

Thinking Like the Experts

Team-Based Learning in the Classroom

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Doing Ethics

Ethicists work by analyzing specific issues or scenarios in moral terms and then offering ethical arguments for particular positions or recommendations

In a TBL course, students are provided this same opportunity by reading a case and then working together to apply a common moral framework to analyze the case and justify their recommendation

Example Team Activity

PHI 215: Engineering Ethics Case Brief
SmartLink & the Brain Computer Interface

SmartLink Corporate Overview:

SmartLink is a start-up company founded by Elon Musk and others. The aim is to develop a brain-computer interface that can be used to treat stroke brain damage and restore functioning as well as be a source of entertainment and, eventually, human enhancement.

In order to maximize profits and ensure the lowest cost possible to users, SmartLink wants to develop a simple brain-computer interface that accomplishes all of these goals. In order to do this, the system will have to be capable of being augmented by applications running on top of the standard operating system (like current smart phones, etc.).

Before getting any further into development, SmartLink has called a meeting of managers and engineers to discuss how the company should approach certain ethical concerns with the product.

How the System Works:

A Brain Computer Interface (BCI) is a communication system between the brain and the external environment. Electrical signals from the user's brain are recorded as physiological signals. These signals are then used to control other devices, such as prosthetic limbs or virtual characters.

BCI can also be used to "write" neural information into the brain. This would be useful, for instance, in treating various neural diseases. This has already been used to treat individuals with depression through "deep-brain stimulation".

Ethical Concerns:

Recent experiments have shown that BCI are vulnerable to a variety of "brain hacking" activities. This includes the collection of personal information, unilateral advertising or other attention-based brain inputs, and malicious control where the person's thoughts or actions are controlled by some outside agent.

Researchers at the University of Washington showed how sophisticated managing a BCI video game – such as a tank game – will result in substantial neural responses that provide information to the hacker, such as what tank you use. They also discovered how this could be used to determine social connections by quickly detecting social inputs and parsing unintentional responses.

A further possibility, which is addressed by creating deep-brain stimulation therapies, is the hacking of BCI to tamper certain parts of the brain leading to the formation or enhancement of certain preferences. This could be used, for instance, to reduce a person's buy impulses or increase the likelihood they engage in some action.

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Option 1: A Locked Down System

SmartLink could restrict usage of app content to "safer" but still provide users the ability to download apps over the internet. This approach would not require SmartLink to share information about the operating system nor would it intentionally provide access to neural signals to 3rd parties. However, this would significantly reduce the speed at which apps are created, thus reducing the usability of the BCI.

In order to make up some of the financial shortfall compared to Option 1, SmartLink could use user neural patterns to target advertising in certain applications. This would allow SmartLink to reduce the cost of the device.

Option 2: A Closed App Environment with Advertising

SmartLink could restrict usage of app content to "safer" but still provide users the ability to download apps over the internet. This approach would not require SmartLink to share information about the operating system nor would it intentionally provide access to neural signals to 3rd parties. However, this would significantly reduce the speed at which apps are created, thus reducing the usability of the BCI.

In order to make up some of the financial shortfall compared to Option 1, SmartLink could use user neural patterns to target advertising in certain applications. This would allow SmartLink to reduce the cost of the device.

Option 3: A Closed App Environment without Advertising

Same as option 2, but without the advertising. This would reduce SmartLink's profits and increase the cost of the device.

Option 4: A Locked Down System

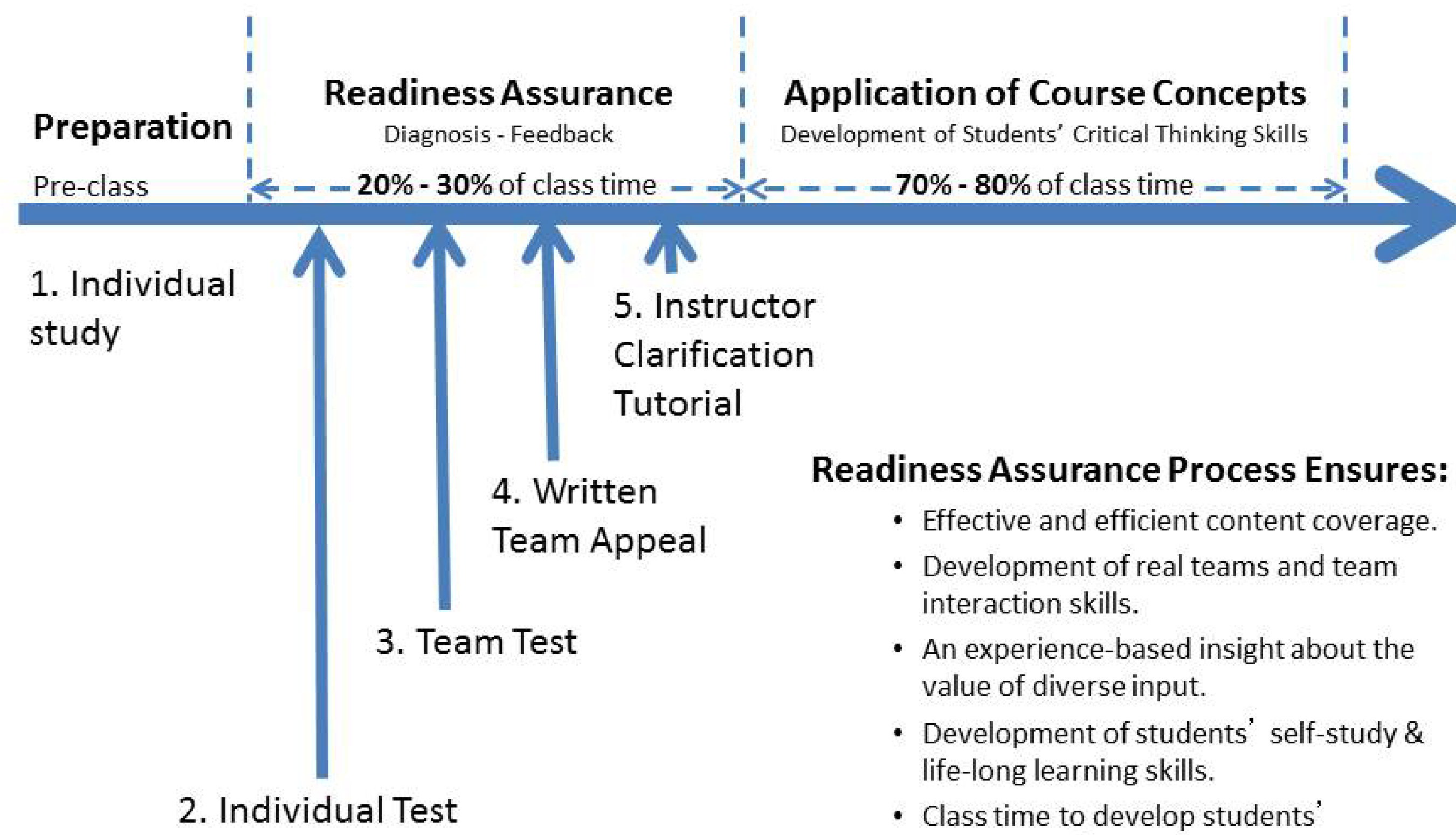
Rather than providing an app store at all, SmartLink could instead create the system with a variety of functions and then lock it down from being altered. This would allow SmartLink to see the system off from the internet, but would significantly reduce the usability of the device. Additionally, this approach would require users to send their device to SmartLink for operating system upgrades. This approach results in the most expensive device and will require SmartLink to charge for upgrades to maintain a profit.

What is Team-Based Learning?

An active-learning instructional strategy which provides students with substantial class time to engage in higher-level application of course concepts

Team-Based Learning Sequence

This sequence will be repeated for each major instructional unit



Readiness Assurance Process Ensures:

- Effective and efficient content coverage.
- Development of real teams and team interaction skills.
- An experience-based insight about the value of diverse input.
- Development of students' self-study & life-long learning skills.
- Class time to develop students' application / critical thinking skills.

What are Students Saying?

"I found the team and discussion based setting to be much more useful at presenting, analyzing, and applying the course material than a regular lecture."

"After taking this class, I am very confident in my opinions and I can share them with the group effectively. I am also a better listener from working in groups, because my answer was not always the best, so I had to listen to theirs to compare everyone's opinions."

"I really enjoy team based learning because when I am confused or everyone in my group isn't grasping the concepts yet then we each discuss our own understanding in order to come to an even better understanding."

"Never thought I would like working in a team but I think it's beneficial for everybody (helps facilitate learning)."

"The team-based learning approach is beneficial especially for those who are uncomfortable with speaking in front of the class."

"What we have been taught in this class is different from most others. Rather than spitting out memorized information, we have learned to ask our own questions and see the world how we choose to look at it rather than how we are expected to do so. We learned about how much we did not know, and never will, and many interesting ideas were introduced to us that made us take a step back and view reality in an unbiased fashion."

Doing History of Philosophy

Historians of philosophy take difficult philosophical texts from our shared cultural heritage and strive to see the ways in which the theories and arguments from those texts can offer key insights into how to live our lives and to think about the world today.

In a TBL course, students are provided this same opportunity by reading primary source texts and then working together to interpret them with the overarching goal of applying the insights they offer in a contemporary context.

Example Team Activities

PHI 215: Engineering Ethics Case Brief
SmartLink & the Brain Computer Interface

Part 1: Analyzing Aristotle's account of happiness

1. Aristotle claims that nothing is sought for the sake of anything else (Nicomachean Ethics, Book X, Chapter 8). In other words, we do not engage in the activity of contemplation for the sake of anything resulting from it. In light of that claim and of the other things he says about contemplation, which of the options below best describes what he means by the word "contemplation"?

- The activity of "contemplation" is the activity of learning new things.
- The activity of "contemplation" is the activity of simply seeing (with the mind's eye) or understanding the goodness and beauty in your own life and in things in general.
- The activity of "contemplation" is the activity of thinking about things.
- The activity of "contemplation" is the activity of reading.
- The activity of "contemplation" is the activity of reasoning your life.

2. Explain why the answer you gave to question 1 is better than the alternative:

Better than ____ because _____

Better than ____ because _____

Better than ____ because _____

Better than ____ because _____

Part 2: Objecting against the view that contemplation is the activity in which happiness consists

3. Considering what Aristotle says in Book X, Chapter 8, how does he think the activity of contemplation relates to having a happy life?

- Having the activity of contemplation only once in a while would do us no harm to achieve a happy life.
- In order to achieve a happy life, one must continually engage in the activity of contemplation.
- Contemplation is the activity in which happiness consists and thus the happiest life is the one richest around the activity of contemplation, but, since part of what you will be contemplating is your own life and since humans can't constantly contemplate a happy life for a lifetime being requires other virtues and some external properties.

4. Explain why the answer your team gave to question 3 is better than the alternative:

Better than ____ because _____

Better than ____ because _____

Better than ____ because _____

Better than ____ because _____

PHI 215: Engineering Ethics Case Brief
SmartLink Case Worksheet

Part 1: Analyze the Case

Before you can make an all-things-considered judgment as to what to answer you consider all that is relevant. One way to do this is to analyze a case from each Principle of Engineering Ethics in isolation. For each of the Principles determine the best specification & which recommendation that principle/specification would support on its own.

For this case, make use of the following possible specifications:

- The Approach to Acceptable Risk (Use at most 2, and do not use Informed Consent)
- The 5 Moral Reasons for Privacy

(A) Principle of Beneficence

1. Specification: _____

2. Recommendation: A B C D

(B) Principle of Non-Maleficence

1. Specification: _____

2. Recommendation: A B C D

(C) Principle of Respect for Autonomy

1. Specification: _____

2. Recommendation: A B C D

(D) Principle of Justice

1. Specification: _____

2. Recommendation: A B C D

Want to find out more about TBL?

- The Team-Based Learning Collaborative online
- *Getting Started with Team-Based Learning* edited by Sibley & Ostafichuck
- Reach out to us!