EXTENDED SUMMARY

How the characteristics of a problem differ in the military context

Key words
Definition of problem, military profession, military training

Abstract

A problem and its characteristics seem to be well defined in the scientific literature; however, the definitions are all quite general and typically fail to consider the different variations and components of some unique, in this case military profession.

This work aims at specifying and describing the meaning of problem and its characteristics in scientific literature and find out how well they suit in the context of the military. This is done based on a literature review and interviews, which were carried out with experienced military officers. The results indicated that the general definition of problem was valid in the military context; however, some specific characteristics should be revised and some important characteristics added. Those characteristics are presented and described in this article. This work could contribute to designing problem-based learning in military education.

Introduction

Problem-based learning is not very often applied in military education. The current study aims at investigating why it is so and starts with clarifying the differences between a problem in military education and other contexts. A problem has typically been defined as an unknown entity that is valuable to the problem solver. The unknown entity in this formula is the difference between the current state and goal state in a situation (Jonassen, 2000). Some authors have described problems through the need to achieve goals; in this case, a problem occurs if the solver has to achieve an objective (Mayer & Wittrock, 1996). A value for the solver has been argued by some other authors, too: Arlin (1989), for example, adds that a problem is not a real problem if there is no “felt need”, e.g., motivation to solve it (Arlin, 1989). Thus, a problem must offer some social, cultural, or intellectual value to the solver (Jonassen, 2000). It is also argued that in the case of a problem it is not exactly known how to reach the goal state and while doing so, problem solvers have to act (Robertson, 2001).

To conclude, a problem as a phenomenon has been defined from many different viewpoints, but the solver is always in the middle (see Table 1). The following research question was
formulated in the current study: Which are the aspects of a problem in the military profession that deviate from the general definition of a problem?

Table 1. Definition and elements of problem (Davis, 1973; Mayer & Wittrock, 1996; Meachan & Emont, 1998; Arlin, 1989; Jonassen, 2000; Nitko, 2001; Robertson 2001).

<table>
<thead>
<tr>
<th>Problem</th>
<th>Not a problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is an unknown entity between the current state and goal state in some situation.</td>
<td>Problem solver cannot recognize the unknown entity.</td>
</tr>
<tr>
<td>It is not exactly known how to reach the goal state.</td>
<td>Problem solver recognizes the unknown entity but decides to ignore it.</td>
</tr>
<tr>
<td>Problem solver cannot ignore the problem.</td>
<td>Solving the problem does not offer any social, intellectual or cultural value to the solver.</td>
</tr>
<tr>
<td>To reach the goal state (eliminate the unknown entity), the problem solver must think, use cognitive processes and act to some extent.</td>
<td>The process of removing the unknown entity is too obvious; goal state is familiar to the solver.</td>
</tr>
<tr>
<td>There is “felt need” to solve the problem – removing the unknown entity must have some social, cultural or intellectual value for the solver.</td>
<td>Goal state can be reached without thinking, by using only mechanical skills and “trial and error” method.</td>
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Methods

1.1. Instrument and procedure

After conducting the literature review and providing an initial model of differences of a problem in the military profession, semi-structured interviews were carried out with six experts to revise the model. Before that, one pilot interview was conducted to adjust the instrument and rehearse the procedure.

Before interviews, the procedure and ethical points were introduced to the interviewees. During interviews, the interviewees were asked questions and encouraged to clarify questions, illustrate and visualize their answers, if needed, and recommended to think aloud. Because all interviewees were experienced military officers, the interviews were conducted as dialogue between equal partners.

1.2. Sample

Interviews were conducted with six experienced military officers (4 senior officers, 1 junior officer and 1 NCO) aged 31–41; the convenient sampling method was used. One participant had seven and all others over fifteen years of experience in the military system; all had previous experience with military training. At the time of the interviews, two officers held high positions in the Estonian Defence Forces.

Transcribing and data analysis
In transcribing the interviews, the standard orthography approach was used, i.e. speech was directly written down according to standard pronunciation, (Kowal & O’Connell, 2014). All interviews were transcribed and later categorized with the NVIVO10 programme. In the 1st stage of the analysis, directed and deductive approach was used to answer the research question. In the 2nd stage of the analysis, inductive approach was used to find unnoticed themes; here, codes and categories were created based on the data found.

**Results**

The results show that the definition of problem suits in the military context, but there are some differences. Although some authors briefly mentioned the need for a practical and motivating environment (Meacham & Emont, 1989) and situation (Jonassen, 2000), a problem was still typically defined only as an unknown entity between the current state and goal state. However, in the military context, it is always necessary to consider the problem not only in the context of a practical military situation but also to stress the importance of a “bigger picture”, which gives the problem a broader military background.

Another difference is that in the military, the problem solver usually acts as the member (or commander) of some group (unit) of people and must cooperate with other units (higher, lower, neighbours). Thus, problem solvers operate in the context of a strict military subordination system, where solving the problem is an order.

Acting is very important in the military context; if it occurs as the result of an order in some practical situation, the problem still exists even if the solver cannot recognize it. In the military context, an unsolved problem can escalate to a bigger problem for someone else later. Additionally, problems cannot be ignored even though they might not offer any cultural, intellectual or social value to the solver – they must be solved anyway and cannot be overlooked as the definitions typically suggest. The acceptance of losing human life and the unclear price of the goal makes problem solving in the military profession quite different from the general definition of a problem.

In conclusion, a problem can be defined in the military profession as an unknown entity between the current state and goal state in some practical situation, which, at the same time, is part of a “bigger picture”. The specifics of a problem in the military context are also concluded in Figure 1.
**Figure 1.** Characteristics of problem in military education

**References**


