EE&AE
2025 10th International Conference
on Energy Efficiency and Agricultural Engineering
5-7 November 2025, Starozagorski Bani, Bulgaria
IEEE

Education challenges in the Disaster management: a framework for University students' learning in addressing future crises

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GOAL OF THE STUDY

The aim of the research is to assess the disaster management university education in a Bulgarian university, by correlating the curricula and students' educational profiles with the assessment results in an evaluation test, or the effectiveness of the knowledge obtained by the students. As a broad area of interdisciplinary relations the disaster management as a way to address future crises faces the challenges of solving safety and resource problems with the required knowledge, the university education provides

METHODOLOGY OF THE INVESTIGATION

The respondents are 94 students from six educational profiles of bachelor's qualification degree, who studied the disaster management in a winter semester with a curriculum of 15 and 30 hours. The test results are obtained by answering of groups of questions grouped around the following subjects: Taxonomy of hazards (TH), Ionizing radiation and radioactivity (IRR), Industrial toxic substances (ITS), Burning and fires (BRF) and Natural disasters (ND). There are four sub-group questions in each five group of questions. Regardless the different curriculum the questions were chosen to be the same for every student's educational profile. The answers are chosen by the students, from a list of answers and within the IRR group, there is one case study. Pearson's correlation, case processing tests and graphical analysis were used in the statistical analysis with IBM SPSS Statistics viewer.

The answers were coded at the scale of 1 to 5, follwing the assessment scale of 20-70 points, where the score points were marked within the following ranges: from 20 to 30 points – "1", from 31 to 40 points- "2", from 41 to 50 points –"3", from 51 to 60 points – "4" and from 61 to 70 points – "5". The answers in each group was marked within the same range 1 to 5. "1" -100 % negative answer, "3" – 50-70 % positive answer "5"-100% positive answers. The educational profiles were coded at the numerical range from 1 to 6. "1"- Ecology, "2"- Marketing, "3" - Tourism, "4" - Management, "5"- Transport and technology, "6"- Biotechnology.

Table 1. Score results on Disaster management test's distribution

Educational profile and curriculum		Score range points				
		20-30	31-40	41-50	51-60	61-70
Educational profile	Ecology	0	4	11	2	1
	Marketing	0	1	7	3	0
	Tourism	0	6	12	7	0
	Management	3	6	3	1	0
	Transport and technology	0	3	3	5	0
	Biotechnology	0	0	2	11	3
Curriculum	15	3	20	36	18	1
	30	0	0	2	11	3
Total		94 students				

MAIN RESULTS FROM THE STUDY

The evaluation results of the students with engineering profiles are higher. As seen from Table 1 Biotechnology students have the most answers in the score range of 51-60 points (Very good) and 61 - 70 points (Excellent). This could be a result of their deeper knowledge of the physicochemical mechanisms of the processes in case of disaster because of the broader curriculum of the education on disaster management. The mean values of the results distributed around and above the average values show, that the educational material on Disaster management is well accepted, by the students, no matter of their profile. The lack of low results could be interpreted as a matter which is understandable and interesting. This build a good base for disaster management knowledge's application in case of crisis, when using it could be used in finding of solutions and saving lives.

CONCLUSIONS

The technological engineering profiles' education on Disaster management is based on mathematical, physic and chemical knowledge, which ease the process of understanding of the principle of interaction in the human-disaster system with its all aspects – various hazards and lack of resources. Nevertheless, when addressing a crisis, we should use all the knowledge available, because of its multifarious nature. The educational profiles could only add value to this knowledge, by setting the focus on the strong points that it could be applied through. The length of the curriculum positively correlates with the effective application of knowledge in a given case. This means that a well-structured and directed to development of practical and fundamental skills educational program on Disaster management would be well accepted and useful for students even if it is longer. The universities could be encouraged to enhance their curricula to include longer and more comprehensive disaster management education, fostering a generation of skilled professionals ready to tackle the challenges a disaster leads to.