides. all of them seemed perplexed of this way of making lesson and they were less satisfied with respect to the other channel. before the lesson i gave them a sheet with the question: do you agree to restrain an elderly patient? yes: 5 no: 8 i don't know : 3 total: 16 responders out of 26 after the lesson: do you agree to restrain an elderly patient? yes: 12 no: 2 i don't know : 3 total: 17 responders out of 26 particularly: one answered: yes, but it must be very necessary. another one answered: yes, I am more convinced now, after the lesson, than it is necessary. another one answered: yes, i am more convinced now after the lesson, i have a personal experience. another one answered: yes, it is not necessary but it is useful in certain situations. liberty last slide comments: only two of them answered and said that the man is the elderly patient who wants to be free.

They paid attention to the slides but they were not able to understand without my exposition maybe also because it is an unusual argument in medicine. they were distracted during the lesson and they didn't want to answer to my questions and to discuss perhaps because they wanted to take notes only and they seemed tired at the end of the lesson. only one student after the lesson asked me a question. they didn't want to go on out of the hour of the lesson as in the other channel. so it was more successful the lesson face to face traditional than this one.

DISCUSSION

We have summarized the outcomes of this educational in Table 1. A total of 300 students registered were grouped in two channels (A and B). The names of the courses, the number of slides used, the number of students present, the time of presentation and time of discussion and the dates when these courses were offered are given. An assessment by the instructor on the outcomes is given in values from 0 to 5. Although the number of courses is not enough to arrive at a general conclusion we notice that there is no much difference in the outcomes for different approaches.

A more accurate evaluation will come after the final exams are graded. We conjure that learners having had experienced more time for open discussion will outperform the rest. We base this statement on the idea that discussion help in improving the retention of the material delivered in the class environment. Engaging learners to actively participate in the classroom environment is a challenge. Grouping students to debate on different issues has shown to be very effective at least during the first courses. Motivation can be maintained if bonus points are awarded on the spot.

As an ongoing project we hope that the results of the educational activities described in the previous section will allow us to make policy recommendations. We have been faced by resistance of some students requesting a more classical approach to teaching. Nevertheless we believe that since new generations are being more experienced in cooperative learner better results will be achieved in the future. We believe that the “retention time” of the learned material is longer in the case of cooperative learning. No doubt that we need to more data to be able to derive a final conclusion.

Table 1: Summary of activities and outcomes of presentations with/without discussions

C*	Courses **	Number of students present	Date	Number of slides	Time of Presentation (minutes)	Time of discussion (minutes)	Outcome (0-5)
B	Restraint in Elderly	50	3.11.2006	48	45	15	5
A	Restraint in Elderly	45	17.11.2006	48	45	5	2
B	Malnutrition in Elderly, Fecal Obstruction in	40	28.11.2006	48	105	15	4

	<u>Elderly with clinical cases</u>			<u>20</u>			
				<u>10</u>			
A	Malnutrition in Elderly, Fecal Obstruction in Elderly with clinical cases	40	10.1.2007	48	105	10	3
				<u>20</u>			
				<u>10</u>			

*Two channel (A and B) 120 students registered each (2006-2007)
**Geriatrics 6° Year Courses in Medicine and Surgery University of Padua, Italy

As can be seen from Table 2, the evaluation of the students is constant along the different groups. What is very encouraging is the fact that there has been an improvement in the question referring to “Material is useful in my research and clinical work”. We claim that that positive change is due to the fact effort was

Table 2: Evaluation of questionnaires given students in different groups

Question	1	2	3
(Likert 5 scale) Number of students:	8	33	27
Date:	<u>19.05.06</u>	<u>28.11.06</u>	<u>10.01.07</u>
Channel:	specialization	B	A
Organization of instruction material was adequate	5	4,5	4,7
Presentation of instruction material was adequate	5	4,6	4,6
Slides were clear and satisfying	4,6	4,5	4,4
Objective of course was clear	4,6	4,4	4,7
Material is useful for the learning and my career	4,2	4,3	4,4
Material is useful in my research and clinical work	3,8	4,4	4,4
In total the instructor has done a good job	5	4,6	4,7

placed on improving the instruction material and the time allocated to group discussions. Students need proper guidance as the instruction material is delivered in class. The relevance of the topic must always be highlighted. We propose a new format to the slides to be more readable.

A way to enhance the present educational practice as described earlier we here suggest the addition to the classical tutorial slide presentations, new slides having hypertext that would connect to other resources for the learners to do exploratory work. Technology today allows us to go still further with the use slides using simulation tools. Learners can then make experiments to test their knowledge. In our case learners could prepare diet by dragging information available in the screen and testing the nutritional value provided by the simulation program.

CONCLUSION

This work is the result of the experiences gained in an ongoing project on educational approaches. We compare traditional approaches to teaching with a more participatory approach of learning. We strongly believe that is time to shift from an instructors oriented to a learner oriented paradigm. Motivation of learners is enhanced as they participate in the educational process. In the future we hope to be able to implement the already available digital Although the immediate outcomes of this work do not show differences between the new and the traditional material in a virtual environment where learners share communication technology to use the instructional knowledge in a dialogue approaches to teaching, we are confident that by enhancing the teaching techniques we will see the superiority of an education process based on group discussions. This will entail longitudinal research work where learners are followed during the career life. As continuing education is becoming a requirement in many countries follow up students will be possible. We believe that students are more motivated to learn if they are welcomed as participants in the educational process

An important area that needs improvement is the current practice of guidance through the course to show the relevance of the topic. In Figure 1., we present a recent “roadmap” –where all the issues are presented- prepared by the second author for a course in informatics. Another important source of change is the use of “convergence maps” –where ideas are added as they come- during the discussions. Students should feel that their ideas are being taken into consideration.

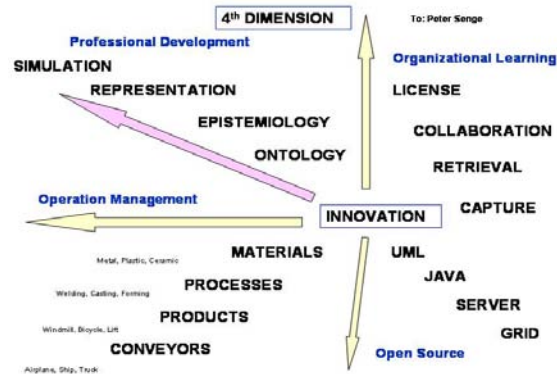


Figure 1: Roadmap for a course in informatics (by Inelmen, E., 2007)

A recent example is given in Figure 2, the result of discussions on the relevance of informatics in society.

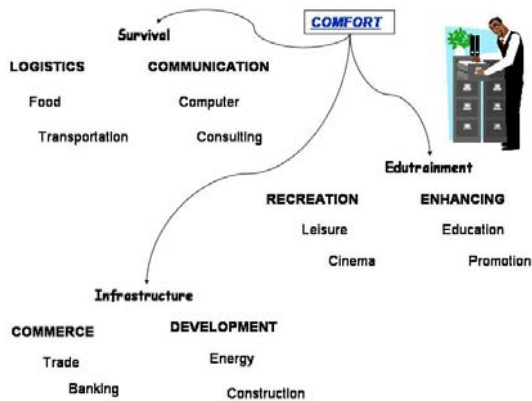


Figure 2: Roadmap for a course in informatics (by Inelmen, E., 2007)

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