
RISK PERCEPTION BY STUDENTS: CASE OF FACULTY OF SECURITY ENGINEERING, UNIVERSITY OF ŽILINA

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Abstract: *The perception, awareness and understanding of risk by the population are important factors for the society safety, which contribute to increasing the preparedness of the population for the effects of crisis events, whether natural, industrial, economic, social, or in enterprise. The article focuses on the analysis of the need for education of students in the area of risk management and crisis management. The research groups were only students, not the population in general. The results were achieved by analysing the current state of education at the Faculty of Security Engineering - University of Žilina and a partial statistical evaluation of the questionnaire survey among students of this faculty. The results indicate that the risk perception of students is relatively low and the need for education in this field is justified.*

Keywords: RISK, RISK MANAGEMNT, CRISIS MANAGEMENT, EDUCATION, QUESTIONNAIRE SURVEY

1. Introduction

Perception, awareness and understanding of risk by the population are important factors in building the security of society [1]. The significance and relevance of these attributes is highlighted in situations where security is threatened or even compromised [2]. In such situations, it is usually too late for adequate response and preventive measures. Risk perception, awareness and understanding allow us to better prepare for the crisis of any nature and to take preventive measures against the perceived risk [3].

The perception and importance of understanding risk is primarily encouraged by education in this field as well as personal experience of exposure to risk, either directly to the citizen or indirectly to the close surroundings. As far as education is concerned, this issue is generally covered by the areas of education related to risk management and crisis management. In the Slovak Republic, this issue is covered by the system of civil protection within nationwide and systematic education in this field, for various age groups [4]. However, the issue of risk perception, risk assessment and, ultimately, management is far more extensive, as it should also address other areas of application, such as: economic, social or enterprise area.

The article focuses on the analysis of the need for education of students in the area of risk management and crisis management, which the authors perceive as a prerequisite of a prepared and resilient society [5, 6]. Faculty of Security Engineering - University of Žilina educates students in the field of security, which also includes the mentioned areas. Development trends and practice requirements currently increased the requirements for graduate preparedness and interconnection with practice, and therefore it is very important for universities to reflect the current trend, which is based directly on the demand of practice. Recent EU research confirms that graduates lack practical skills to help them adapt better in practice [7]. It is a difficult task for universities to ensure an adequate range of practice during their studies. In the field of security, the task is even more complicated, because practicing real situations where life, health, property or the environment is endangered is practically impossible and direct involvement of students in solution of such situations is also dangerous. Education at the Faculty of Security Engineering - University of Žilina therefore focuses primarily on mastering the basic principles of working with risks, from understanding risk through risk analysis and evaluation, to working with risk management and reduction of risks. The faculty also deals with situations where it is necessary to apply the principles of crisis management and solution of the situations. The scope of education covers areas from natural hazards, through industrial, social, to economic and entrepreneurship risks. There are considerable differences in approaches to such risks. Therefore, the idea is to create a separate field of study that would focus on risk assessment only in the entrepreneurship area. However, the article attempts to link

students' overall perception of risk with their current possibilities at the faculty and to reflect needs of practical training in the field of risk management and crisis management.

2. Education at the Faculty of Security Engineering, Department of Crisis Management

Faculty of Security Engineering educates security professionals in various areas. These include education in the areas of protection of persons and property, emergency services, critical infrastructure protection and crisis management. The Department of Crisis Management includes both crisis management in public administration and risk management as well. The department ensures education on three levels - undergraduate (Bc.), graduate (MSc.) and post-graduate (PhD.) [8].

The graduates of the study programme Crisis Management are experts with university education able to carry out the position of the crisis manager. The study programme also deals with the risk management area in the conditions of the public administration and entrepreneurial subjects. The graduates are able to assess (identify, analyse, evaluate) the risks and threats of the natural, social, economic and technological processes as well as to design procedures for their reduction.

3. Methodology

The authors utilized the following methods for fulfilling the stated goal:

- analysis of the current state of education at Faculty of Security Engineering – University of Žilina with a focus on linking with practice
- questionnaire survey conducted on a sample of students of Faculty of Security Engineering – University of Žilina focusing on attitudes to risk and risk perception. The questionnaire was distributed to randomly selected respondents and students of faculty of security engineering (also small number of students of other universities) primarily in electronic form (several were also written). For the purpose of this paper only students' responses are investigated.

4. Results and Discussion

4.1 Assessing the current risk-aimed education at Department of Crisis Management with relation to practical activities

Currently, the Department of Crisis Management ensures implementing of risk-aimed practical activities for the university education in the following areas:

1 The professional practice of the students

The professional practice belongs to the activities organised by department every year. The students carry out professional practice in selected organisations (public administration institutions or companies) where they can gain new practice experiences from the security and safety field. After that students take part in professional practice under the auspices of the Ministry of Interior and its educational center. During this practice exercises, students have a possibility to confront their knowledge with experienced employees of Civil Protection and crisis management departments, and also with experts from the integrated rescue services.

2 Experts from practice included in educational process

The department is cooperating with different institutions (public administration or private) at different level. Experts from these institutions can within specialised subjects (courses) enrich the educational process with practical inputs (examples from practice), eventually increase the attractiveness of the studies. Another form of symbiosis is realised through consulting with experienced professionals from the private sector, as well as organising seminars and workshops for students [9].

3 Linked thesis with practical problems

Final thesis (Bc., MSc., PhD.) are realised in cooperation with the risk and crisis management authorities, as well as with business entities which are open to solving the issue of crisis and risk management in their enterprises. Currently, we can observe an increasing demand for cooperation and we still looking for new possibilities of cooperation.

4 Excursions

The department teachers' organise interesting excursions in the framework of their subjects, e.g.: (1) to manufacturing enterprises: The aim of these trips is to get students acquainted with the manufacturing process in a particular company, with quality control procedures from the point of view of risk management, as well as with systemic risk assessment in Occupational Health and Safety; (2) to expert institutions specific for the crisis management: e.g. the coordination centre of integrated rescue services, resistance shelters and warning networks of the civil defence or the warehouses of the Administration of State Material Reserves; (3) other excursions: Nuclear Power Plant Mochovce and Nuclear Waste Repository RAO Mochovce, etc.

5 Projects with companies

The department has been cooperating in the long term with Slovak Rails - ŽSR, ŽSSK a ZSSK Cargo, with companies QUADRIQ, s. r. o., L. Mikuláš, GOSSIS, s. r. o., Nitra, LYNX Košice. Other organisations include Nemak Slovakia, s. r. o. Žiar nad Hronom, Geodézia, s. r. o. Žilina, Distribúcia SSE, a. s. Žilina, Žilina Region, KROS, a. s. Žilina. There is an effort to include students into solving of these project, unfortunately, this represents the weakest spot in the department-company cooperation [9].

6 Research centers

The Department of Crisis Management has two specialised centers at its disposal. The first one is the Crisis Management Simulation Centre, which creates conditions for independent scientific and research activities. The center focuses on providing students with practical experience and skills in the form of simulation of crisis scenarios in a given situation. The other one includes research laboratories at the University Scientific Park designated to provide efficient and complex training of crisis management specialists with the help of software simulation technologies [10].

7 Reversed cooperation

A good example is a cooperation with the Ministry of Economy (and in connection with this with the company VUJE, a.s.) which provided us with software products for the lectures of the Subject

Crisis Planning. After updating the information system in practice we succeeded in continuing this collaboration and we ensured the access to the new application of this system for our students. Another example is our cooperation with the company Bel Power Solution, s.r.o. in 2016 – 2017 by involving the students in the project of manufacturing a new product in the company. The student's role was to implement the risk management to the project.

The department as well as the whole faculty of security engineering offers various opportunities for students where they can acquire practical experience in the field of crisis management and risk management. However, the extent and numbers of students involved, which are unfortunately limited, remain problematic and therefore we think that it is still necessary to deepen the link between theoretical teaching and practice.

4.2 Questionnaire survey

A questionnaire survey was conducted between January 2019 and July 2019. A structured questionnaire was used, based on various sources [e.g. 6, 11, 12] and supplemented with questions and formulations that the authors considered appropriate with regard to the subject of the research. The questionnaire was distributed students of our university in electronic form. Number of participants was 360 (n). For the purpose of this paper are used results related to the flood risk only.

Table 1: General information about survey participants

General information		Share [%]
Gender	Male	52.39
	Female	47.61
Living type	In flats	36.67
	In houses	63.33
Living place	Rural	57.50
	Urban	42.50

First of all, the experience that students have with crisis events, such as floods, can have some effect on the subsequent perception of the risk of such events in the future. 39.72% (Fig. 1) of the respondents have not yet experienced any crisis phenomenon and it can therefore be assumed that their attitude to risk may to some extent be different from those who have already experienced the crisis event. The type of crisis event, as well as its severity, can also have a different impact on a person's attitude to risk in the future. We have also examined the severity of the impact of such events once they have experienced a crisis event. The results suggest that they have experienced mostly crisis events with low impacts and minor complications of everyday life. It was seldom a threat to life. Only 2.77% of students experienced a flood during which their lives or lives of their family members were at risk.

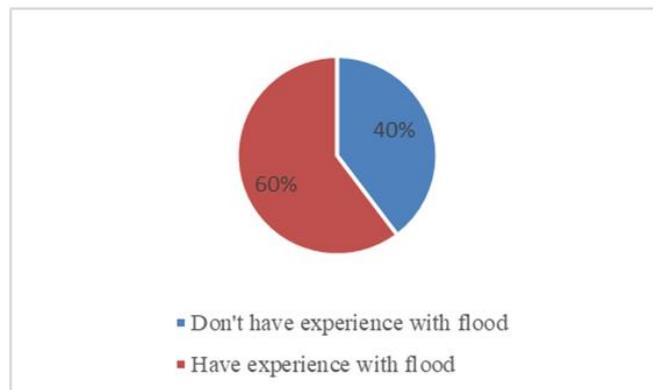


Fig. 1 Percentage share of experience with crisis event (flood)

In the section of experience exploration, we have also explored "How many students have ever been evacuated?" This tells a lot about the severity of the situation they have experienced, since

evacuation is only ordered in severe situations where it is impossible to save people otherwise from the area affected by a crisis event. The survey showed that only 8.05% of the students were ever evacuated (see Fig. 2), which is considerably lower rate compared to the experience with the occurrence.

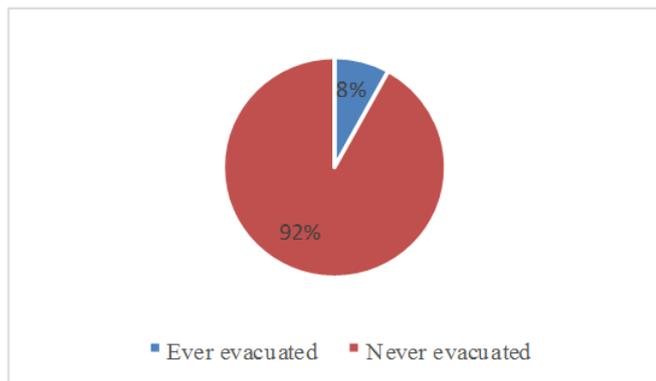


Fig. 2 Percentage share of evacuated students

Although they do not have much experience with serious impacts of crisis events, there is a presumption (statistics of the Ministry of Interior of the Slovak Republic - Fig. 3), which indicates that crisis events occurrence will increase and at the same time there will be more crisis event with more serious impacts. These figures are not only valid for the Slovak republic, but when we look at this issue broadly, this increasing trend is also seen in the neighbouring countries in Europe and worldwide [13, 14, 15, 16, 17]. There are, of course, considerable differences between countries, but the overall increasing trend is obvious, according to scientists [13, 14, 15, 16, 17].

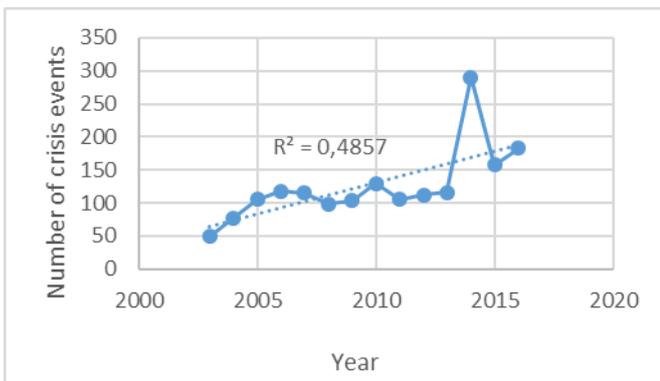


Fig. 3 Development of the occurrence of crisis events in the Slovak Republic (adapted from [18])

Therefore, we were interested in the view of students regarding the occurrence of crisis events in dependence to the development of the global environment and climate change. How do students perceive this development? The results are shown in Fig. 4, where it can be seen that approximately one third of them (34.17%) report either "slightly higher frequency" or "higher frequency" of crisis events occurrence compared to the past.

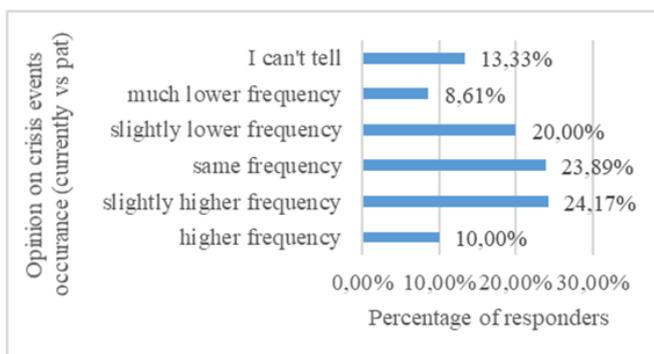


Fig. 4 Opinions of students on crisis events occurrence

Not only these facts, which indicated the current situation of risk awareness and preparedness among students, but also subjective evaluation of the level preparedness is important as well. This factor suggests that students think that they are prepared only moderately (almost half of the responses - 48.06%) and approximately a third (24.44% + 8.33%) think that they are prepared poorly or not at all (Fig. 5). The high share of responses within the middle level (3) may also be due to the fact that students do not know what is threatening them, what preparation would contain and therefore they decided to mark the middle level. It is possible that if we evaluate them individually and objectively, the results could be more inclined to lower preparedness.

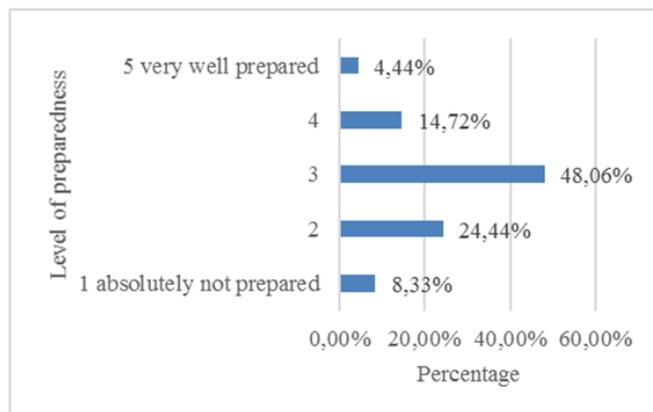


Fig. 5 Preparedness level of students

It is very positive that 81.67% of students showed interest in risk management or risk reduction, risk management and risk protection (Fig. 6). Nowadays, students preferred the more modern ways of obtaining this information (mainly electronic form) such as mobile applications, websites, information to mail, but there is still interest in a more common way of providing information by lectures and practical demonstrations.

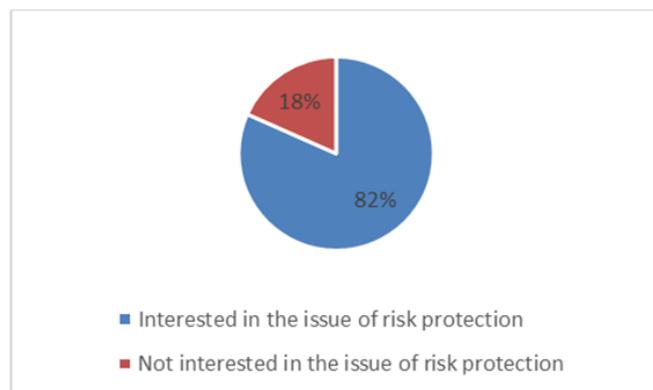


Fig. 6 Interest in the issue of risk protection

Initial results of the analysis of the current state of practical education at the Department of Crisis Management and the results of the survey show that although students have direct experience as well as practical teaching activities, self-assessment of their readiness is sceptical as well as opinions on security environment development. In principle, we see 2 explanations: (1) poor effectiveness or extent of practical education or (2) direct experience with crisis events was modest and did not change their attitudes and preparation for risks of different nature.

4. Conclusion

In summary, it can be stated that students have some experience of risk effects, but they are unsure about their overall readiness for their manifestations. On the positive side, however, they are aware of their shortcomings in this field and they would like to improve it

and learn more about the issue of risk management as practical as possible.

Demonstrated interest and current evolution of the environment suggest that the issue of risk management and crisis management is very attention-requiring. At the same time, it is a challenge for teachers and educational institutions to be able to train professionals in this field, as security is a rapidly changing area and requires a high degree of flexibility to address it comprehensively. Therefore, teachers should also be flexible and try to use modern teaching techniques and connect theoretical knowledge with practice more frequently.

Not only for teachers but also for public administration and enterprise entities alike, education, training and risk awareness-raising of various nature should be a priority in the field of raising the level of security. Practical education of students appears to be the desired phenomenon, and this highlights the importance of the study fields dealing with crisis and risk management. In this context, the idea of the Faculty of Security Engineering in Žilina is to continue in the established trend of applying practical elements to the teaching process and to try to find other ways to do these activities better in order to (1) improve perception, awareness and understanding of risk among students and (2) to ensure the prerequisites for employment in security and safety sector.

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