

## Chris Joiner

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**From:** Tony Holland  
**Sent:** Monday, September 10, 2012 9:12 AM  
**To:** Bill Sellers; Kathy Buntin; Shannon Thomas; Chris Joiner; David Cobb; Leslie Reeder; Lisa Sanders; Robert Speed; Rosemary Hunter; Tara Estes; Gwyn Galloway; Jackie Spivey; William Arwood; Delmar Smith; John Waters; Lori Logan; Quincey Banks  
**Subject:** Prof dev..

Although this particular article (see below) is written about a study with Physics instructors, it has information applicable to all instructors. Incorporating successful strategies is the first step; incorporating them into a consistent system each and every semester is the key to long-term success. I have heard from more than one instructor about how their crystal clear objectives given before ever starting the 'lecture', followed by a system of accountability for students to prepare for class with these objectives, have increased test scores by as much as **50%**! (class avg. low 50's to mid-70's). You can just imagine what this does to the success rates of these classes. Point is, it does not require many changes to result in significant student learning increase. This is an important concept to keep in mind as you are dealing with that least effective third of your instructors. Remember...use the statistical data to identify your most 'at-risk' instructors and provide them with the support they need to make needed adjustments.

List of the most successful classroom techniques **according to our faculty**:

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- **Know students names & use them frequently!**
  - **Crystal clear objectives**
  - **Writing assignments...*one-minute paper, muddy points, wrappers, etc.***
  - **Daily assessments & frequent feedback on these**
  - **Online lecture/tutorial videos!**
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Please make any necessary adjustments and forward this on to your folks, copying me and your Coordinator. Thank you for all you do...your efforts do not go unnoticed!

## Teaching & Learning | Research

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### Physics Instructors Try New Teaching Methods, but Few Stick with Them

- By Dian Schaffhauser
- 09/06/12
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Change is hard, and act two appears to be the toughest phase of all to get through for physics instructors who want to try to teach their science courses in new ways. A recent study by researchers at [Western Michigan University](#) and the [University of Colorado - Boulder](#) found that although physics teachers are willing to try innovative teaching techniques in introductory physics courses, **many revert to traditional teaching approaches in short order.**

The study, "[Use of research-based instructional strategies in introductory physics: Where do faculty leave the innovation-decision process?](#)"--recently published by the [American Physical Society](#)--also suggests crucial factors that can predict how well an innovation will "stick" for a given instructor.

During 2008 the researchers sampled 722 physics faculty members in higher education across the United States. A Web-based [survey](#) asked 61 questions to help identify personal characteristics of the respondent (such as gender) and the familiarity and use of instructional strategies, such as **collaborative problem solving, peer instruction, interactive lecture demonstrations, and 21 teaching other approaches or "research-based instructional techniques."**

They used this information to figure out the point at which faculty discard the use of a new technique along the adoption lifecycle. The largest losses occurred, according to the report, at the "continuation" stage, where the instructor has to make a choice about whether to stick with the new technique or discontinue it.

The factors that encourage teachers to try out new teaching methods in the first place mostly relate to their exposure to other instructors. That includes reading teaching-related journals, attending talks and workshops related to teaching, and attending physics and astronomy new faculty workshops. Also, **instructors tend to be more willing to experiment if they're female, care about meeting instructional goals, and have a permanent, full-time position. And, although it seems obvious, having an interest in using more new teaching approaches (increasing student learning) correlates with using more new approaches.**

What doesn't seem to matter is the age of the instructor, the type of institution, the size of the class being taught, or the percentage of the position actually related to teaching versus other activities.

The paper's authors noted that it's **easier to make faculty aware of new approaches to teaching than it is to persuade instructors to stick with them once they've been tried.** If a school wants instructors to adopt new instructional approaches, the paper suggested, it'll need to provide greater support to faculty during implementation. Plus, it'll want to identify where in the adoption process "the biggest losses occur" for that particular environment.

"Current change strategies seem to do a reasonably good job of helping faculty develop knowledge and motivation to try these new instructional strategies," the researchers reported. "But additional work is needed to **understand and address the third of faculty who discontinue use after trying.**" In fact, the paper declares, it may be more fruitful to focus on getting those who discontinue use of an innovation to pick it up again than to encourage holdouts to try the innovation in the first place.

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