

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

*I. Krišto, M. Batak, A. Cesar Slegovac*  
[ikristo@hzzzs.hr](mailto:ikristo@hzzzs.hr)

## *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*

---

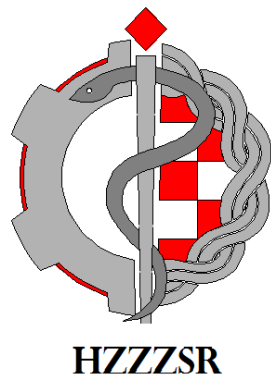
### *Regulation on organizing and teaching in vocational schools :*

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



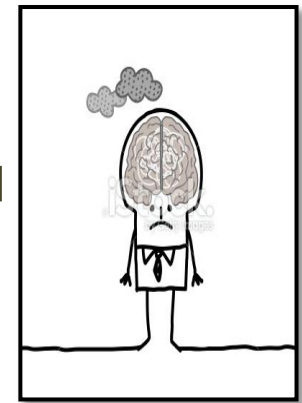
Survey on OSH knowledge (the questionnaire for students) and interview with teachers and mentors

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



- ✓ 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

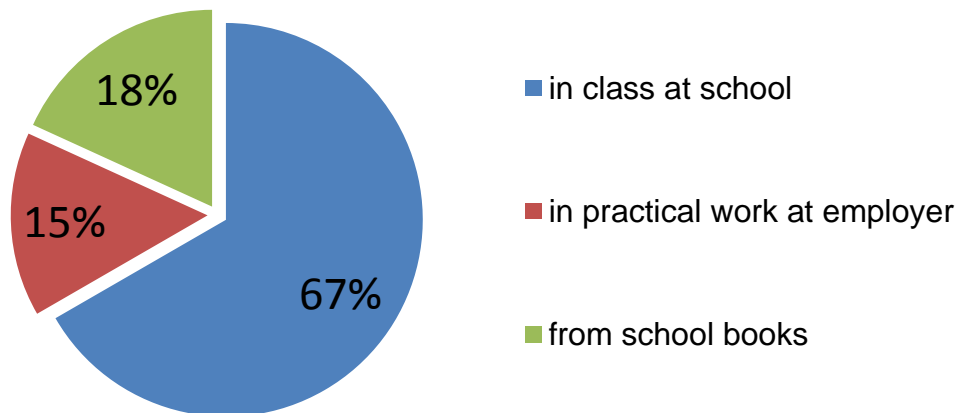
## *Educational program for the profession carpenter*

---

### **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

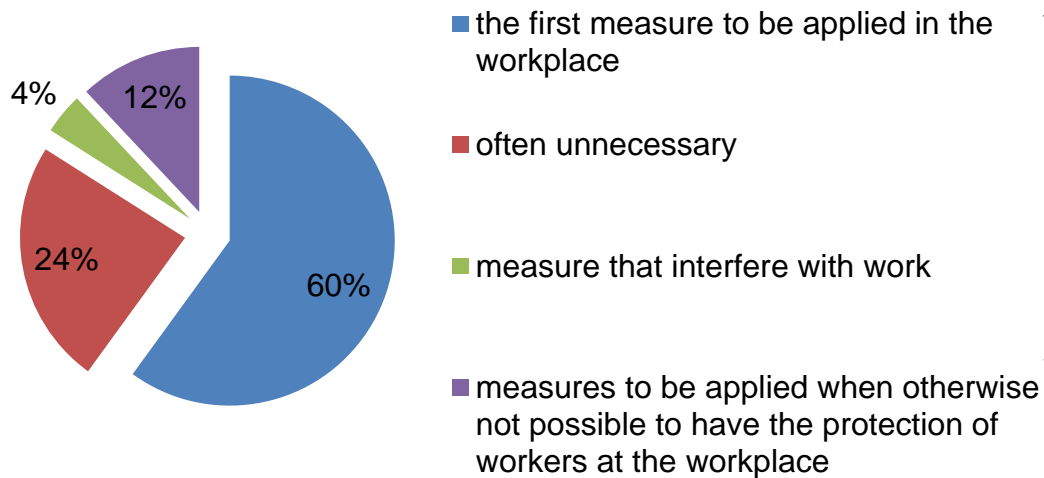
### **Introduction to OSH**



# *Educational program for the profession carpenter*

---

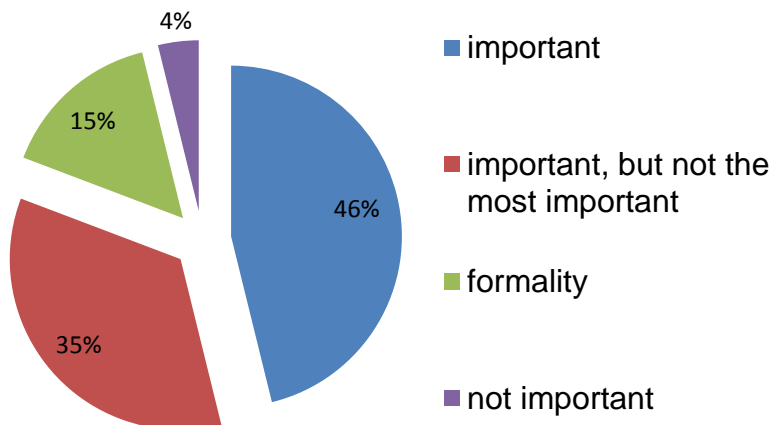
## PPE



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

✓ Practical training mentors deny injures at work but 20% of students said that there were injures

## OSH



✓ 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 Mudrovčić

Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

### Što je opasno u stolarskim radionicama?

Strojevi, uređaji  
i oprema



posjekotine, ubodi,  
amputacije

Težak fizički rad



bolesti vezane za  
mišićno-koštani  
sustav

Prašina drva



astma, dermatitis

Buka



oštećenje sluha

Požar i eksplozije



ozljede,  
materijalna šteta

### Kako se zaštititi?



Prije rada sa strojevima i  
opremom dobro proučite  
radne upute



Pravilno podižite  
i nosite terete



Održavajte radno mjesto  
čistim od prašine



Koristite odgovarajuću  
osobnu zaštitnu opremu



Oprezno postupajte sa  
zapaljivim tvarima

Razmišljajte  
što i kako radite!





## *Educational program for program agricultural technician*

---

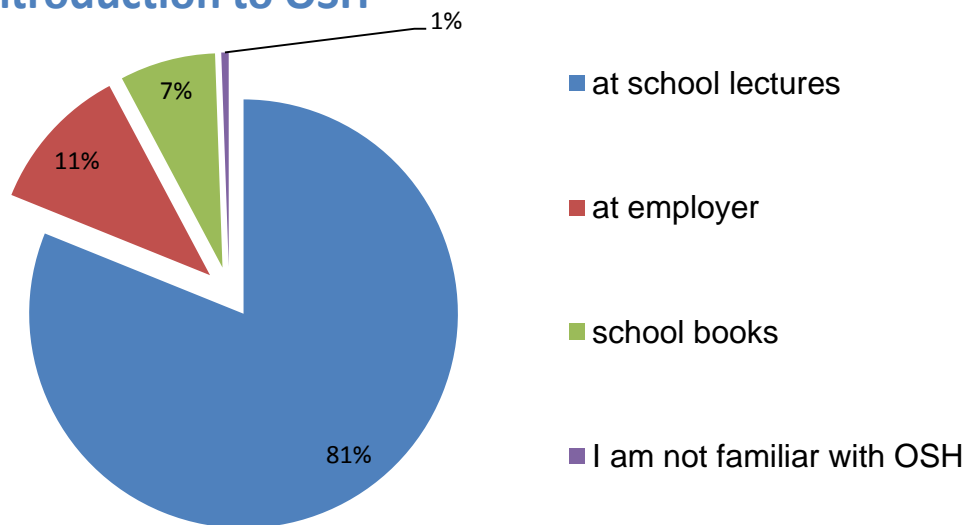
✓ **5 schools, 147 students**

✓ General agricultural technician, fitofarmaceut, agrtourism 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

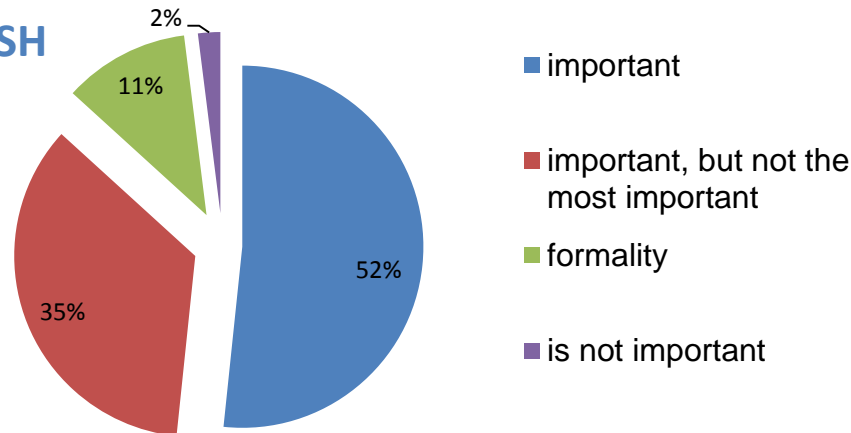
### **Introduction to OSH**



## *Educational program for program agricultural technician*

---

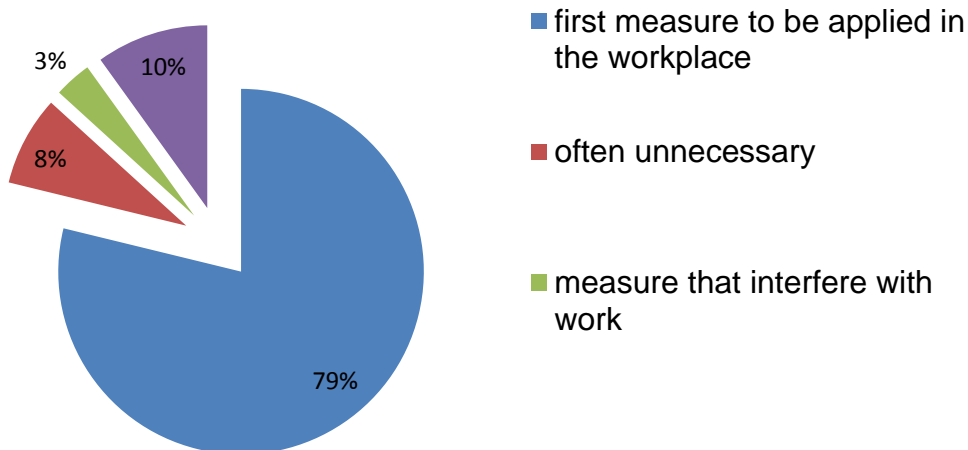
### OSH



✓ 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

### PPE



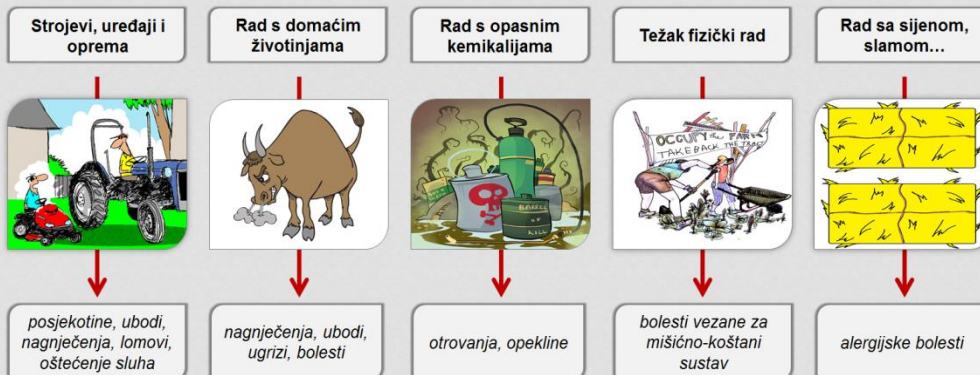
✓ 56% of students expressed their interest in finding out more about the safety measures and occupational health



## MJERE ZAŠTITE U PRAKTIČNOJ NASTAVI ZA OBRAZOVNI PROGRAM POLJOPRIVREDNI TEHNIČAR

Zlatko Šarić, Andreja Cesar, Ivana Krišto  
Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

### Što je opasno u poljoprivredi?



### Kako se zaštititi?



## *Educational program for the occupation chemical technician*

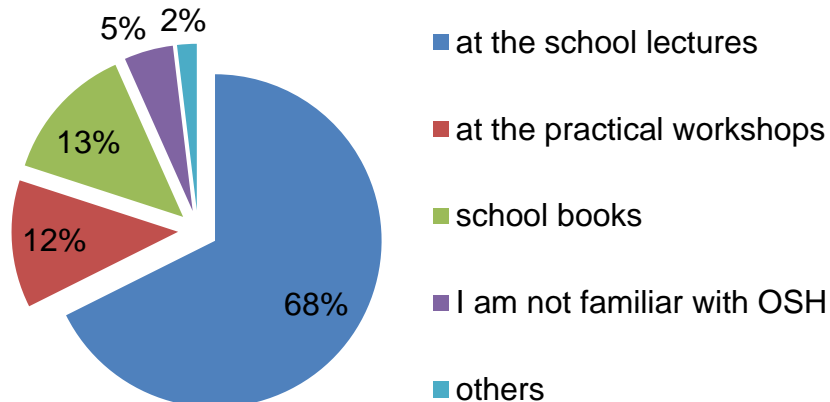
---

✓ **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

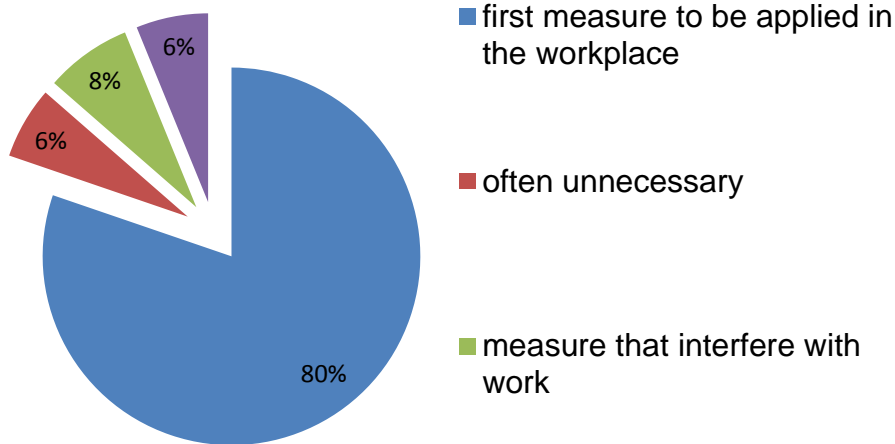
### **Introduction to OSH**



# *Educational program for the occupation chemical technician*

---

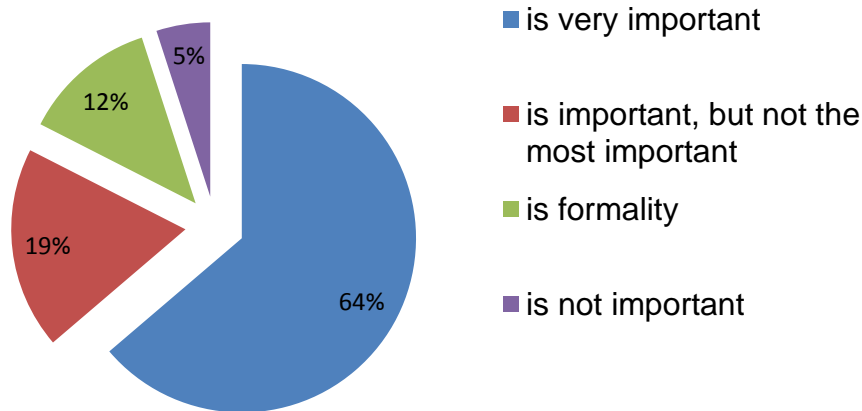
## PPE



✓ 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

## OSH





## MJERE ZAŠTITE U PRAKTIČNOJ NASTAVI ZA OBRAZOVNI PROGRAM KEMIJSKI TEHNIČAR

Sonja Damjanović Dešić, Zlatko Šarić, Ivana Krišto

Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

### Što je opasno u kemijskom laboratoriju?

Oštećeno stakleno  
laboratorijsko suđe



posjekotine, ubodi

Plamenik i vrući  
predmeti



opekline

Plin i eksplozivne  
kemikalije



opekline

Mokri i skliski  
podovi



prijelomi, nagnječenja

Opasne kemikalije



štetno djelovanje  
na zdravlje

### Kako se zaštititi?



Prije početka rada dobro  
proučite radne upute



Koristite odgovarajuću  
osobnu zaštitnu opremu



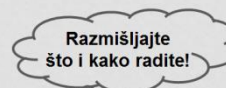
Pridržavajte se preporuka  
za siguran rad u laboratoriju



Naučite prepoznavati  
piktograme opasnosti



Iz sigurnosno tehničkih  
listova upoznajte se sa  
svojstvima kemikalija



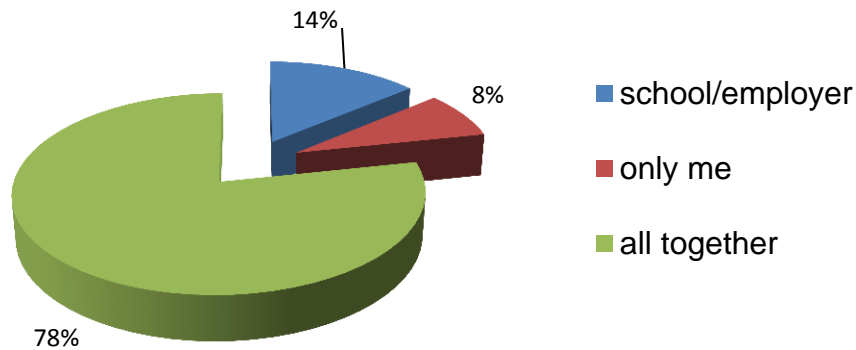
## *Educational program for the occupation construction technician*

---

### ✓ 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.

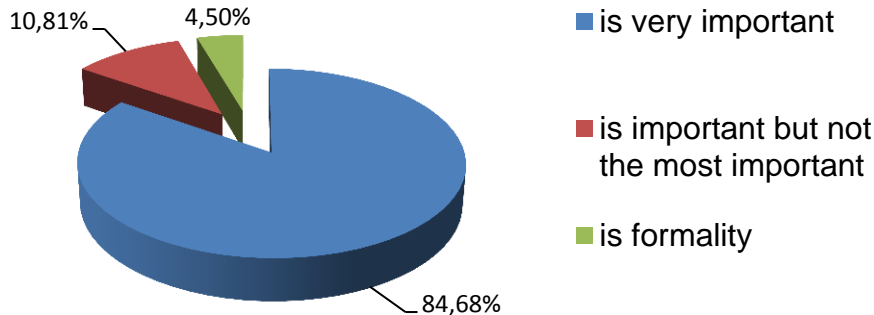
### **OSH RESPONSIBILITY**



# *Educational program for the occupation construction technician*

---

## OSH

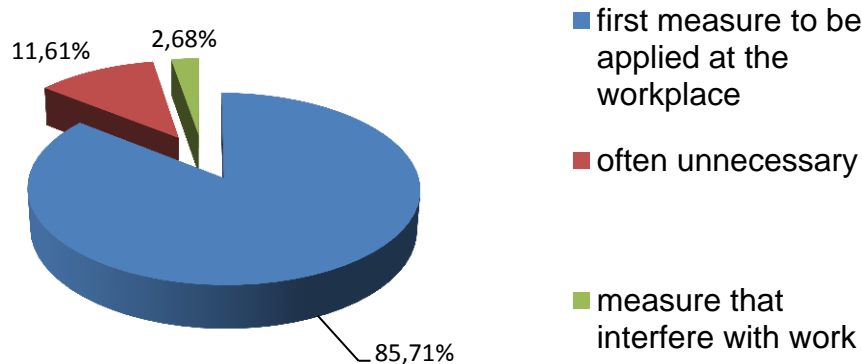


✓ Most of the students agree (78 %) that responsibility for OSH should be divided between worker (student), employer and teacher

✓ 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

## PPE







# MJERE ZAŠTITE U PRAKTIČNOJ NASTAVI ZA OBRAZOVNI PROGRAM GRAĐEVINSKI TEHNIČAR

Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

## Što je opasno u građevinarstvu?



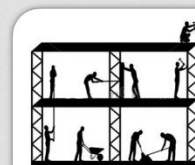
## Kako se zaštititi?



Prije rada sa strojevima i opremom dobro proučite radne upute



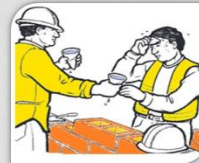
Pravilno podižite i nosite terete



Poduzmite mjere za zaštitu od pada (ograde, sigurnosni pojasevi...)



Koristite odgovarajuću osobnu zaštitnu opremu



Koristite kratke pauze u radu, unosite dovoljno tekućine (vode)



Razmišljajte što i kako radite!



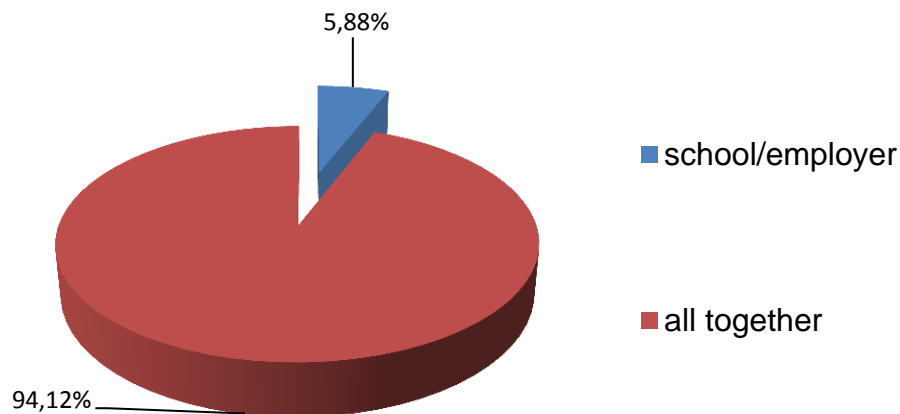
## *Educational program for the occupation graphic technician*

---

✓ **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

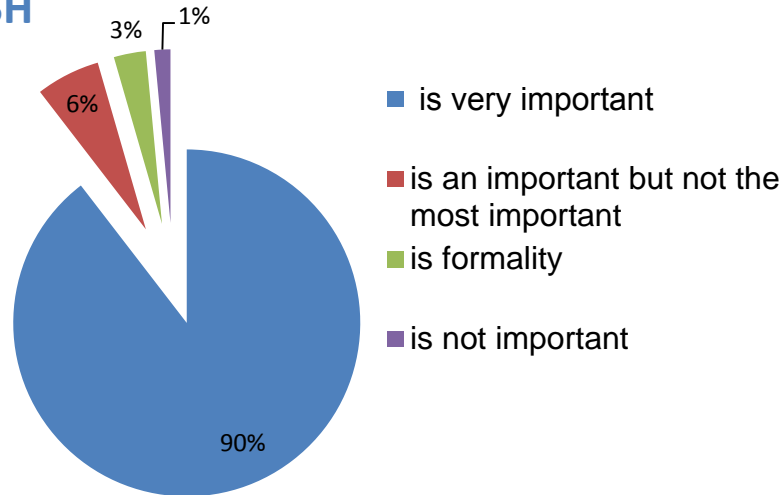
### **OSH responsibility**



# *Educational program for the occupation graphic technician*

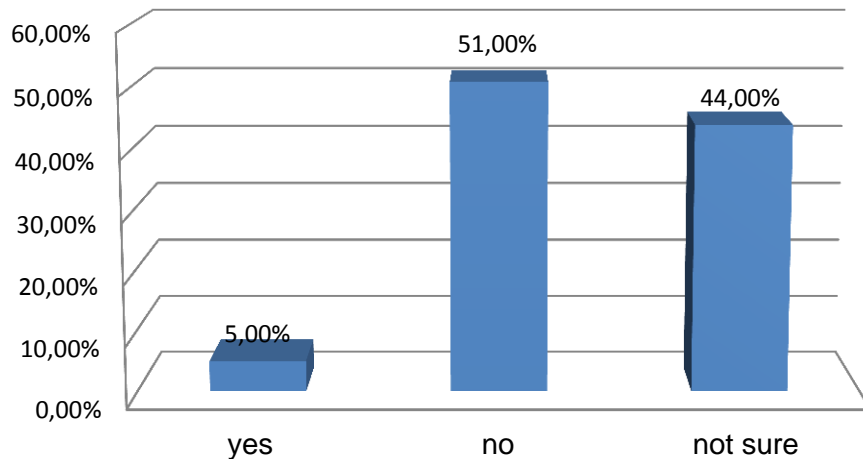
---

## OSH



- ✓ 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

## Injuries at practical workshops

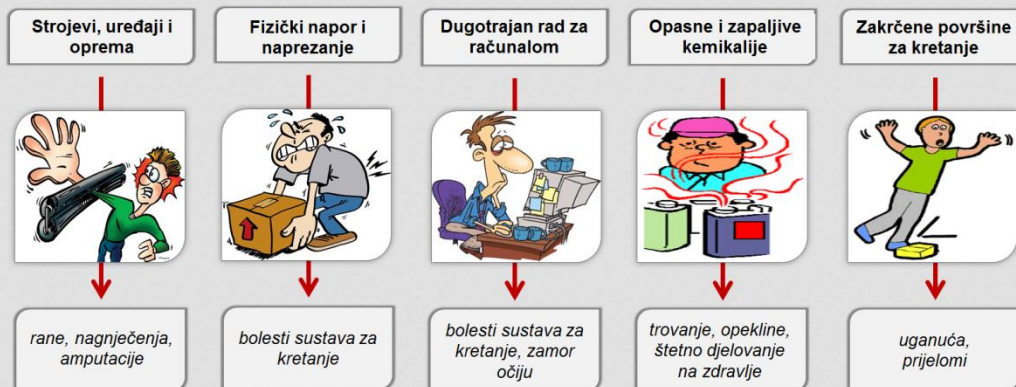




# MJERE ZAŠTITE U PRAKTIČNOJ NASTAVI ZA OBRAZOVNI PROGRAM GRAFIČKI TEHNIČAR

Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

## Što je opasno u grafičkim zanimanjima?



## Kako se zaštititi?

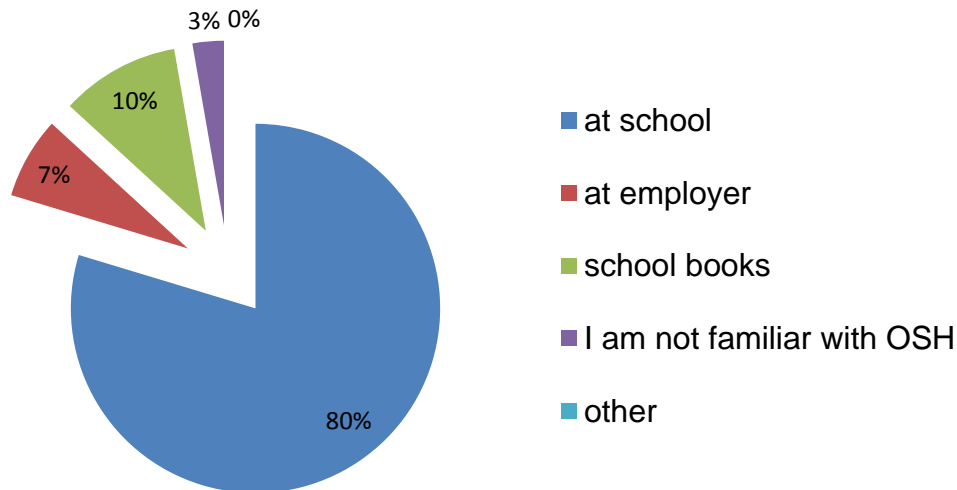


## *Educational program for the occupation forestry technician*

---

- ✓ 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

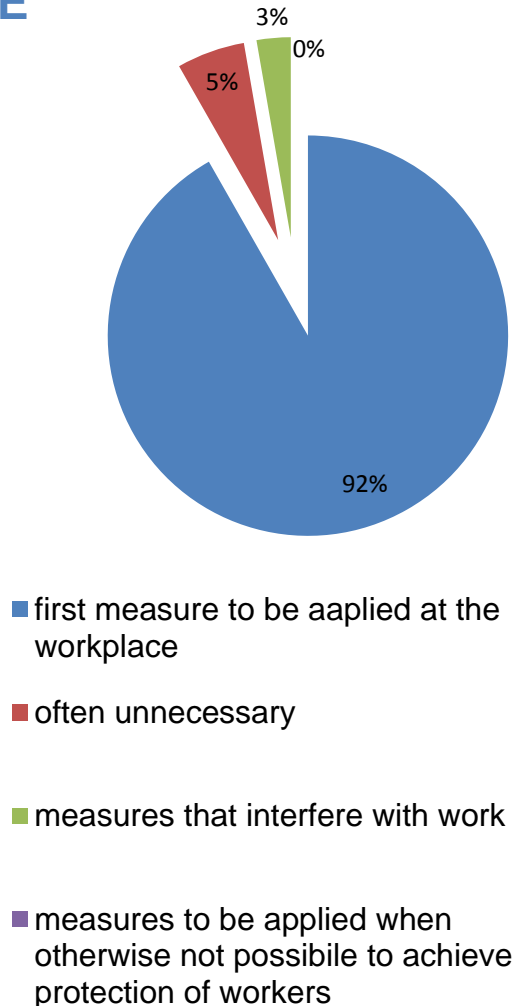
### Introduction to OSH



## *Educational program for the occupation forestry technician*

---

### PPE



- ✓ 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





# MJERE ZAŠTITE U PRAKTIČNOJ NASTAVI ZA OBRAZOVNI PROGRAM ŠUMARSKI TEHNIČAR

Hrvatski zavod za zaštitu zdravlja i sigurnost na radu

## Što je opasno u šumarstvu?



## Kako se zaštititi?



Kontakt:

Hrvatski zavod za zaštitu  
zdravlja i sigurnost  
na radu

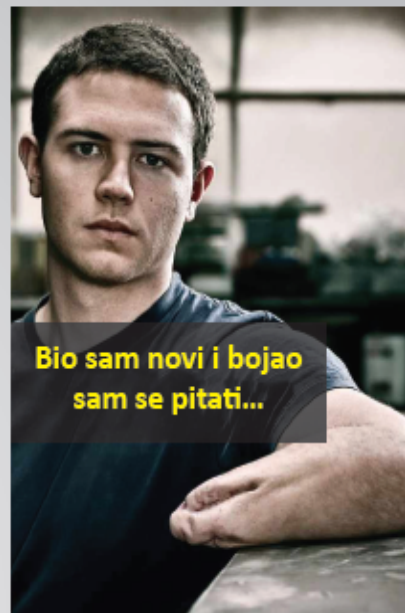
R. Cimermana 64a  
10020 Zagreb  
+385 1 5577 499  
www.hzzzs.hr

Materijali korišteni uz odobrenje  
WorkSafe Victoria

**Informirajte  
se o svojim  
pravima !**

U svijetu se godišnje  
dogodi 270 mil. nesreća  
na radu.

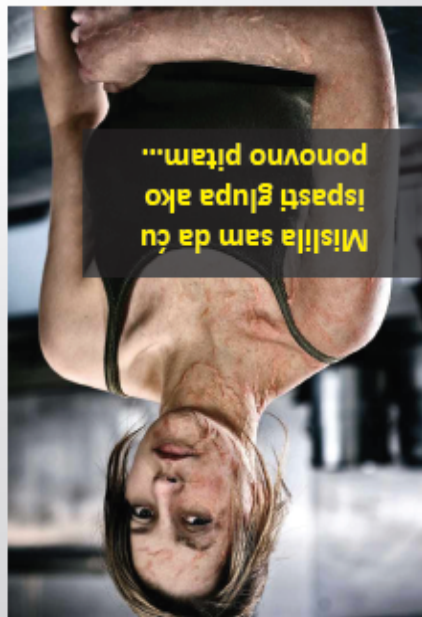
Dnevno se dogodi 6000  
smrtnih slučajeva koji  
se povezuju s radom.



**Bio sam novi i bojao  
sam se pitati...**

## 10 PRAVILA ZA SIGURAN RAD

1. Brinite o vlastitoj sigurnosti i ne dovodite sebe i druge u opasne situacije.
2. Neželjeni događaji na radu mogu se predvidjeti i spriječiti.
3. Mislite što i kako radite!
4. Prijavite nadređenima nesigurne događaje i uočene nedostatke.
5. Zatražite pomoć ako vam je potrebna, pitajte ako niste sigurni...
6. Ponašajte se odgovorno i savjesno. Radno mjesto nije mjesto za komunikaciju je ključna za sigurnost na radnim mjestima.
7. Ako niste osposobljeni za određeni zadatak, ne riskirajte!
8. Koristite odgovarajuće alate i opremu za rad. Koristite ih na ispravan način.
9. Poštujte sigurnosna pravila i upute nadređenih.
10. Bez iznimke koristite dodijeljenu osobnu zaštitnu opremu.



**Mislila sam da ću  
ispasti glupa ako  
ponovno pitam...**

**Mladi radnici se  
dvostruko češće  
ozljeđuju na radnim  
mjestima.**

**Nemoj biti dio  
crne statistike!**





## Ozljeda na radu nije u opisu tvojeg radnog mjesta!

## OBVEZE I PRAVA RADNIKA

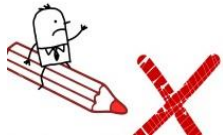
- Osposobiti se za rad na siguran način
- Prije početka rada pregledati mjesto rada i utvrditi je li sve ispravno
- Pravilno koristiti sredstva rada
- Pravilno koristiti propisanu osobnu zaštitnu opremu
- Pravilno koristiti i samovoljno ne isključivati, ne vršiti preinake i ne uklanjati zaštitne naprave 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

## OBVEZE POSLODAVCA

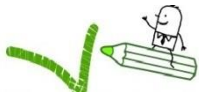
- Izgraditi i opremiti radni prostor u skladu s pravilima zaštite na radu
- Izraditi procjenu rizika i kontinuirano pratiti i poboljšavati uvjete rada
- Osposobiti radnike za rad na siguran način
- Postaviti sigurnosne znakove, pisane obavijesti i upute
- Provoditi mjere zaštite od požara, evakuaciju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

**Nisam vidio.  
Nisam znao.  
Nisam razmišljao.**



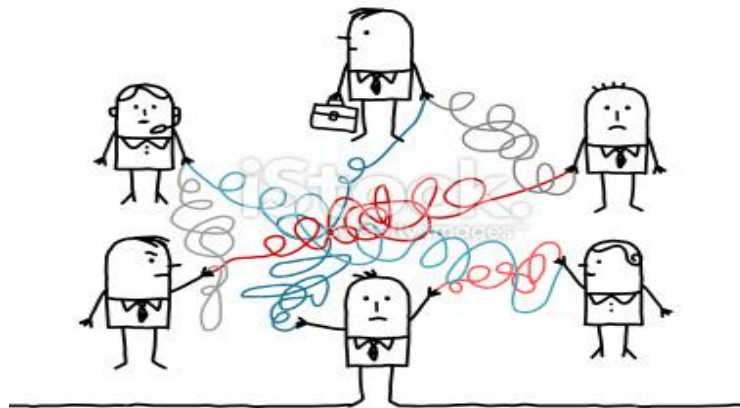


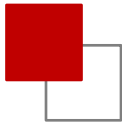
- ✓ Study showed that students don't understand basic OSH principals
- ✓ Data on the availability of PPE, as well as information on occupational injuries that are very controversial, even when it comes to the same schools



- ✓ 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!

Hrvatski zavod za zaštitu zdravlja i sigurnost na radu  
Radoslava Cimermana 64a, Zagreb  
[www.hzzzs.hr](http://www.hzzzs.hr)  
e-mail: [ikristo@hzzzs.hr](mailto:ikristo@hzzzs.hr)