





Prague, Czech Republic  
May 28, 2015



Cracow University of Technology  
Faculty of Mechanical Engineering

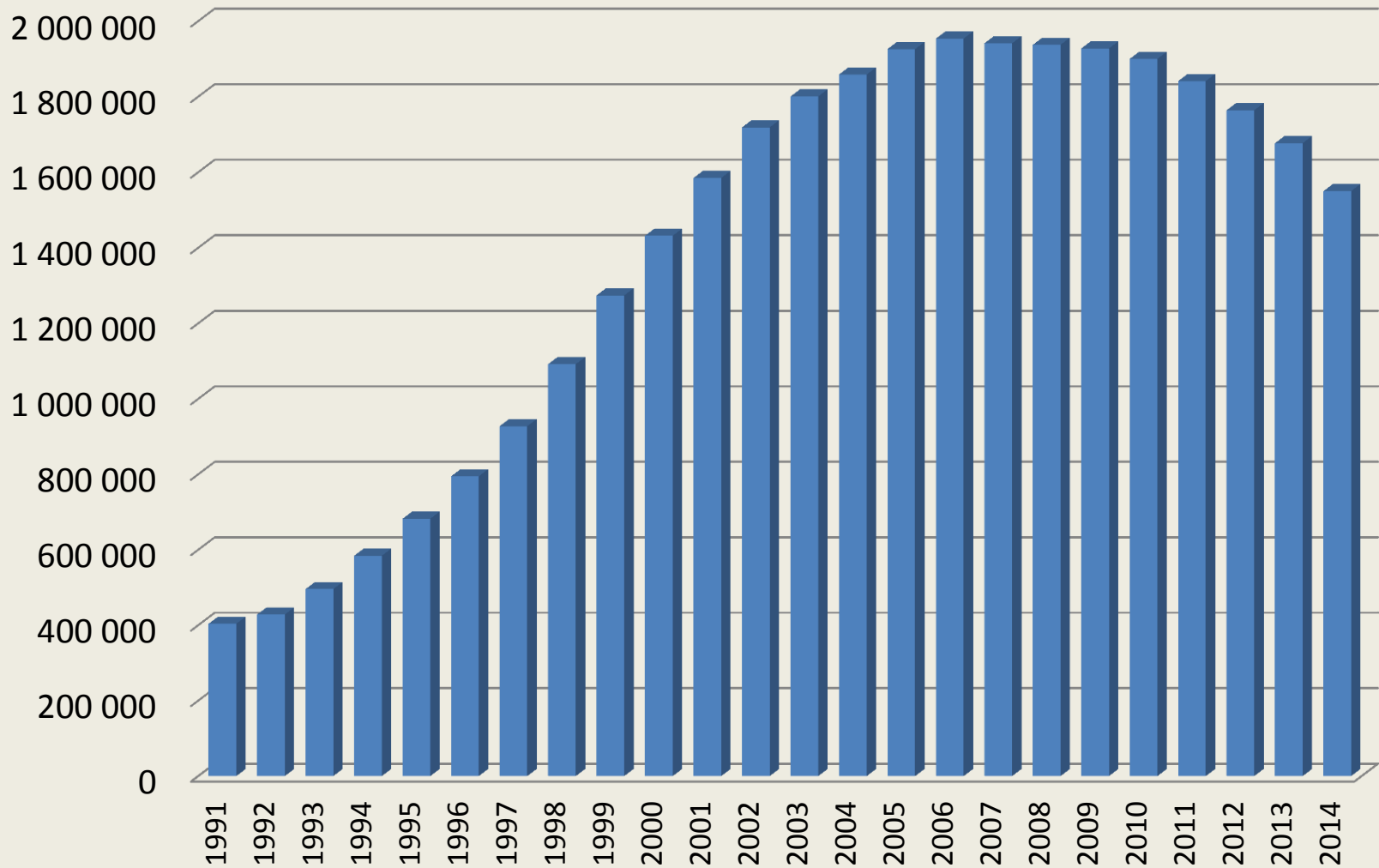
Leszek Wojnar

# **Engineering Education**

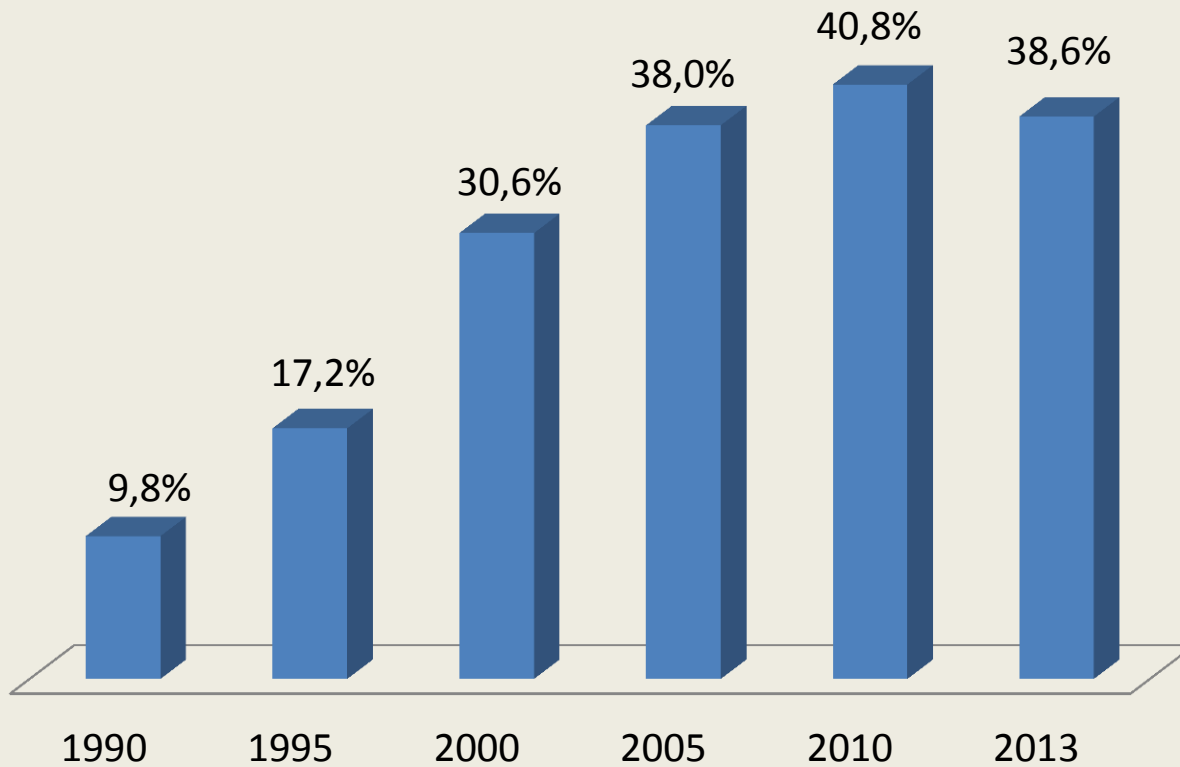
## Quantity versus Quality

**Number of students (Quantity)**

## number od students in Poland (1991-2014)



### **fraction of students among young people in Poland**



- The number of students in Poland (**quantity**) increased during 20 years about 4,5 times. This process has been accelerated by purely political decisions.
- In 2012 about 27,4% of students have chosen non-public high schools (paid studies). Among them approx. 90% have chosen part-time studies.
- What about **quality** of such education?

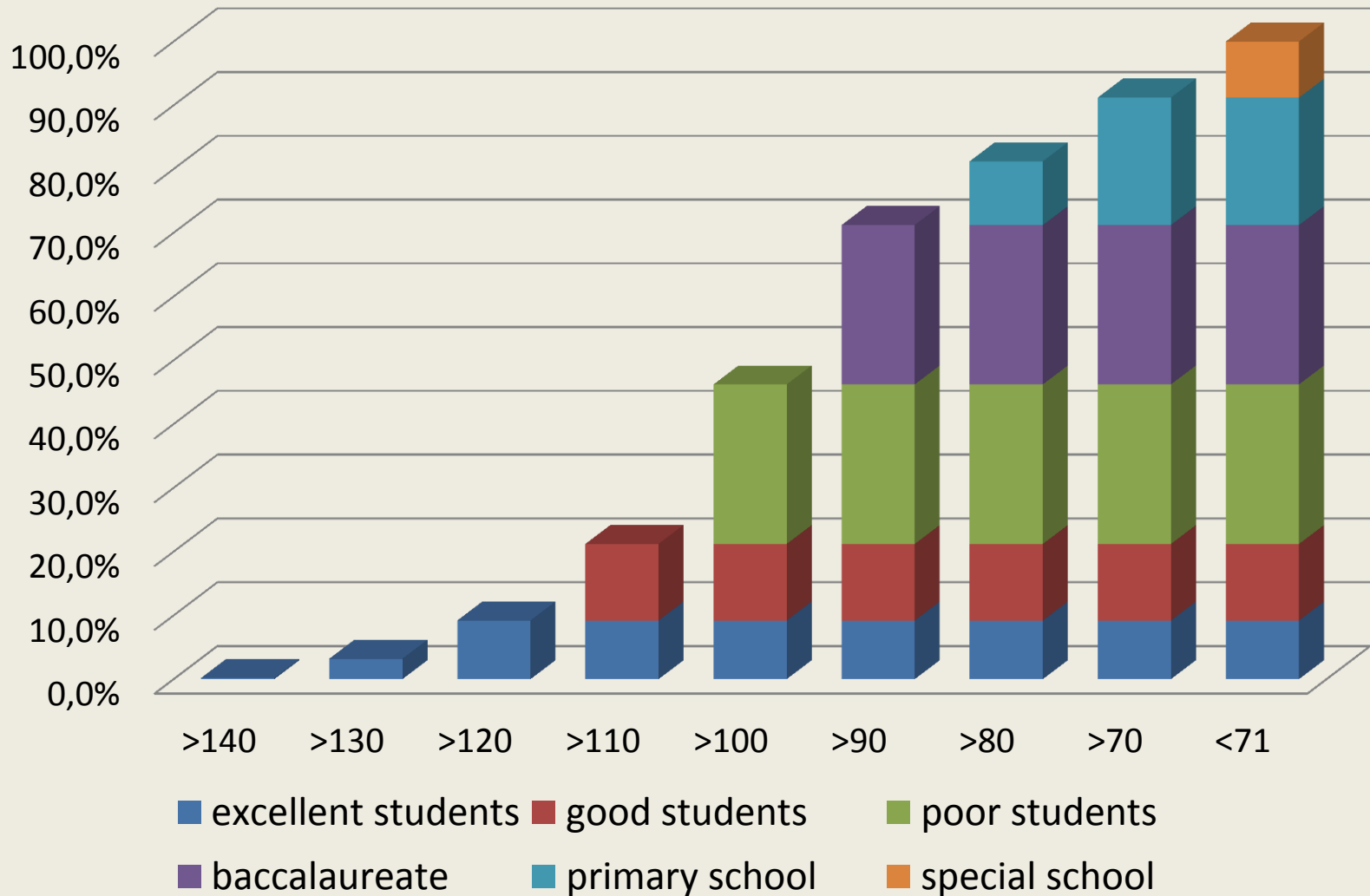




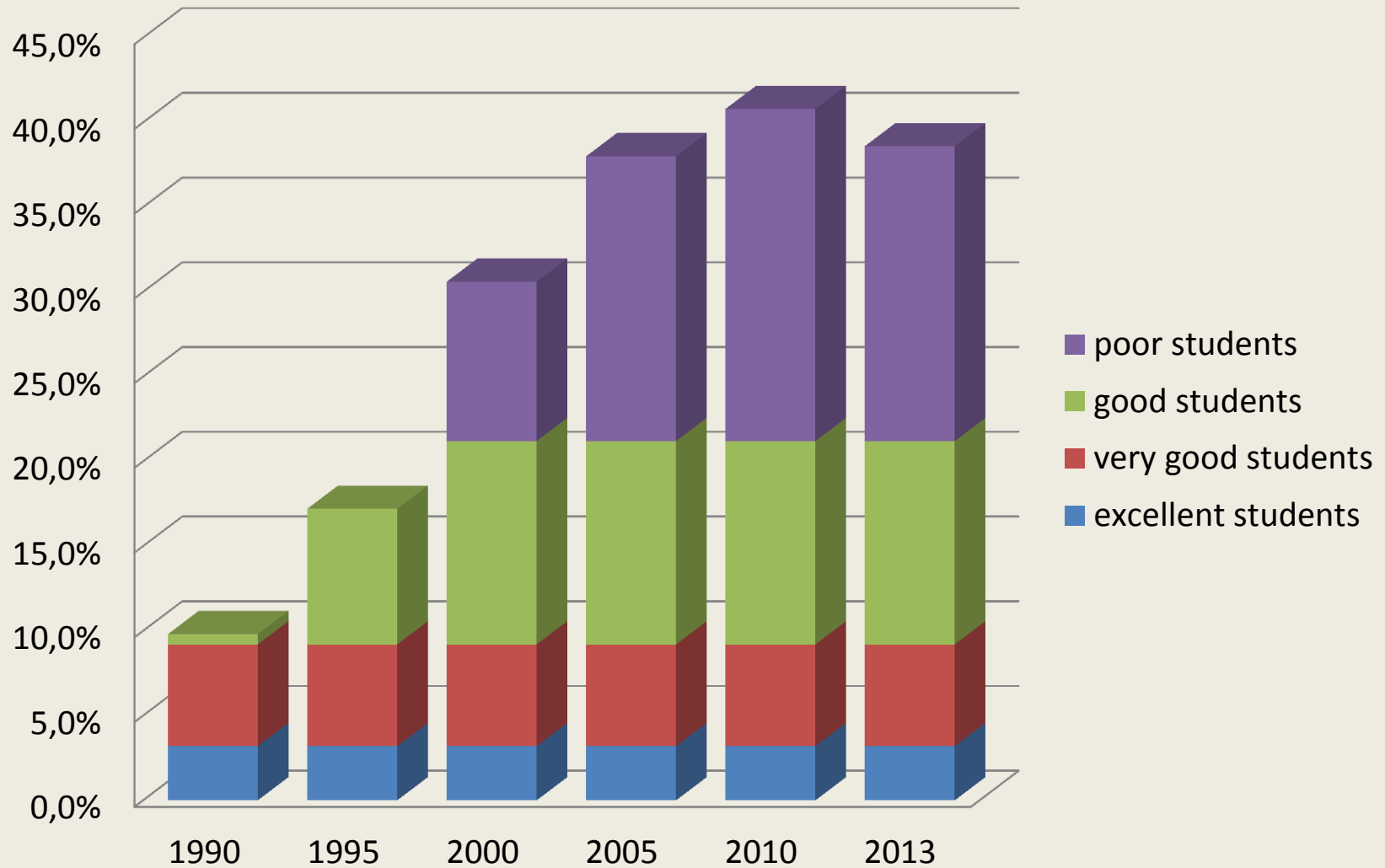
Why you have taken so many new students?  
One says that quantity transforms into quality...

**Quality of students**

## distribution of IQ index in population



## distribution of potential skills among students in Poland



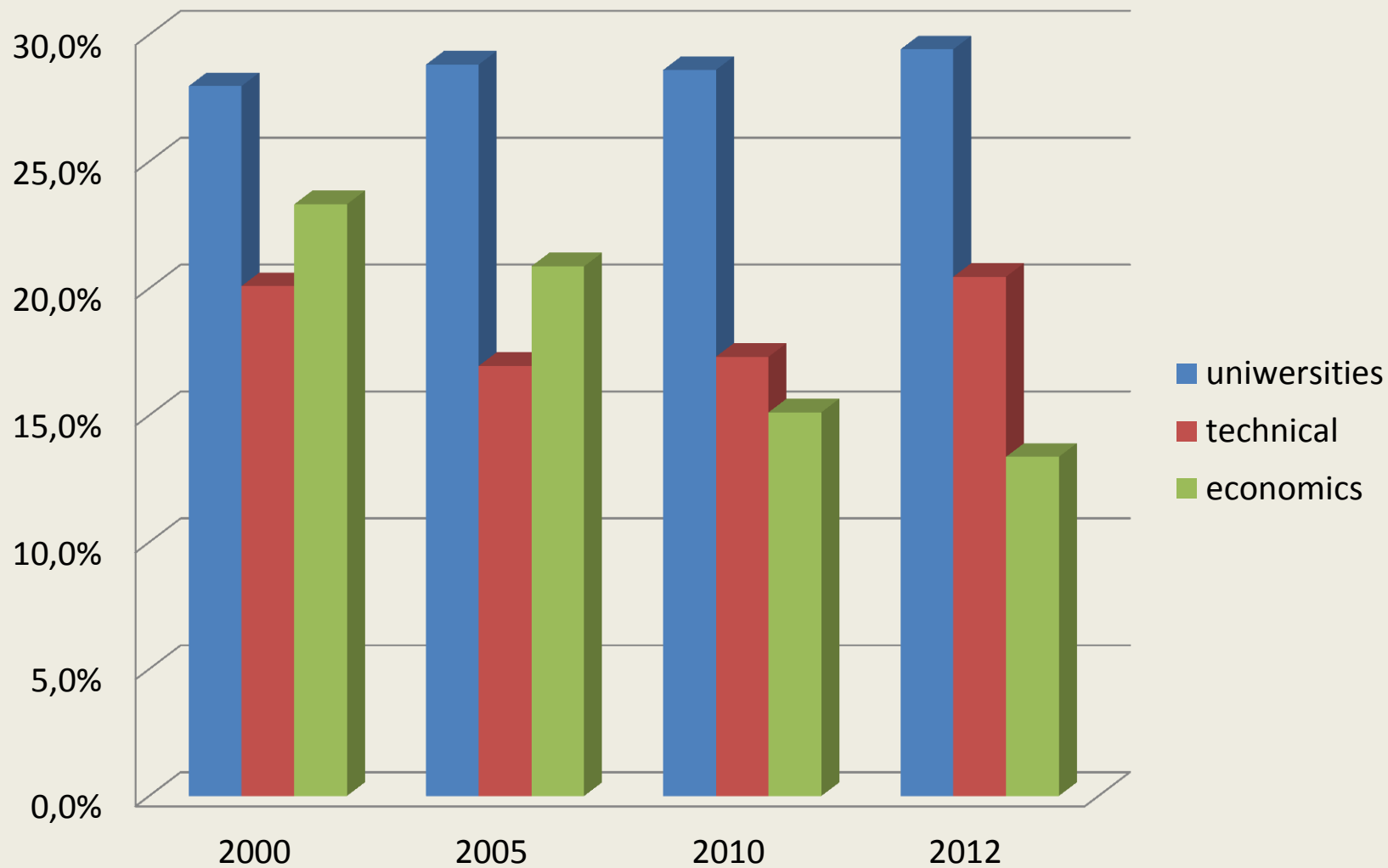
TAK. POTWIERDZAM, ŻE  
MA WIEDZĘ, UMIEJĘTNOŚCI  
ORAZ KOMPETENCJE(...)  
TAK. I DO NICZEGO SIĘ  
NIE NADAJE...



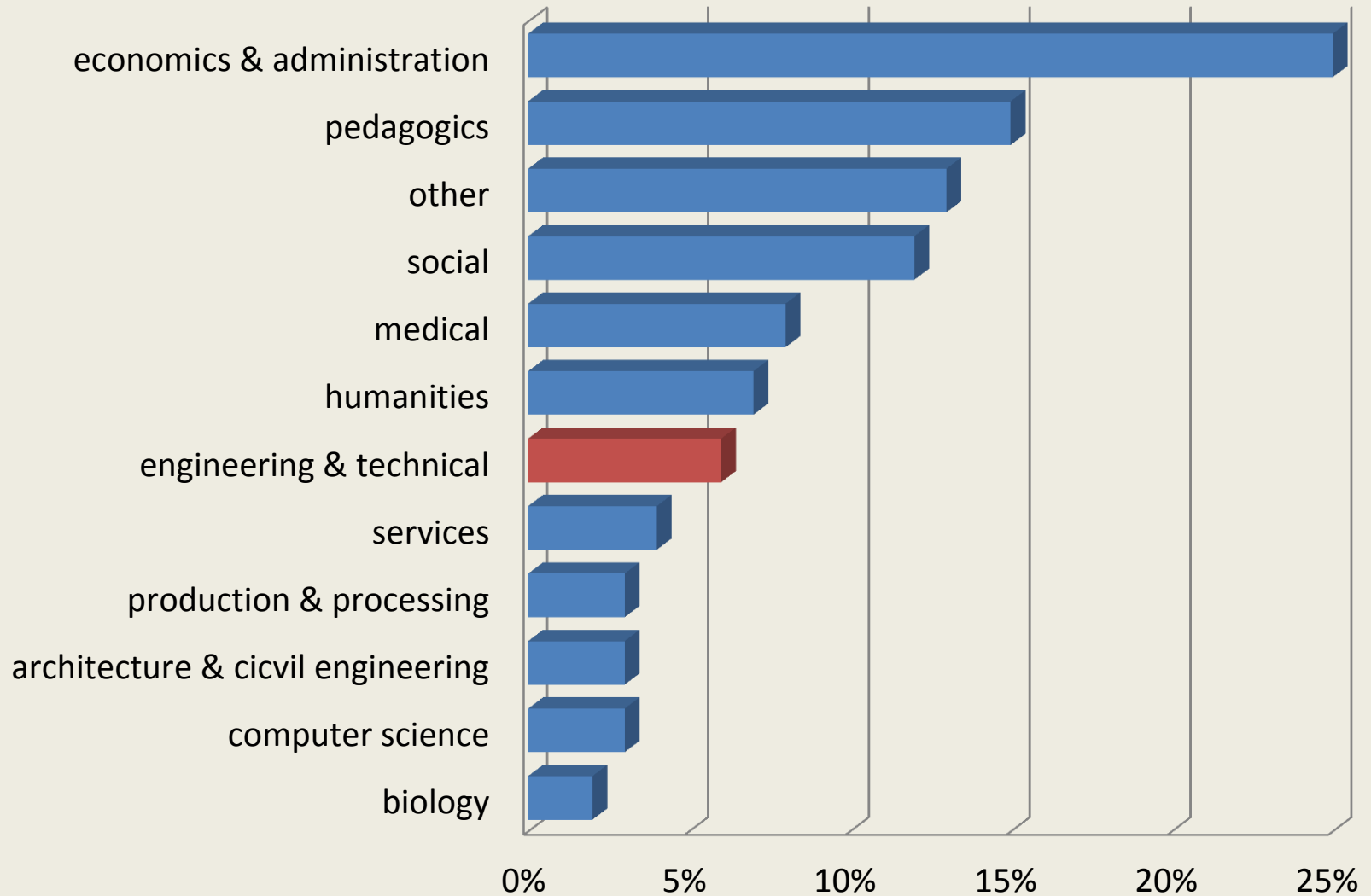
Well. I confirm that he has  
some knowledge, some skills  
and some competences. But in  
total he is completely useless...

**Engineering –  
popular field of study?**

**fraction of students at different high schools in Poland**



## graduated students in Poland, 2012







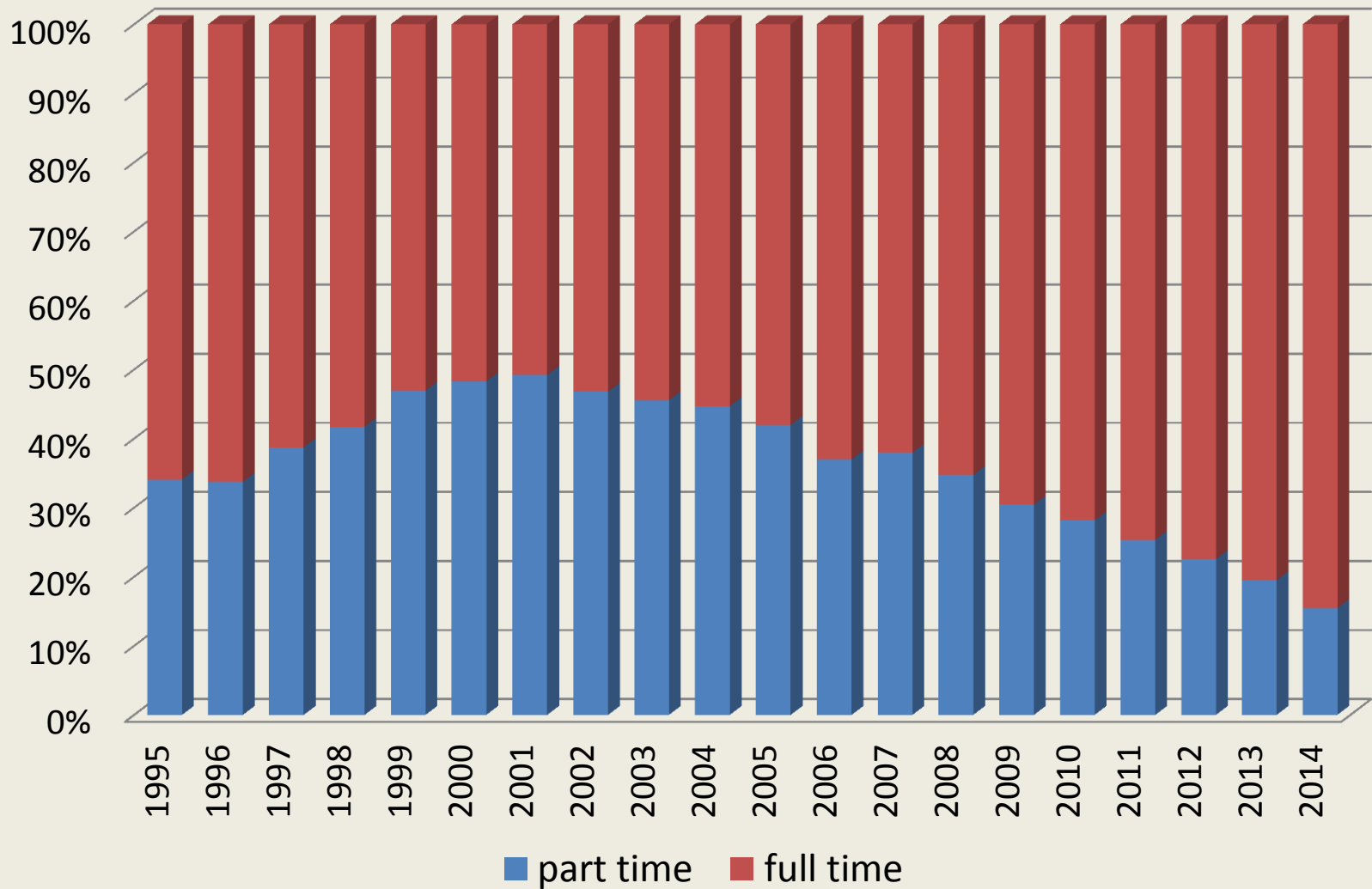
He also is graduated at the  
technical university...

# **Students at Faculty of Mechanical Engineering, CUT**

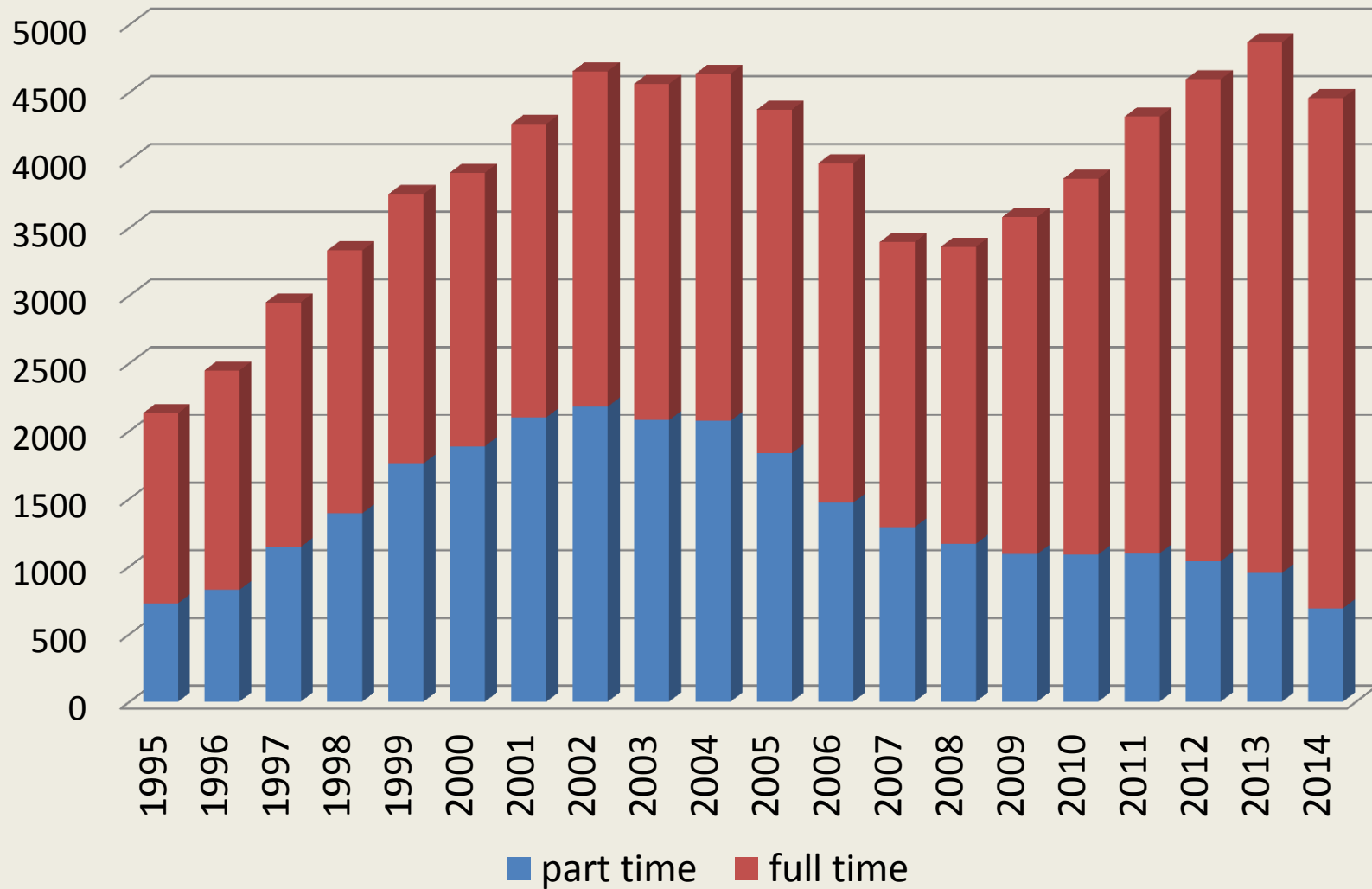


Dear students...

## part & full time students - Faculty of Mech. Engng CUT



## number of students - Faculty of Mech. Engng CUT



# **Finances and quality of education**



PODEJMUJEMY ZDECYDOWANE  
DZIAŁANIA NA RZECZ POPRAWY  
JAKOŚCI KSZTAŁCENIA.

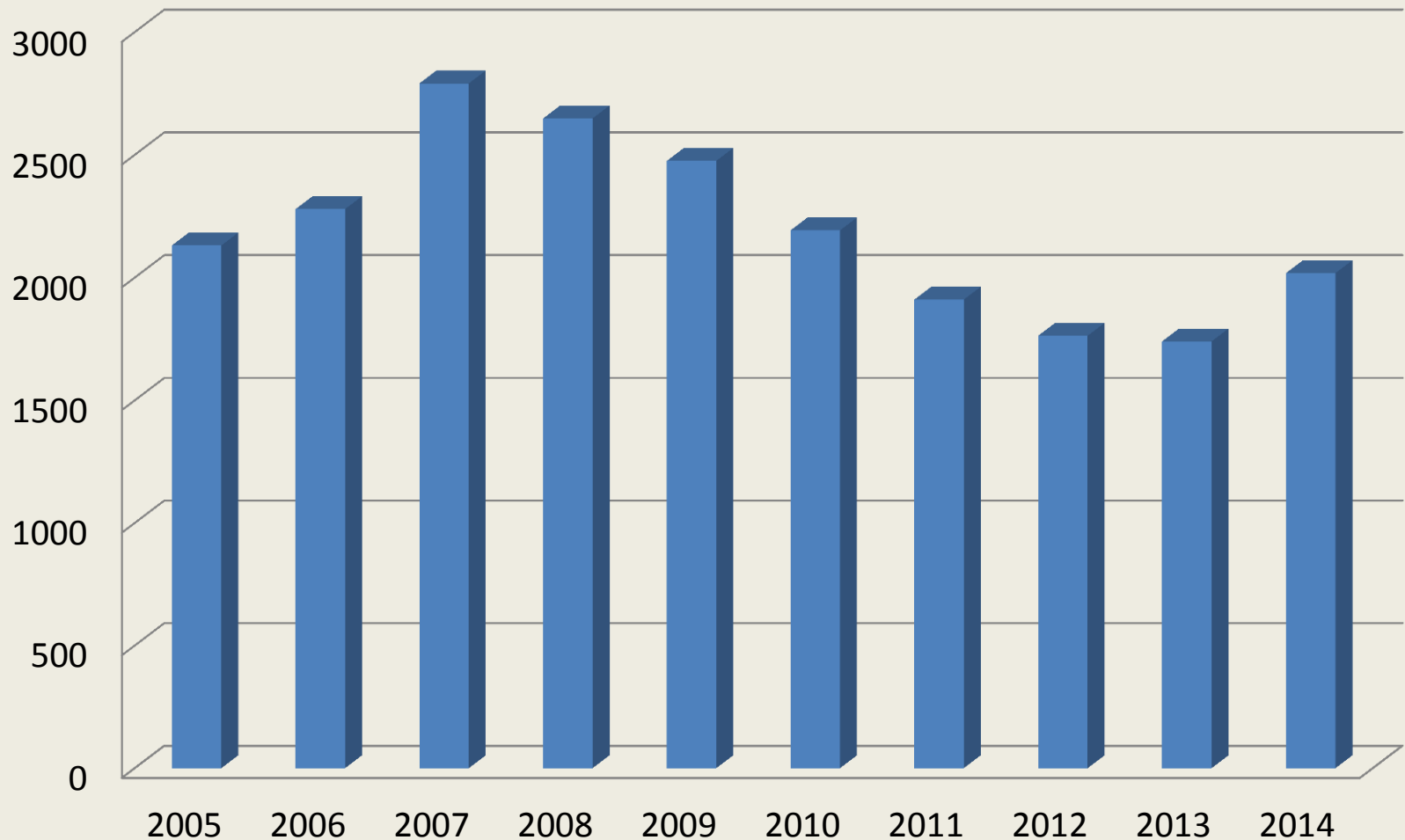
WPROWADZAMY 3 NOWE ANKIETY,  
5 SRAWOZDAŃ ORAZ 7 NOWYCH  
FORMULARZY...



We begin strong actions  
in order to improve the  
quality of didactic process.

We introduce 3 new surveys,  
5 new reports and 7 new  
questionnaires...

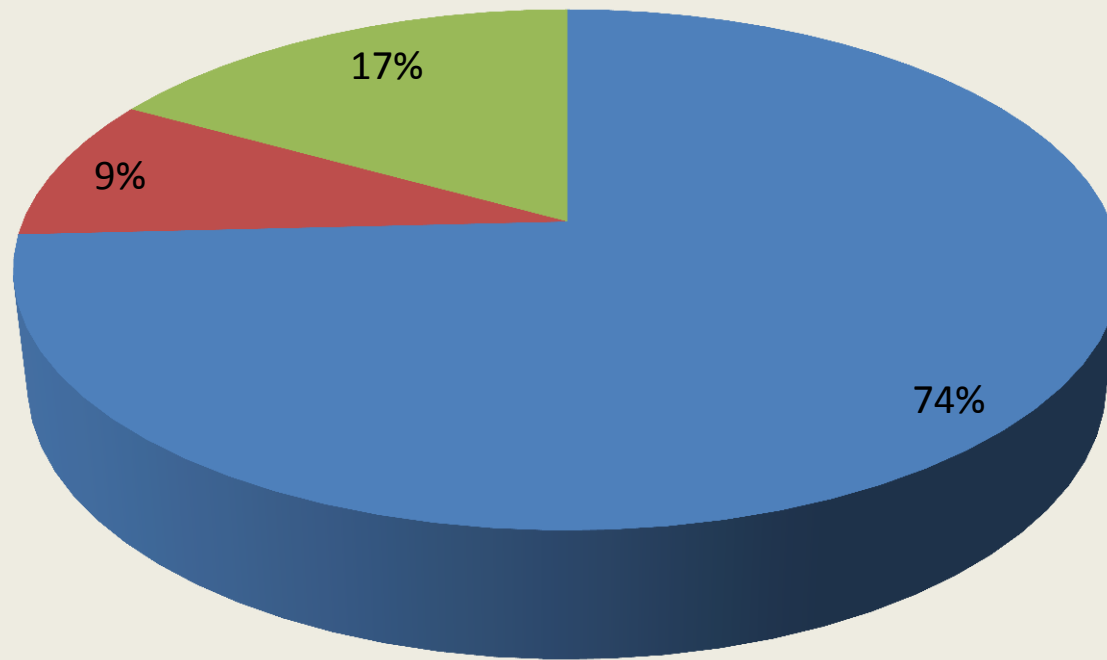
## Faculty of Mechanical Engineering, CUT funds for 1 student per year (€)



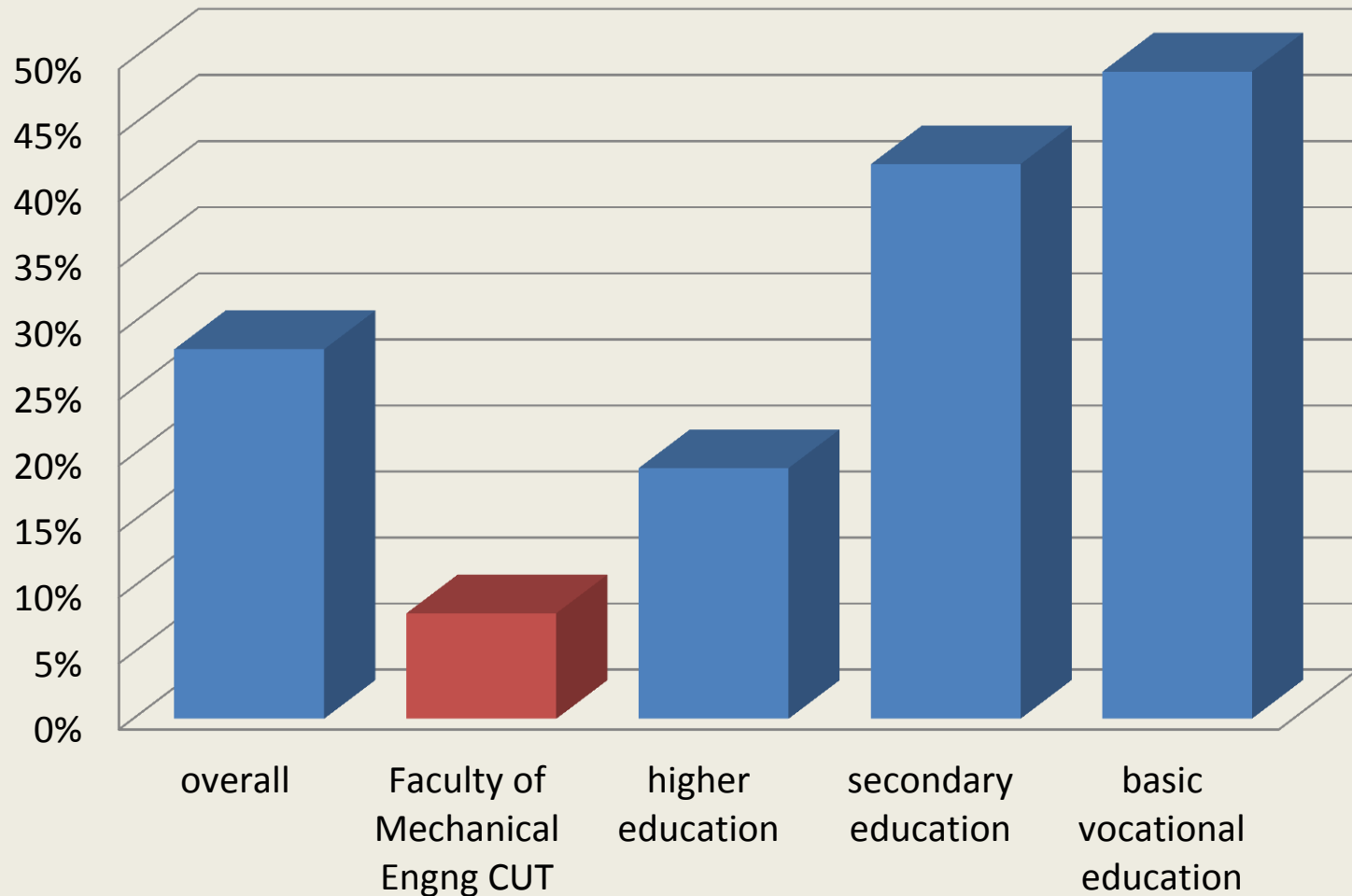


**Satisfaction of graduated students (2012):  
If they begin studying once more they will choose:**

- the same field of study, Faculty of Mechanical Engng, CUT
- the same field of study, other university
- other field of study

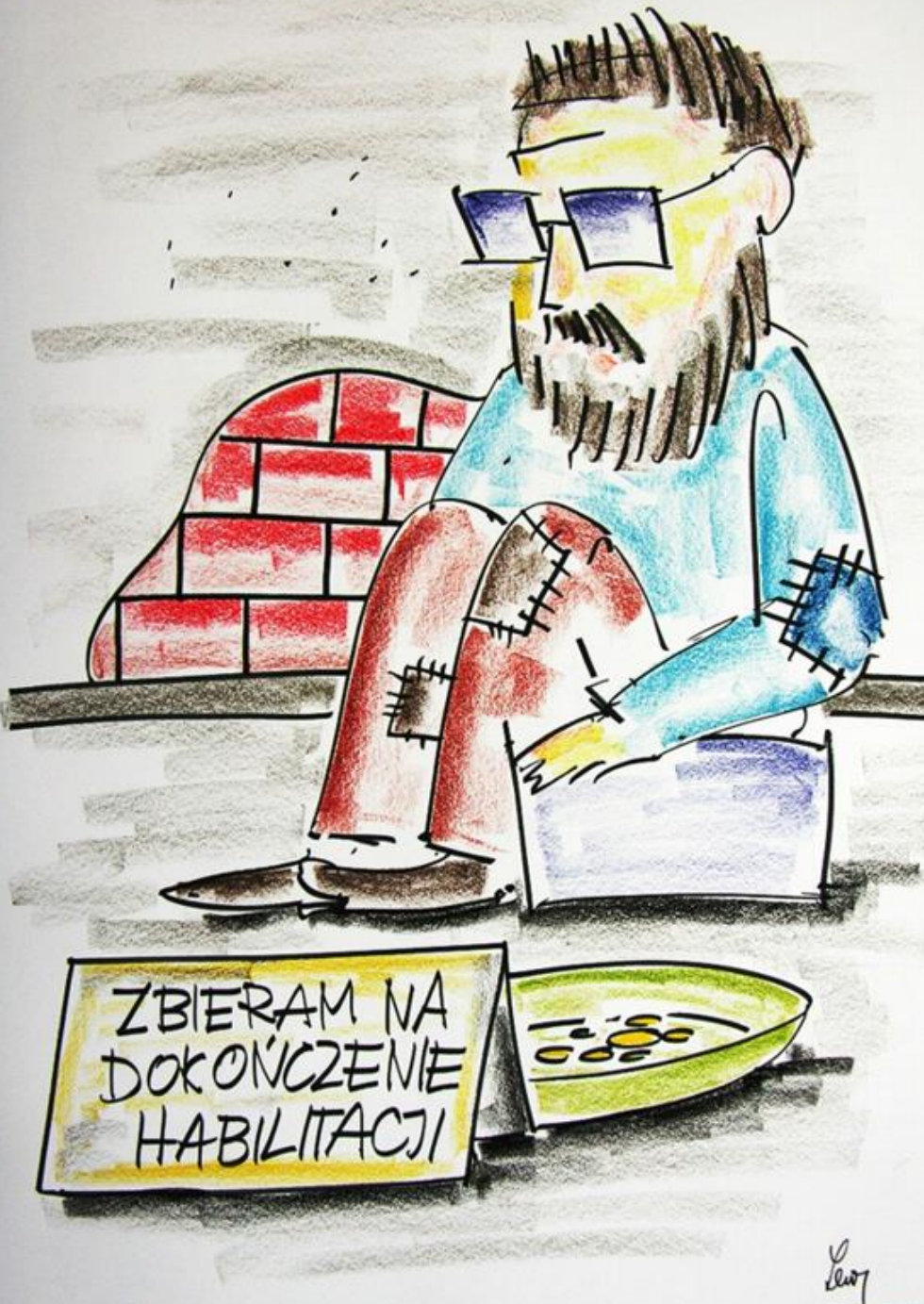


## unemployment of graduated young people in Poland (2012), 3 months after graduation



# Conclusions

I am collecting money for  
habilitation (scientific work)



1. Due to relatively low further unemployment rate (especially if compared with the universities), engineering education (in Poland) seems to be attractive for a growing number of students.
2. Very high fraction of students in the population of young people causes numerous difficulties, as approximately 30% of students have serious and continuous problems to complete studies. **Quantity does not transform into quality.**
3. In spite of low level of money transferred to the Faculty of Mechanical Engineering CUT (35% decrease within 4 years), quality of the didactic work is satisfactory for a prevailing number of graduates.
4. Engineering education is a good perspective for young people. However, in order to make these studies more attractive one should redefine the whole didactic process, significantly decrease the number of students keeping at least the same level of money devoted for engineering education.









Thank  
you  
for  
your  
attention...