

Engineering Ethics - Moral Issues

A moral issue can be understood as an issue to be resolved not only by considering the technical stuff but also by keeping moral values in mind. To be more precise, let us consider the definition in general.

Moral issue is a working definition of an issue of moral concern is presented as any issue with the potential to help or harm anyone, including oneself.

Types of Moral Issues

There are mainly two types of Moral issues that we mostly come across while keeping the ethical aspects in mind to respond. They are –

Micro-ethics

This approach stresses more on the problems that occur on a daily basis in the field of engineering and its practice by engineers.

Macro-ethics

This approach deals with social problems which are unknown. However, these problems may unexpectedly face the heat at both regional and national levels.

Examples

Let us now understand a few examples related to moral issues.

Example 1

After a recent collapse of a structure in which many people died, an Engineer came to know about a bridge which is marginally safe. He informed his superior who asked him to stay calm and not to discuss with anyone, while waiting for the next year budget sessions to get some financial help for the repair required. What should the engineer do?

Example 2

What should an Engineer who observes his colleague copying confidential information unauthorized, do immediately? If he chooses to stop his friend, what if this gets repeated without his notice? If he chooses to report the management, what if his friend loses the job? Which is morally correct?

Example 3

An engineer who develops a proto-type for the project, loses it due to a mishap exactly the day before the submission. Is it morally correct to outsource the prototype of the project and reduce the risks of job insecurity? What should he do?

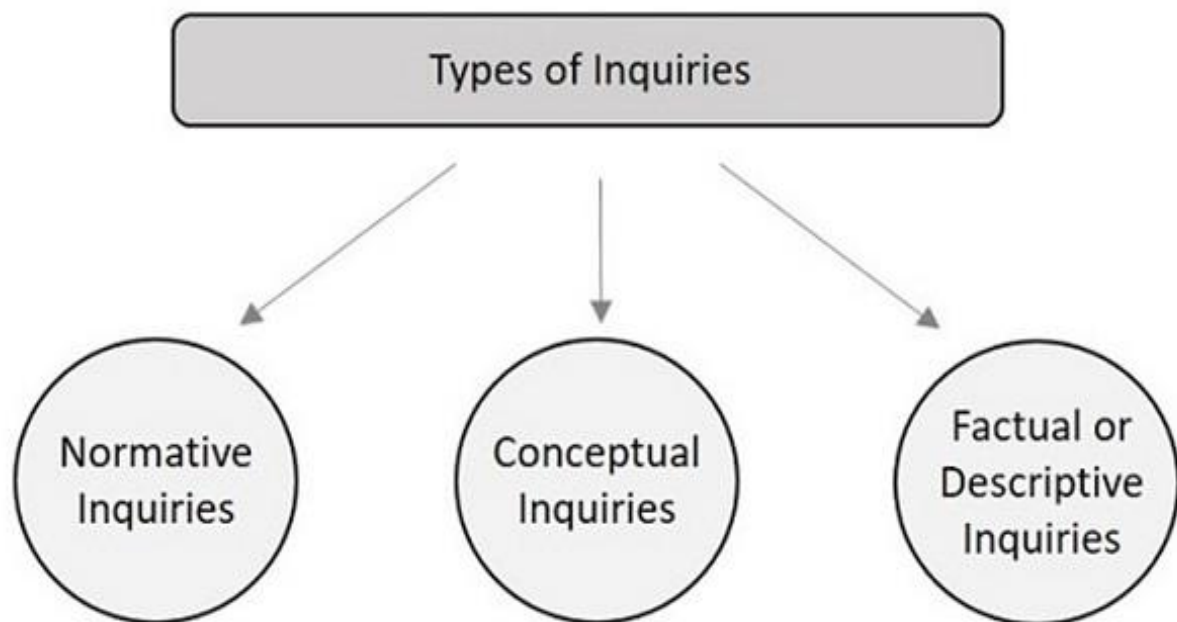
These are the few examples just to understand the kind of moral dilemmas. There might be one or more correct answers at times. There can be some other way around to deal with the issue, which one cant easily notice. However, the decisions have to be made by following a slow and clear process in order to avoid further problems and also to solve this in a manner that leads to no regrets.

Types of Inquiries

The issues can be resolved by following an investigation procedure, step by step in order to have a clear understanding towards the issue. Here we have three different types of inquiries.

Judging the issues has to be followed by a systematic procedure to avoid any flaws. Engineering ethics involves investigations into values, meanings and facts. Following are the different types of inquiries made for this.

- Normative inquiries
- Conceptual inquiries
- Factual or descriptive inquiries



Normative Inquiries

Normative Inquiry refers to the description that describes **what one ought to do** under a specific circumstance. This is the expected ideal response, which might differ from what one believes to be right or wrong.

This list identifies and justifies the morally desirable nature for guiding individuals or groups. This includes the responsibility of engineers to protect the public safety and how they should respond under such dangerous practices. Normative inquiries also **quote the laws and procedures** that affect the engineering practice on moral grounds. **They refer to the thought process where the moral rights are to be implemented in order to fulfill their professional obligations.**

Conceptual Inquiries

Conceptual Inquiry refers to the **description of the meaning of concepts, principles and issues related to engineering ethics.** The ethics that an engineer should possess to protect the safety, health and welfare of the public, etc. are described under conceptual inquiries.

It describes what safety is and mentions the marginal issues of safety along with the precautions an engineer should take to avoid risk. Conceptual inquiries mention the moral aspects of bribery and how its effects, along with the professional ethics and professionalism.

Factual and Descriptive Inquiries

Factual Inquiry or the descriptive inquiry help to **provide the facts for understanding and finding solutions to the value based issues.** The engineer has to conduct factual inquiries by using scientific techniques.

This helps in providing the information regarding the business realities such as engineering practice, history of engineering profession, the effectiveness of professional societies, the procedures to be adopted when assessing risks and psychological profiles of engineers.

Let us now go through the concept of Moral dilemma that a person faces when confronted with a situation.