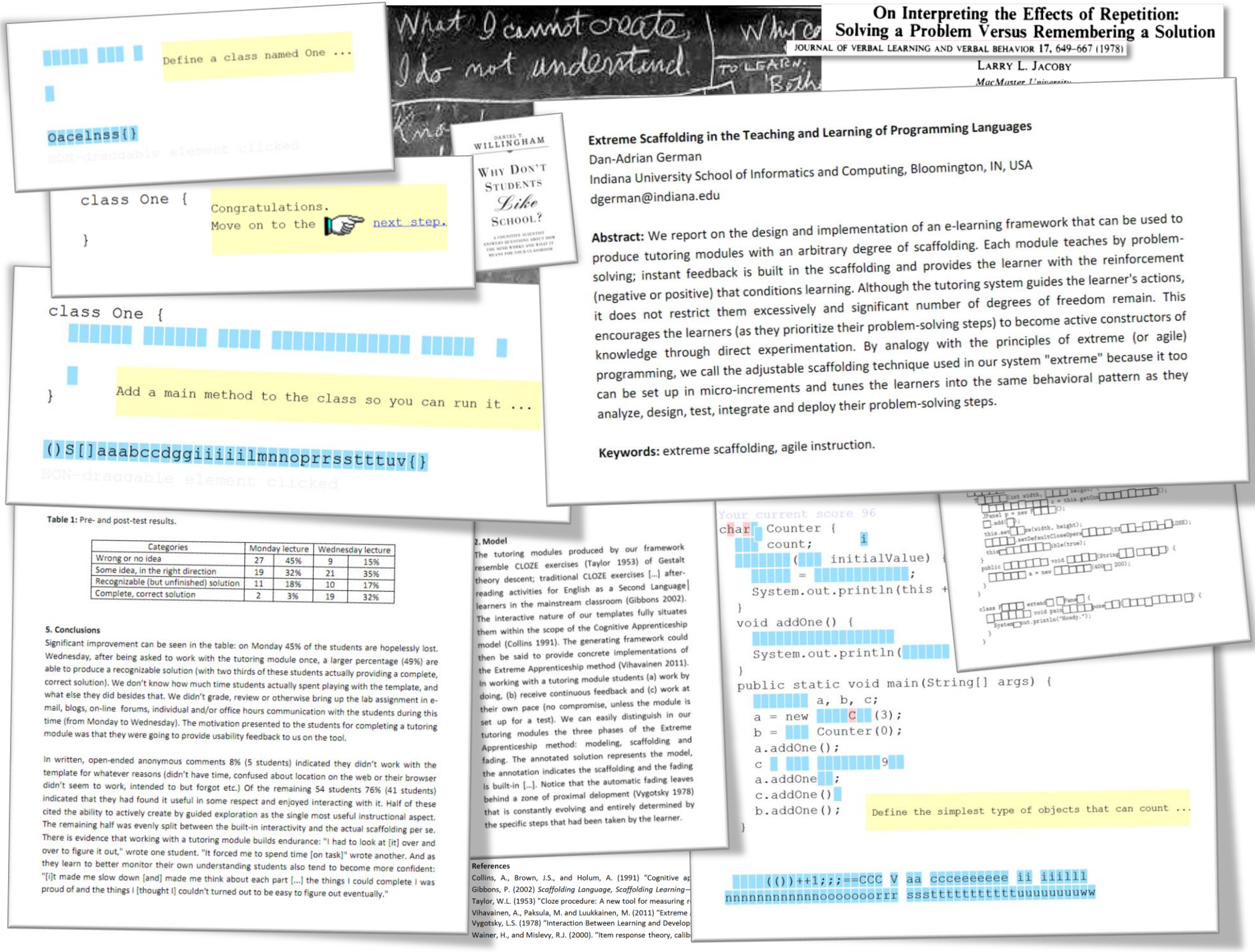

Define a class named One ...
Oacelnss{}
NON-draggable element clicked
What I cannot create, I do not understand.
TO LEARN:
On Interpreting the Effects of Repetition: Solving a Problem Versus Remembering a Solution
JOURNAL OF VERBAL LEARNING AND VERBAL BEHAVIOR 17, 649–667 (1978)
LARRY L. JACOBY
MacMaster University
DANIEL T. WILLINGHAM
WHY DON'T STUDENTS Like SCHOOL?
class One {
Congratulations.
Move on to the next step.
}
class One {
}
Add a main method to the class so you can run it ...
()S[]aaabccdggiiiiilmnnoprrsstttuv{}
NON-draggable element clicked
Extreme Scaffolding in the Teaching and Learning of Programming Languages
Dan-Adrian German
Indiana University School of Informatics and Computing, Bloomington, IN, USA
dgerman@indiana.edu
Abstract: We report on the design and implementation of an e-learning framework that can be used to produce tutoring modules with an arbitrary degree of scaffolding. Each module teaches by problem-solving; instant feedback is built in the scaffolding and provides the learner with the reinforcement (negative or positive) that conditions learning. Although the tutoring system guides the learner's actions, it does not restrict them excessively and significant number of degrees of freedom remain. This encourages the learners (as they prioritize their problem-solving steps) to become active constructors of knowledge through direct experimentation. By analogy with the principles of extreme (or agile) programming, we call the adjustable scaffolding technique used in our system "extreme" because it too can be set up in micro-increments and tunes the learners into the same behavioral pattern as they analyze, design, test, integrate and deploy their problem-solving steps.
Keywords: extreme scaffolding, agile instruction.
Table 1: Pre- and post-test results.
Categories | Monday lecture | Wednesday lecture
Wrong or no idea | 27 | 45% | 9 | 15%
Some idea, in the right direction | 19 | 32% | 21 | 35%
Recognizable (but unfinished) solution | 11 | 18% | 10 | 17%
Complete, correct solution | 2 | 3% | 19 | 32%
5. Conclusions
Significant improvement can be seen in the table: on Monday 45% of the students are hopelessly lost. Wednesday, after being asked to work with the tutoring module once, a larger percentage (49%) are able to produce a recognizable solution (with two thirds of these students actually providing a complete, correct solution). We don't know how much time students actually spent playing with the template, and what else they did besides that. We didn't grade, review or otherwise bring up the lab assignment in e-mail, blogs, on-line forums, individual and/or office hours communication with the students during this time (from Monday to Wednesday). The motivation presented to the students for completing a tutoring module was that they were going to provide usability feedback to us on the tool.
In written, open-ended anonymous comments 8% (5 students) indicated they didn't work with the template for whatever reasons (didn't have time, confused about location on the web or their browser didn't seem to work, intended to but forgot etc.) Of the remaining 54 students 76% (41 students) indicated that they had found it useful in some respect and enjoyed interacting with it. Half of these cited the ability to actively create by guided exploration as the single most useful instructional aspect. The remaining half was evenly split between the built-in interactivity and the actual scaffolding per se. There is evidence that working with a tutoring module builds endurance: "I had to look at [it] over and over to figure it out," wrote one student. "It forced me to spend time [on task]" wrote another. And as they learn to better monitor their own understanding students also tend to become more confident: "[i]t made me slow down [and] made me think about each part [...] the things I could complete I was proud of and the things I [thought I] couldn't turned out to be easy to figure out eventually."
2. Model
The tutoring modules produced by our framework resemble CLOZE exercises (Taylor 1953) of Gestalt theory descent; traditional CLOZE exercises [...] after-reading activities for English as a Second Language learners in the mainstream classroom (Gibbons 2002). The interactive nature of our templates fully situates them within the scope of the Cognitive Apprenticeship model (Collins 1991). The generating framework could then be said to provide concrete implementations of the Extreme Apprenticeship method (Vihavainen 2011). In working with a tutoring module students (a) work by doing, (b) receive continuous feedback and (c) work at their own pace (no compromise, unless the module is set up for a test). We can easily distinguish in our tutoring modules the three phases of the Extreme Apprenticeship method: modeling, scaffolding and fading. The annotated solution represents the model, the annotation indicates the scaffolding and the fading is built-in [...]. Notice that the automatic fading leaves behind a zone of proximal delopment (Vygotsky 1978) that is constantly evolving and entirely determined by the specific steps that had been taken by the learner.
References
Collins, A., Brown, J.S., and Holum, A. (1991) "Cognitive ap
Gibbons, P. (2002) Scaffolding Language, Scaffolding Learning–
Taylor, W.L. (1953) "Cloze procedure: A new tool for measuring r
Vihavainen, A., Paksula, M. and Luukkainen, M. (2011) "Extreme
Vygotsky, L.S. (1978) "Interaction Between Learning and Develop
Wainer, H., and Mislevy, R.J. (2000). "Item response theory, calib
Your current score 96
char Counter {
count;
initialValue)
System.out.println(this +
}
void addOne() {
System.out.println(
}
public static void main(String[] args) {
a, b, c;
a = new C(3);
b = Counter(0);
a.addOne();
c 9
a.addOne;
c.addOne()
b.addOne();
}
Define the simplest type of objects that can count ...
(())++1;;;==CCC V aa ccceeeeeee ii iiilll
nnnnnnnnnnnnoooooorrr ssstttttttttttuuuuuuuww