

# SciPub in SE – Seminar 1

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## Preparatory tasks

### **PQ1. What is science?**

**T1:** Science is the process through which mankind tries to answer questions which are raised for him through history using tools which are available to him.

**T2:** Science is the process through which mankind discovers the reliable rules and relations in nature.

### **PQ2. How is science different from engineering?**

**T1:** Engineering is mainly involved with solving a practical problem which comes from the industry, and this problem solving will be rewarded (for example with money). While in science the main motivation is not financial.

**T2:** In the references given I did not find anything about engineering but I can complete the answer above like this:

Engineering is mainly involved with solving a practical problem which comes from the industry, and this problem solving will be rewarded (for example with money). While in science the main motivation is not financial, although even the process of scientific thinking needs to be financially supported.

### **PQ3. How is science different from a process improvement project in a company (for example, trying to find a better way to capture bugs found during early stages in software projects)?**

**T1:** The source of process improvement is also in the industry and again the same as mentioned for engineering this improvement will be rewarded. Even the quality of the improvement will be set proportional to the level of reward which is set beforehand. But in science financial issues are not the incentive.

### **PQ4. What kind of science is Software Engineering?**

**T1:** Software Engineering also as a field of engineering tries to answer questions which are initiated by problems in the industry and also have to be backed up via a reward procedure (e.g. payment).

### **PQ5. Why is publication important in science?**

**T1:** To get your ideas validated by other peers in your research field.

To let other people in your research community know the results of your research.

To have your ideas documented (from a legal perspective – copyrights)

**T2:** To improve both individual bibliometric measures and also bibliometric measures for the research group you are involved in.

To help in starting future collaboration between different individuals and research groups.

**PQ6. Why is scientific and research community central for scientific processes?**

**T1:** In order for a scientific process to be successful it has to be unbiased and well documented. Also most scientists use other peer's research results and improve them in some way. The scientific and research community helps the scientific process to be unbiased as this process will be analyzed from other peers with different points of view. Also the scientific process has to be well documented for other members of the scientific and research community to be able to use its results.

**PQ7. What are the two most common bibliometric measures out there and how are they calculated?**

**T1:** Number of citations of a publication which is based on that scientific process, is one of the main bibliometric measures which is used. Also the very process of being able to publish a paper is also a validation which is from other peers in related field.

**T2:** The crown indicator, which is the ratio of the number of citations a group's publication has compared to the average number of citations which has been recorded in the same year, same research area and same document type.

Top 5%, shows the top 5% of the most cited publications in the same year and same subject area.