

WCES-2011

## Civil protection, survival and physical fitness

Daniela Chlíbařová<sup>a</sup>\*<sup>a</sup>*Brno University of Technology, Centre of Sports Activities, Technická 2896/2, Brno, 616 69, Czech republic*

---

### Abstract

The development of education in civil protection shows a continuous change from preparation for protection against the results of wars to the present aim - which deals mainly with the results of natural and anthropogenic disasters. At the same time the problems and drawbacks in this field of education have emerged. They are exemplified by present results of research into human protection education in extraordinary events in primary schools. There is an obvious link between education in solving critical situations and extraordinary events and education in outdoor physical training.

© 2011 Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](#).

*Keywords:* Human protection in extraordinary events; outdoor physical training; education; primary school.

---

### 1. Introduction

This paper should mainly contribute to the present discussion about education in civil protection in schools as part of an education system reform (European Commission, 1999; Chlíbařová, 2008; Chlíbařová & Mazal, 2008). It puts emphasis on practical education in civil protection and the connection between physical fitness in outdoor conditions and survival in emergency situations (Chlíbařová, 2007a, and 2007b). From the content point of view the main aim of the research was to evaluate the knowledge of teachers and students from secondary-basic school in human protection in extraordinary events. This is presented by a points score from a didactic knowledge test in a pedagogical experiment. Following on are the additional research questions relating to the close association between education in civil protection and physical outdoor training. Final quantitative and qualitative content analysis shows the opinions of teachers on civil protection education, especially on its connection to physical fitness, outdoor training and the physiological parameters of students.

### 2. The aims and reseach questions

#### 2.1. Partial aims

Realize comparison analysis of methods of civil protection education in specifically chosen European states. Evaluate the knowledge level input data on the issues of human protection in extraordinary events from secondary-

---

\* Daniela Chlíbařová.

basic level teachers and students from randomly chosen schools (didactic test method) and monitored input variables (questionnaire method). Evaluate the knowledge level input data on the issues of human protection in extraordinary events from secondary-basic level teachers and students from randomly chosen schools (didactic test method) and monitored input variables (questionnaire method). Carry content analysis of the educational surrounding of educating teachers and students in civil protection (questionnaire method). Add the quality evaluation of the educational surrounding factors which might have been related to education in civil protection of monitored groups (method of interviews with teachers) to the quantitative approach to the data. Educational intervention focused on civil protection by the combined form of education with emphasis on outdoor training (part of Ministry of Schools and Education of the Czech Republic Project No. 51302302) with an experimental group of teachers. Characterize on the basis of the analysis of results of output didactic tests the output knowledge level of the teachers and students and prove the influence of the aimed educational intervention on their knowledge. Verify the possible influence of chosen monitored variables on the knowledge level in human protection in extraordinary events of the teachers and students.

## *2.2. Main research questions*

Does intentional aimed education in civil protection influence the knowledge of experimental teachers of human protection in extraordinary events?

Does intentional aimed education of experimental teachers influence the knowledge of their students?

## *2.3. Additional research question relating to the close association between education in civil protection and physical outdoor training*

Are there significant differences between knowledge of human protection in extraordinary events of groups of students according to school teaching of human protection in extraordinary events (factor: practical education of students' knowledge during physical outdoor training exercises organized by the school)?

## **3. Methodology**

The subject of the pedagogical experiment was a group of teachers participating in teaching human protection in extraordinary events at randomly chosen secondary schools in the Czech Republic and a group of 6th- 9th year students in which the monitored teachers participated in teaching. The final number of respondents included in statistical processing (after reductions and data treatment) was 70 teachers and 1603 students from 31 schools. Of these, there were 21 experimental teachers with 568 students and 49 control teachers with 1035 students. During the interview method a combined strategy of choice was used and the final set consisted of 37 teachers. The final number of respondents in the output test was 70 teachers and 1591 students from 31 schools. Of these, there were 21 experimental teachers with 553 students and 49 control teachers with 1038 students from 31 schools.

The data was mainly received through the pedagogical experiment at the start (pretest) and at the end (posttest) of the school year by a didactic test method which was a basic and initial technique and by questionnaire and interview (only with teachers) methods whose additional role was to provide verification. The preparation of the experiment required the creation of specific questionnaires for teachers and students; didactic test knowledge was adopted from the Czech school inspection. The inter-group experiment used a technique of parallel experimentation and control groups of teachers and students. The dependent variable of the experiment was the total average point score and average point score of single items from the didactic test of teachers and their students, the independent variable was aimed educational intervention in civil protection of the experimental group of teachers. Aimed educational intervention of the experiment was a course designated for teachers of basic and secondary schools by the combined form of study in lifetime education (Hořková, 2009) with practical courses emphasizing physical outdoor training controlled by the centre of distance education of the Faculty of Physical Culture in Olomouc, Czech Republic. The

main target was to prove the influence of educational intervention on the knowledge level of the monitored group of teachers and then on the knowledge of the students taught by them in human protection in extraordinary events. The educational intervention was aimed at educating teachers when the monitored group of teachers and students was given information and practical outdoor training which might have influenced their knowledge (Cadabert, 2004; Chlíbková, 2007c). A further aim was to prove the influence of some chosen monitored factors on teacher and student knowledge of human protection in extraordinary events. From a methodological point of view the aim was to prove the effectiveness of the pedagogical experiment method.

Statistical processing of the data from the tests and questionnaires was done with a statistic program Statistica Cz 7 (StatSoft Inc., Tulsa USA). The qualitative data from the interviews was processed by a method of content analysis and paradigmatic models.

#### 4. Results

The comparison analysis of methods of civil protection education has shown that the most important forms of preparation and education are training (courses) and practical exercises in outdoor conditions. Although the chosen countries pay quite a lot of attention to the preparation of the population for self-protection, these topics are not still discussed in a comprehensive and determined form at schools and they are not a part of school teaching programs without emphasis on physical fitness. The same results were verified by quantitative and qualitative analysis.

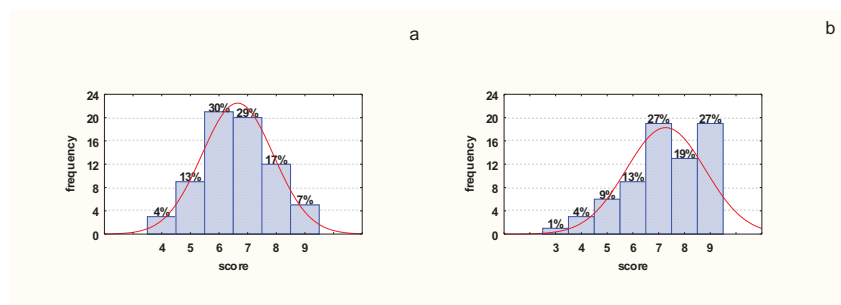


Figure 1. Frequency distribution of overall average point score of all teachers from didactic input and output test

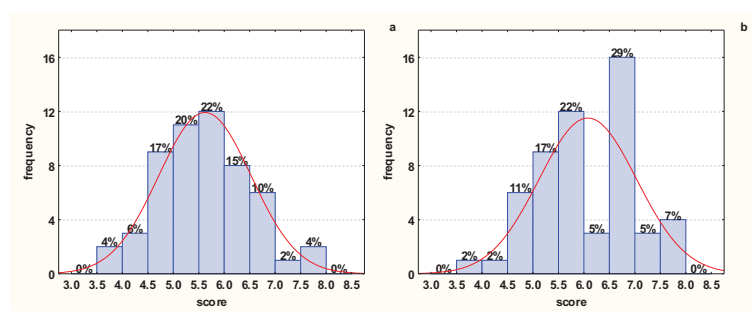


Figure 2. Frequency distribution of overall average point score of all pupils from didactic input and output test

According to pretest criteria for fulfillment of the test and also according to the evaluation of single items of the test, a low knowledge level of the participating teachers and their secondary-basic students in human protection in extraordinary events was proved (Figure 1. Distribution frequency of overall average point score of all teachers from

the didactic input and output test; Figure 2. Distribution frequency of overall average point score of all students from the didactic input and output test).

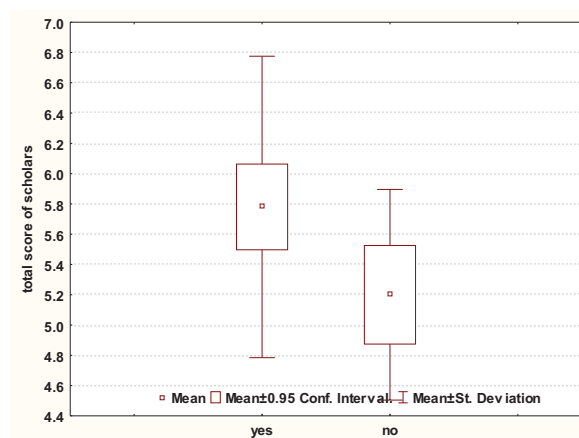


Figure 3. Specification of the curriculum and students' knowledge

The additional research questions verified a probable influence of some chosen monitored variables on the human protection in extraordinary events knowledge of the teachers and students. Verifying characteristics of teaching at schools and their influence on the knowledge of the students showed a statistically and factually significant difference between the knowledge of the groups of students from the schools where a concretization curriculum into teaching of single subjects with emphasis on physical outdoor training has taken place and from the schools where the concretization has not taken place (Figure 3. Specification of the curriculum and students' knowledge).

The analysis of teachers' opinions on education in civil protection by input quantitative content analysis of intentionally chosen items from the teacher's questionnaire and input qualitative content analysis of the interviews with the teachers showed that there is actually no targeted education of teachers of basic schools and the necessity of change in education with emphasis on physical outdoor training.

## 5. Conclusion

While working on this research I have contributed to innovation for teachers and students in the tuition of civil protection with the emphasis on practical education by forms of outdoor physical training aimed on emergency or survival situations. Outdoor training is necessary for everybody not only to enable us to cope with survival, but also with difficult natural conditions and adverse weather. Last but not least there is also an improvement of physical fitness, endurance and mental resilience. A state of readiness is important for survival - to be physically and mentally able to handle stress and the problems of extreme situations. Physiologic parameters are regarded as powerful phenomena for human survival and also for extreme-sports endurance situations (Chlábková, 2002; Wilmore & Costill, 1994). In this context my continuing research will be focused on the measurement of concrete physiologic parameters in extreme endurance sport.

## References

- Cadalbert, R. (2004). Die schule brennt! *Action*, 51/1, 4.
- European Commission. (2002). *EU focus on civil protection. Coping with catastrophes - Coordinating civil protection in the European Union..* Luxembourg: Office for Official Publications of the European Communities.

- Hošková, Š. (2009) Experience with blended (distance) learning study materials, *Proceedings: Distance Learning, Simulation and Communication 2009*, , Brno, Czech Republic, 70-77.
- Hošková, Š., Rosická, Z. (2009) Origins and Development of Programmed Learning, *Proceedings: XXVII International Colloquium on the Management of Educational Process*, Brno, Czech Republic, 81-85.
- Chlíbková, Chlíbková, D. (2002). *Cycling training with a focus on MTB*. Study support. Brno: University of defence.
- Chlíbková, D. (2007a). Physical training and education in Human protection in extraordinary events in basic schools. *Modern education*, 2, 18.
- Chlíbková, D. (2007b). Physical training and education in Human protection in extraordinary events in basic schools or Movement as a part of education to the "survival". In *Collection of proceedings of 2 International Student Scientific Conference in Brno kinantropology*. Kinantropological aspects of sport psychology (pp. 49-51). Brno: Masaryk University, Faculty of Sports Studies.
- Chlíbková, D. (2007c). Practical application of outdoor activities and other "survival activities" when teaching students to deal with emergencies [Annex green pages]. *Modern Education* 2,12-16.
- Chlíbková, D. (2008). *Education of teachers and pupils at basic schools in civil protection*. Dissertation. Olomouc: Faculty of physical culture.
- Chlíbková, D., & Mazal, F. (2008). Reflections on education in the field of civil protection not only from the historical point of view. *Physical Culture*, 31 (1), 30-47.
- Wilmore, J. H. , & Costill, D. L. (1994). *Physiology of sport and exercise*. Champaign IL: Human Kinetics.