

Peer Review of Randy Jones
by Dale Skrien and Mark Tappan
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Overview

Dale Skrien observed Randy Jones' CS 231 class on three consecutive meetings (Friday, October 31, Monday, November 3, and Wednesday, November 5). Mark joined Dale for the last two meetings. Each class met from 10:00-10:50 a.m. in Keyes 103. There were 7 students in the course and they were all present in the classes we visited.

The CS231 is the second course in the introductory computer science sequence (after CS 151). In the course, students learn standard ways of structuring data in computer programs, such as stacks, queues, binary trees, graphs, and tables. They also learn some fundamental algorithms such as algorithms for sorting and searching.

Observations

In the three classes we visited, Randy started out with a few announcements concerning reminders of due dates of projects and upcoming exams. He then asked the students if they had any questions on the previous day's material or on the projects they were working on. After answering the questions, Randy continued his discussion of the previous class' material. His style of teaching consisted of lecturing, using the blackboard for displaying new terms and important diagrams. Throughout his lectures he continually asked students questions to test their understanding, to get them involved in the material, and to help them guide the discussion. When presenting new material, Randy gave many examples to help the students understand the usefulness of the new concepts.

Comments

The classroom had a very friendly, relaxed atmosphere, which seemed very conducive to learning. Randy spoke loudly and clearly, maintained eye contact with the students, and his boardwork was very readable. He had a good sense of humor, which seemed to help the class relax.

Because of the relaxed atmosphere, the students felt free to ask questions, even to the point of interrupting Randy's lecture. Randy welcomed such questions, treating the students respectfully as he answered their questions. His answers were very clear.

In addition to the questions the students asked, Randy involved the students in the discussion of the day's material by interspersing the lectures with many questions of his own. In particular, Randy would sometimes throw questions to the entire class (in which case, the better students usually answered) but was also careful to ask questions of every student in the class, to make sure they were all keeping up with him.

Randy was very well prepared. Furthermore, the material was presented in a very appropriate order. For example, in computer science, there are two completely distinct concepts both with the name "heap". Randy was very careful when introducing one of the concepts to distinguish it

from the other. Also, when presenting new material, he discussed the material at just the right depth so that the students could understand the important concepts. He was careful to introduce simple examples first to get across the general ideas and then, after the students understand the basic concepts, Randy presents the more general, more complex cases.

We liked how Randy made his lecture notes available on the course web page shortly before class each day. More generally, the course web pages are very well organized and are a very useful resource for the students.

One of the reasons the class worked so well is the small size. Randy was able to ask every student questions to see how well they are understanding the material. However, Randy's style is such that we feel it will work well on larger classes as well.

Concerns

We have only four minor suggestions to help Randy become a more effective teacher.

When Randy asked the class if they had any questions, he would sometimes give them only a short time to respond. We felt it might be better to pause for a longer period of time to give the students time to organize their thoughts and to decide whether they have a question.

Another suggestion is to be more careful in his boardwork. Randy rarely if ever wrote a complete sentence. When introducing a new term, he would write the term on the board, but would sometimes give the definition only verbally. For another example, Randy discussed nicely the advantages and disadvantages of using binary search trees as compared to linked lists and vectors for storing sorted data. Unfortunately, he didn't put a summary of the discussion on the board, which might have been very helpful in firming up the comparisons in the students' minds. More generally, because students usually copy into their notes only what is written on the board, it would be helpful to have more carefully organized and complete boardwork. Although we shouldn't pander to students' poor note taking habits, we should also strive to ensure that their notes are helpful to the students when they study them.

The third suggestion concerns the order of presentation of a new subject. When introducing new material, we feel it is pedagogically helpful to present a problem, ask the students for any solutions they can think of, and only then present the general solution and how it solves the problem in an elegant way. By taking this approach, the students are involved in the discussion and have a vested interest in the solution because they have had a chance to try to solve it themselves first. Randy took this approach when he discussed deleting nodes from a binary search tree, but when discussing inserting nodes in a binary search tree, Randy talked about the algorithm first, gave the students the code for the algorithm on the board, and then went through an example of stepping through the algorithm with a specific binary tree. We felt that Randy might have had better success if he had presented the problem of inserting new data in a binary search tree, then given the students a specific example of a binary tree and asked them how they would insert a new node in this particular example, and finally asked the students to come up with a general algorithm for node insertion, before presenting the textbook's solution.

Finally, we felt it would be better if Randy could present some more concrete, "real-world" examples of the uses of the concepts. For example, when discussing binary search trees, Randy could have presented some situations in industry or on the web where binary search trees are used. If there are no such uses, Randy could have used that fact as an opportunity to explain why not.

Summary

We were very impressed with Randy Jones' teaching style. He appears to be a very effective teacher with a good mix of lecturing and asking questions. He is respectful of the students and teaches in a low-key way that promotes learning by allowing the students to relax and focus on the material being presented.

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