

Effective Ethics Education

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Abstract

Ethics Education in undergraduate programs may not be very effective for many students. This is due to many misconceptions that the students have developed from personal experiences. These misconceptions prevent them from responding to value dilemmas. A new approach is presented in this work. This approach, which is known as the effective learning approach (ELA) is more effective than the traditional approach in helping students recognize these misconceptions and modify their analyses. An ELA for ethics education is presented. This approach should lead to more effective teaching of ethics in our programs.

Introduction

Most programs for teaching ethics are based on behavioral approaches^{1,2}. Students are normally presented with a case study and a code of ethics, and are told that specific actions violate specific sections of a code. Very frequently, the results of the case study are included, so the students are not given the freedom to participate in the decision process. A prepared case study leads to the laboratory procedure, and the conclusions stated as part of the case study corresponds to the results that the students must get on their laboratory computation sheets. Such case studies are useful, but they will not help the student to solve the ethical dilemmas. Another learning approach has recently become very popular among educators. This is called the Effective Learning Approach (ELA).

Effective Learning Approach

There are four strategies for the ELA viz: invitation, exploration, explanation and action. These strategies described are used in conjunction with science education.

Firstly, invitation. This includes: observing one's surrounding, asking questions, and identifying situations where students perceptions vary. This can lead to various misconceptions. Overcoming these misconceptions is very critical to success in restructuring the knowledge base of the students.

Secondly, exploration. This phase is for the participants to begin planning a study that will enable the knowledge necessary to overcome the misconceptions in phase 1.

Thirdly, explanation. In this phase, the student is trying to collect the data through experimentation, then make the necessary data summaries that will enable him or her to overcome misconceptions. The new knowledge gained through experimentation must be integrated with other experiences stored in their knowledge base so the sum is useful for explaining other observed phenomena.

Fourthly, action. This phase is important because unless the student can extend the new knowledge, the effort to learn will have been only marginally effective.

Effective Learning Approach For Ethics Education

The ELA in science/engineering education deals with hypotheses, experiments, and analyses. They are quantitative-oriented. Ethical problems are qualitative-oriented; specifically, they involve a comparison of human values. They require the formation of decision criteria that are designed to balance values such as loyalty and diligence rather than numerical quantities such as benefits and costs.

The ELA for ethics education includes four processes that correspond to the ELA for science/engineering education viz: observation, proposition, examination, and evaluation.

Firstly, observation, the act of recognizing that an occurrence cannot be explained by knowledge as it is currently formed in one's knowledge base.

Secondly, proposition, the act of placing a value dilemma into an organized framework so that it can systematically be assessed.

Thirdly, examination, the act of identifying all values involved in the conflict, forming decision criteria for the values, assessing through accepted standards the dominance of each value, and integrating the new knowledge into one's knowledge base.

Fourthly, evaluation, the act of showing the usefulness and generality of the examination in making value decisions in a professional context.

These processes can guide an ethics-education program based on ELA. In developing an ethics-education program for students in engineering, every effort should be made to discuss value issues from a college setting that can show a close association with a value specific issue to professional practice. For example, littering is a topic that college age students can understand. It could be used when the subject of the role of the engineering profession in solving environmental problems is addressed.

When applying the ELA in ethics education, the professor needs to draw from students' personal experiences that relate to the general concept behind the value dilemma. This helps in two ways. First, it helps the professor to identify the misconceptions of students. Second, the use of personal experience enables the students to understand the conflict more easily.

If the professor is able to help students overcome the misconception that originates from activities in their personal life, then it will be easier to incorporate ethical values into the student's knowledge base. For example, cheating in classroom is a value conflict that may arise. Most students often do not report the offense. They think that cheating only hurts the cheater. Unless this misconception is corrected, it will be difficult for the student to evaluate a cheating case at a larger context.

Conclusions

The ELA provides an alternative method for introducing topics on ethics and value decision making to engineering students. It is not necessarily meant as a replacement for other approaches, but its use for some topics is worthwhile. Firstly, it concentrates on students' experiences, which will put value issues in a context that students can appreciate. Second, it enables students' misconceptions to be identified. Third, the students are involved in developing the knowledge base. The ELA is not without disadvantages. Firstly, it takes more time to introduce and discuss a topic. Second, the instructor will not be able to prepare for every possible experience that the students relate, so the instructor will need to have a broader base of experience to draw upon. The advantages of ELA seem to outweigh the disadvantages. Finally, programs based on ELA may be more effective in addressing value issues.

References

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