Foundational Ethics in Computing
An Instructor's guide

This teaching brick is about a historical overview of the most important milestones in the field of Computing Ethics and the evolution of the name of the field up until the adoption of the term "Computing Ethics". The Powerpoint presentation provided along this guide contains historical information as well as popular culture references that help make the material more vivid, more relatable and interesting within the classroom.

All the references to films and shows included in the Powerpoint file aim to initiate in-class discussions in a playful but also philosophical manner and make the educator and the students think and debate about ethical issues around the use of computing technology. Finally, this guide contains ideas about interactive activities to be used while teaching this subject matter online or offline.

This guide and presentation are by no means exhaustive of the material or restrictive in any way, shape or form. It is up to the educator to use as they please.

1. Learning Outcomes

- To demonstrate a distinction between the different ethical frameworks such as deontology, utilitarianism, and virtue ethics.

- To demonstrate an understanding of the timeline in the development of epistemology surrounding ethical thinking within the discipline of computer science.

- To show how the public perception of IT technologies and their ethical impact upon society and culture has evolved.

- To demonstrate the societal and ethical dilemmas that can arise with technologies through such media as movies.

- To demonstrate techniques using ethical frameworks to analyse the ethical components within a technology-related problem.

- To present ethical analysis and conclusions using a selection of techniques such as presentations, discussions, and debates.

2. Assessment of Foundational Ethics in Computing

Exam question:

What is meant by the term "Computing Ethics" providing a clear definition of your understanding of the term ?

Continuous Assessments

- Create a <u>historical timeline</u> of the most important milestones of Computing Ethics and explain why they are so.

- Create a power point presentation or a poster where you present in detail one milestone of the ethics of computing

- Write an <u>essay</u> arguing <u>for</u> or <u>against</u> the importance of ethics in computing.

- Create a poster, a collage or set of slides where you identify issues presented in the news media (during the past year) that relate to ethical and/or social issues of computing.

- Write a short essay where you try to come up with a suggested approach/strategy for addressing ethical issues in computing from a specific viewpoint. You can pick one of the following:

    o Company / Industrial perspective
    o Academic / Teacher perspective
    o Government / Public administration perspective

3. In-Class Activities

3.1. Discussion and argumentation

Discuss the differences between the 3 fundamental types of ethics (deontology, utilitarian and virtue ethics)and try to identify which ones are more relevant to computing ethics and why. (Maybe Social contract theory)

Another way this can be done is by splitting students in three groups and assigning one particular type to each group about which they have to come up with arguments.

3.2. Case Studies

(source: http://melissajacquart.com/teaching)

1. Provide the students with a read-world case for the students to study (something like a news articles, account of a decision or procedure, video, etc.). Alternatively, have students find their own case to examine.
2. Individually, or in small groups, have students analyze the case using guidelines and a framework provided by you (the instructor).
3. Have students present their analysis the class, or turn in written answers. If presenting in class, try to facilitate discussion such that students connect case with material in class.
4. After student analysis has been completed, ensure that the group has concretely discussed how the case study illustrates application of theoretical or background concepts from course material.

<u>Pointers</u>

This is a great activity for students to work on the practical application of philosophy and philosophical theories. For example, students can come up with pros and cons for two possible options or solutions to a case, utilizing two different moral perspectives on how to solve a moral issue.

3.3. Modern media and ethics in computing

Discuss about films and popular culture references pertaining to ethics in technology and computing. The slides provided in this teaching brick offer opportunities for this.

3.4. Complete Turn Taking

(source: http://melissajacquart.com/teaching)

Taken from: Prof. David Concepcion and Juli Kathryn Thorson

Activity

1. Each student should be asked to bring a couple questions to class. These can be clarificatory questions, issues they think were left unresolved, or even ideas or positions not yet considered.

2. Have students arrange themselves in a circle. Alternatively, students can be in small-medium size groups.
3. One student reads a question aloud. The student to their left then has one minute of uninterrupted time to speak and give their thoughts. This person signals that they are done speaking by saying, "OK, I'm done".
4. The next person to the left goes, has one minute of uninterrupted time to speak, and signals they are done by saying, "OK I'm done". Finally, the third student to the left goes, following the same pattern.
5. After three people have had a chance to speak, the conversation is opened up to the whole group for two minutes of discussion.
6. The next student gets to ask a question, and this cycle continues.

Pointers

A benefit of this activity is that it allows students to speak uninterrupted. It also allows the students to work through some of their issues, questions, or concerns with the text together.

3.5. Think Aloud

(source: http://melissajacquart.com/teaching)
(Maybe not suitable for large cohorts of students)
 Size: Pairs
Time: 1 class

1. Choose a text, either philosophical or from literature, for the students to engage with (approximately two 2-3 paragraphs). Students should not have read the text for this activity already.
2. The idea in a think aloud is that while one reads a passage of text aloud, they also stop frequently to "think" aloud. Every few sentences the reader stops, and expressed what they are thinking. (This process is awkward and weird for most. Let students know this is OK!)
3. Inform the students what the point of this activity is (see references and pointers below), and then model this activity very briefly for students with a sample piece of text.
4. Have students get into pairs, and give each student a text (in the pair, student A gets text 1, and student B gets text 2).
5. One at a time, each student should perform a "think aloud". Once student A finishes their text, student B then preforms

their think aloud. Give students 15-20 minutes to perform this part of the activity.
6. Bring the class back together as a group. Go over each of the texts, preforming a think aloud as a class, asking students to contribute what they were thinking about at each point.
7. Finally, conclude class with a "Meta-moment": ask students what they thought of the activity, and what they will take away to their next reading. (This can take the form of a 1-minute paper!)

Pointers

This activity helps students develop their ability to read a philosophical text, as well as their ability to explain their (philosophical) thinking process. An analogy I like to use in this activity is comparing it math: Much like a mathematician must show their work when solving an equation, so must a philosopher when explaining their thinking and reasoning process.

3.6. Debates

(source: http://melissajacquart.com/teaching)

Ask students to be prepared for the next class

Size: Entire class, divided into 2 groups

Activity

1. Divide class in half either by (1) asking students to seat themselves in the section representing a particular side of the debate, or (2) dividing students in half by where they already happen to be seated.
2. Assign each half of the class a position on a topic or issue. Give students approximately 15 minutes to prepare an argument for their position. After 15 minutes, have each side share their position.
3. Following each side providing their "Opening Argument", each side must then prepare to respond to the opposition's argument. (Give students approximately 10 minutes). This part requires members of the groups to carefully listen to, and reconstruct the opposition's argument.
4. After each side provides their criticisms of the opposition's position, each group then has the opportunity to respond to the criticisms. (Give students approximately 10 minutes for students to prepare their responses to this as well).

<u>Pointers</u>

This is a great activity for students to work on the practical application of philosophy and philosophical theories. Additionally, this activity models a common structure for student paper assignments to take.

3.7. Redistributing Voices:

(source: http://melissajacquart.com/teaching)

Electronically through a form where the lecturers collect a few from the forms (50 words per point)and categorise. Polling

1. After watching a video, reading a text, or finishing up discussion about a controversial issue that students may not want to respond aloud to, give each student an index card and ask them to write down a brief reflective thought about the material just covered. For example, invite students to reflect on what they now know that they didn't know before the unit.
2. Once everyone has written something down, collect the cards and redistribute them, making sure everyone gets a card written by someone else. Students then take turns reading out what's on the card they have. Try first to let students speak spontaneously, without calling on people.
3. After all (or enough) of the cards have been read, debrief quickly about why you did the activity: This activity allows students to express their sometimes quite personal thoughts without having to speak or be identified with them publicly. It gives everyone an opportunity to speak up, given that everyone has a card in front of them, and it is a way of making vivid that different people's identities and group membership will affect their experience with/interpretation of the content.

<u>Pointers</u>

For this activity, one of the most powerful aspects is hearing other's concerns or thoughts, and reflecting on them. For example, if a topic of reflection has a clear gender component (such as "What do you do to get ready for a late night out") when male students read and voice the reflections of female students, it can make salient that women experience the same question or topic from a different location in the world (a women might make sure she is not walking home at night alone for safety concerns). Elements such as this may be something that many of the male students hadn't fully realized before.

3.8. Position Line-up / Value Line

(source: http://melissajacquart.com/teaching)

Might be impractical with large groups of students

Size: Entire class, or a group of volunteers in larger class
Time: 10-40 minutes
Activity

1. Ask the entire group to line up along one wall of the class and then present an issue (e.g. Facebook is an appropriate forum for student-TA interaction).
2. Tell the class that the right end of the line represents the position 'yes, I agree completely' and the left end of the line represents the position 'no, I completely disagree'. Students should mingle and discuss their opinion on the issue, eventually finding and taking their appropriate position within the continuum.
3. Once students are in place, take a few moments to discuss why they have chosen the position they have in the various locations in the line-up.
4. Repeat for a variety of questions.

- For another version of this activity, tape a circle in the center of the room. Students who agree should stand close to the circle and those who disagree further away. Ask students who are on the extremes (close or far away) and in the middle why they chose that location.
- For another version of this activity, write on a chalkboard a few positions one could hold, and ask students to stand by the position they agree with the most.

Pointers

- This activity is a great tool for highlighting the "shades of gray" in issues. Line-ups allow for interactions and the opportunity to have one-on-one discussions (to figure out your place in line) and to get an idea of the wide range of opinions that may exist about a certain issue.

- A disadvantage of this activity is that students must make a public stand about their opinion.

3.9. Round-Tables

(source: http://melissajacquart.com/teaching)

Activity

1. Have the class move their desks into a circle so that everyone can see each other.

2. Discussion facilitator poses a question. Each person, in turn around the circle, provides a comment. If a student does not wish to comment, they may "pass".
3. Repeat for a variety of questions.

Pointers

- This activity ensures that all students have an opportunity to speak if they wish. However, the question posed cannot be a simple yes/no, and must have several points or issues that can be raised.

3.10. Snowball

(source: http://melissajacquart.com/teaching)

Activity

1. Present an idea, question, or issue to students. Each student first thinks about the idea/question/issue for one minute, with the goal of generating at least three reactions, comments, answers, etc.
2. Two students then come together with their lists and try to come up with three things they agree on.
3. The pairs of students then join with another pair, and try to come up with three things they agree on. Repeat for as many iterations as desired.
4. Eventually, bring the class together as a group to hear what the students have decided are the three most important issues, questions, ideas, etc.

Pointers

- For some issues, it may be difficult to reach consensus on the "three most important issues" (which can be good, or bad depending on the topic).
- This discussion model can be time-consuming.

3.11.   Jigsaw

(source: http://melissajacquart.com/teaching)

Size: Entire class, divided into four groups
Time: 1 class
Activity

1. Divide the material you would like to cover into four parts. For example, this could be four papers, four case studies, four theories or positions, etc.
2. Pre-assign students a number (1, 2, 3, 4). Let students know that 1's will be responsible for paper/case study/theory #1, 2's are responsible for #2, etc.
3. Be sure to provide students guidance or with a set of questions you want them to answer, or task you want them to complete with respect to their assigned part. For example, ask students to be prepared to present a summary of the ethical theory they have been assigned, and what that position might do in the following 2 situations.
4. During class, create small groups of 4, with each group having a #1, #2, #3, and #4 member. Each member is to be the "expert" for their group on their topic, and to present their information, position, case study, etc to the other group members during the small group discussion.

- In another version of the Jigsaw, rather than small groups of 4, the class can be divided into 4 groups, with each group being responsible for 1 part. Have each of the four groups answer a set of questions related to their assigned reading or topic. Bring the class together as a group, and have each group present what they have discussed to the rest of the class.

Pointers

- The biggest advantage to the Jigsaw is that one person or group is responsible for one component. This allows, in some ways, for more content to be covered, since not all the students will have to read everything. Rather, one student (or one group of students) provides a synthesis to the rest of the group.
- The activity's success relies heavily on students coming to class prepared. This is why it is important to provide students with guidance on how to prepare for this activity (such as giving them a set of questions, or study guide).

Additional Resources

The Jigsaw was introduced in the 1970s by Elliot Aronson, as a way to reduce hateful behavior and increase cooperation among students. More information about The Jigsaw Classroom can be found online here.

A quick Google Search will also bring up several other links to resources and papers on using this technique.