

## Teaching Academy Innovation Award Application

### Section 1: Contact information

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### Section 2: What is the innovation and how was it applied in class?

I integrated team-based learning and backwards course design into all of my undergraduate classes.

Team-based learning (Michaelson, Knight, & Fink, 2002) is a teaching paradigm in which students are assigned to permanent teams and students' grades are composed of their performance on individual and team tasks. The majority of class time is used to complete in-class activities that require students to apply their knowledge to complex problems. Teammates are held accountable for contributing positively to team performance via end-of-term peer evaluations that become part of students' final grades.

Backwards course design is a technique whereby the course is designed around behaviors students should be able to perform at the conclusion of the course (i.e., what should students be able to do when the course is over). Class time is used to help students develop the knowledge and skills they will need to be able to perform those behaviors. Backwards course design created a paradigm shift in my approach to teaching and learning (as well as provoking critical thought about the value of my discipline). Instead of planning class around what I will do (e.g., lecture, lead a discussion), I now plan class around what students will do and the prerequisite knowledge and skills necessary to perform those behaviors.

I have used team-based learning and backwards course design for multiple semesters in PSY 324 (Sexual Behavior), PSY 359 (Psychology of Women), and PSY 201G (Introduction to Psychology). PSY 324 and PSY 359 enroll 30-40 primarily junior and senior students, about 50% of whom are psychology majors. PSY 201G enrolls approximately 110 primarily first- and second-year students, less than 10% of who will major in psychology.

Team-based learning and backwards course design allow my students to “do psychology” even at the introductory level. For example, an classic authentic task in psychology is designing an experiment to test a hypothesis about human behavior. Because of the difficulty of the task, students typically aren't given a chance to design an experiment until they are upper-class psychology majors. In other words, students aren't allowed to “do psychology” until they are inches from graduating! I can give Introductory Psychology (PSY 201G) students the opportunity to design an experiment because team-based learning affords students the full resources of the team to work on the task and backwards course design helps me identify the prerequisite knowledge and skills they will need to do so. Thus, I designed a series of in-class activities to help teams practice the basic elements of experimental design (e.g., sampling, defining variables). After these practice activities, the unit culminates in the experimental design

assignment (see Appendix) where each team designs an original experiment to test a realistic hypothesis about human behavior. The assignment is both a learning assessment and a learning event; by the end of the activity, virtually everyone understands how to design an experiment (see learning evidence below). More importantly, students get to “do psychology” even at the introductory level.

**Section 3: Evidence that the innovation positively affected student learning.**

Below are two types of evidence regarding the positive effect of team-based learning and backwards course design on student learning in PSY 201G: students’ performance on the experimental design assignment described above and a comparison of the grade distributions before and after implementing team-based learning and backwards course design. I focus on PSY 201G here for two reasons. First, PSY 201G offers a large sample size (i.e., I teach around 300 PSY 201G students each term). Second, PSY 201G has a much greater impact on the NMSU community than either PSY 324 or PSY 359 in that around 25% of NMSU undergraduates will enroll in PSY 201G at some point in their studies.

*Scores on experimental design assignment:* This term, 69% of teams (24/35) earned at least a B on this assignment and 97% of teams (34/35) earned at least a C on this assignment. Keep in mind that this assignment would normally be considered too difficult for use in an introductory course.

*Comparison of grade distributions before and after implementing team-based learning and backwards course design.*

Until I implemented team-based learning and backwards course design in PSY 201G, it was considered a “barrier course” in that over 40% of students performed poorly or withdrew from the course and very few students performed well (e.g., around 30% of students earned A’s or B’s). This pattern was evident over many years and across instructors (even me, back when I lectured). After implementing team-based learning and backwards course design, PSY 201G is no longer considered a “barrier course.” Now, over 60% of students earn A’s or B’s and far fewer students fail the course. Team-based learning and backwards course design have been so successful in PSY 201G that all of the large enrollment sections of the class (approximately 550 students) are now being taught using these techniques and the materials I developed for the course.

Percentage of each grade earned by my PSY 201G students before and after implementing team-based learning and backwards course design:

Grades	% pre	% post
A	11	30
B	20	32
C	22	7
D	12	9
F	22	13
W	12	9
Number of students	4556	1268

Although one might reasonably wonder whether the “post” grade distribution simply reflects easier course requirements, I argue the opposite is true; my students learn more about psychology and develop more practical skills now than when I used a traditional course structure. With team-based learning and backwards course design, students must learn basic information from the textbook without the aid of lectures, a skill that is important to life-long learning. Students must share their knowledge with their teammates, improving their meta-cognitive skills and increasing their learning (teaching is one of the best learning tools). Teams provide social support and personal connections that can aid in student retention, especially of first-year and first-generation students. In addition, team-based learning requires that students develop and hone their ability to work with other people, one of the "critical competencies" required for personal success (Gardiner, 1994).

#### **Section 4: Relation between innovation and the Teaching Academy**

I learned about team-based learning and backwards course design at the Teaching Academy and have since led or co-led several Teaching Academy events about team-based learning.

##### *Learning via the Teaching Academy*

I learned about team-based learning and backwards course design via workshops presented at the Teaching Academy or at the Professional and Organizational Developers Network 27<sup>th</sup> Annual Conference, my attendance at which was funded by the Teaching Academy (see specific dates below).

Teaching Academy Workshops:

- Team-Based Learning (11/30/2001 and 12/14/04) 8 hours. Leaders: Drs. Larry Michaelsen and L. Dee Fink, University of Oklahoma.
- Backwards Course Design (12/13/04). Leader: L. Dee Fink.

Workshops held at the Professional and Organizational Developers Network 27<sup>th</sup> Annual Conference 10/9-10/13, 2002, Atlanta, Georgia

- Team Learning: A Special Way of Using Small Groups Leader: Dr. Larry K. Michaelsen, University of Oklahoma.
- Three Keys to Developing Effective Group Activities and Assignment Leaders: Drs. Larry K. Michaelsen and L. Dee Fink, University of Oklahoma.

I also participated in the Teaching Academy Team-Based Learning Discussion Group that met bi-weekly throughout Spring 2002. This group exchanged classroom visits and discussed each other’s implementation of and experience with team-based learning.

##### *Giving back to the Teaching Academy*

Since converting my classes to TBL, I have led or co-led a number of Teaching Academy events related to TBL.

- I co-led a Teaching Academy discussion of *Team-Based Learning: A Transformative Use of Small Groups in College Teaching*, edited by Larry K. Michaelsen, Arletta B. Knight, and L. Dee Fink (12/13-12/16/05). I will co-lead another discussion on the same book in May 2007.
- I co-led a Teaching Academy workshop on TBL on 12/13/06.
- I will give a guest presentation on TBL to the Teaching Academy’s Teaching Scholars class on 3/12/07.