

Flipping an Undergraduate Capstone Course: Student Perceptions of their Experience in a TBL Formatted Course



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Flipped Learning



- Flipped learning utilizes a restructuring of content delivery methods traditionally delivered in face-to-face settings by requiring student completion prior to class (Rosenberg, 2013; Tucker, 2012).

Team-Based Learning



- Neider, Parmalee, Stolfi, and Hudes (2005) posited that TBL is a very active type of learning process that aids students in acquiring factual materials as well as in developing higher-level cognitive skills.

AG 450



- Provides students with a capstone experience in the management and operation of a real, working farm (Murray, 1945).
- Emphasis on teamwork, communication, decision-making, problem-solving, and critical thinking (Crunkilton, Cepica, and Fluker, 1997).

Theoretical Framework



- Transformative learning theory is defined as “the process of effecting change in a frame of reference” (Mezirow, 1997, p. 5).
- In order to foster learner self-direction, the educator becomes the facilitator, and emphasizes problem-solving groups in which students learn from one another (Mezirow, 1997).

Methods



- An electronic questionnaire developed by Bickelhaupt and Dorius (2014) was distributed to all students enrolled in AgEdS 450 for the fall of 2014 ($N = 57$).
- Response rate of 84.2% ($n = 48$).

Methods



- Survey comprised of 3 factors and 6 subscale constructs ($\alpha = 0.82$, $R^2 = 0.84$)
- Attitudes and Beliefs about Learning
 - Group/ Peer Learning
 - Individual Learning
 - Self-efficacy
- Motivation to Learn
 - Internal and External
- Professional Development
 - Critical Thinking

Student Perceptions of their Motivation to Learn in a TBL Formatted Course (N=57)

| | | SA/ A | N | D/ SD |
|---|----|----------|----------|----------|
| | n | f(%) | f(%) | f(%) |
| During this course, my team and I have worked well together. | 48 | 46(95.8) | 1(2.1) | 1(2.1) |
| I have found that my team has motivated me to work harder in this course. | 48 | 31(64.6) | 9(18.8) | 8(16.7) |
| The members of my team encouraged each other to give their best efforts. | 48 | 34(70.9) | 7(14.6) | 7(14.6) |
| I have found that my team has motivated me to work more collaboratively in this course. | 47 | 34(72.3) | 11(23.4) | 2(4.3) |
| The members of my team maintained high standards of performance. | 48 | 35(72.9) | 6(12.5) | 7(14.6) |
| I believe I could have done more to receive the grade I wanted in this course. | 46 | 28(60.8) | 8(17.4) | 10(21.7) |
| I made sure I kept up with the weekly readings and assignments for this course. | 46 | 40(87.0) | 4(8.7) | 2(4.4) |

Note. Construct Grand Mean = 4.93. Construct SD = 1.02.

0 = Not Applicable, 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree

Student Perceptions of their Professional Development in a TBL Formatted Course (N=57)

| | | SA/ A | N | D/ SD |
|--|----|----------|----------|---------|
| | n | f(%) | f(%) | f(%) |
| I have found that being on a team has helped me become better at problem solving. | 48 | 37(77.1) | 4(8.3) | 7(14.6) |
| I have found that being part of a team has helped to challenge previous ideas and improve my learning. | 48 | 37(77.1) | 5(10.4) | 6(12.5) |
| Being part of a team discussion has improved my ability to think through a problem. | 46 | 39(84.8) | 3(6.5) | 4(8.7) |
| Solving problems in a group was an effective way to apply what I have learned. | 47 | 41(87.3) | 5(10.6) | 1(2.1) |
| When a theory, interpretation, or conclusion was presented in class or in the readings, I tried to decide if there was good supporting evidence. | 47 | 34(72.4) | 10(21.2) | 3(6.4) |
| I treated the course material as a starting point and tried to develop my own ideas about it. | 47 | 35(74.6) | 6(12.7) | 6(12.7) |
| I tried to play around with ideas of my own related to what I was learning in this course. | 46 | 33(71.8) | 7(15.2) | 6(13) |
| Whenever I read or heard a statement or conclusion in this course, I thought about possible alternatives. | 47 | 36(76.6) | 8(17.0) | 3(6.4) |
| I was given the appropriate resources to do well in this course. | 47 | 37(78.7) | 3(6.4) | 7(14.9) |

Note. Construct Grand Mean = 4.99. Construct SD = 1.06.

0 = Not Applicable, 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree

*Student Perceptions of their Attitudes and Beliefs about Learning in a TBL Formatted Course
(N=57)*

| | | VT/ M | N | S/ NT |
|---|----|----------|----------|----------|
| | n | f(%) | f(%) | f(%) |
| The ability to collaborate with my peers was necessary for me to be a successful student in this class. | 46 | 34(74) | 7(15.2) | 5(10.9) |
| I believe solving problems in groups has led to better decisions than solving problems on my own. | 46 | 38(82.7) | 2(4.4) | 6(13) |
| The ability to work with my peers in this class was a valuable experience for me. | 46 | 36(78.3) | 3(6.5) | 7(15.2) |
| Collaborating with my peers helped me to be a better student. | 46 | 31(67.4) | 9(19.6) | 6(13) |
| I believe solving problems in a group was an effective way for me to learn. | 46 | 36(78.3) | 4(8.7) | 6(13) |
| Working in teams in class has been a productive way for me to spend class time. | 46 | 30(65.3) | 7(15.2) | 9(19.6) |
| I believe that being part of a team has improved my grades in this course. | 46 | 41(89.1) | 2(4.3) | 3(6.5) |
| When I studied in appropriate ways, I was able to learn the material in this course. | 46 | 37(80.4) | 6(13) | 3(6.5) |
| If I didn't understand the course material, it was because I didn't try hard enough. | 46 | 21(45.6) | 12(26.1) | 13(28.3) |
| It was my own fault if I didn't learn the material in this course. | 46 | 25(54.4) | 12(26) | 9(19.6) |
| If I tried hard enough, then I understood the course material. | 46 | 34(73.9) | 11(23.9) | 1(2.2) |
| I am confident I understood the basic concepts taught in this course. | 46 | 41(89.1) | 4(8.7) | 1(2.2) |
| I am certain I understood the most difficult material presented in the readings for this course. | 46 | 36(78.3) | 4(8.7) | 6(13) |
| I am confident I did an excellent job on the assignments and tests in this course. | 46 | 39(84.8) | 2(4.3) | 5(10.9) |
| I am certain I grasped the skills that were taught in this course. | 46 | 38(82.6) | 5(10.9) | 3(6.5) |
| I expect that I will receive an excellent grade in this course. | 46 | 41(89.1) | 3(6.5) | 2(4.4) |
| I believe I can perform independently with the knowledge I have gained in this course. | 46 | 41(89.1) | 3(6.5) | 2(4.4) |
| I am confident I can apply the knowledge I have learned in this course in future tasks | 46 | 41(89.1) | 3(6.5) | 2(4.4) |

Note. Construct Grand Mean = 4.99. Construct SD = 1.04.

0 = Not Applicable, 1 = Not at All True of Me, 2 = Sometimes, 3 = Neutral, 4 = Mostly, 5 = Very True of Me

Conclusions and Implications



- Students reported a positive experience in a TBL formatted capstone course.
- Flipping to TBL format is a time consuming process, and student satisfaction is an important component in the revision of AG 450.
- Provides insight into an effective active-learning teaching method.

Recommendations



- Replicate in other CALS courses.
- Examine CT, PS, DM, TW, and communication.
- Examine student performance.