Occupational health and safety knowledge of students in secondary vocational schools in Croatia

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Protection of students and minors, legal regulations

Young workers are in accordance with the *Occupational Health and Safety Act* particularly vulnerable group of employees.

Because of their inexperience, lack of practical knowledge, lack of awareness about safety and health risks, the inadequate supervision by experienced workers, young workers get injured more often than others.

Employer shall be obliged to provide special occupational health and safety for this group for the purpose of preserving his unimpaired mental and physical development.

For the purpose of minors’ safety and health protection at work, the employer shall be obliged to adjust conditions and working time organization for the purpose of eliminating safety and health risks.
Protection of students and minors, legal regulations

Regulation on organizing and teaching in vocational schools:

Before the commencement of the practical part of the curriculum, students have to adopt the contents of the basics of occupational safety and pass the exam before the qualified person from the institution.

While performing the task each exercise as part of the practical part of the curriculum, the student must know the sources of danger, adopt procedures to work safely and apply PPE in accordance with the regulations governing safety and health at work.

The student can only work under the expert guidance of teachers in the institution, or mentors with the employer.
Application of measures and knowledge of students on occupational safety in secondary vocational schools

Survey on OSH knowledge (the questionnaire for students) and interview with teachers and mentors

28 vocational schools, 896 students

carpenter, chemical, agricultural construction, graphic and forestry technician

Positive impact on reduction of the number of injuries at work of students and young workers

Raise awareness of students about the importance of safety and health at work
Results

✓ The theoretical part of work safety is taught in the first grades of the prescribed number of hours, after which the students take an exam that is equal for all directions.

✓ In the higher grades, students are introduced to the dangers and hazards related to the particular technology of work which is emphasized through practical training.

✓ Practical classes (workshops) are held in the school and at employers (usually, craftsmen).

✓ None of the schools that participated in the survey has registered accidents at work (workshops) of students.
Educational program for the profession carpenter

3 vocational schools, 24 students

✓ Future young carpenters recognize general hazards and are able to identify efforts and harmfulness they may occur on their future work.

✓ The students say that they are familiar with the safety measures by teachers or leaders of practical training as well as by craftsmen where they go for practical training.

Introduction to OSH

- 67% in class at school
- 18% in practical work at employer
- 15% from school books
**Educational program for the profession carpenter**

- **PPE**
  - 60%: the first measure to be applied in the workplace
  - 24%: often unnecessary
  - 12%: measure that interfere with work
  - 4%: measures to be applied when otherwise not possible to have the protection of workers at the workplace

- **OSH**
  - 46%: important
  - 35%: important, but not the most important
  - 15%: formality
  - 4%: not important

- Availability and application of PPE in schools is positively evaluated according to 13 students, and is considered to be inaccessible by 5 students.

- Practical training mentors deny injuries at work but 20% of students said that there were injuries.

- More than half of the surveyed students didn't express a wish to gain additional knowledge about the safety measures.
MJERE ZAŠTITE U PRAKTIČNOJ NASTAVI ZA OBRAZOVNI PROGRAM STOLAR
Andreja Cesar, Zlatko Šarić, Tina Mudrović
Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

Što je opasno u stolarskim radionicama?

- Strojevi, uređaji i oprema
- Težak fizički rad
- Prašina drva
- Buka
- Požar i eksplozije
- posjekotine, ubodi, amputacije
- bolesti vezane za mišićno-koštani sustav
- astma, dermatitis
- oštećenje sluha
- ozljede, materijalna šteta

Kako se zaštititi?

- Prije rada sa strojevima i opremom dobro proučite radne upute
- Pravilno podijelite i nosite terete
- Održavajte radno mjesto čistim od prašine
- Razmišljajte što i kako raditi
- Koristite odgovarajuću osobnu zaštitnu opremu
- Oprezno postupajte sa zapaljivim tvarima
Educational program for program agricultural technician

- 5 schools, 147 students
- General agricultural technician, fitofarmaceut, agritourism and gardener
- Students are able to list the hazards related to their future profession
- Students consider occupational safety and health very important and are familiar with the area

**Introduction to OSH**
- 81% at school lectures
- 11% at employer
- 7% school books
- 1% I am not familiar with OSH
Most of the students said that they are well-informed about safety measures and danger of their future profession.

The availability of personal protective equipment at the school was confirmed by 53% of students.

56% of students expressed their interest in finding out more about the safety measures and occupational health.
Željka Šarić, Andreja Cesar, Ivana Krišto
Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

Što je opasno u poljoprivredi?

- Strojevi, uređaji i oprema
- Rad s domaćim životinjama
- Rad s opasnim kemikalijama
- Težak fizički rad
- Rad sa sijenom, slamom...

- posjedotvorne, ubodi, zagrebanja, komori, oštećenje sluha
- nagrebanja, ubodi, ugnjetala, bolesti
- otrovanja, opekline
- bolesti vezane za mišićno-kostni sustav
- alergijske bolesti

Kako se zaštititi?

- Prije rada sa strojevima i opremom dobro proučite radne upute
- Pravilno postupajte sa životinjama (posebno s bolesnima)
- Iz uputa za uporabu upoznajte se sa svojstvima kemikalija
- Pravilno podizite i nosite terete

- Koristite odgovarajuću osobnu zaštitnu opremu
- Naučite prepoznavati piktogramne opasnosti

Razmišljajte što i kako radite!
Educational program for the occupation chemical technician

✓ 4 schools, 80 students

✓ Most of the students successfully recognize dangers, hazards and efforts specific to their profession

✓ 80% of surveyed students consider personal protective equipment to be the first safety measure

Introduction to OSH

- 68% at the school lectures
- 13% at the practical workshops
- 12% school books
- 5% I am not familiar with OSH
- 2% others
Students report that PPE is provided and available in the school (31% of students) and in practice with the employer (18% of students).

An equal percentage of students (39%) denies and confirms injuries during practical training, while half of the students expressed an interest in additional education about safety measures.
Što je opasno u kemijskom laboratoriju?

- Ostčeno staklo
- Plamenik i vrući predmeti
- Plin i eksplozivne kemikalije
- Mokri i slinski podovi
- Opasne kemikalije

- Posjekotine, ubodi
- Opekline
- Opekline
- Prijelomi, nagrijevanja
- Štetno djelovanje na zdravlje

Kako se zaštititi?

- Prije početka rada dobro proučite radne upute
- Koristite odgovarajuću osobnu zaštitnu opremu
- Pridržavajte se preporuka za siguran rad u laboratoriju
- Razmišljajte: što i kako radite!

- Naučite prepoznati piktogram opasnosti
- Iz sigurnosno tehničkih listova upoznajte se sa svojstvima kemikalija
Educational program for the occupation construction technician

✔ 6 schools, 226 students

✔ Students recognize general hazards and are able to identify efforts and harmfulness that may occur on their future work.

✔ Students say that they are familiar with the safety measures by teachers or leaders of practical training as well as by craftsmen where they go for practical training.

**OSH RESPONSIBILITY**

- 78% all together
- 14% school/employer
- 8% only me
Educational program for the occupation construction technician

OSH

- Most of the students agree (78%) that responsibility for OSH should be divided between worker (student), employer and teacher.

PPE

- Teachers and practical educators deny injuries at work (practice) but 20% of students said that there were some injuries during practical work.

- More than half of the surveyed students (56%) said that they don't want to gain additional knowledge about the occupational safety and health.
MJERE ZAŠTITE U PRAKTIČNOJ NASTAVI ZA OBRAZOVNI PROGRAM GRAĐEVinski TEHNIČAR
Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

Što je opasno u građevinarstvu?

- Strojevi, uređaji i oprema
- Težak fizički rad
- Padovi
- Buka
- Rad na otvorenom

- posjekotine, ubodli, nagrijevanja, pripadima, amputacije
- bolesti sustava za kretanje
- posjekotine, uganuća, pripadima
- oštećene sluha
- dehidracija, sunčanja, promjene na koži

Kako se zaštititi?

- Prije rada sa strojevima i opremom dobro proučite radne upute
- Pravilno podijelite i nosite terete
- Poduzmite mjere za zaštitu od pada (ograda, sigurnosni pojasevi...)
- Razmišljajte što i kako radite!

- Koristite odgovarajuću osobnu zaštitnu opremu
- Koristite kratke pauze u radu, unosite dovoljno tekućine (vode)
Educational program for the occupation graphic technician

- 3 schools, 66 students
- Students are able to list the hazards related to their future profession
- Students consider occupational safety and health very important and are familiar with the area, primarily through lectures in schools

OSH responsibility

- 94.12% all together
- 5.88% school/employer
Educational program for the occupation graphic technician

OSH

- is very important: 90%
- is an important but not the most important: 6%
- is formality: 3%
- is not important: 1%

- OSH is very important
- OSH is an important but not the most important
- OSH is formality
- OSH is not important

- injuries at practical workshops

- 97% of students consider PPE to be the first measure to be applied in the workplace
- The availability of personal protective equipment at the school was confirmed by 97% of students
- 64% of students expressed their interest in finding out more about the safety measures and occupational health
MJERE ZAŠTITE U PRAKTIČNOJ NASTAVI ZA OBRAZOVNI PROGRAM GRAFIČKI TEHNIČAR
Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

Što je opasno u grafičkim zanimanjima?

- Strojevi, uređaji i oprema
  - rane, nagnećenja, amputacije

- Fizički napor i naprezanje
  - bolesti sustava za kretanje

- Dugotrajni rad za računalom
  - bolesti sustava za kretanje, zamor očiju

- Opasne i zapaljive kemikalije
  - trovanje, opekline, štetno djelovanje na zdravlje

- Zakrčene površine za kretanje
  - uganuća, prijetnami

Kako se zaštititi?

- Prije rada sa strojevima i opremom dobro proučite radne upute
- Pravilno podijelite i nosite terete
- Mijenjajte aktivnost tijekom dana, koristite kraće pauze za rasterećenje
- Održavajte radni prostor čistim i prohodnim
- Razmišljajte što i kako radite!
- Koristite odgovarajuću osobnu zaštitnu opremu
- Upoznajte svojstva radnih tvari (kemikalija)
Educational program for the occupation forestry technician

- 182 students were surveyed from 5 vocational schools

- Future young workers in this field recognize general hazards and are able to identify efforts and harmfulness they may occur on their future work

**Introduction to OSH**

- 80% at school
- 10% at employer
- 7% school books
- 3% I am not familiar with OSH
- 0% other
Educational program for the occupation forestry technician

- Availability and application of PPE in schools is positively evaluated according to 92% students and is considered to be inaccessible by 8% students.

- Teachers and practical educators deny injuries at work (practice) but 10% of students said that there were some injuries during practical work.

- 78% of the surveyed students said that they do not want to gain additional knowledge about the occupational safety and health.
Što je opasno u šumarstvu?

- Strojevi, uređaji i oprema
- Rad s lančanom motornom plirom
- Težak fizički rad
- Životinje / kukci
- Rad u nepovoljnim mikroklimatskim uvjetima

- Posjekotine, ubod, nagnećenja, prijetnje
- Oštećenje sluha, bolesti uzrokovane vibracijama
- Bolesti sustava za kretanje
- Bolesti, otrovanja
- Dehidracija, isorijenost, sunčanja...

Kako se zaštititi?

- Prije rada sa strojevima i opremom dobro proučite radne upute
- Radite prema pravilima struke
- Pravilno podizite i nosite terete
- Koristite odgovarajuću osobnu zaštitnu opremu
- Razmišljajte što i kako radite!

- Preventivno se cijepite, održavajte higijenu ruku
- Koristite kratke pauze, pijte dovoljno tekućine (vode)
Informirajte se o svojim pravima!

U svijetu se godišnje dogodi 270 mil. nesreća na radu.
Dnevno se dogodi 6000 smrtnih slučajeva koji se povezuju s radom.

Mislite sam da ču ispustiti glupu ako ne smijem da nu.
Ozljeda na radu nije u opisu tvojeg radnog mjesta!

**OBVEZE POSLODAVCA**
- Izgraditi i opremiti radni prostor u skladu s pravilima zaštite na radu
- Izraditi procjenu rizika i kontinuirano pratiti i poboljšavati uvjete rada
- Osposobiti radnike za rad na siguran način
- Postaviti sigurnosne znakove, pisane obavijesti i upute
- Provoditi mjere zaštite od požara, evakuaciju i spašavanje
- Osigurati pružanje prve pomoći
- Obavještavati i savjetovati se s radnicima i njihovim predstavnicima o svim pitanjima zaštite na radu

**OBVEZE I PRAVA RADNIKA**
- Osposobiti se za rad na siguran način
- Prije početka rada pregledati mjesto rada i utvrditi je li sve ispravno
- Pravilno koristiti sredstva rada
- Pravilno koristiti propisani osobnu zaštitu opremu
- Pravilno koristiti i samovoljno ne isključivati, ne vršiti preinake i ne uklanjati zaštitne naprave na sredstvima rada
- Posao obavljati sukladno pravilima zaštite na radu, pravilima struke i uputama poslodavca
- Prije napuštanja mjesta rada ostaviti sredstva rada u takvom stanju da ne ugrožavaju druge radnike i sredstva rada
- Radnik ima pravo odbiti raditi i napustiti mjesto rada ako mu izravno prijeti rizik po život i zdravlje

Nisam vidio.
Nisam znao.
Nisam razmišljao.
Study showed that students don't understand basic OSH principals.

Data on the availability of PPE, as well as information on occupational injuries that are very controversial, even when it comes to the same schools.

The leaders of practical training expressed their desire and need for education in the field of safety and health at work.

The positive impression related to the perception of safety at work as very important and the awareness that responsibility for the safety and health at work is divided between students, schools and employers.
Safety culture should be developed from the earliest age by means of educational training.

OSH education must include theoretical and practical part.

Development of safety culture should be joint responsibility of teachers, employers and OSH specialists.
Thank You!

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