

## LABOUR PROTECTION SPECIALISTS COMPETENCE MODEL

**Dace Brizga**

Latvia University of Agriculture, Latvia

**Abstract.** *The number of fatal accidents in the workplace in Latvia in 2014 was higher than the average in the European Union and continues to grow. One remedial action for preventing accidents is to improve the competence of labour protection specialists. The aim of this study was to evaluate and improve a competence development model for labour protection specialists, as well as to make an expert assessment of the model. This was carried out by experts with experience in the implementation of educational programs and other professional activities. The experts ranked highly all the parameters of the model and determined that the competence model would be useful for improving labour protection and other specialists' training, study and practice.*

**Keywords:** *competences development model, expert assessment, specialists.*

### Introduction

The actuality of the problem is determined by the fact that in 2014 the number of fatal work-related accidents in Latvia exceeded the average in the European Union. According to European statistics, the fatality rate of workers in Bulgaria, Latvia, Lithuania and Romania is greater than 4.0 per 100,000 persons compared to other countries of European Union (Eurostat, 2016). According to the information from the State Labour Inspectorate (2017), work accidents were the cause of 34 fatalities and 149 severe injuries between January 1 and December 1, 2016. Between January and May of 2017 nine workers have been killed in work-related accidents and 51 workers have been severely injured. Among Latvians working in foreign countries, the number of job-related fatalities has increased to 10 this year. One remedial action for preventing accidents is to improve the competence of labour protection specialists.

The aim of this study was to evaluate and improve a competence development model for labour protection specialists, as well as to make an expert assessment of the model.

The methodology is based on the expert assessment examples given in several publications (Briede & Peks, 2011; Paura & Arhipova, 2002).

In the data analysis nonparametric statistics – modes, medians - were used.

This was carried out by experts with experience in the implementation of educational programs and other professional activities.

### **Competence development model of occupational safety specialists**

Previous studies (Brizga, 2016; Brizga & Peks, 2015) have shown that improving competence in safe work techniques is one of the conditions of change in individual and public attitudes and lifestyles. Improving the competence of labour specialists through courses and occupational health and safety teachings ensures the safety of institutions and their personnel, and could reduce the number of accidents and fatalities. Bertaitis (2013) show “*A labour protection specialist alone cannot create such an environment*. The participation of both employer and employees and everyone concerned in occupational safety is very important” (p. 59).

“The first task in competence-based higher education is to define what competences and competence levels students should acquire through a study programme. This task is called *establishing a competence model*” (IQM-HE, 2016: p. 34).

The European Commission (2016) Qualifications Framework describes learning outcomes in the context of knowledge, skills and competence. Competence is described in terms of responsibility and autonomy. There is an understanding that within the context of competence, there is greater understanding of autonomy and responsibility (Keevy et al., 2010).

The author's observations during both studies and practical work found that responsibility is associated with attitude. For example, Angela Smith (2005) in her publication “Responsibility for Attitudes: Activity and Passivity in Mental Life” shows that “what makes us responsible for our attitudes... is that they are the kind of states that reflect and are in principle sensitive to our rational judgments” (p. 271).

In evaluating publications and experience, knowledge, skills, attitude and intelligibility were selected as the components of the competency model.

The significance of intelligibility is apparent when applying occupational health and safety instructions and conducting lessons in training and studies. This was also stressed by experts.

The labour protection specialists' competence development model has been created to improve the professional “Labour protection and safety” higher education program (Brizga et al., 2017).

The aim of the study is to evaluate and improve a competence development model for labour protection specialists, as well as to make an expert assessment of the model.

The methodology is based on the expert assessment examples given in several publications (Briede & Peks, 2011; Paura & Arhipova, 2002). In the data analysis nonparametric statistics – modes, medians - were used. Experts whose field of activity is the higher education system were selected with regard to the objectives of the research. The experts have participated in the implementation of labour protection study programmes, as well as worked in organizations or companies.

Table 1 List of experts

Experts	Experience		Scientific and academic degree
	Position	Work experience	
A	Associate professor, Leading researcher	17	Dr. silv.
B	Associate professor, leading researcher	10	Dr.sc.ing., Mg.paed.
C	Associate professor (Emeritus)	47	Dr. sc. ing.
D	Professor (Emeritus), Leading researcher	42	Dr. sc. ing.
E	Associate professor, Leading researcher	13	Dr.sc.ing.

The scientific status of the experts (Dr. sc.) and their experience have contributed to a comprehensive evaluation of the specialist's competence development model.

## Results and Discussion

The study produced the following competencies component characteristics and graphical model (Fig. 1).

**1. Unconscious incompetence** - You lack the skills, and you are not aware of the skills gap, or even its possible existence. By becoming aware of the skills gap, you move to the second stage.

**2. Conscious incompetence** - You know that you lack a specific skill. Understanding your own incompetence on the one hand can motivate you to acquire the necessary skills, but on the other hand, can lead to uncertainty and discomfort that interferes with learning.

**3. Conscious competence** - You pursue deliberate skill acquisition. Often this stage is referred to as self-awareness. This or any other repetitive activity requires constant concentration, more than at the outset of training.

**4. Unconscious competence** - This is the final stage of training, where skills are fully integrated into your behavioural repertoire. Your subconscious mind will

deal with actions independently, but your consciousness is free to obtain new skills. This stage is characterized by mastery.

### **Knowledge**

Understands occupational health and labour medicine, promotion of wellness, protection of the surrounding environment, management sciences, economics, business IT, record keeping, rules and regulations of labour protection, work environment risk assessment and management, choice of labour protection means, ergonomics, fire safety and civil protection, work psychology and pedagogy, organisation of learning and instructional process, and utilizing this knowledge in the development of the required methodological materials in the context of safe and sustainable work which is non-injurious to health.

### **Skills**

Skills - the labour protection specialist is able to build and develop a safe, healthy and sustainable working environment, to create and develop a learning environment for companies and organisations, to plan, organise and conduct training and instruction, to develop and improve instructional materials and training resources, and to use information technology to improve training, and to identify and use Latvian and EU employment protection legislation.

### **Attitude**

Attitude – a tolerant, positive, consistent and responsible attitude towards promoting labour practices which are safe, sustainable and non-harmful to health, accountability for one's words and actions; responsibility to one's partners, a critical approach towards dominant societal attitudes on the observance of labour protection rules, reducing the impact of formal attitudes to these rules; respect for differing and diverse views; objective and considerate evaluation and characterisation of accidents, and observing confidentiality.

### **Intelligibility**

Intelligibility – the ability to demonstrate and explain safe work techniques which are sustainable and non-harmful to the employee's health, as well as to design understandable methodological materials and instructions, commensurate with the knowledge level of a certain learner or that of a learning group.

The formation of a labour protection specialist expertise and development model also provides for individual and public attitudinal and lifestyle changes, according to the UNESCO Education for Sustainable Development (ESD) framework for lifelong learning. The fifth pillar of the ESD envisages learning to transform oneself and society (UNESCO's Five Pillars..., 2012). How to transform oneself and society is particularly topical given the dominance of the prevailing attitude respecting safe working condition.

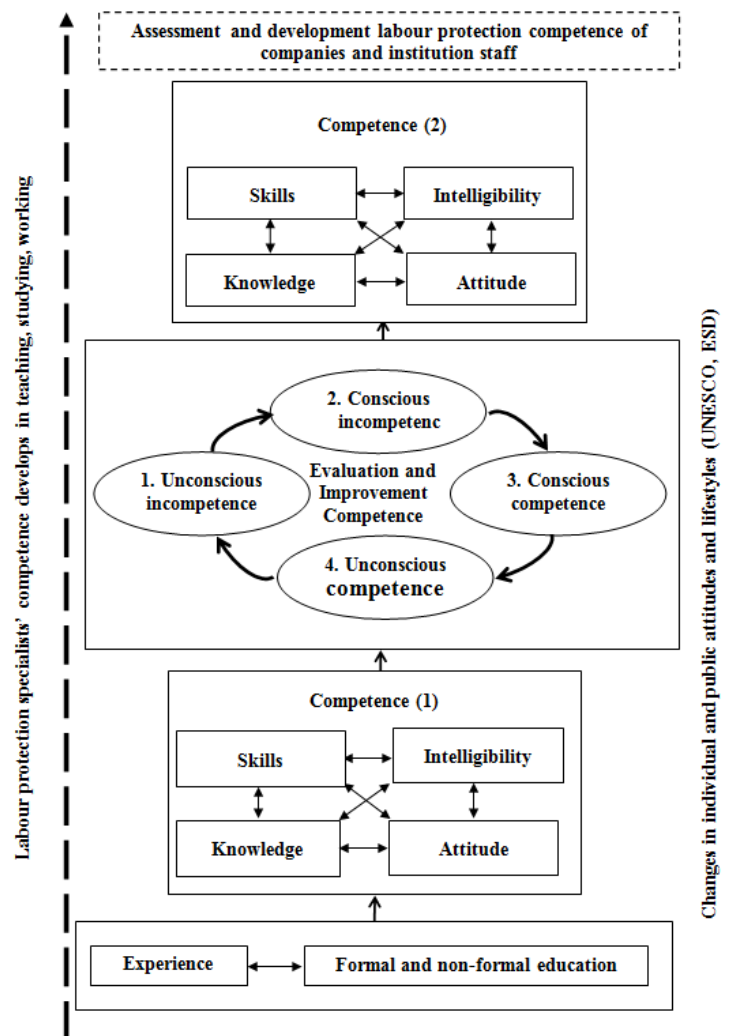


Figure 1. Competence development graphical model for labour protection specialist

Three stages of expert evaluation:

- Evaluation of individual components and characteristics of competence development model;
- A graphic image of the characteristics of the individual competences, characteristics of the complete, improved model, and assessment of the possible uses of the model;
- Familiarization by the experts with the assessments and their acceptance of the results.

In the first stage the experts received the key components of the model's initial characteristics.

In the second stage the experts received a graphic image model for evaluation, a list of improved components of the model and a questionnaire (Table 2):

- 1) Conformity of the graphical model image with the model title;

- 2) The model component characteristics, its succession;
- 3) Graphical model representation and internally consistent interpretation of the components;
- 4) Possible uses for the model in planning training and study modules for labour protection specialists;
- 5) Possible uses for the model in self-improvement for labour protection specialists (in informal learning).

Assessment uses a 5-point scale (Table 2)

Initial characteristics of knowledge and skills are formulated using the European Commission (2016) Qualifications Framework, as well as existing characteristics of the courses in the Latvia University of Agriculture study programme “Labour protection and safety”.

Attitudes and intelligibility characteristics are newly formulated.

Explanation of *unconscious incompetence*, *conscious incompetence*, *conscious competence*, and *conscious competence* based on publications (Conscious Competence..., s.a.), as well as the experiences of the authors and experts.

Table 2 Formation and development of competence model expert’s evaluation summary

Questions		Experts					Total	Rank
		A	B	C	D	E		
Nr.	How do you estimate...	Estimate, points						
1	Conformity of graphic image to the model title?	5	5	4	4	4	22	2
2	The characteristics model component, its successor?	4	3	5	4	5	21	4
3	Graphic image of model and interpretation of component cross-compliance?	4	4	4	3	4	19	5
4	Possibilities for using the model in planning training and study for labour protection specialists?	5	5	4	4	4	22	2
5	Possibilities for using the model in self-improvement for labour protection specialists (in informal learning)?	5	5	4	4	4	22	2
<b>Total</b>		<b>23</b>	<b>22</b>	<b>21</b>	<b>19</b>	<b>21</b>	<b>106</b>	

Estimates of data distribution are unimodal.

All estimates median  $M_e = 4$ .

All the experts agree that numerical estimates adequately characterise the model quality.

The experts conclude that it would be useful to use the model for the improvement of teaching, learning and practice.

The experts also point out that the formation and development model for the labour protection specialists' competence can be used to improve on and master other professions.

The *Model of competence-based higher education* and its detail described in Handbook for Internal Quality Management in Competence-Based Higher Education (IQM-HE, 2016: p. 34). The main components of the model: intended student competences; teaching and learning process (curriculum, teaching methods and assessment methods, learning strategies); potential skills of students.

Analogous components are also included in the expert evaluation labour protection specialist's competence model. It is useful to use Handbook for Internal Quality Management in Competence-Based Higher Education recommendations.

The three-dimensional business and economic competence framework model in the WiWiKom project (Zlatkin-Troitschanskaia et al., 2017: p. 8) encourages further research into creating a similar three-dimensional competence model for labour protection specialists.

## Conclusions

As a result of the study, the competence model for labour protection specialists was evaluated and improved.

Experts judged highly all the parameters of the model - median  $Me = 4$  (using a 5-level scale).

Experts found that the competency model is useful for improving the training, study and practice of labour protection and other specialists.

The creation of a three-dimensional competence model for labour protection specialists is one of the future outcomes of this study.

## References

- Bertaitis, I. (2013). *Pedagogical Competence of the Labour Protection Specialists*. Summary of Doctoral Thesis. Downloaded from [http://llufb.llu.lv/dissertation-summary/education/ImantsBertaitis\\_kopsavilkums\\_2013\\_LLU\\_TF\\_IMI.pdf](http://llufb.llu.lv/dissertation-summary/education/ImantsBertaitis_kopsavilkums_2013_LLU_TF_IMI.pdf)
- Briede, B., & Peks, L. (2011). *Ekoloģiskā pieeja izglītībā (Ecological approach in education)*. Jelgava: LLU. (In Latvian)
- Brizga, D. (2016). Competence development model for occupational safety specialists. *In conference proceedings 15th International scientific conference "Engineering for rural development"* (Vol. 15, pp. 774-780). Jelgava: Latvia University of Agriculture.
- Brizga, D., Ozolina, V., Peks, L., Karlsons, U., & Sisenis, L. (2017). Labour protection specialist's competence development in adult education. 17th International multidisciplinary scientific GeoConference SGEM 2017. *In conference proceedings*

- Ecology, Economics, Education and Legislation*, 54 (17), 97-104. Bulgaria: Bulgarian Academy of Sciences.
- Brizga, D., & Peks, L. (2015). Work environment assessment in the aspect of work psychology processes. In conference proceedings 14th International scientific conference "Engineering for rural development" (Vol. 14, pp. 699-704). Jelgava: Latvia University of Agriculture.
- Conscious Competence..., (s.a.). Conscious competence learning model. Downloaded from <http://www.businessballs.com/consciouscompetencelearningmodel.htm>
- European Commission. (2016). Descriptors defining levels in the European Qualifications Framework (EQF). Downloaded from <http://tk.unideb.hu/uploads/pagettranslation/file/eqf.pdf>
- Eurostat. (2016). Accidents at work statistics. Downloaded from [http://ec.europa.eu/eurostat/statistics-explained/index.php/Accidents\\_at\\_work\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Accidents_at_work_statistics)
- IQM-HE. (2016). Handbook for Internal Quality Management in Competence-Based Higher Education. Downloaded from <http://www.enqa.eu/indirme/IQM-HE%20Handbook.pdf>
- Keevy, J., Chakroun, B., & Deij, A. (2010). *Transnational Qualifications Frameworks*. Turin, Italy, ETF, p. 122. Downloaded from [http://www.nki-latvija.lv/content/files/Transnational\\_Qualifications\\_Frameworks.pdf](http://www.nki-latvija.lv/content/files/Transnational_Qualifications_Frameworks.pdf)
- Paura, L., & Arhipova, I. (2002). *Neparametriskās metodes. SPSS datorprogramma. (Non-parametric methods. SPSS computer program.)* LLKC, Jelgava: LLU. (In Latvian)
- Smith, A. (2005). Responsibility for Attitudes: Activity and Passivity in Mental Life. *Ethics. Research Library Core*, 115 (2), 236-271.
- UNESCO's Five Pillars of Education. (2012). Downloaded from <https://souham.wordpress.com/a-a-prologue/>
- State Labour Inspectorate. (2017). Accident at work statistics as of June 19, 2017. Downloaded from <http://www.vdi.gov.lv/lv/jaunumi/>
- Zlatkin-Troitschanskaia, O., Pant, H. A., Toepper, M., Lautenbach, C., & Molerov, D. (2017). Valid Competency Assessment in Higher Education: Framework, Results, and Further Perspectives of the German Research Program KoKoHs. *AERA Open*, 3 (1), 1–12. Downloaded from <http://journals.sagepub.com/doi/pdf/10.1177/2332858416686739>