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## Adaptive Learning -The merge of Al and digital literacy: A tool that empowers personalized learning

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#### 9GAG.COM/GAG/4239400

### Adaptive Learning in Few terms

#### • What is adaptive?

- Adaptive sequencing of educational tasks
- Adaptive content presentation
- Adaptive ordering of search results
- What kinds of information about user?
  - User knowledge
  - User interests
  - User individual traits

## In a Nutshell

Personalized learning using learning analytic engine

- Right content and assessment
- Right student
- Right time

Combining Art of Teaching with the Science of Teaching

### Adaptive systems



Classic loop user modeling - adaptation in adaptive systems

## Why Adaptive E-Learning?

- Increased control: Students can move quickly through areas of mastery to immediately address those areas where they need to improve, which helps prevent students from falling behind in the coursework.
- **Higher confidence:** Students report feeling a stronger sense of confidence as they proactively address learning gaps.
- Better engagement: Students say classes are "more fun" and, as a result, they engage in the learning process at a deeper level.
- Long-term learning: Students retain knowledge and skills that can be applied in practical ways both in and out of the classroom.
- Improved results: According to faculty, students perform better in class because they get extra support in the areas they find most challenging

### A Sample Sequencing



# Going Adaptive – A Case Study at Lebanese American University

Course Title: Remedial English Course

- Course Description: This course is designed to reinforce critical reading and effective writing skills, with emphasis on summarizing, paraphrasing and citing sources to develop documented essays in various modes. The course focuses on academic style and task-based work.
- Audience: English learners with an ENG 009 or SAT score between 440 – 499
- Learning Environments: 1 class offered in a traditional way and 1 course in a Blended format

### The Case

#### The Case: Summer 2015

McGraw-Hill Education offered 40 free trial codes for Connect Writing 3.0 latest edition. This edition includes LearnSmart Achieve. The online platform offers a collection of pre-made assignments that can be used as is or edited to create assignments that support the course learning objectives; instructors may also create their own customized assignments. The content was arranged and compiled based on the previous English oog online Laboratory design and division (refer to the syllabus).

- Two English 009 sections were offered. One section had 22 students and the other 11.
- Section 11 with 22 students used BlackboardLearn as a blended learning approach. Nicol 115, the computerized room with an interactive whiteboard, was used as a classroom.
- Section 12 with 11 students used the traditional teaching and learning. A regular smart classroom was used.

### LearnSmart Achieve

LearnSmart Achieve offers an adaptive study plan for each module. The platform addresses and meets each student's unique needs and abilities. The continuous combination of the content (based on the learning objectives) and the student's data results offers a personalized learning workflow.

# Implementation

#### McGraw-Hill Connect was used in 2 different ways;

- paired with BlackboardLearn and customized as "MyGrammar Reinforcement" (Blended format)
- Independently through the Connect online page (traditional)
- Both groups received training sessions by the publisher's representative, Mrs. Taline Prescott-Decie. An average of 30 minutes is needed for the training session.

- Section 12 had their training on their own smart devices (which was a little challenging for some students due to the size of the device).
  - Tip: With Internet access, the registration process and tools can be accessed from any smart device .
- In both sections, instructors were able to track learners' work and give the learner recommendation on their performance.
- To motivate learners to cover the learning modules, common tests were assigned for both sections.



# Findings

 Building a course and/or assignments and sharing it/them with peers is straightforward.

 Simple LMS integration. The platform can be easily managed and designed to meet a program's learning objectives.  It is user-friendly to instructors and learners; the questions or learners' queries were on their performance, for example meeting deadlines. No questions were asked about using the platform.  The one time training session in a smart classroom worked well with a small class size (less than 11 students). However, might not be the case with a larger number.

The training session in the computerized room was very efficient.

- It was found that when Connect was paired with BbLearn, learners were more engaged.
  - Moving or flipping from their online regular work to their online laboratory work was very easy.
  - Having learner's assignments, learning modules, grades, announcements and notifications compiled in and accessed from one platform was valuable.

- The 'Reports' section was of great value to the learner and instructor; learners and instructors can check
  - the progress and the time spent on the learning objectives
  - the most challenging learning objectives
  - the missed questions
- accordingly, the instructor can adjust the teaching and learning process and give data drive advice.

 The 'Insight' feature which is under the 'Performance' feature is a helpful tool that offers a visual analytics to track each learner's performance (time on task and grade). The learners were not only tested for 'collecting grades', but the test questions were to evaluate their level of confidence regarding a set of learning objectives. In other words, the test items are not to check whether the learner answered correctly or not the question, but whether s/he understood the learning objective to be tested.  The analytical reports are powerful. For example, the 'At Risk Student' feature was very helpful. It is an online engagement indicator that offers the instructor a break down of the level of learner's engagement. Learners may be categorized into 3 levels: at risk, keep watch, and safe. Instructors may click the 'send message to student' button to convey their concern to the affected learner(s).

 The learners had to power over their learning and most of them were pleased with their learning experience.

 Learners queries and remarks regarding their online grammar work during a face-to-face session can support that learning was taking place.

 Learners who had poor online engagement were the ones who had face-to-face attendance problems.  Finally, it was noticed that grades are still an important extrinsic motivation for efficient work. When grades are to be counted in the learner's total grade, they showed care, interest, and engagement (not all though- 4 out of 21 barely worked).

 N.B. Learners had free codes; it is not evident how they will work when they have to pay for their work.

# The Story of Publishers and Adaptive Learning



Assessment



KNEWTON 🌮

PEARSON



# Some Adaptive Learning Systems

- Adapt Learning
  - Whole Course Delivery
  - Small
- Cogbooks
  - LMS Module
  - Small
- Knowillage
  - LMS Module
  - Small
- LoudCloud Systems

Small

LMS and eReader Platform

- Open Learning Initiative
  - Whole Course Delivery
  - Moderate
- Smart Sparrow
  - Homework Tool, Interactive Labs, Simulations
  - Small
- Realizeit
  - LMS Module
  - Small

# Disadvantages with Adaptive Systems

- Adaptive Systems may learn the *wrong behavior* 
  - adaptive games learn badly from bad players
  - generally: adaptation good for one user may be bad for another user; it is *personal* after all
- Adaptive Systems may outsmart the users
  - all doomsday movies in which machines take over the world blame second order adaptive systems
  - a game that learns how always to win is no fun
  - an adaptive information system may effectively perform censorship
  - it may be hard to tell an adaptive system that it is wrong

## **Risks for Students and Faculty**

- May well conflict with the prevailing teaching paradigm at a given institution.
- Not all students will take to learning models that represent such a significant break with their past.
- For some students, adaptive approaches to instruction may well increase disengagement rather than foster deeper engagement, particularly if those students feel uncomfortable in a learning context that is not characterized by close oversight, continual monitoring and frequent feedback from a trusted instructor.

### References

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#### THANK YOU!