

Findings and Views on Occupational Safety and Health

Teaching at Universities

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Abstract

BACKGROUND: Young employees have often poorer occupational safety and health (OSH) skills and knowledge than older employees. Efforts should be made at different educational levels to strengthen young employees' OSH skills and knowledge.

OBJECTIVE: To analyze OSH perceptions and attitudes among university students and to examine OSH professionals' views on OSH teaching.

METHODS: This explorative study employs an iterative multi-method approach, including a paired comparison questionnaire for university students (N = 104) and OSH professionals (N = 40), an OSH questionnaire for university students (N = 130) and a Delphi survey for OSH professionals (N = 26).

RESULTS: OSH perceptions and attitudes were found to vary widely among the students and some expressed somewhat stereotypical views about OSH. The results confirm the need to improve OSH education. To that end, the study reports concrete practical ideas from OSH professionals.

CONCLUSIONS: The findings confirm the need to augment both the quality and quantity of OSH teaching at university level. Ideas are presented for future OSH teaching, along with recommendations for future studies.

Keywords: OSH perceptions, attitudes, university students, working life, young employees

1. Introduction

Young employees aged between 15 and 24 years are at higher risk for occupational accidents and injuries [1,2]. This presents a pressing challenge for the young people themselves and for their close relatives, work communities and employers; it is also a public health issue [3]. Occupational safety and health (OSH) education and training is considered important in the early stages of working careers, but the amount and quality of OSH training in the first year of a new job varies considerably [4,5]. As Schulte et al. [3] noted, schools may be the only setting in which some employees receive adequate OSH information. In addition, as students may be working while studying, it is important to provide them with sufficient OSH knowledge at that time [6].

The benefits of more comprehensive OSH teaching processes may be realized directly and indirectly in both the short and long term, as students already are or will soon be in employment. The challenges around young employees' OSH skills and knowledge were recognized a decade ago at European Union level when the European Agency for Safety and Health at Work (EU OSHA) recommended that OSH teaching should be strengthened and deepened at all educational levels, including universities [7–9].

In their evaluation of strategy implementation, EU OSHA highlighted the relevance of deepening university-level OSH education and noted that there had been progress in some respects. However, OSH teaching remained a major concern, and a need was identified for continuing improvement in this regard. Integrating OSH in education had not been a primary concern for member states, and some limited use was made of the EU Social Fund to support this policy [10].

Based on earlier EU OSHA studies and recommendations [7,8,10], and that studies have shown that young employees in general are a risk group at work [2,11,12], and the share of young employees with physical and psychosocial challenges has increased [13,14], the need to strengthen OSH teaching at different levels remains clear. As Schulte et al. [3] noted, it is often difficult to foresee the challenges that working life may bring, making it important to equip students with more generic OSH knowledge. This iterative exploratory study aims to contribute to this broad discussion by investigating university students' OSH perceptions and attitudes, along with the views of OSH professionals on OSH teaching needs. The study addresses the following research questions (RQs):

RQ1: Which OSH themes do students consider important in the work context, and do these differ from the views of OSH professionals?

RQ2: How diverse are university students' OSH perceptions and attitudes?

RQ3: How would OSH professionals improve OSH teaching at universities?

2. Key concepts

2.1. Young employees

There is a need to improve young employees' OSH knowledge [1], as various studies have shown that young employees are more likely than older employees to suffer nonfatal occupational injuries [2,11,12,15]. Young men are at the greatest risk for occupational injuries in any age group [16,17].

Young employees' OSH risks are typically associated with lack of physical, cognitive and emotional development; lack of experience; lack of holistic understanding; lack of information and training; inappropriate attitudes and ignorance of OSH matters [11,18–21]. Most often, young employees take risks either unconsciously or because of ignorance, or because they

lack the courage and confidence to mention any risks or issues they notice or to apply for compensation [22–24].

Cuts and lacerations and sprains and strains are the most common types of injury among young employees [25]. In addition, occupational diseases such as skin diseases should be recognized [26–28]. An occupational disease is an adverse health condition resulting from exposure to risk factors at work [29]. Although musculoskeletal disorders are less serious and less frequent among young employees than among older employees, any early exposure is likely to become more serious in their later career [1]. In addition, there is evidence that the number of young people claiming disability pension has increased since the turn of the century, often due to mental health problems [13,14].

In Finland, general upper secondary schooling provides the necessary qualification for application to university. This means that students may have had no vocational education before entering university [30]. The broad range of possible occupations after graduating from university means that graduates are employed in diverse tasks in multiple fields, ranging from lower white collar jobs to entrepreneurship [31]. For example, technical graduates may be employed as schedulers, project engineers or project managers, and thus are

having an impact to safety issues related to the work site and other employees [32]. In general, the range of OSH risks across different fields is vast [33–37].

2.2. OSH teaching and training

OSH teaching and training aims to improve OSH awareness and the ability to identify OSH hazards, as well as extending knowledge of the causes of illness, injury and accident and promoting implementation of preventive measures [38,39]. Commonly used teaching and training methods include lectures and courses, as well as modern approaches such as virtual reality simulation, computer-aided learning, e-learning, remote learning and online learning [40]. In general, methods that require participation and combine different levels of engagement are considered more efficient [41,42], and the use of examples, pictures and demonstrations is often more effective than lectures or reading material alone [43,44].

In universities, OSH education can be incorporated in existing courses or taught as a separate course [39,45]. As noted by the EU OSHA [7–9], the challenges of mainstreaming OSH in university education include convincing professors and other teaching staff that OSH knowledge is important. Other

challenges include a lack of university-level teaching staff with OSH expertise and the need to improve the OSH culture within universities. In addition, lack of suitable university-level OSH teaching materials, theoretically oriented teaching and hierarchical and time issues associated with change processes are common challenges.

3. Mixed methods research

3.1. OSH teaching in universities in Finland

According to EU OSHA reports [8] and national authorities [46,47], there are some existing examples of good practice in OSH teaching—for example, in the area of engineering—but content varies widely. Although these reports are by now quite old, the authors of this study as experienced OSH teachers are aware that these complex challenges persist. This view was supported by a preliminary study, in which the authors searched for OSH courses in course catalogues from all 13 Finnish universities, using the terms “turvallisuus” (safety) and “työterveys” (occupational health). The survey confirmed that OSH is taught to a larger audience in only a few courses at a few universities; mainly in technical disciplines. OSH is supposedly integrated in a variety of courses as a supplementary topic, but there was little evidence of this.

3.2. Study design

In this study, there were three iterative phases in the mixed methods process [48]. In Phase 1 (2016–2017), a paired comparison questionnaire was developed and administered to answer RQ1, based on a quantitative analysis of students' and OSH professionals' responses. Based on those findings, an OSH questionnaire for students was developed in Phase 2 (2017–2018), and qualitative and quantitative analysis of students' responses answered RQ2. Phase 3 (2018) used a Delphi survey to explore how OSH professionals would improve OSH teaching in universities, and qualitative and quantitative analysis of their responses answered RQ3.

3.3. Methods and materials

3.3.1. OSH paired comparison questionnaire

The OSH paired comparison questionnaire was tailored with a multidimensional work group involving five OSH professionals (three men and two women): an OSH teacher, a researcher, a supervisor in a safety-critical field, an OSH authority and a head of OSH. To begin, the work group addressed general OSH themes that students should know about

before entering work. The first author led the work group with the assistance of one university student. The aim was to discuss OSH teaching in general as a basis for subsequent steps.

In no particular order, the themes addressed in the paired comparison questionnaire were OSH management, OSH law and directives, Developing and managing work in the future, Sustainable development, Responsibilities in different positions, Work conditions and work environment, Recognizing risk factors and risk assessment, Measuring OSH, Work ability management and Benefits of OSH. The content of these generic themes differs by field and must be tailored accordingly. The group followed Schulte et al.'s suggestions [3] that OSH themes should be generic but tailored to fit group needs.

As described by Mitchell [49] and practiced by ergonomics professionals [50], the themes were weighted. In comparing the themes, each participant indicated his or her response on a list comparing every theme to every other theme. In each case, participants were asked to choose the theme they considered more important for work by circling a number. Each preference constituted one vote.

The OSH paired comparison questionnaire was sent by email to a selected group of Northern Finnish OSH professionals in early 2017. About 200 emails were sent, and 40 OSH

professionals completed the questionnaire, yielding a response rate of approximately 20%. The respondents worked in a range of settings, including industrial companies, labor market organizations, authorities and research institutions, with titles that included HSE supervisor, OSH manager, OSH representative, OSH engineer and researcher. Half of the respondents were men, 17 (42.5%) were women, and 3 (7.5%) did not provide any information about their gender. The respondents were considered experienced, as 29 (72.5%) had worked for more than 10 years. Of these, 32 (80.0%) were at expert or management level, 6 (15.0%) were employees and 2 (5.0%) provided no information in this regard. In terms of age, 7 (17.5%) were less than 34 years old, 27 (67.5%) were between 34 and 54 years old, 6 (15.0%) were older than 54 years and 2 (5.0%) did not indicate their age.

Later in 2017, the same questionnaire was distributed to students during a lecture at the University of Oulu. In total, 109 students responded; as the target group was young students with limited work experience, five were excluded because they were older than 25. Of the remaining students, 14 (13.5%) were less than 20 years old and 90 (86.5%) were between 20 and 24 years old. Of these, 26 (25.0%) commenced their studies in 2016, 74

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(71.2%) commenced in 2017, and 4 (3.8%) commenced prior to 2016. All of the respondents were studying technical disciplines.

To analyze the paired comparisons, the total number of votes for each theme was counted first, and the corresponding proportions were then calculated, based on the overall total. Equation (1) shows the procedure for calculating the proportions representing weighting factors λ_j . Equation (2) shows how the degree of agreement among individuals in their preferences was calculated, using the Kendall coefficient of agreement u [51].

$$\lambda_j = \frac{\text{preferencechoices}(votes)_j}{\sum_{j=1}^m \text{preferencechoices}(votes)} , \quad (1)$$

$$u = \frac{8(\sum a_{ij}^2 - k \sum a_{ij})}{k(k-1)N(N-1)} + 1 \quad . \quad (2)$$

3.3.2. OSH questionnaire

The OSH questionnaire, which included 13 quantitative items and four qualitative items, was tailored based on the results from the previous phases. In this study, the focus is on the open question “Tell in your own words what OSH means”, the questions “What are the employee’s responsibilities?” and “What are the employer’s responsibilities?” Additionally, there were comparison questions and questions about students’

opinions regarding different statements (on a scale from *disagree* to *agree*) and about the Bradley Curve. DuPont created the Bradley Curve in 1995 to help customers to understand the development of safety culture in terms of four stages: reactive, dependent, independent and interdependent [52,53]. On the questionnaire, students were asked which stage of the safety culture was closest to their own current thinking.

The questionnaire's intelligibility and clarity were assessed in spring 2017 (N = 27), complemented by feedback from students. The OSH questionnaire (N = 130) was administered during lectures in autumn 2017 and early 2018. Of the participating students, 12 (9.2%) commenced their studies before 2014, 9 (6.9%) commenced in 2015, 10 (7.7%) commenced in 2016, and 99 (76.2%) commenced in 2017. Of these, 57 (43.8%) came from technical disciplines, 28 (21.5%) from pedagogics, 26 (20.0%) from economic sciences and 19 (14.6%) from other fields. In terms of age, 21 (16.2%) were less than 20 years old, 85 (65.4%) were between 20 and 24 years old, 16 (12.3%) were between 25 and 29 years old, 7 (5.4%) were older than 30 years, and 1 (0.8%) did not provide this information. Most of the respondents, 104 (80.0%), had less than 5 years of work

experience, 17 (13.1%) had more than 5 years of experience, and 9 (6.9%) did not know or did not provide this information.

Thematic categorization of responses to the open-ended question was conducted by applying the open coding analysis approach [54]. Quantitative questions were analyzed using IBM SPSS version 24.

3.3.3. Delphi survey

Based on the results from the OSH questionnaire, a Delphi survey [55] was used to gather opinions from OSH professionals about how OSH education should be implemented in order to prepare students for working life. It was assumed that OSH professionals are, by definition, aware of the practical risks that students face on entering working life. The request to participate was emailed to 45 individuals; 26 agreed, yielding a response rate of 57.8%. Three rounds of the Delphi survey were conducted. The respondents worked for or were retired from industrial companies, research institutions and local authorities. Their job titles included OSH manager, OSH representative, OSH engineer, researcher and project manager. As 20 (76.9%) had worked for more than 10 years, the respondents were considered experienced. Of the respondents, 17 (65.4%) were women, and 9 (34.6%) were men. In terms of age, 6 (23.1%)

were younger than 40 years old, 9 (34.6%) were between 40 and 50 years old, 7 (26.9%) were older than 50 years, and 4 (15.4%) did not provide this information.

In the first round of the Delphi survey, participants were asked to describe factors that might increase students' interest in OSH and how universities might develop their OSH education provisions. A qualitative analysis was then performed, and the participants received feedback. Thematic categorization of the first round qualitative material was conducted by applying the open coding analysis approach [54], identifying 15 factors that might increase students' interest in OSH and 16 factors related to how universities might develop OSH education provisions. In the second round, these factors were listed, and participants were asked to choose the five most important factors from both lists. Participants were also invited to comment on the lists and to explain their answers. After the second round, a quantitative analysis was performed using IBM SPSS, and the participants again received feedback. In the third round, the five top factors from both lists were ranked in order of importance. Third round answers were again analyzed using IBM SPSS.

4. Results

4.1 OSH themes

Table 1 shows votes and proportions representing weighting factors (λ_j) for the OSH themes. In descending order, the four most important themes for students and OSH professionals were Recognizing risk factors and risk assessment, Work conditions and work environment, Work ability management and Responsibilities in different positions. The most notable difference was that while students ranked Sustainable development fifth, this theme was last for OSH professionals. The Kendall coefficient of agreement for students was $u = 0.224$ ($X^2 = 1,082$, $df = 45$, $p < 0.001$) and $u = 0.205$ ($X^2 = 404.5$, $df = 45$, $p < 0.001$) for OSH professionals.

Table 1. Votes by students ($N = 104$) and OSH professionals ($N = 40$) and weights (λ_j) expressed as proportions

4.2. Students' OSH perceptions and attitudes

Responses to the question “Tell in your own words what OSH means” provided an overall indication of students' OSH perceptions. About a quarter of respondents answered in vague terms, describing OSH as a safe work environment, a safe way

to work or safe work conditions. One eleventh of respondents said that OSH meant no occupational accidents. These answers were quite shallow and stereotypical. Elements of risk management were mentioned in about one tenth of the answers while a fifth mentioned different responsibilities and a common commitment to ensure safety, and a third stated that safety is not just about physical issues but also includes psychosocial safety.

Figure 1 summarizes what students would do when given two options. A fifth chose financial profit rather than OSH, and a sixth chose performing the task on time rather than OSH. Finally, a ninth chose to wait for somebody else to produce the safety notice rather than doing it themselves.

Figure 1. Students' choices of two options.

Figure 2 summarizes students' opinions about whether OSH slows down or speeds up work. While 40 (30.8%) thought that OSH slows down or somewhat slows down work, 34 (26.2%) thought that OSH speeds up or somewhat speeds up work, and 55 (42.3%) thought that OSH has no effect either way.

Figure 2. Students' opinions in relation to whether OSH slows down work or speeds it up.

In relation to the Bradley Curve's four stages of safety culture, 2 respondents (1.5%) chose *Safety is more a matter of luck than management, and accidents will happen anyway from time to time*; 48 (36.9%) chose *Safety is a matter of following rules: Safety could be managed if only people would follow the rules*; 28 (21.5%) chose *Safety is before anything personal and with their own actions, a good safety level can be achieved*; and 51 (39.2%) chose *Teams of employees take responsibility for themselves and others. People do not accept low standards and risk-taking. They actively converse with others*.

Table 2 summarizes students' opinions of different statements about OSH. In total, 35 (27.2%) disagreed or slightly disagreed that zero accidents is a realistic target. Most of the students said they would interfere when other employees acted against directions, 100 (77.6%), or when they noticed indiscreet behavior, 111 (86.0%). Of the respondents, 58 (44.6%) said they would take risks when in a hurry. Most would tell others about hazards, 115 (89.2%), and most would interfere if they had sufficient professional knowledge, 117 (90.0%). Of the students, 12 (9.2%) said they do not act safely during leisure time.

Table 2. Students' reactions to statements about OSH

When asked about employees' responsibilities, 37 (28.5%) of students thought about obeying rules and taking care of themselves while 80 (61.5%) understood that employees need to, for example, report hazards and take care of their co-workers' safety and health, and 13 (10.0%) did not answer. When asked about employers' responsibilities, 117 (90.0%) indicated that the employer has the main responsibility for OSH, and 13 (10%) did not answer. Finally, when asked about typical occupational diseases in their field of study, 57 (43.8%) did not know.

4.3. How OSH professionals would improve OSH teaching at universities

In the first round of the Delphi survey, OSH professionals identified 15 factors that can increase students' interest in OSH and 16 factors related to how universities might develop their OSH teaching. After the second round, the five most important factors from both lists were chosen, and in the third round, the top factors were ranked in order of importance from 1 to 5 (Tables 3 and 4).

Table 3. Key factors for increasing students' interest in OSH
(ranked in order of importance)

Table 4. Key ways in which a university can develop OSH
teaching (ranked in order of importance)

5. Discussion

OSH professionals and students unanimously agreed that the most important themes were related to achieving a better understanding of the risks encountered in different work environments. OSH responsibilities, including skills and knowledge to improve working conditions and work ability, were also emphasized. If learned and understood in the early stages of a working career, these themes help to strengthen the holistic prevention culture emphasized in the OSH literature. The students' responses to the paired comparison questionnaire were very similar to those of OSH professionals, showing that students understand the basics of OSH at some level. However, the OSH questionnaire results also indicate the varying level and quality of students' OSH perceptions and attitudes. Responses to the open-ended question "Tell in your own words what OSH means" indicated that a third of the participating students had a

fairly stereotypical view of OSH. This finding is supported by Clarkson et al. [24], who noted the lack of proper understanding of the psychosocial work environment among young employees.

The students' impressions of their safety maturity level in relation to the Bradley Curve provide further confirmation of the diversity of their views of OSH. While slightly more than one third of the students chose the two first stages of the Bradley Curve, almost two thirds chose the two more developed stages. While the first two stages are reactive and are associated with higher injury rates, the two more mature stages are proactive and are associated with lower injury rates [52]. This indicates students' potential but also confirms the diversity of their OSH perceptions. From a teaching perspective, this highlights the importance of identifying students' knowledge level and using different teaching methods and materials to reach the particular audience. This finding was further supported by the responses to the Delphi survey.

In addition, a fifth of the participating students chose financial profit rather than OSH, and a sixth chose performing the task in time. Almost a third believed that OSH slows work down, and almost half slightly agreed or agreed that they take risks when in a hurry. Based on these findings, it is reasonable to ask whether

these perceptions and attitudes persist throughout their future careers. When asked about employees' responsibilities, almost a third did not understand that OSH is about more than one's own safety. These results confirm that some students have the wrong idea about OSH and need more education, otherwise they might risk themselves or others at work.

Finally, four out of ten respondents indicated that they did not know the typical occupational diseases in their future professional field. This may be because they were not yet sure what kind of work they would be doing after graduating. However, as Moscato et al. [56] noted, the incidence of work-related symptoms is higher in the first 2–3 years of exposure, and it is therefore important to know about typical occupational diseases in order to prevent future health problems—not only as individuals but also for those in managerial positions and with responsibility for others OSH [32].

The Delphi survey results indicate that OSH professionals believed that universities should focus more on *how* OSH is taught, and that there were similarities between the factors that might increase students' interest in OSH and how a university might develop OSH teaching. The present results support the view that there is a need to introduce practical and active learning methods. The results also align well with the success factors for

mainstreaming OSH into university-level teaching, such as providing suitable material, using real cases and promoting and facilitating a whole-university approach to OSH [7–9].

As a conclusion to our empirical study and earlier literature, Figure 3 sums up the discussion of where we are now and where we want to be in the near future. The steps in the middle would help to bridge the gap between the present and the future ideal.

Figure 3. OSH teaching and young employees' OSH situation: Where we are now and where we want to be.

5.1. Future studies

The Delphi survey results suggest the use of diverse teaching and learning materials, supported by practical and active methods. For example, in nursing education, various teaching simulations are used to facilitate practical hands-on learning [57,58]. We would encourage OSH teachers to look for ways of using physical learning environments [59], simulations, virtualization and digitalization, and to assess the effectiveness of training from different perspectives—in other words, what

kind of teaching works for whom? In addition, ways of studying short- and long-term impacts should be explored.

Further study is needed on occupational accident levels and work disability-related absences among university students and in different disciplines. Our results show that there is variance in students' OSH perceptions and attitudes, supporting Nielsen et al.'s [60] view that while not all young employees are at risk, some appear to be more exposed to risks than others. On that basis, it is reasonable to ask whether efficient OSH teaching during education would enhance subsequent OSH performance.

The Finnish Student Health Service reported that Finnish university students' health problems have increased since the turn of the century [61]. According to Oksanen et al. [62], frequent psychological distress among Finnish university students showed an increase from 2000 to 2012. During the same period, the proportion of young people claiming disability pension has increased [13,14]. Future research should explore whether there is any connection between OSH perceptions and attitudes and university students' health problems and disability absences, and whether differences between students relate to their future work.

5.2. Limitations

Our empirical study has some possible limitations that should be acknowledged. In relation to the questionnaires, a number of issues arise. First, an open-ended question allows for various kinds of answer, and interpreting those answers can be challenging. In addition, respondents' attitude to the question may influence their answers [63]. Slight variations in the words used in a questionnaire or the context of a question can also affect the results [64]. In the present case, the OSH questionnaire was tested, and students' feedback was taken into consideration. In addition, as the questionnaires were completed during lectures, participants were able to ask the author about anything they did not understand.

In relation to the response rate of OSH professionals to the paired comparison questionnaire, it has been noted that response rates to e-mail surveys vary widely. In this case, the questionnaire was a part of a larger advertisement sent to Northern Finnish OSH professionals, and as it was sent only once, this may have affected the response rate [65,66]. Regarding students who responded to the paired comparison questionnaire, it should be noted that all were from technical disciplines, which may have affected the results. However,

students' responses to the paired comparison questionnaire were similar to those of OSH professionals representing different branches, and in the OSH questionnaire the student group was multidisciplinary.

Carelessly executed, poorly worded and ambiguous questionnaires and superficial analysis of responses are likely to undermine the Delphi method [55,67]. In the present study, the fact that respondents continued to answer throughout the three rounds reflects well on the questions and analysis, with 26 responding in the first round, 24 in the second and 20 in the third. The OSH professionals who participated in the Delphi survey were from different regions of Finland.

While the validity and reliability of the methods used here were not formally estimated, progressive and iterative questionnaire testing involving feedback, methodology triangulation and varied participants served to enhance the quality of the study.

6. Conclusions

Young employees constitute a risk group for occupational accidents and they may lack adequate OSH skills and knowledge. At all educational levels, including universities, there is a need to include OSH in teaching provision. The present

findings serve to clarify the attitudes and perceptions of students and other stakeholders' opinions in relation to OSH, highlighting the great variety of students' views and indicating how OSH teaching at universities might be improved. The study also describes an iterative process for analyzing the results.

OSH professionals and students unanimously agreed on the four most important OSH themes. Nevertheless, the results confirm that some students need to improve their OSH knowledge and attitudes, and universities should seek to improve OSH teaching. The Delphi survey provided concrete and practical ideas regarding how universities can improve OSH teaching and increase students' interest in OSH. The use of OSH questionnaires to gather information about students' perceptions and attitudes can be of value in pursuing this goal.

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Table 1. Votes by students (N = 104) and OSH professionals (N = 40) and weights (λ_j) expressed as proportions

Theme	Votes, students	λ_j , students	Votes, OSH professionals	λ_j , OSH professionals	All votes	λ_j , all
OSH management	328	0.07	143	0.08	471	0.07
OSH law and directives	261	0.06	124	0.07	385	0.06
Developing and managing work in the future	436	0.09	148	0.08	584	0.09
Sustainable development	429	0.09	106	0.06	535	0.08
Responsibilities in different positions	497	0.11	204	0.11	701	0.11
Work conditions and work environment	691	0.15	244	0.14	935	0.15
Recognizing risk factors and risk assessment	724	0.16	310	0.17	1034	0.16
Measuring OSH	278	0.06	125	0.07	403	0.06
Work ability management	626	0.13	235	0.13	861	0.13
Benefits of OSH	374	0.08	154	0.09	528	0.08
	$\sum_{votes} 4,644$		$\sum_{votes} 1,793$		$\sum_{votes} 6,437$	

Four most important themes

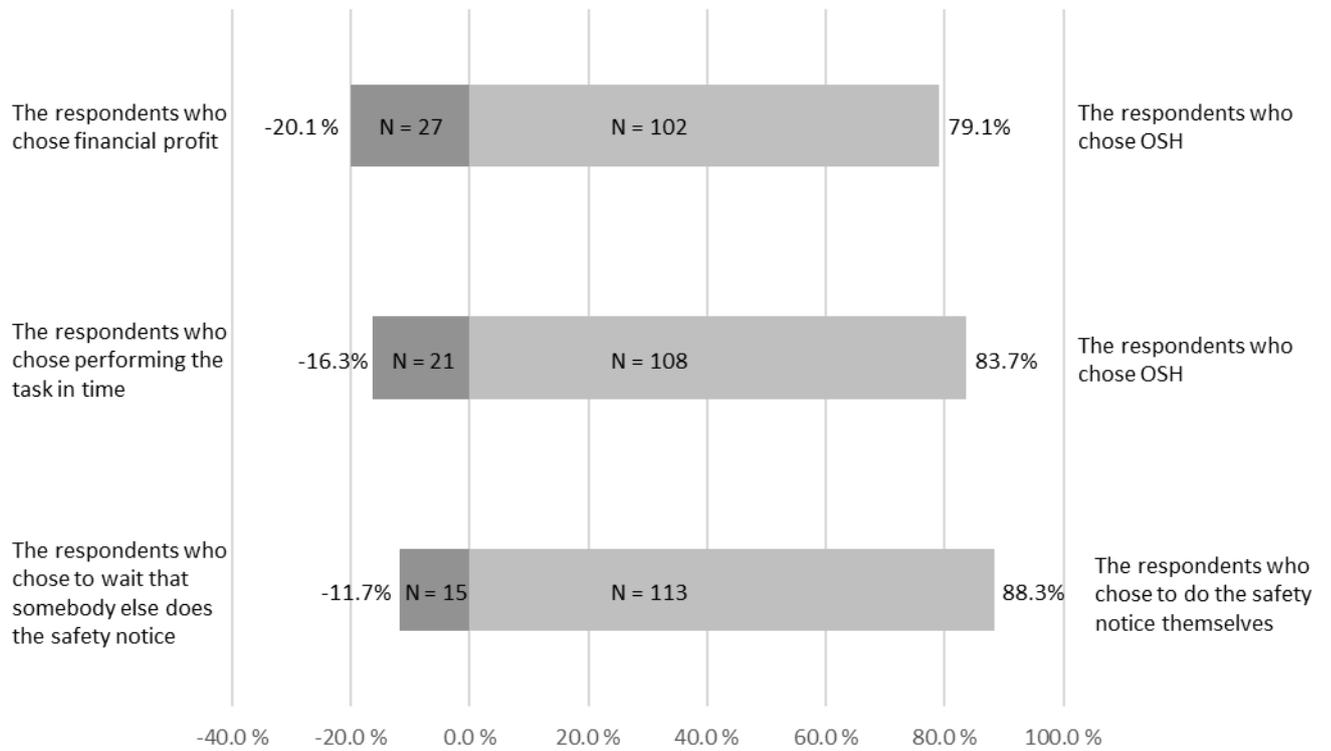


Figure 1. Students' choices of two options.

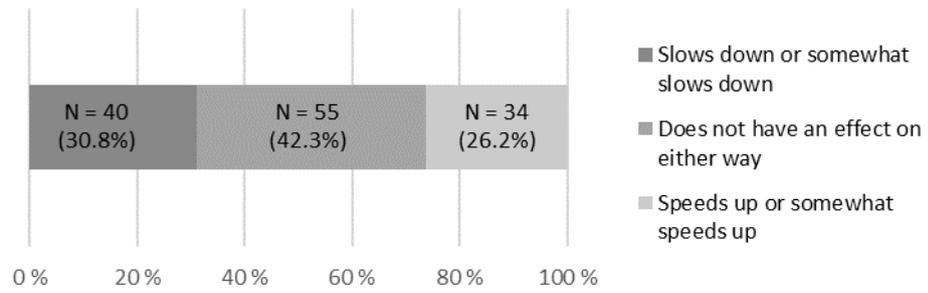


Figure 2. Students' opinions in relation to whether OSH slows down work or speeds it up.

Table 2. Students' reactions to statements

Question	Disagree (n (%))	Disagree slightly (n (%))	Do not disagree or agree (n (%))	Agree slightly (n (%))	Agree (n (%))	Do not know (n (%))
Zero accidents is a realistic target (N = 129)	9 (7.0)	26 (20.2)	10 (7.6)	37 (28.7)	43 (33.3)	4 (3.1)
I interfere when other employees disregard directions (N = 129)	1 (0.8)	7 (5.4)	19 (14.7)	74 (57.4)	26 (20.2)	2 (1.5)
I interfere in indiscreet behavior in the workplace (N = 129)	0 (0.0)	6 (4.7)	8 (6.2)	68 (52.7)	43 (33.3)	4 (3.1)
I take risks when I'm in a hurry (N = 130)	15 (11.5)	36 (27.7)	18 (13.8)	52 (40.0)	6 (4.6)	3 (2.3)
I tell others about hazards (N = 129)	0 (0.0)	5 (3.9)	5 (3.9)	37 (28.7)	78 (60.5)	4 (3.1)
I interfere in hazards if I have enough professional knowledge (N = 130)	0 (0.0)	3 (2.3)	5 (3.9)	47 (36.2)	70 (53.8)	5 (3.9)
I act safely during leisure time (N = 130)	2 (1.5)	10 (7.7)	22 (16.9)	55 (42.3)	38 (29.2)	3 (2.3)

Table 3. Key factors for increasing students' interest in OSH

(ranked in order of importance)

The most important factors that can increase students' interest in OSH
1. Clear explanations why OSH is important and where and how it affects
2. Real-life examples
3. Concrete exercises
4. Taking OSH to personal level
5. Diversity of teaching and learning material

Table 4. Key ways in which a university can develop OSH teaching (ranked in order of importance)

The most important ways a university can develop OSH education
1. Integrating OSH in other teaching
2. Using real-life examples in teaching
3. Teaching the basics of OSH
4. Making OSH a normal everyday routine at the university
5. Making the OSH course obligatory for every student

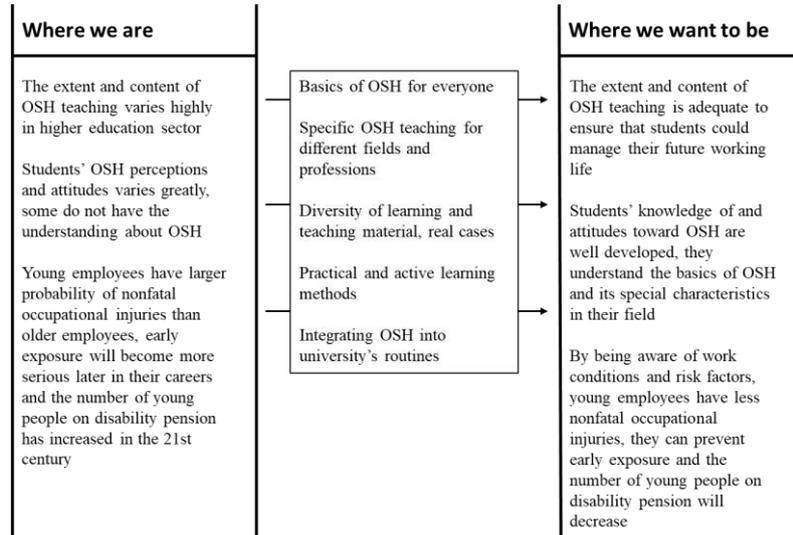


Figure 3. OSH teaching and young employees' OSH situation: Where we are now and where we want to be.