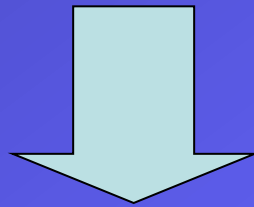


# TREND PENELITIAN PENDIDIKAN BIOLOGI

SRI ANGGRAENI

Falsafah & fokus pembelajaran  
IPA sudah beralih dari  
bagaimana guru mengajar  
menjadi bagaimana  
siswa belajar !!



**Pembelajaran**

Active  
learning



## HOW WE TEACH

# THE EFFECT OF ACTIVE LEARNING ON STUDENT CHARACTERISTICS IN A HUMAN PHYSIOLOGY COURSE FOR NONMAJORS

R. Russell Wilke

Biology Department, Angelo State University, ASU Station, San Angelo, Texas 76909

## Abstract

This study investigated the effect of active-learning strategies on college students' achievement, motivation, and self-efficacy in a human physiology course for nonmajors. Variables were studied via a quasi-experimental, Solomon four-group design on 141 students at a small west-Texas university. Treatment groups were taught using a continuum-based, active-learning model implemented over the course of a semester. Control groups were taught using traditional didactic lecture methods. To assess the effects of the continuum-based active learning strategies, students were administered a comprehensive physiology content exam, the Motivated Strategies for Learning Questionnaire, and attitude surveys. Factorial analyses indicated that the treatment groups acquired significantly more content knowledge and were significantly more self-efficacious than students in the control groups. There were no significant differences in motivation. Attitude surveys indicated that students in both the treatment and control groups demonstrated a positive attitude toward active learning, believed it helped (or would help) them to learn the material, and would choose an active learning course in the future.

*Key words:* achievement; motivation; self-efficacy; college science teaching; Solomon four-group design

# Learning How Scientists Work: Experiential Research Projects to Promote Cell Biology Learning and Scientific Process Skills

Shubhik K. DebBurman

Department of Biology, Lake Forest College, Lake Forest, Illinois 60045

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Facilitating not only the mastery of sophisticated subject matter, but also the development of process skills is an ongoing challenge in teaching any introductory undergraduate course. To accomplish this goal in a sophomore-level introductory cell biology course, I require students to work in groups and complete several mock experiential research projects that imitate the professional activities of the scientific community. I designed these projects as a way to promote process

skill development within content-rich pedagogy and to connect text-based and laboratory-based learning with the world of contemporary research. First, students become familiar with one primary article from a leading peer-reviewed journal, which they discuss by means of PowerPoint-based journal clubs and journalism reports highlighting public relevance. Second, relying mostly on primary articles, they investigate the molecular basis of a disease, compose reviews for an in-

house journal, and present seminars in a public symposium. Last, students author primary articles detailing investigative experiments conducted in the lab. This curriculum has been successful in both quarter-based and semester-based institutions. Student attitudes toward their learning were assessed quantitatively with course surveys. Students consistently reported that these projects significantly lowered barriers to primary literature, improved research-associated skills, strengthened traditional pedagogy, and helped accomplish course objectives. Such approaches are widely suited for instructors seeking to integrate process with content in their courses.

**Keywords:** undergraduate, science education, experiential learning, mock symposia, primary literature comprehension, project-based, assessment, survey.

# PENELITIAN PENDIDIKAN BIOLOGI

- Proses pembelajaran
- materi pelajaran
- Sumber & media belajar
- Asesmen & evaluasi
- Retensi/Konsepsi/persepsi siswa
- Berpikir (scientific, critical & creative thinking)
- Dampak pembelajaran/ iringan
- E learning/animasi/e resource/computer based
- Nilai/moral/sikap/gender

# reference

- Advance Physiology Educations
- Cell biology Educations
- Journals of biology Educations
- Journals National Resource Life Science Educations
- International journals of environment

# Beberapa judul penelitian

- Berpikir (kritis, kreatif, sikap, lingk) > 30
- Pembelajaran > 69
- Media > 30
- Praktikum > 9
- Asesmen > 21
- dll