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ICT,EDUCATION,QUALITY AND EXCELLENCE

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INTRODUCTION

- Fry (2000 p15) defines e-learning as delivery of training and education via networked interactivity and a range of other knowledge collection and distribution technologies. E-learning opportunities for students have skyrocketed in popularity. Every year, more universities are starting online programs. Much of this increase is due to the demands of the learner audience who are intrigued by online education, mostly because they face a number of obstacles that make conventional, brick-and-mortar educational options unviable which include some of the following:

- Conveniently located institutions offer limited program options .Their work schedules conflict with campus-bound course schedules, this includes people who work in shifts, travel frequently on business, work long hours, and/ or are in the armed forces.

- Personal and family commitments conflict with campus-bound course schedules. This includes having children at home and taking care of aging parents.

- Kenyan universities are increasingly turning to e-learning as a tool to facilitate improved education. They also want to rope in more students through better access to facilities, hoping to reach a wider base in a cost effective way. This thesis aim at offering student with an agent based e-learning support system

RESEARCH OBJECTIVES

The following are the objectives of this research:

- To investigate how agents can be used in e-learning.

- Use e-learning agents to improve learning performance based on performance assessments and learning needs.

- Use intelligent agents to work with the instructors to produce the right depth, timely content for the students.

AGENTS

- **An agent:** is a small, autonomous, or semiautonomous software program that performs a set of specialized functions to meet a specific set of goals, and then provides its results to a customer (e.g., human end user, another program) in a format readily acceptable by that customer

LITERATURE REVIEW

- Harbouche, K, A & Hamdi_chief (2002) states that the aim of this approach was to allow many users to interact collectively and intelligently with the environment. In this cooperation model, human users and artificial agents carry out tasks in the learnings service. They define the internal structure of our kernel supposed to work within Internet/Intranet settings. Design in this e-learning approach was structured in three parts: Individual learning space, collaborative space, and cooperative space.

- The employment of an agent-based approach is advocated for two main reasons: agents were a natural metaphor of human acts, and the learning systems are generally complex.

- This environment has to take into account problems underlined by different forms of distance learning, such as: the sociological isolation of the learning, the loss of motivation and the learning independence. Create necessary means to make of a distance situation, a reasonable equivalent of a face-to-face situation while allowing more suppleness in comparison with the constraints of time and space Propose means to attend and accompany learning and to replace the teacher during a working session Re-aim groups of learning in a productive direction pay attention to the members left out of the Correlation

WHY LEARNING SUPPORT SYSTEM USING AGENTS FOR THIS STUDY?

- **Learning Agent:** This is an intelligent agent that makes exams available for the students at the end of the chapter, submits the answered questions to the tutor agent and monitors the learning progress of each individual student throughout the learning process.

- **Course management Agent:** This agent will act as an interface between the teacher, student and the e-learning environment. The agent will manage the learning process for example determines the next available learning material, and then retrieves the required learning resources for individual students and also sends the log in progress to the tutor agent.

- **Tutor Agent:** Evaluates the learning performance of the students by reviewing the exam marks, if performance is lower than the minimum threshold the students will need to retake the assessment.

RESEARCH METHODOLOGY

- This agent based e-learning support system is based on a study of a kenyan University fourth year students taking Bachelor in Business Information Technology. The students taking the e-learning courses particular in a course unit known as Database management system exam marks are analyzed and evaluated. An exam is done by the students in class, after the end of the session; the results are an instant feedback that the students receive after the session.

DATA COLLECTION

- Questionnaire

The questionnaires were distributed to the students. In executing the questionnaires, a time frame was provided and agreed with the respondents.

Answers to questions was cross checked and analyzed using descriptive statically method.

- System Developed

E-learning agent based system was be implemented using Prometheus methodology, inference rules and JADE platform. The agent platform can be distributed across multiple machines, regardless of the underlying operating system, and the configuration controlled via a remote graphical user   interface.

Agent Responsibilities

- Course management Agent

acts as an interface between teacher, student and the e-learning environment

manages the learning process eg determines the next available learning material, and then retrieves the required learning resources for individual students

Report the student log in progress the to the tutor agent

- Learning Agent

make test available for the students

Submit the answered questions to the tutor agent

monitors the learning progress of each individual student throughout learning process

- Tutor Agent

Evaluates the learning performance of the students by reviewing the exam marks and the login hours, if performance is lower than the minimum threshold the students will need to retake the assessment.

RESULTS AND DISCUSSION

- The system was tested using information of 60 students who were undertaking the course Data Base Management Systems. Student and course details were captured. The students who participated in the study were from a Kenyan university.

RESULT1

- **Objective 1: Agents can be used in e-learning.**

- **Result 1: Overall Evaluation of effectiveness of Agent based E-learning system**

RESULT 2

- **Objective2: Use intelligent agents to work with instructor to produce content of the right depth and that is timely?**

- There were two key aspects of focus about the course, under objective 2: Depth of the course and timeliness of the availability of the course.