

THEORETICAL CONTRIBUTIONS ON OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEMS IN HIGHER ETHNIC EDUCATION

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***Abstract:** The concept of the Occupational Safety and Health Management System (OSH) has its origins in the field of quality, and the presentation of this system must be done in the context of the relationship with the other management systems from which it was derived, respectively those of quality and environment. In the modern Romanian society characterized by a great dynamic in the managerial plane, dynamically imposed by the evolutionary and globalization tendencies of the market economy, on the one hand, and by the policies of aligning the member states with the requirements of the European Union, on the other hand, the vocational training and the adaptability of human resources to change appears as a sine dienecessity.*

***Keywords:** Systems, infrastructure, ,standardization, relationship, implementation*

Introduction

Quality in technical education is a relatively new concept for Romanian education, although it has been used since the establishment of the system. Quality in higher technical education is the combined result of the two processes [1,2,3]:

- the educational services provided by the technical higher education unit comply with the requirements of the relevant standards by certification by a competent body (national or international);
- the educational services provided by the technical higher education unit are *validated* by a high degree of satisfaction of the beneficiaries (parents, students, employers, technical researchers, etc.).
- Quality is determined at the *conception stage*. No service can be better than it was conceived. This stage analyzes the requirements of the beneficiary, stakeholders (teachers, students, parents, employers, society, business partners). In other words, quality is projected.
- Quality is achieved in the *execution stage*. Vocational training must ensure product compliance (the graduate) with the project underlying its achievement (University Curriculum).
- Quality is manifested in the *exploitation phase*. The way in which a service was designed and built to achieve the proposed qualitative level should be confirmed when it is used. In other words, it is the customer's satisfaction that can serve as a measure (often the only measure) of the quality of the educational service.

In 1991, HSG 65 „Successful Health and Safety Management” was developed by the United Kingdom Health and Safety Executive (HSE) as a first reference for health and safety

management at work.

Another important moment for occupational safety and health management is the emergence of the BS 8800: 1996 standard guide, developed by BSI. It serves as a guide in implementing the OSH management system and integrating this system into the company's overall management system.

Starting from this guide, the British Standard Institution (BSI), the British Standards Authority, developed this standard by developing OHSAS 18000 specifications. The series includes two specifications:

- OHSAS 18001: 2007 - Occupational Health and Safety Management Systems. Specification;
- OHSAS 18002: 2008 - Occupational Health and Safety Management Systems. Implementation Guide.

The OHSAS 18001: 1999 specification was developed to be compatible with ISO 9001: 1994 (valid at the time of the specification and subsequently replaced by ISO 9001: 2008) and ISO 14001: 1996, quality management system standards and, the environment, to facilitate the integration of the three types of management systems.

Starting from the basis created by the existing legal framework, the standard aims to improve organizations' SSOs performance in the context of integrating OSH management with other management components in order to achieve:

- minimizing risks to employees and other staff;
- improving economic performance;
- helping the organization establish a favorable image on the market.

Until now, no university in Romania (technical or humanist specialisation, state or private) has implemented a health and safety management system. Given the predominant component of technical universities, the diversity of laboratories and the variety of exposure to harmful agents or other dangers (electrocution, crushing, cutting, etc.) of teachers and students, as well as legislative requirements in the field (Law 319/2006 on safety at work), it is considered appropriate to implement a health and safety management system in these higher education establishments.

The current trends in the economic field both at European and international level clearly show the need for each organization (including the university) to set concrete targets on occupational safety and health and, on the other hand, the need to place these objectives on the same level as the performance objectives, the image and prestige of the university, the performance of students and absentees, the quality of the education and research service, or the protection of the environment [4, 5].

It is also recognized that there is a direct relationship between these segments of the general management of the technical higher education units, the successes / deficiencies registered in a segment having favorable and unfavorable effects on the other segments. Thus, for example, a poor maintenance program for some facilities in the laboratories may cause explosions or emissions of nuclear radiation, causing work and environmental accidents.

The need for systematically addressing these segments of the general management of education required the design and realization of models based on which to implement, maintain and verify the management systems for each of these segments.

Technological progression and intense competition pressure have brought about rapid changes in working conditions, work processes and organization in terms of workplace safety and health. Under these circumstances, legislation is essential, but it can not provide for itself the management of new types of dangers and risks. Technical universities need to be able to

cope continuously with OSH issues and respond to them through dynamic management strategies [6,7,8]. This is another reason for the need to introduce the notion of a management system in the field of health and safety at work.

The framework Directive no. 89/389 calls on all specialists in occupational safety, occupational health, ergonomics, employers, designated persons, workers' courts (Law 319/2006). Directive no. 89/389 addresses the integration of health and safety at work into the organization of processes taking place in the organization (including higher education institutions with a technical profile). Dangers must be systematically identified, the risks assessed, and the measures established should be implemented.

The implementation of BS OHSAS 18001: 2007 within the Technical faculties is a pioneering activity in the field and constitutes a guideline for the implementation of good practices in the field of health and safety at work in technical universities. The methodology proposed in this thesis (in particular chapters 2, 3, 4, 6 and 7) serves as guidance in the voluntary implementation of an OSH management system and takes into account national conditions and practices.

The purpose of this approach is not only of human nature, it is also aimed at reducing the direct and indirect costs of occupational accidents and illnesses. Starting with 2006, all organizations in Romania are required to comply with these provisions, including universities.

For any technical higher education establishment characterized by the presence of particular risks, in particular due to practical activities carried out in laboratories or production plants (eg X-ray exposure), a risk analysis by occupational safety experts should be carried out using a recognized method. The methodology proposed in this thesis is the method of risk analysis, evaluation and control (MEER) supported by a software application resulting from the doctoral research activity (MEER version 1.02). In the spirit of the Directive, risk analysis and evaluation through the proposed method is in line with the approach as defined in ISO 14121-1: 2007 „Safety of machinery - Risk assessment - Part 1: Principles”.

Any technical higher education institution must be able to carry out at least a comprehensive or detailed risk assessment. Thus, the MEER method was followed by the evaluation:

- educational processes (teaching-learning, laboratory precision and research) / working methods;
- appliances, equipment, technical installations (analysis of work equipment);
- job vacancies and work processes as described in job descriptions of teaching staff and auxiliary technical staff.

The general framework was developed by a multidisciplinary team with competence in the field, with the participation of representative organizations of employers (department staff) and employees (trade union). The team has developed the overall OSH policy framework, subject to the Dean's approval, and sets out the general principles and procedures for:

- promoting the implementation and integration of OSH management systems as part of the overall management of the pilot department;
- promoting the participation of teaching staff and auxiliary and technical staff in solving the OSH problems of the pilot department;
- promoting collaboration with the territorial labor inspectorate through the exchange of information and the organization of workshops for the implementation of the OSH management system;

- assessing the effectiveness of OSH policy and the overall framework at appropriate intervals;
- application of labor safety requirements to both own employees and employees of contractors and temporary employees (equipment maintenance companies and firms, firms where students practice activities).

Process analysis and method analysis, as well as risk assessment, were carried out where possible before their practical realization, their commissioning, the establishment of working methods or processes but also *a posteriori* for the majority of cases.[9,10,11]

Conclusions

The integrated management system requires the establishment of a common policy and objectives and the achievement of these objectives by integrating more management segments as a more efficient solution to maintaining more parallel management systems.

The main features that distinguish an integrated management system from a system consisting of separate segments (eg quality, environment and safety and health at work) are as follows:

- there is only one policy statement for all these segments, the content of which meets the specific needs of each field;
- there is a single document describing the elements of the integrated management system and the relationships between them (manual of the integrated management system);
- common processes are addressed in a unitary way (eg. identification of legal requirements, worker training, internal / external communication, handling of non-conformities, internal audit, management analysis);
- the importance attached to specific requirements (eg. risk assessment of injury and occupational disease or occupational injury research) is not diminished.

In other words, the benefits of implementing an integrated management system within technical background universities include:

- increasing process efficiency;
- the diminishing of conflicts between management segments and the antagonistic tendencies between their different objectives (eg. increasing labor productivity and complying with operational environmental and health and safety requirements);
- optimizing the documentation volume by eliminating redundancies.

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