

**AUTHOR'S DESCRIPTION OF DOCTORAL (PhD)
DISSERTATION**

NATIONAL UNIVERSITY
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Theoretical and practical development issues of volunteer firefighter training

author's description of doctoral (PhD) dissertation and its official review

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CONTENT POINTS

1. THE PROBLEM AND ITS BACKGROUND

The role of disaster management becomes more important today. An important step in the process of renewal is the development and creation of an integrated approach in the field of education and training. This process intends to promote the consolidation of the system, particularly in the case of volunteer fire and rescue control associations.

The prevention and restraint of fire are one of the oldest organized human activity. The time since then shows that human experience itself is not enough. Therefore theoretical and practical training has a crucial role in exercising functions successfully. Volunteer firefighter associations, as social associations which contribute to accomplishing fire and technical rescue tasks, were allowed to operate where the registered office is located until 2013. In addition, there were no available operational area or firemen license. As a result of this, fire associations could only operate at the intervention level and only in the presence of the professional staff. Nevertheless, the amendment of act No. 31 of 1996, (fire protection act) by creating act No. 122 of 2013 November, made it possible that those volunteer firefighter associations which were involved so far, were allowed to intervene independently in the field of their operation if the stated requirements are met. The instruction of No. 2/2013. (V.17) BM OKF (National Directorate General for Disaster Management) contains the technical criteria and the detailed regulation of intervention for the independent intervention. The instruction covers the qualification requirements of the persons performing intervention tasks. In order to meet the requirements, the independently intervened volunteer firefighter associations' training need to be integrated and developed. This is not an easy task. The law expects from the volunteer fire associations an identical level of damage control, rescue control and fire protection with the professional associations.

I believe that the scientific analysis of the training system and the continuous measurement of theoretical and practical knowledge of firefighters is a fundamental factor in training development and for fulfilling adequate and efficient damage management tasks. Furthermore, improving training and examination methods, developing and applying new methods also crucial with regard to current training. In this paper, I aim to highlight the actuality and the relevance of the topic. I also aim to contribute to increasing the efficiency of theoretical and practical training.

2. AIMS OF THE RESEARCH

1. To analyze the Hungarian firefighting training' development stages, particularly volunteer firefighter training. Furthermore, analyze the legal basis and the technical conditions of fire prevention training. Likewise, identify and analyze those challenges, which demand the changes of requirements against the training' requirements.
2. To justify that those volunteer firefighters who perform independent intervene, are required to continuously measure and develop their competence, theoretical and practical knowledge. For this purpose, I analyze the firefighting training system used in Hungary, particularly in the case of volunteer fire fighters.
3. According to the current legislation, I methodize with my own criteria the applicable theoretical and practical training opportunities. Furthermore, based on my own empirical studies I will create a comprehensive picture of the level of theoretical and practical preparedness of volunteer associations. I will also examine the opportunities for training development.
4. Based on the result of my study and the collected data I will produce a training method which will provide a uniform theoretical and practical development of firefighters.
5. Based on the practices I have organized, considering the results of the research, I make recommendations for the development of firefighting training and also for the adaptation of the procedures I have applied to existing and planned institutional and activity systems.

3. RESEARCH HYPOTHESIS

1. In my view, in order to fulfill the requirements and demands on firefighters, their training must be constantly renewed. The renewal process must contain the continuous measurement of theoretical and practical knowledge. This can be justified by the studies I have organized.
2. According to my assumption I believe that firefighting training should use foreign experiences, moreover trainings must measure up to the demands of our times by introducing electrical training forms. Thus, changing training requirements is fundamental.

3. The training methods I applied and the special examination program can be an integral part of the existing and planned institutional and activity systems. Moreover, it's adaptable to other trainings.
4. The training methods I applied suitable for labor supply training and also for checking knowledge. These methods are fostering the maintenance of knowledge and the future development of training.

5. RESEARCH METHODS

During writing my dissertation I applied the following research methods:

- **A general method**, that is after searching and identifying the relevant literature, I do a systematic, comparative, evaluative analysis. My results create the basis of my conclusions.
- **A specific method**, that is I do an empirical study on the level of theoretical and practical preparedness of the selected participants.
- **A personal solution**, that is I justify my assumptions based on my research results.

6. BRIEF DESCRIPTION OF THE SURVEY AND ITS RESULTS BY CHAPTER

In chapter one, I made a historical overview of firefighting training. I searched for the documents describing the roots of organized Hungarian firefighting training and outlined the development stages of firefighting training. According to the historical chronicles, in the past, people put a great emphasis on training and the importance of knowledge acquisition. During the training development, the challenges of the given period were always considered. On firefighting and rescue missions firefighters were confronted with these challenges. I discovered not only the acquisition of theoretical knowledge was considered as an important task, but the development of practical skills.

In chapter two, I reviewed the legal basis of the current firefighting training and the scope of the currently applied training. I have pointed out that the training of firefighters, whether professional or volunteer firefighters, must constantly follow the challenges of the given era, and the emergencies must always be addressed. As a result of this, the transformation of the Hungarian firefighting system has become actual, which is under a continuous even after the unified disaster management system, so that the level of training meets the current expectations.

In chapter three, in order to base my research I made analyzation in foreign environments. Furthermore, in the case of surrounding EU countries I reviewed the situation of volunteer firefighters in the given country's fire protection system, and I analyzed their training. By my own questionnaire survey, I examined the theoretical knowledge of the volunteer firefighters and then their level of practical preparedness, and I diagnosed that there are deficiencies in both areas. I have also examined the technical conditions of the voluntary firefighter associations that I have chosen, depending on the educational activity. I organized several fire brigade exercises, where the gained experience was a good starting point for organizing the practice of volunteer firefighters. I discovered the training deficiencies, I highlighted the importance of theoretical and practical training in the case of fire departments I have examined.

In chapter four, I examined the opportunities of volunteer firefighting training. In order to improve and develop the training, I reviewed the development opportunities and barriers. I pointed out that e-learning as an educational method is adaptable in the case of volunteer firefighting training. Moreover, e-learning is also adaptable for subordinated staff members and manager members of firefighting and backup management as well. In order to compile a successful teaching curriculum, I examined the typical firefighting interventions, that is, to use my experience in compiling the teaching curriculum.

In chapter five, I presented the methods I have used in the volunteer firefighter training. As a first step, I compiled an e-curriculum for volunteer firefighters, which was based on my questionnaire results. I have also improved the examination methods by using the test program I have developed, which is user-friendly, and the exam questions can be changed if needed. I also diagnosed that the training was not organized and planned in the volunteer firefighters' associations I have examined, so I developed a training plan to eliminate the deficiency, which was tested by the Volunteer Firefighter Association of Abda.

In chapter six, I was dealing with the questions the labor supply training. Voluntary firefighter associations would not be able to carry out their tasks on a regular basis if there were no adequate labor supply. It is important to arouse interest at a very young age in the labor supply. I conducted a questionnaire survey among students studying at the Bercsényi Miklós Vocational Secondary School. Evaluating the results, I came to the conclusion that putting the practical experience into theoretical training could raise the interest of students. I organized a practice, I participated in the establishment of the first high school rescue group, and then I shared my experiences with the students. With another questionnaire survey, I proved that the interest about the subject was greater among the students.

7. CONCLUSIONS

Before the year of 2012, the system of disaster management has already undergone several changes. The purpose of these changes is also to ensure the complete coverage of the system. The BM OKF (National Directorate General for Disaster Management) emphasize the importance of education and also the training has an increasing role at the Department of Disaster Management of the NKE (National University of Public Service) which is part of the BM OKF. As a result of the changes, it is obvious that training has to fit the organizational structure. During my research have come to the conclusion that training system must follow the changes. The most significant message of the module system it that practical training requires a higher number of education hours. During writing my dissertation I tried to make a comparative analysis of the available resources and experiences, and according to my results, we can receive a comprehensive picture of the training system of disaster management. Nevertheless, I was disappointed to realize that the development of the training system for voluntary fire extinguishing associations has not yet been adapted. I believe that developments in this area are needed.

In order to promote developments I examined foreign cases, I appointed the required directions of the training. Furthermore, to develop the training I managed an e-learning based teaching approach on the volunteer fire extinguish associations I have chosen, then with the help of my examination program, I analyzed the knowledge of participants. I organized situational practices to monitor the practical tasks. Finally, I adapted the experiences into future training. I diagnosed that the associations I have examined do not have a training plan, as a result of this, in order to support the practical training I developed a training sample plan which is being applied by the Volunteer Fire Extinguishing Association of Abda on a test basis.

During post evaluation of cases, always can be stated that unfortunately, the preparation of unexpected situations is not always completely successful. My personal experience is that older and more educated colleagues are making mistakes as well. One of the most significant elements of successful damage management is self-confidence and professional competence. This should be based on that the intervening firefighter is aware of his capabilities. Therefore, theoretical and practical training has a crucial role in successful and efficient damage management. In my view, we cannot start early enough the preparation of fire and catastrophe protection training and the labor supply training. As a secondary teacher, I feel it is my

responsibility to contribute to the training of labor supply. In this spirit, I actively participated in the establishment of the first high school rescue group.

One of the core elements of effective damage management is the extensive professional knowledge and practical experience of rescuers and executives. As a result of this, maintaining these skills is a crucial task of the practices and training. To practice theoretical knowledge, practices should be organized, preferably by simulating life situations. Experiences gained in this way can be useful in later interventions, at the same time a useful practice also promotes interest in theoretical knowledge.

Analyzing the current firefighting system, it is noticeable that the introduction of the new integrated disaster management system has brought new demands and new challenges, which requires serious requirements from volunteer firefighting associations. Nevertheless, I diagnosed that the voluntary firefighting training system is far from expectations. In my dissertation, I highlighted the fact that volunteer firefighting training needs a greater emphasis in the future, since disaster management count for the work of volunteers.

Analyzing the past and present training, and analyzing from a foreign perspective, I diagnosed that the training of volunteer firefighters needs to be improved, both in theoretical and practical training. In my own questionnaire survey, I examined the level of theoretical and practical preparedness of volunteer firefighters, and I diagnosed that both areas have deficiencies. In order to eliminate the deficiencies, I examined the possibility of using e-learning as an educational method in firefighting training and I came to the conclusion that it is appropriate to expand the theoretical knowledge. Therefore, I compiled an e-curriculum for volunteer firefighters. I also improved the examination methods by applying an examiner program I have developed, which has met expectations in all respects. The key to success in disaster management lies in the training of labor supply. A particularly good example is the establishment of the first high school rescue group in Hungary, which has also pushed the theoretical education into the focus of practical knowledge. I have come to the conclusion that increasing the role of volunteering is essential for the protection of disasters. This is possible by the use of my applied methods.

8. NEW SCIENTIFIC RESULTS

1. According to *my empirical research*, and using the national and foreign training' results that I have analyzed, *I revealed* the deficiencies of training of the volunteer firefighter

associations, I have also **appointed** the directions of the training, **I identified** that e-learning is applicable for theoretical educating of volunteer firefighters. Therefore, according to **my own criteria, I have developed an E-curriculum** and I have provided it to the volunteer firefighters I have examined.

2. **I created an electronic examination program**, thereafter with the use of my program I continued to examine the volunteer firefighter associations and do examinations. During the *practice*, I was able to **prove** that my program is suitable for examination and it also helps to evaluate and make a summary.
3. **I revealed with my questionnaire** the deficiencies of the theoretical knowledge in the case of students who are attending in law enforcement specialized schools. In order to foster the labor supply training, **I developed** the first plan of a high school-rescue group. Moreover, I actively involved myself to the preparation, **I helped** the students with the application of theoretical knowledge in practice, and **with my questionnaire, I proved** that practical application draws attention to the theoretical knowledge
4. During the critical analyzation of the training of the volunteer associations I have examined, **I identified** that the Training Plan is missing from the education system of the associations. As a result of this, to eliminate the deficiency I developed a Training Sample Plan which was integrated from 2017 to the training system of the volunteer firefighting association of Abda. Thus, the plan proves its practical applicability.

9. PRACTICAL APPLICABILITY OF RESEARCH RESULTS

1. My research result and useable suggestions on firefighter training may support to increase the efficiency of training.
2. The application of procedures and methods I have developed in various areas of training supports the efficiency of training.
3. The examination program that I have developed and tested, can make the examiner's work easier. Furthermore, the evaluation and summary is also completed by the computer, datas can be stored electronically, and can be printed, if needed.
4. The incorporation of results into training can support the maintenance of practical knowledge of volunteer firefighters.
5. The methods I have presented and applied may support the law enforcement training in specialized schools.

10. RECOMMENDATIONS

1. I recommend the application of educational methods I have developed for the volunteer firefighter associations.
2. I recommend the nation-wide application of Training Sample Plan I have developed for the volunteer firefighter associations.
3. I recommend for the volunteer firefighters to consider my dissertation in the field of practical training.
4. I recommend the establishment of rescue groups in all high schools of our country.
5. I recommend the application of training methods I have presented for the law enforcement training in specialized schools.
6. I recommend the application of procedures and methods I have developed in various areas of firefighter training.

11. PUBLICATION LIST RELATED TO PHD CANDIDATE TOPIC

1. Nagy, Zs. (2015). *A magyar tűzoltóképzés fejlődésének fontosabb szakaszai*. [online] Available at :<http://www.vedelem.hu/letoltes/anyagok/540-a-magyar-tuzoltokepzes-fejlodesenek-fontosabb-szakaszai.pdf> [Accessed 01 Jan. 2017].
2. Nagy, Zs. (2011). *A tűzoltóképzés fejlődése Magyarországon*. Thesis, Pannon Egyetem
3. Nagy, Zs. (2015). *A magyar tűzoltóképzés fejlődésének fontosabb szakaszai*. [online] Available at: <http://www.vedelem.hu/letoltes/anyagok/540-a-magyar-tuzoltokepzes-fejlodesenek-fontosabb-szakaszai.pdf> [Accessed 20 Jan. 2017].
4. Nagy, Zs. (2016). Safe intervention of firemen in the event of accidents occurred of public road. *Hadmérnök*, 11(1), pp. 144-150. [online] Available at: http://www.hadmernok.hu/161_15_nagyzs.pdf [Accessed 25 Mar. 2017].
5. Nagy, Zs. (2013). *A hivatásos és a létesítményi tűzoltók közös kárfelszámolási gyakorlatának tapasztalatai*. [online] Available at: <http://www.vedelem.hu/letoltes/anyagok/427-a-hivatasos-es-a-letesitmenyi-tuzoltok-kozso-karfelszamolasi-gyakorlatanak-tapasztalatai.pdf> [Accessed 20 Mar. 2017].
6. Nagy, Zs. (2013). *E-learning, mint lehetőség a tűzoltóképzésben*. [online] Available at: <http://www.vedelem.hu/letoltes/anyagok/434-e-learning-mint-lehetoseg-a-tuzoltokepzesben.pdf> [Accessed 20 Mar. 2017].
7. Nagy, Zs. (2014). *A tűzoltás-mentésvezetők döntéshozatali hatékonyságának kérdései* [online] Available at: <http://www.vedelem.hu/letoltes/anyagok/488-a-tuzoltas-mentesvezetok-donteshozatali-hatekonysaganak-kerdesei.pdf> [Accessed 30 Mar. 2017].
8. Nagy, Zs. (2015). Safe intervention of firemen in the event of accidents occurred of public road. *Hadmérnök*, 10(1), pp. 127-138. [online] Available at: http://hadmernok.hu/151_12_nagyzs.pdf [Accessed 30 Mar. 2017].
9. Nagy, Zs. (2015). *Egyéni ABV védelem és mentés katasztrófa helyzetekben* [online] Available at: <http://www.vedelem.hu/letoltes/anyagok/537-egyeni-abv-vedelem-es-mentesites-katasztrofa-helyzetekben.pdf> [Accessed 25 Mar. 2017].

10. Nagy, Zs. (2015). *A lakosság felkészítés aktuális kérdései*[online] Available at: <http://www.vedelem.hu/letoltes/anyagok/552-a-lakossagfelkeszites-aktualis-kerdesei.pdf>[Accessed 30 Mar. 2017].

Presentation published in a foreign language conference issue

1. Nagy, Zs. *Oktatási, képzési reform a katasztrófavédelem területén*

In: Karlovitz János Tibor (szerk.) *Tanulás és fejlődés: A IV. Neveléstudományi és Szakmódszertani Konferencia válogatott tanulmányai*. 322 p., Conference place, time: Štúrovo, Szlovákia, 2016.02.21-2016.02.23. Komárno: International Research Institute, 2016. pp. 279-285. (ISBN:978-80-89691-31-9)

12. THE PHD CANDIDATE PROFESSIONAL-SCIENTIFIC BIOGRAPH

PROFESSIONAL-SCIENTIFIC BIOGRAPHY

ZSOLT NAGY

Date of birth, place: 12.02.1976, Győr

Zsolt Nagy started his professional fire service at the Győr City Fire Department in 2003. He was working in various positions. In 2007 he earned a qualification as an occupational safety specialist, later in 2008, he became an occupational safety lecturer. In 2009, he received a diploma at Apáczai Csere János Faculty of the University of West Hungary. From this year he had a leading position as an occupational safety lecturer. In 2011, he successfully completed a Firefighter Manager training at the Disaster Management Training Centre and in the same year he graduated from the Faculty of Education of University of Pannonia as BA of pedagogy. From 2011 he started his work as a teacher at the Law Enforcement department of Bercsényi Miklós Vocational Secondary School in Győr. From the year of 2012, he is the Assistant Chief of Disaster Management of Fire Department in Győr. Later in 2014, he completed the Law Enforcement examination. Between the period of 2013-2016, he was a student of Doctoral School of Military Engineering of the National University of Public Service. In 2016, he requested his transfer to the Bercsényi Miklós Vocational Secondary School, where he is working as a professional teacher at the law enforcement department. His primary is of research is law enforcement, particularly the theoretical and practical questions of firefighter training. Fourteen of his publication was published so far in various professional journals, and he attended at several professional conferences.

LANGUAGE SKILLS:

English elementary A: 2009

English elementary B: 2009

English intermediate B: 2010

English intermediate A: 2012

German intermediate C: 2017

01.08.2017 , Budapest

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signature