

TEAM-BASED LEARNING AT MIZZOU

Training Engineering Teachers Online for Practice and
Application of Team-Based Learning (TBL)

TBL at Mizzou Engineering

- Student-centered active learning for deeper understanding
- Team-based Learning (TBL) as a form of group-based learning
- Success in sophomore-level electric circuit theory course at MU (taught by O'Connell)
- Modification of textbook TBL needed for engineering disciplines

Online TBL Training

- Department-wide initiative for promoting TBL as signature pedagogy
- Online workshop format:
 - Preference of flexible schedules on training needs
 - Effective use of media
- Foundation Course: AC 2012-4057, “Teaching Circuit Theory Courses Using Team-Based Learning”

Course Framework

Unit #	Topics	Activities
1	Introduction to TBL Limitation of Traditional Learning	<ul style="list-style-type: none">• Presentation 1• Quiz 1
2	Active Learning	<ul style="list-style-type: none">• Presentation 2• Quiz 2
3	Group-based Active Learning	<ul style="list-style-type: none">• Presentation 3• Quiz 3
4	Team-based Learning	<ul style="list-style-type: none">• Presentation 4• Quiz 4
5	Practical Recommendations and Suggestions	<ul style="list-style-type: none">• Presentation 5• Quiz 5

Instructional Design Strategies

- Adapted Knowles' adult learning theory
- Adults as independent learners motivated by own specific needs
- Voluntary motivation by both extrinsic and intrinsic motivators
- Directive /reflective on practical matters

Application of Adult Learning Theory

	Key Points of Adult Learning Theory	Application in Online TBL Training Course
1	Adults have a need to know why they should learn something.	Department-wide initiative, voluntary-based participation
2	Adults have a deep need to be self-directing.	Self-paced, mastery learning
3	Adults have a greater volume and different quality of experience than youth.	Opportunity to work on lesson plan
4	Adults become ready to learn when they experience in their life situations a need to know or be able to do in order to perform more effective and satisfyingly.	Success stories disseminated through showcases/seminars, recognition in the department

Application of Adult Learning Theory

	Key Points of Adult Learning Theory	Application in Online TBL Training Course
5	Adults enter into a learning experience with a task-centered (problem-centered, life-centered) orientation to learning.	Informative sessions along with quizzes, task-oriented
6	Adults are motivated to learn by both extrinsic and intrinsic motivators.	<ul style="list-style-type: none">• Extrinsic motivator: department-wide initiative/ recognition, consideration in tenure review• Intrinsic motivator: success stories, course evaluation, enthusiasm for better teaching

Conclusion

- Successful experience on two-course electric circuit theory sequence in electrical and computer engineering
- Applicable to any engineering disciplines
- Online TBL training for helping willing instructors for better teaching

Question?



- Pil-Won On, onp@missouri.edu
- Bob O'Connell, OconnellR@missouri.edu