

What students think about thinking: Perceptions thinking critically

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Critical Thinking

- Critical thinking is at the foundation of formal education, and often a goal of colleges and universities.

Critical Thinking in Agriculture

- The agricultural industry is a global network; as students enter the workforce they are challenged with opportunities to examine situations and act on their ability to think critically.

As educators...what can we do?

- To prepare our students for successful careers in agriculture, a variety of critical thinking activities, assignments, and exams were integrated into a college foundations of leadership course.
- Students ($N = 13$) responded to a series of questions soliciting their perceptions of the critical thinking activities, assignments, and exams.

Critical Thinking Class Assignments

- **Exams (300 points)** - Four exams will be given during the semester, three exams and one final (unless you meet the **attendance criteria** to opt out of the final exam*). The tests will assess your knowledge of the concepts discussed during class lectures and presented in the text, handouts and class notes.
- **Activities/Class Participation (200 points)** - Throughout the semester there will be in-class activities you will be asked to complete. In order to receive the points you must be in attendance. There will not be any make-up activities offered. Each activity is worth 20 points, with a maximum score of 200 points.
- **Questions (100 points)** - During the course of the semester, you must select five (5) sets of questions to respond to. These questions will be submitted through myCourses and are designed to encourage students to complete assigned reading and consider how the course content connects to leadership they experience in their real life. **Questions will not be accepted late**

Critical Thinking Writing Assignments

- **Leadership in “Reel” Life (100 points)** - During the semester, the instructor will choose a movie to be viewed in class. You will write an essay that illustrates a connection of leadership concepts from “reel” life to real life.
- **Leadership Assessment and Reflection (100 points)** - Students will complete a leadership assessment in class and participate in a class discussion. You will write a paper describing your personal results and reflecting on the meaning and impact of your results.
- **Infographic(100 points)** - Reflect on the leadership theories and concepts you've learned this semester. Develop an infographic that illustrates how one or more of the concepts can be applied in order to help solve big complex problems in agriculture.
- **Personal Leadership Development Paper (100 points)** - Throughout the semester you will be introduced to leadership principles. To fully understand and recognize the importance of being a leader you are asked to assume a leadership role. At the end of the semester you will write about your experience and relate it to the concepts covered during this course.

As Students...what did they think

- Students *reported* mixed feelings regarding the critical thinking components of the class.
- The open-ended application-based assignments and exams were an unfamiliar change of pace from the standard multiple choice and right or wrong assessments in classrooms today.

Exams

Positive $n = 11$

- ❖ Fair
- ❖ Learned more
- ❖ More application instead of right or wrong answers

Negative $n = 2$

- ❖ Content heavy
- ❖ Difficult to decipher
- ❖ Too much critical thinking
- ❖ Intimidated by the questions

“ I didn't like them as much as a normal type of exam, just because it's a lot of critical thinking. I do feel like I learned more by doing those exams though.”

“The exams given seemed fair, there was sometimes instances where the questions confused me. But, I do like the change up.”

“I liked the exams with the scenarios and how you would incorporate what we talked about because while you're challenged to think of a solution, you can rally back up your opinion as to why you think it's the right way.”

Class Activities

Positive $n = 13$

- ❖ Favorite aspect of class
- ❖ Help in understanding concepts
- ❖ Hands-on learning
- ❖ Real-life example of how leadership is used

“The class activities were fun. Being that I’m a hands-on learner, it helps me remember examples for the lesson.”

“Those were fun! It was new to me. It helped for everyone to get to know each other a little and break the ‘ice’. It helped also with understanding the concepts a lot better. Very fun.”

“I really enjoyed that part because it got us engaged and thinking , almost experiencing it, for ourselves. Made us think of how to convey [each concept] correctly.”

Reflection Questions

Positive $n = 8$

- ❖ Helped with reinforcing understanding
- ❖ More in-depth thinking
- ❖ Made us think critically

Negative $n = 5$

- ❖ Hard questions
- ❖ All or nothing grading was too hard
- ❖ Expected too much

“I did not like that they were graded all or nothing. If I overlooked one tiny question in a paragraph of questions then I would receive a zero. Partial credit is better than no credit.”

“I will be the first to say that I waited till the last minute to get my questions done. It was nice though that there were so many opportunities to get these done so it wasn't super stressful. They also helped with understanding the notes.”

“It was challenging but also helpful with keeping information already discussed fresh on my mind. More in-depth thinking as well.”

Writing Assignments

1. Leadership Assessment ($M = 1.85$, $SD = 1.14$)

“The leadership assessment helped me learn things about myself I didn’t know. It also helped me to improve on things I wasn’t aware of.”

2. Leadership in “Reel Life” ($M = 2.15$, $SD = 1.07$)

“The Reel life paper REALLY helped me learn A LOT about transformational leadership. I’m a visual, hands-on learner, if I see examples...It’s going to stick in my head...this assignment helped me the most.”

Writing Assignments

3. Personal Leadership Development ($M = 3.00$, $SD = 0.91$)

“This assignment showed us where we started and ended. It is sometimes hard for me to assess myself.”

4. Infographic ($M = 3.00$, $SD = 1.00$)

“Wasn't very exciting mainly because I am not creative.”

What did we learn?

- The results of this study are not surprising as widespread mandating of standardized testing continues to influence teaching and assessment.

Recommendations

- In order to ease student anxiety towards critical thinking, it is recommended that these types of assignments be integrated into more courses so expectations to think critically become more common place.
- Additionally, time during class should be allotted to discuss students' answers and prompt deeper thought when participating in future critical thinking activities and exams.

References

Thank you!