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Change of decision-making methods with the help of training and higher education

A döntéshozatal módszereinek megváltoztatása a kiképzés és más magasabb szintű képzések segítségével

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Introduction

Human decision-making is based on habit and schema. The more solution options there are, the more schemas the human brain can create. Different schemas result rapid situation recognition, which lead to more effective intervention and execution. In order to improve the success of interventions, Disaster Management deepens its expertise through various basic, secondary and advanced training courses, preparing commanders for correct task planning and control. However, the theoretical preparation is not enough to allow the theoretical knowledge to be brought to the surface in a stressful situation, with a greater load, therefore it is essential to practice the various situations at a skill level. A good example of this is that in addition to the various training courses, disaster management professionals and students also carry out complex exercises involving multiple organizations.

Bevezetés

Az emberi döntéshozatal alapja a szokás és séma. Minél több megoldási lehetőség van, annál több sémát tud kialakítani az emberi agy. Az eltérő sémák gyors helyzetfelismerést eredményeznek, amelyek hatékonyabb beavatkozáshoz és végrehajtáshoz vezetnek. A Katasztrófavédelem a beavatkozások sikerességének javítása érdekében különböző alapfokú, középfokú és felsőfokú képzések segítségével mélyíti el a szaktudást, készíti fel a parancsnokokat a helyes feladatszabásra és kontrollálásra. Azonban az elméleti felkészítés kevés ahhoz, hogy stresszhelyzetben, nagyobb terhelés mellett az elméletben megtanultak operatív módon felszínre kerüljenek, ezért elengedhetetlen a különböző helyzetek készség szintű begyakorlása. Erre jó példa, hogy a különböző képzések mellett az összetett, több szervezet bevonásával történő gyakorlatokat hajtanak végre a katasztrófavédők, illetve az azt tanulók is.

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Keywords: drill, decision, training habit, disaster management

Kulcsszavak: drillezés, döntés, képzés szokás, katasztrófavédelem

Actuality of the topic

With the spread of smart devices, the quality of a person's thinking decreases significantly. This also means that we increasingly rely on decisions made/suggested by Artificial Intelligence based on Big Data in various operations.

However, relying on Artificial Intelligence alone is dangerous, since the human factor cannot be neglected in various rescue operations, since the physical execution is carried out by humans. Therefore, the theories and practices presented in various trainings and higher-level trainings have a great responsibility to change the naturally developed decision-making methods and to "program in" the best technique (best practice). In my article, I present the methods and tools for changing decision-making through individual disaster management trainings.

Decision-making

Decision theory is studied by several disciplines. Philosophy examines decisions from the perspective of values and ethics, based on the possibilities of approaching the good and the true. Psychology examines the impact of decisions on individual behavior. Sociology researches the field of behavior, cooperation and resistance in groups with regard to decisions. In mathematics, decision-making situations are used to create models and scenarios related to simulations. In the fields of law and anthropology, the examination of the environment is primary for decision-making. Economics, on the other hand, combines utility and probability of occurrence with decisions. [1]

Definition of decision: Searching for action alternatives for a specific goal. [2]

The problem is closely related to a decision. Namely, a decision is needed when there is a situation in which we want to achieve one or more goals, but the path to achieving the goals is not always known, often hidden from us. That is, the need to change the currently perceived state, which refers to the achievement of the desired status.

The phases of decision-making:

- Recognition of the decision situation: identification, description of the problem, analysis of the situation,
- Definition: development, evaluation of alternatives,
- Decision: choice between alternatives,
- Implementation, control, evaluation. [3]

If the individual does not recognize the decision situation, they will not make any decision, but will continue their previous activity (activity) or passivity (non-action). On the other hand, if they misjudges the situation or draws wrong conclusions, they will certainly develop insufficient/bad alternatives, due to which they will make the wrong decision(s) and the implementation will be insufficient.

Decision-making schemas

From a professional perspective, it is of particular importance that the decision-making approaches of the rookies, whether learned or experienced as civilians, are changed during training according to disaster management best practices. Mental programming begins in early childhood. Parents and teachers should be the primary influence, but in addition, the media, social media, and classmates have a significant impact on the individual's way of thinking, thus they also play a significant role in the formation of schemas. [4]

The goal of disaster management training and higher-level training is to create new schemas in rookies, disaster management staff, and commanders.

he most visible changes in decision-making methods after training:

- Getting know the formal forms,
- Learning professional terms,
- Learning knowledge of procedures and rules, laws, obligations and opportunities,
- Following rules, obedience,
- Thinking in a team, developing cooperation,
- Knowledge of equipment,
- Tactical knowledge in case of a retreat, emergency,
- Situational awareness,
- More complex problem solving,
- Practicing assembly techniques,
- Equipment management, performing maintenance.[5]

For all this, new habits must be formed. The structure of a habit consists of the Trigger-Action-Routine triad. This means that the given situation must function as a trigger and be able to stimulate action immediately, practically without thinking. In order to form a habit, two neurons in the brain need to be connected. The strength and durability of this connection will determine when the habit is formed and how long it will last. The habit is formed through practice, so-called drilling, which means such a large number of repeated practices that it becomes part of the person's comfort zone. [6]

The task of trainers and those providing higher-level training is to teach as many schemes as possible to the participants in the training, so that on the one hand, they can associate the given emergency situation with a specific scheme during situation recognition, or with an existing scheme by recognizing and understanding certain differences. Thus, the commanders can immediately apply the appropriate procedure to assess the situation and develop a solution. [7]

If they do not do this and do not master a sufficient number of schemes (at least a thousand different schemes), then there is a great risk that due to the lack of recognition, either by using so-called slow thinking, wasting valuable time, or by using the wrong scheme during their quick thinking, thus based on the wrong solution, commanders give inappropriate orders, and/or the executive staff carries out the assigned tasks improperly or in a significantly longer time. The purpose of slow thinking is precisely to allow the individual to delve deeper and make decisions or develop patterns over a longer period of time, which is extremely energy-intensive and requires a lot of effort for the brain. [8]

Tools for changing decision-making mechanisms in disaster management training

The training system of the Disaster Management is diverse, from performing basic tasks to higher-level, multi-actor, multi-organization coordinated cooperation. The types of these trainings and exercises are:

- Training
- Disaster Management Bachelor's and Master's Degrees
- Local Capacity Development of Voluntary Civil Protection Organizations
- Joint Public Service Exercise
- Central and Security Administration Practice
- Trainings of the Disaster Management Education Center
- Increasing Citizen Preparedness

Trainings of the Disaster Management Education Center

The basic training of disaster management professionals takes place at the Disaster Management Education Center. Disaster management specialties can be divided into three main parts: firefighting, civil protection, industrial safety. The trainings have three or four levels. The following extract contains the main training courses. For firefighters: Firefighter, Fire Chief, Disaster Management Officer. In the field of civil protection and industrial safety: Disaster Management Associate, Disaster Management Administrator. [9] [10] [11]

Disaster Management Bachelor's and Master's Degrees

The Disaster Management Bachelor's and Master's Degrees are courses offered by the Disaster Management Institute of the Faculty of Law Enforcement, National University of Public Service.

During the undergraduate program, participants in the higher education programs first receive comprehensive basic knowledge (police, military theory, military operations, disaster management knowledge) so that they can handle disaster management in its context, and then they become familiar with the organizational and management system of disaster management, disaster prevention, civil defense expertise, the disaster response intervention system, disaster management technical knowledge, the rules and tricks of fire protection, technical rescue, as well as the laws and regulations regarding the establishment and operation of hazardous plants, and the practice of their application. The training helps students understand background activities and the operation of larger organizations. [12]

In the Master's degree in Disaster Management, students learn how to manage a specific organization or organizational unit. Therefore, they study IT, HR, management theory, meteorology and climatology, disaster management organization, public and defense administration, cooperation with authorities, management of dangerous facilities and industrial safety incidents, disaster health insurance, fire protection and rescue management, disaster management logistics, civil defense operations, and they become familiar with the legal system of Disaster Management and the system of international assistance. [13]

The National University of Public Service is at the forefront of training/drilling students in cooperation with partner agencies, which is why it organizes the Joint Public Service Exercise every year, where various crisis situations are simulated (e.g.: Flood protection, Outage of services threatening the supply and safety of the population, Cyberattack on critical infrastructure, Bioterrorism and epidemic threat, National defense crisis and emergency). In these exercises, students are expected to organize, manage, and execute complex law enforcement, disaster management, and national defense tasks. In order to be able to take their place in an Operational Committee and make appropriate decisions and give orders, even in a tense situation. [14] [15]

The Defense and Security Administration Practice (formerly: Central and Security Administration Practice) serves to practice similar skills, which was attended by full-time students of the Institute of Disaster Management and members of the Hungarian Civil Defense Association. The participants must ensure the operational cooperation of the intervening organizations, carry out the redeployment of forces and assets, as well as rescue, evacuate and provide care for the persons affected by the disaster (e.g.: a satellite with its own nuclear reactor operating in Earth's orbit has failed and crashed. It emits gamma radiation out). More complex task solving requires knowledge of the legal environment, acquisition of deployment and tactical knowledge for operational task execution, and, if applicable, processing the shock effects received. [16]

The aim of Local Level Capacity Development of Voluntary Civil Defense Organizations is to provide appropriate practice for workers in voluntary civil defense organizations to deal with dangerous situations (e.g.: floods, waves, dealing with flood effects on subsoil, internal water, thunderstorms, lightning strikes, wind storms, winter hazards, ice sport, mass events, finding explosives, road, air, rail , participation in water transport accident relief). [17]

Summary and conclusion

In my article, I examined the forms and prerequisites of decision-making. I found that, in order to speed up the decision-making procedures, schemes must be created for those involved in the assignment and implementation. This requires the development of habits. Schemas can be developed based on habits. A sufficient number of schemas help the commander and the executors to use quick thinking. In this way, it is possible to avoid the loss of time, as well as the incorrect execution of tasks, which do not comply with the procedure, and the human sacrifices and unnecessary material losses resulting from incorrect intervention**.**

The ultimate goal of drills is to increase the level of training, as in a stressful situation everyone falls back to their level of training. In other words, if emergency response tasks and work are not performed at a normal level, it will either lead to a state of shock, a state of rigidity, or a lack of compliance with regulations and procedures, which in some cases can even cost a life.

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