



Objectives

Aim 1: You will be able to list the methods of analysis of issues in ethical problem

Aim 2: You will be able to apply the method of analysis to a particular case

Aim 3: You will be able to discuss or join the given ethical dilemma

This module will learn how to prepare a debate by following certain steps and rules. It is important to learn the following steps because in your real life you will use this methodology to make a decision. As a professional, it was expected to learn how to analyze any issue. What you will learn should be converted into a kind of tacit knowledge. In the last part you will be familiarize with the debate activity in your classroom.

ANALYSIS OF ISSUES IN ETHICAL PROBLEMS

In solving engineering problems, it is always tempting to look for an appropriate formula, plug in the numbers, and calculate an answer. This type of problem-solving approach, while sometimes useful for engineering analysis problems, is less useful for ethical problem-solving. Some theories help us to frame our understanding of the problem, but there are no formulas and no easy “plug-and-chug” methods for reaching a solution.

In this module, we will examine methods for analyzing ethical problems and see how to apply them. Obviously, some problems are easily solved. If you are tempted to embezzle money from your employer, it is clear that this action is stealing and is not morally acceptable. However, as mentioned previously, many of the situations encountered by practicing engineers are ambiguous or unclear, involving conflicting moral principles. This is the type of problem for which we will most need analysis and problem-solving methods.

A first step in solving any ethical problem is to completely understand all of the issues involved. Once these issues are determined, frequently a solution to the problem becomes apparent. The



issues involved in understanding ethical problems can be split into three categories. Understanding these issues helps to put an ethical problem in the proper framework and often helps point the way to a solution.

Types of Issues in Ethical Problem Solving

Factual issues: involve what is actually known about a case – i.e., what the facts are. Although this concept seems straightforward, the facts of a particular case are not always clear and maybe controversial. An example of facts that are not necessarily clear can be found in the controversy



in contemporary society regarding abortion rights. There is great disagreement over the point at which life begins and at which point a fetus can be legally protected. In engineering, there are controversies over facts as well. For example, global warming is of great concern to society as we continue to emit greenhouse gases into the atmosphere. This is thought to lead to generalized warming of the atmosphere as emissions from automobiles and industrial plants increase the carbon dioxide concentration in the atmosphere. This issue is of great importance to engineers since they might be required to design new products or redesign old ones to comply with stricter environmental standards if this warming effect indeed proves to be a problem. However, the global warming process is only barely understood, and the need to curtail the emission of these gases is a controversial topic. If it were known exactly what the effects of emitting greenhouse gases into the atmosphere would be, the engineer's role in reducing this problem would be clearer.

Conceptual issues: have to do with the meaning or applicability of an idea. In engineering ethics, this might mean defining what constitutes a bribe as opposed to an acceptable gift, or determining whether certain business information is proprietary. In the case of the bribe, the value of the gift is probably a well-known fact. What isn't known is whether accepting it will lead to an unfair influence on a business decision. For example, conceptually it must be determined if the gift or tickets to a sporting event by a potential supplier of parts for your project is meant to influence your decision or is just a nice gesture between friends. Of course, like factual issues, conceptual issues are not always clear-cut and will often result in controversy as well.

Moral issues: once the factual and conceptual issues have been resolved, at least to the extent possible, all that remains is to determine which moral principle applies to the situation. The resolution of moral issues is often more obvious. Once the problem is defined, it is usually clear with a moral concept applies, and the correct decision becomes obvious. In our example of a "gift" offered by a sales representative, once it is determined whether it is simply a gift or is a bribe, then the appropriate action is obvious. If we determine that it is indeed a bribe, then it cannot ethically be accepted.

Often, all that is required to solve a particular ethical problem is a deeper analysis of the issues involved according to the appropriate principles. Once the issues are analyzed and agreements are reached on the applicable moral principles, it is clear what the resolution should be.

Challenges

- In many situations, it is difficult or impossible to determine the relevant facts, especially when the factual issues have to do with the prediction of the likely consequences of events in the future.
- Arguments over the definitions of "bribe" or "proprietary" may be very difficult to resolve.
- People can disagree over moral issues, so let us examine these disagreements in more detail.



Given that the issues surrounding an ethical problem can be controversial, how can these controversies be resolved?

Factual issues can often be resolved through research to establish the truth. It is not always possible to achieve a final determination of the “truth” that everyone can agree on, but generally, further research helps clarify the situation, can increase the areas of agreement, and can sometimes achieve consensus on the facts.

Conceptual issues are resolved by agreeing on the meaning of terms and concepts. Sometimes agreement isn’t possible, but as with factual issues, further analysis of the concepts at least clarifies some of the issues and helps to facilitate agreement.

Moral issues are resolved by agreement as to which moral principles are pertinent and how they should be applied.

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