

Problem-solution pattern

The Problem-Solution pattern is not only one of the most important organizational structures in *scientific* and *engineering* texts but also in *newspaper* and *magazine articles*. The problem-solution pattern reflects a form of critical thinking that tends to be more argumentative and evaluative. You may find this pattern useful in writing *introductions*, research reports and proposals. In its simplest form, the Problem-Solution pattern consists of two parts: a **problem** and a **solution**. However, most problem-solution texts involve four steps.

SITUATION

The first sentence provides *background information* and the *setting* for the problem. In this step, the writer attempts to orient the reader by showing the **importance** or **relevance** of the current situation to the reader's world. To emphasize the current relevance, writers typically use the **present perfect tense** (*has/have -ed*) and **positive evaluation** to stress the importance:

Adjectives: *major, important, popular, common, many*

PROBLEM

Next, the writer points out either a **problem** or a **weakness** in the current situation, commonly signaled using the following types of words:

Contrast: *However, despite, unfortunately, although, but*
Negative connotation: *limited, few, little, no, not, none*
Synonyms for "problem": *danger, drawback, disadvantage, weakness, need, shortcoming, obstacle*

Sometimes, the present situation may be presented as the problem, or these first two steps can even be presented in reverse order. Describing a problem also entails commenting on the **history**, possible **causes and effects** of the problem, the **limitations** of any **current/previous solutions**, as well as the **criteria** for a good solution.

SOLUTION

Once the reader understands the *importance/relevance* of this topic and the *problems* arising from it, the next step introduces a **solution** to the problem. This step is often signaled using the words below:

Nouns: *solution, answer, approach, strategy, improvement*
Verbs: *solve, address a problem, work out, develop*
Causative connectors: *therefore, as a result, thus*

EVALUATION

When presented with a possible solution, readers naturally wonder whether this solution is effective in light of the criteria described in the problem step. Therefore, the final step should *evaluate* the solution. If the evaluation is **negative** (i.e., the solution is ineffective), then your reader will expect an *explanation* as to why it will not work. Alternatively, a **positive** evaluation supports a successful solution, and the positive features of the solution would be signaled by **positive language**:

Nouns: *benefit or advantage*
Verbs: *provide, offer, enable, allow*
Adjectives: *effective, efficient, reliable, safe, useful, robust*

