

Quiz Engine Design for



CluelessPC.com

Introduction

In 1997 I got a job helping to administrate a educational assistance benefits for a local research university. My work involved two benefits, tuition grant and tuition remission. The modern benefit of "Tuition Grant" was a formalized version of a practice of waiving tuition for children of faculty of other schools. This tit-for tat exchange was an off-the-books exchange of money between colleges that amounted to a significant benefit for faculty. The benefit of "Tuition Remission" was also descended from this practice, but its scope was internal to the university.

During the civil rights era, benefits that had been previously limited to faculty were extended to staff. Shortly afterwards, in response to the desire of staff to actually be able to use their benefits for themselves and their families to attend the prestigious-but-exclusive university, the university created a whole school just for that purpose. Other than by attending the school which was focused on continuing studies, it was then and remains now extraordinarily difficult for staff to use remission to attend mainstream university classes. This conundrum is maintained by the practice of scheduling mainstream classes within normal business hours, and by degree requirements for maintaining a full-time course-load in order to finish within a certain amount of time.



University of Mississippi, October 1, 1962

In the year of work that I tracked tuition remission the overwhelming amount of the budget went to this degree-granting school, designed for staff. My position was situated in the part of the university administration that was responsible for staff training, which is not considered a true benefit, since it is considered work itself and is conducted during work hours, for pay. Thus I also had a sense of the overall effort and process of administrating training across the May 13th, 2008

university. And I also had the privilege of explaining the grant benefit to parents who wanted to use it to help pay for their children's college education. This gave me insight into the decision making process of parents and children.

Based on all these experiences, I have come to the conclusion that educational benefits in the university are not designed to be leveling the field in terms of class -- but instead (and not surprisingly) -- are designed in such a way that they maintain the status quo. In short, education and training are available to those who need it the least, and largely denied to those who need it the most.

As I began working in the corporate world, this pattern was revealed to be even more true of how technical training in computer skills are offered to employees. Commonly, mature IT departments grant IT staff who are interested to access to several thousand dollars worth of training a year, while non-technical users get by with very little. I would estimate that it breaks down to approximately 90%/10% in favor of technical staff.



Whitnel Cotton Mill, Whitnel, N.C.

But as a developer, my work is made much more difficult by the limitations of the users I create information systems for. Thus I have imagined that as part of my work at University of Baltimore, I would create a course of learning that would be designed to address the 90% of people who get by with 10% of the resources.

CluelessPC

CluelessPC.com as it is online right now represents the current state of evolution of this effort. 10 modules establish a roughly hierarchical set of topics -- all of them together constitute that ephemeral set of competencies that distinguish novices from intermediates.

The immediate goal is to implement a quiz engine based on EdFund.org's Loan Counseling Test:

<https://www.edfund.org/eec/CounselingMainForm.cfm?GradStatus=graduate&testtype=entrance&schoolID=00210200&schoolTheme=1>

The EdFund site provides a service to school Financial Aid offices, which is to provide a simple online tutorial for learning about Financial Aid obligations which students take on when they receive aid. Only after students successfully complete the quiz do schools release aid.

The whole site has been designed to the nines by a rigorous process and has few loose ends. Content metaphors and assets have all been designed to dig deep into user's sub conscious experience of positive child-hood game play, to side-step any negative thoughts about incurring the huge financial obligations of graduate school, and replace them with positive solutions like getting a part-time job, living on campus, or as a last resort moving

back in with parents. The next button graphic is an animated game spinner which rotates when moused over.



EdFund.org's Loan Counseling Test Start Page

Users can take a practice test as many times as they want, but the site leaves it open to your imagination what will happen if you take the real test and don't pass it. The answers to the questions are always on the same page as the quiz. However, the content is fairly complicated and the test is designed to require you to actually read it in order to answer the questions. Successful completion of the test questions provides a way to guarantee that students demonstrate an understanding of certain issues. Each quiz presents a set of questions and correct answers and requires the user to match the correct question with the correct answer. Upon reflection this is a way to have a multiple choice test

which presents no (potentially confusing) incorrect information.

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My goal is to copy this format to CluelessPC, although I haven't decided whether to do a traditional multiple choice, or to make users match the question with the answer. One of the [apparent] advantages of the traditional multiple choice format are the ability to encode multiple-true answers (i.e. Q: "Which of the following statements are true..."; A: "B, D, and E"). Another advantage is it seems to lend itself more to randomized questions.

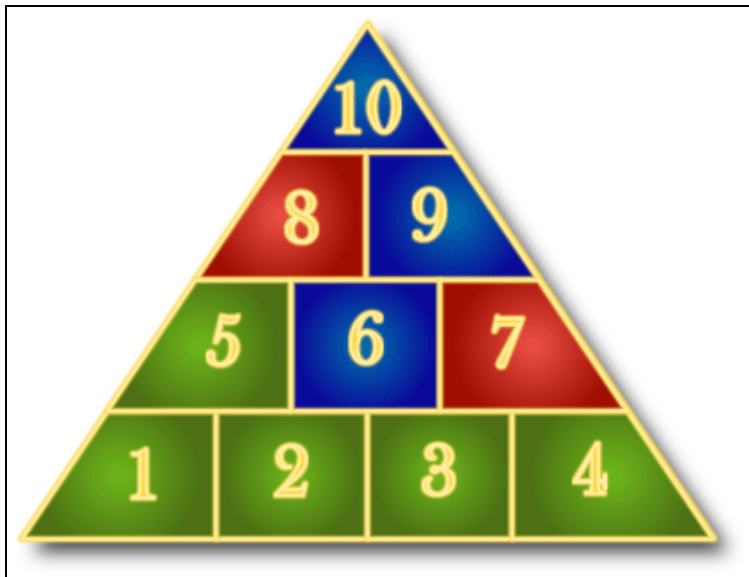
Match the following to indicate your understanding of the different types of financial aid:

Question number	Your Answer	Choice
Funds that do not have to be repaid and may be awarded based on any number of criteria, such as academics, achievements, etc.	<input type="text" value="B"/>	A. Subsidized Stafford loans
Money earned through employment arranged by the school.	<input type="text" value="A"/>	B. Work-study
Financial aid awards that do not have to be repaid and are available through the federal government, state agencies, and colleges.	<input type="text" value="C"/>	C. Scholarships
Money that must be repaid with interest and eligibility is based on need.	<input type="text" value="D"/>	D. Unsubsidized Stafford loans
Money that must be repaid with interest and eligibility is not based on need.	<input type="text" value="E"/>	E. Grants

EdFund.org's Loan Counseling Test Multiple Choice Format

As users attempt to answer questions within modules, the pyramid graphic which is always on-screen in the top-left will chart their progress. The graphic is actually comprised of 10 separate zones, each of which can show three states (blue by default, red for attempted and failed, green for passed). In the first generation of this feature, the pyramid will actually be made up of 10 separate gif graphics. In the future it may evolve into flash, since this would offer more flexibility in adding some kinds of

interactive features to it. Eventually, I could see it becoming an alternative navigation for the website's educational content.



CluelessPC "Clue Pyramid"

A few other features which are beyond the scope of the quiz project bear noting. The site's content management system is designed to store the same content in multiple languages. User data for language preference is part of the data model, and set based logic (SQL) which is part of the website CMS software always returns content items in languages by order of user preference,

defaulting to English when no alternate language content exists. With this in mind, the strategic goal of the site is to serve this thin slice of novice-oriented information to the widest audience possible.

Finally, the content that is in the system right now is 100% text-based, but in the future the CMS is intended to be able to serve a familiar range of web content ranging from graphics to video. Additionally, as I learn more about integrating Flash and PHP, I hope to add the ability to create simple learning games to the content.

The goal of CluelessPC is to address the dearth of internet resources to aid novices in making the journey from novice to intermediate. The ironies of trying to convey information about using computers with computers has not gone unnoticed. An important nuance to the strategic plan for CluelessPC is intended to address the whole social milieu of the learner, and to also focus on serving the needs of first-responders to cluelessness: parents, children of parents, teachers, children of teachers, IT staff, etc.

In its maturity, while the core content will probably focus on educating novices, the community of users of the website and its marketing features will focus on first responders, rather than novices. The idea that has stuck in my mind as an IT worker would be to have the ability to respond to a user problem by sending them a link to the website, and then to only escalate their request when they have demonstrated their mastery of the issues involved with a passing score for a CluelessPC module.

The Appendix to this paper is the set of questions that have been developed for this content.