



Collaboration and Pedagogy with Advance Technology

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Abstract: *The paper is going to focus on Collaboration learning and pedagogy in computer science with advance technology. Computer science is a rapidly evolving discipline which places considerable pressure on the computer science and engineering curriculum. The emergence of new tools, techniques and pardiagram forces a continual evaluation of the topic covered. That can by effectively done by collaboration learning and pedagogy in computer science, which can develop knowledge and cognitive skills of the students. There has been a lack of references to pedagogical theory, underlying most past research studies. Students are allowed to use computer in the classroom in theory lectures with the help of Blackboard which can be easily accessed in the classroom with the additional option of software to show practical use by students and teachers*

1. INTRODUCTION

1.1 Computer Science

Computer Science is the scientific and practical approach to computation and its application. It is the systematic study of the feasibility, Structure, Expression and Mechanization of the methodical procedures that underlie the acquisition representation, processing, storage, communication of and access to information.

As a discipline, computer Science spans a range of topic from theoretical studies of algorithm and limits of computation to the practical issues of implementing computing system in hardware and software.

1.2 Collaboration

Collaboration is an act or set of practices collaborative teaching and learning, then creates new challenges for a teacher to find in her himself the capacity to provide diverse learning environment for students with distinct, often new challenges and opportunities and from all these complexities emerge transformed and enriched relationship with the course materials, for both teachers and students. Collaboration learning is based on the view that knowledge is a social construct .Collaborative activities are most often based on Four Principles.

- The learners or students is primary focus of instruction.
- Interaction and doing are of primary importance.
- Working in groups is an important mode of learning.
- Structured approaches to developing solutions to real-world problems should be incorporated into learning

Collaborative Learning can occur peer-to peer or in larger groups. Peer learning, or peer instruction, is a type of collaborative learning that involves students working in pairs or small groups to discuss concepts or solution to problems. This often occurs in a class session after students are introduced to course material through reading or videos before class and or through instructor.

1.3 Pedagogy

Pedagogy is the discipline that deals with the theory and practice of education. It thus concerns the study and practice of how best to teach. Effective teachers use an array of teaching strategies because there is no single, universal approaches that suits all situations. Different strategies are used in different combinations with different groupings of students will improve learning outcomes. Some strategies are better suited to certain students background, learning styles and abilities Effective pedagogical practice promotes the well beings of students, teachers and community. Pedagogy is the “how” the teaching and learning occurs. Students are not empty vessels to be filled with our expert knowledge. They must construct their own understandings through our considered learning experiences.

1.4 Blackboard

Blackboard learn is a virtual learning environment and course management system developed by blackboard Inc. It is web based server software which features course management customizable open architecture, and scalable design that allows integration with student information systems and authentication protocols. It may be installed on local servers or hosted by blackboard Asp solutions. Its

main purpose are to add online elements to course traditionally delivered face-to-face and to develop completely online course with few or no face-to-face meeting.

2. OBJECTIVES

Our vision is to use teaching strategies of collaboration learning and principles of pedagogy to develop a distributed internet – based center with the help of Black Board. Which promote the distribution of material relevant to computer science education of theory and practical according to level. Students are allowed to use the material in the classroom and software to solve the logic. And by the using its knowledge taught they can use their cognitive skills and try to solve the lecturer in the class room with the help of computers connected with teacher’s system. Students can communicate with teacher by answering to the questions post by the teacher and get answers by the assignment.

3. ADVANTAGES

Using of pedagogy principle, collaboration system with Black Board helps students. To make the students update and active in the class rooms. Involvement in the lecturer using knowledge .Responding by using cognitive skills with help of collaboration learning. Presenting the solution by understanding the demonstration getting the evaluation in the class room using network. By using pedagogy principle.

4. RELATED WORK

We have Studied several research papers on teaching strategies

4.1 Ascilite 2011 changing demands changing directions. An investigation into the learning styles and self regulated learning strategies for computer science students. Students centered educational paradigm place a high level of responsibility on learners to control and self regulate their personal learning process. in these new educational paradigm It is essential to understand student preferences and the self regulated learning strategies they use in order to enhance the learning process. This paper examines the different learning styles self regulated learning strategies used by student in a core computer science course. In computer science course very few students share the same learning styles as their instructor . This instructors cannot wholly rely on their own learning styles, when developing learning material for their students. The aim of the study is to provide a baseline to assist the design and allow the evaluation of the effectiveness of new online collaboration learning objective repository. Based on this work an online collaborative learning object repository is under development. This provides an environment for students to interact and share different learning object to support traditional computer science teaching.

Pedagogy of Computer Programming An interactive and collaboration learning approach. Teaching computer programming to students is major challenges in computer

science discipline. Research indicates that the main problem arises due to the abstract implementations of many of the mathematical concept in computer science theory. In recent years there has been not only a reduction in the number of students in computer science discipline. In order to ease this research have started to investigate several approaches, tools and instruments. This work describes the current practice and issues associates with a fundamental computer programming course. Computer programming course. By introducing a interactive 3D visualization technique and a pair programming approach it details a set of recommendation for improving the current trends in teaching unit. It also examine the pedagogy under pinning my recommendation and finally describes a metric.

5. USE CASE DIAGRAM

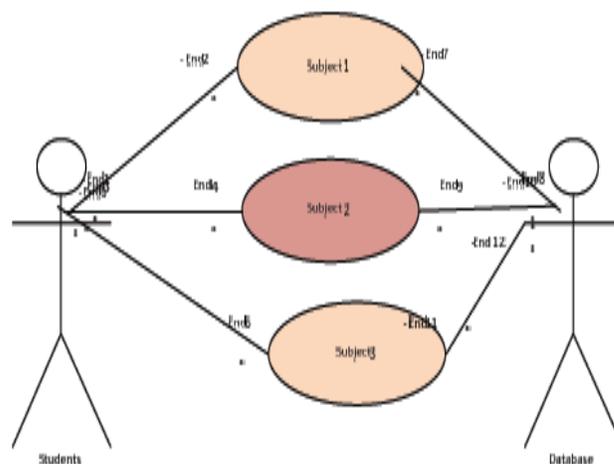


Fig:1 Use case for Home

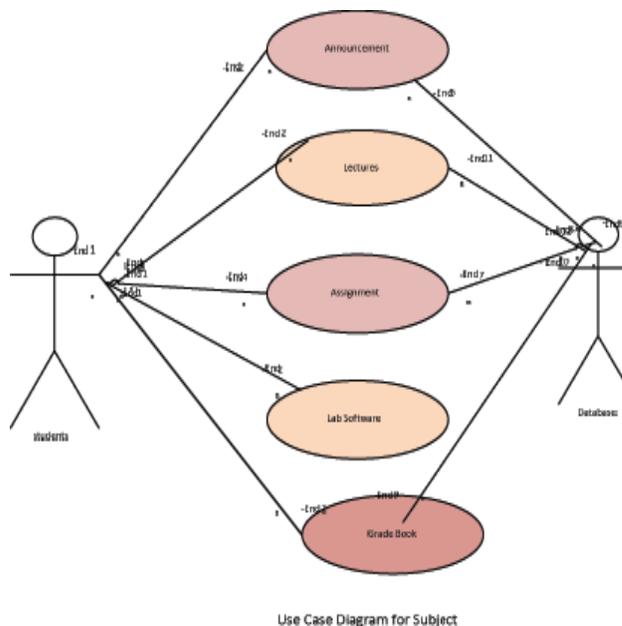


Fig:2 Use Case Diagram for Subject

6. IMPLEMENTATION

A common way of approaching pedagogy as the art and science of teaching. Pedagogical rules and basic principles helps student to improve their knowledge to understand computer science.

Rules:

Teaching must be in accordance with the student's age of development.

All learning happens through the senses.

One should proceed from specific to the general, from what is easy to the more difficult.

Teaching should not cover too many subjects or themes at the same time.

Teaching should proceed slowly and systematically.

Five principles of pedagogy:

1. Motivation
2. Exposition
3. Direction of activity
4. Criticism

Motivation:

Is likely to be dependent on the personality of the teacher and his or her ability to develop a good relationship with the student, understanding the student's current world view interest and experience, and framing the learning to be achieved in a way that makes sense to the student.

The dependence of inspiration on the relationship with the teacher means that computer have only a supportive role to play in this field.

Exposition:

Good exposition requires ability at public performance combined with good subject knowledge, good preparation and supporting props.

It is not essential that exposition is managed by solely by the class room teacher.

We can use online videos.

Online videos can be accessed any time anywhere and is likely to be of much higher quality than classroom exposition. Online video can be made according to the country language which helps students to learn easily.

Direction of activity:

As "we learn by doing" so good instruction must rely heavily on activity.

Direction of activity can be done in several steps:

- 1) Learning activity design.
- 2) Repetition and review.

Learning activity design:

The design activities that deliver particularly learning objectives can be performed by front line classroom teachers. It can be done by black board

Repetition and review:

Memory tends to degrade, learning activities therefore need to be repeated regularly at first in order to ensure that the learning is laid down in long – term and not just short – term

memory. The intervals of review can become increasingly in. Repetition and review will helps to learn and store in the memory. This can be done by recording lectures and uploading on black board. It can be detail lecture or review of lesson. Which reminds the complete lecture and helps to remember.

Criticism:

Criticism should be constructive of course. Criticism is an essential part of the conversation loop. It is a key part of the teacher's tool set and students should learn to accept criticism in the constructive sense that ought to be offered.

Components of criticism are:

Evaluation.

Correction

Contextual repetition of exposition.

Repetition of lecturer (in class or recorded).

Collaboration:

Collaboration learning offers the possibility of methodological innovation as it is based on the notion that knowledge construction is basically an social event and adequate collaboration is particularly important for learning complex knowledge and high order cognitive skills. Therefore its seems clear to us that collaborative learning meets the demands of the knowledge and information society. In which the information explosion and the demands for greater and more varied supply make it necessary to convert new knowledge produced science and technology into educational resources and content. In computer science education collaboration learning help students to improve knowledge and cognitive skills. It can be done with the help of set of computer with advance version of the software according to the level of the students and connected to a network thru which they can access black board in the class to complete theory lectures and practical lectures.



Image of a Class Room using the collaboration ,Pedagogy with Black Board



Image of a Class Room using the collaboration ,Pedagogy with Black Board.

7. CONCLUSION

Collaboration learning with pedagogy in computer science will inspire the students in new direction using new techniques and tools in computer science. The typical uses of this strategy will help students to increase knowledge and also develop cognitive skills by using the key factors of the system. Usage of computers, network, technology and the guide in a systematic way. This develops good relationship with student. Teachers act as collaborator (guide).Instructions and organization can implement pedagogical principle blend with collaboration system can seek greater educational excellence and quality

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