

The step complexity measure — its meaning and applications

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A bstract

According to related studies, it was revealed that procedural error plays a significant role for initiating accidents or incidents. This means that, to maximize safety, it is indispensable to be able to answer the question of “why the operators perpetrate procedural error?”

In this study, the SC (step complexity) measure is introduced to investigate its applicability for studying procedural error, since it was shown that the change of the operators’ performance is strongly correlated with the change of SC scores. This means that the SC measure could play an important role for researches related to procedural error, since it is strongly believed that complicated procedures would affect both the operators’ performance and the possibility of procedural error. Thus, to ensure this expectation, the meaning of the SC measure is investigated through brief explanations including the necessity, theoretical basis and verification activities of the SC measure.

As the result, it is quite positive that the SC measure can be used to explain the change of the operators’ performance due to the task complexity implied by procedures. In addition, it seems that the SC measure may be useful for various purposes, particularly for scrutinizing the relationship between procedural error and complicated procedures.