

Cover Page

Topic of the Special Session: *It Seemed Like a Good Idea at the Time*

Nature of The Proposal: series of presentations, plus discussion.

A Brief Overview of the Session:

We often learn of successful pedagogical experiments, but we seldom hear of the the ones that failed. For this special session we solicited submissions from the SIGCSE membership, and selected the best for presentation in the session. Our contributors describe pedagogical approaches that initially seemed like good ideas, but provided inconclusive or even harmful end results. In the session, presenters will describe their pedagogical experiment, the rationale for the experiment, evidence of failure, and lessons learned.

A “Good Idea at the Time” session was presented at SIGCSE 2007; it was well-attended, and we received a good deal of positive feedback. Information about last year’s session can be found at <http://depts.washington.edu/goodidea/>

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Categories and Subject Descriptors

K.3.2 [Computer and Information Science Education]: self-assessment; K.4.2 [Social Issues]: employment

General Terms

Design, Experimentation, Human Factors, Measurement, Performance, Verification

Keywords

fiasco, disaster, breakdown, failure, humiliation, termination

SUMMARY

We often learn of successful pedagogical experiments, but we seldom hear of the the ones that failed. For this special session we solicited submissions from the SIGCSE membership, selected the best from among these, and will have presentations at the session by the selected authors. Our contributions describe pedagogical approaches that seemed to be good ideas but turned out as failures. Contributors will describe their pedagogical experiment, the rationale for the experiment, evidence of failure, and lessons learned.

1. OVERVIEW

An underlying assumption in the SIGCSE literature is that every decision we make in our class offerings is a small-scale local experiment to determine which acts can best lead to learning. In our community, as in most academic disciplines, there is an exclusive focus on the success of these

experiments. Rarely, if ever, do we hear about the experiments that failed. Given that negative results can be as valid as positive results in the scientific endeavor, it seems natural that there should be a forum for the discussion of especially negative experiences in CS Education.

This proposal is for a Special Session at SIGCSE Symposium 2008, entitled “It Seemed Like a Good Idea at the Time.” This would be a forum for us to discuss the failures we have all had, with the hope that others can avoid the paths that led to these unanticipated results. This session is structured like Parlante’s “Nifty Assignments” sessions: a set of presenters selected from submissions solicited by a general CFP to the SIGCSE community. A similar session at SIGCSE 2007[1] was well-attended and wildly successful.

2. WHEN IS FAILURE GOOD?

Much like Tolstoy’s happy families, successful experiments are all similar but failed experiments all fail in their own way. However, not all failures are interesting or would make for a good discussion. We selected teaching interventions for which there was reasonable expectation of success, for example those based on previously published work. We also selected for reports that provided evidence of failure – or at least significant deviations from expected outcomes, reasons for the failure, and implications for practice for other CS teachers.

By sharing these experiences, the authors provide cautionary tales (and some entertainment) to other instructors. By providing a forum for the failed experiment, we hope to encourage risk taking in the classroom, and by focusing on evidence we hope to foster a community with a greater eye for documenting our classroom experiments.

A web database bomb (Scott D. Anderson)

I taught a course on Databases with Web Interfaces in which I introduced techniques for uploading files, envisioning projects like ebay.com knockoffs that would have the ability to upload a picture of the item for sale. The students used this for terrific course projects with photo sharing and the like.

Around six months later, the CS network link was sev-

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ered by the the college's head of systems and networks, Tim Cantin. He explained that the department server – my server – was involved in a global phishing attack and that he and the campus police would be right over.

It happened that the file upload scripts that I had introduced in my course, with *working examples*, had been used by someone in an eastern European country to upload a replica of a commercial bank's website. The malefactor had then sent out a bazillion email messages, saying the usual stuff: there is a problem with your account, please visit our website by clicking on this embedded hyperlink, login in with your username and password, and so on. Just a standard phishing attack, except that the server hosting the bogus bank site was *my server*.

Thousands of people who saw the scam and wanted to help avoid trouble had called the college, who called the campus police, who called Tim Cantin. Naturally, Tim shut me down. All because I had decided to introduce the fun stuff about file upload before I got to the serious stuff about web security.

Replacing a Textbook with Online Materials from ACM (Caroline M. Eastman)

We all know that textbooks in computing are expensive and that many undergo frequent revisions. Why not move away from the conventional textbook and use online materials? During Spring 2007 I offered a senior/graduate level database course using online materials exclusively, primarily online courses and books available through ACM.

I anticipated many advantages in addition to the obvious cost savings for students. Students would get tutorial help and more immediate feedback from online courses. To gain access they would join ACM, a major professional organization. They would gain experience using a mechanism supporting life-long learning.

Minor problems arose almost immediately at the beginning of the course, including difficulties with system access. Additional problems arose as the course progressed: some online courses were not well written, students were reluctant to rely upon an unconventional mode of instruction, and it was hard to monitor student use and progress. Then, in the middle of the semester, ACM switched providers for its materials, effectively cutting off access to materials that students had used and could no longer review.

Students still appear to be more comfortable with books. More importantly, they are not subject to system crashes and provider changes.

Untimed, Open Note Exams Not Necessarily a Good Combination (Dan Garcia)

I believe in open book, open note exams. I also believe that exams shouldn't have time pressures.

So, in my first semester teaching CS0 in Scheme to 300 students at Berkeley, I offered that their midterm be open book and notes with no time limit. I wrote an exam that should have taken the average student 2 hours. The exam started at 7pm. Some students showed up, took a look at the exam, and turned the book to chapter 1, page 1 and started reading. We were kicked out of the room at 11pm when the custodians told us they needed to clean up. There were 15 left. The students turned their exams in to me, and walked in silence across campus until we arrived in a quiet room in the CS building. I handed their exams back to them. They

trickled in. At 1:15am I caught myself nodding off and asked if anyone *really* could use more time, or whether they'd have mercy on me and let me go home. The two students took pity on me and turned in their exams.

There's More to a Course than a Good Idea (Paul Gestwicki)

In Fall 2006, I taught a design-first CS1 course using Java and UML. This was the first course of its type at my university, and the first time I was teaching such a course. It was a positive experience for all involved. Problems were identified and addressed during winter break, and an improved (though nearly identical) course was offered in Spring 2007.

The Spring offering went much worse than Fall, with grades, morale, performance, and attendance all noticeably lower. The most likely culprit is that the Spring course was "off-sequence". Whereas the Fall class contains many majors and freshmen ready for a challenge, Spring is mostly non-majors, upper-classmen resentful of their requirements, and those who did not have adequate mathematics ability to take the course in the Fall. As a result, the Spring students struggled more with syntax and the mathematical abstractions, and they were not inspired by the benefits of good design.

This difference has important implications for the use of the design-first paradigm. A student who does not care about computer science will also not care about software design. Students in the Fall could easily imagine themselves building large software systems, whether for work, school, or personal enjoyment. Students in the Spring, by and large, were hoping to never have to write any programs at all, even within the course itself.

Manipulated by Strings (Margaret Menzin)

In a sophomore level Data Structures and Algorithms course, I assigned a project in which students were to read a file of names like "President George Washington". They were to identify the titles from a list and strip them, identify the last name (by reading backwards to the first blank), invert it to the form of last_name, first_name and then alphabetize the names (being aware that they could not use a simple ASCII comparison, but had to correct for upper and lower case being the same for alphabetization purposes.)

This problem turned out to be far more complex than envisioned: names can have more than one title; titles can appear in various places; titles may be the same as first or last name (Dr. Rev. Martin Luther King, Jr; Major General John Law Major; Bernard Cardinal Law). Last names can be more than one word, and different languages have different rules as to which words in a name to ignore when alphabetizing. Students enjoyed the idea that their professor had to consult with someone in our Library School to answer their questions, and the project illustrated difficulties inherent in internationalization, but it turned out much different from the straightforward project I had expected.

3. REFERENCES

- [1] J. Boustedt, R. McCartney, J. Tenenberg, T. Winters, S. Edwards, B. B. Morrison, D. R. Musicant, I. Utting, and C. Zander. It seemed like a good idea at the time. In *SIGCSE '07: Proceedings of the 38th SIGCSE technical symposium on Computer science education*, pages 346–347, New York, NY, USA, 2007. ACM Press.