

“How to Improve the Education Activities and Cooperation in the Region”

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Natasa Neskovic
Serbia&Montenegro Section Chair
✉ natasha@etf.rs

Introduction

- *“It is not enough to have a vision which relates to how the contents of education should change. It is also necessary to understand the changes required for the educational system itself*
- *Teaching and learning is what takes place when the teacher closes the door and starts to speak. The test of a vision for a school is the extent to which it influences what happens behind the closed doors.”*

Geoffrey D.Doherty, *“Developing quality systems in education”*, Routledge, London and New York

DESIRABLE CHARACTERISTICS OF 21st CENTURY ENGINEERS

- Social needs and demands have created new technology and vice versa. Technology has become the medium of daily life in modern society, a part of its infrastructure in every sense
- Being for certain period in a shade of financial experts, engineers have regained the most important role in the road to better tomorrow

Abilities

- leadership
- teamwork
- communication
- decision-making
- recognize & manage change
- work effectively in diverse & multicultural environments
- work effectively in the global engineering profession
- synthesize engineering, business, and societal perspectives

Knowledge Areas

- science & math
- engineering fundamentals
- analytical skills
- open-ended design & problem solving skills
- multidisciplinary within and beyond engineering
- integration of analytical, problem solving, and design skills

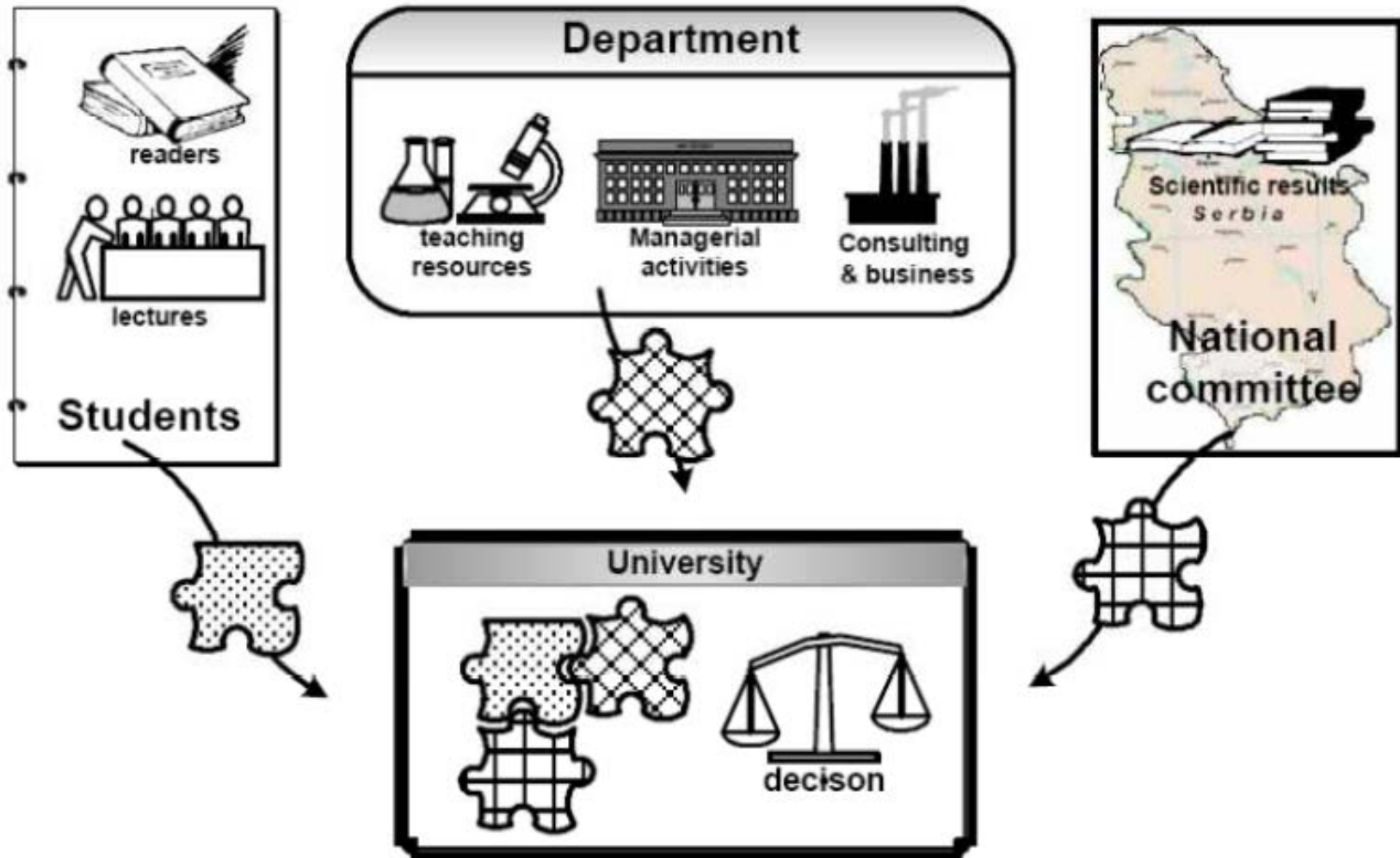
Qualities

- innovative
- strong work ethic
- ethically responsible in a global, social, intellectual, and technological context
- adaptable in a changing environment
- curious and persistent continuous learners

THE TRENDS IN ENGINEERING EDUCATION

- **Improvement of engineering curriculums and teaching/learning methodologies and their accommodation to the desired learning outcomes.**
Usage of modern IT achievements and tools in teaching practices, taking in consideration the important components. Communicative component, high mental skills component and the cross disciplinary approach, are just some examples in this highly complex area of improvements
- Promotion of teaching **creativity and innovation** as a crucial part of engineers' voluntary involvement in educational process
- **Connection between the technology and management** could give good results in form of engineers/technologists with managerial knowledge and skills capable to lead companies to the road of success and cope with challenges
- **Globalization** of research activities and open cooperation between universities on international level, especially in the regions of interest, could prepare the engineers for global market

ENTITIES WHICH SHOULD BE INVOLVED



Knowledge management should be in line with more intense cooperation and linkage of **industry, universities and government** triangle in engineers' education

EDUCATIONAL PROCESS

INPUTS

- Student's current knowledge and awareness
- Teaching experiences and know-how
- Student participation and research
- Books, curriculums, professional magazines
- EE facilities (buildings, laboratories and measurement equipments)
- ICT tools
- Help of companies

EDUCATIONAL PROCESS AND REGIONAL COOPERATION

INPUTS

- Selection of candidates
- Different teaching methods (lectures, videos, guest presentations, class discussions, homeworks,...)
- Mentoring students and co-mentoring with colleagues from other universities
- Laboratory research activities, possibility to use lab. equipment at other universities
- Professional development of professors and assistants to improve know-how in cooperation with colleagues from other universities
- Selection of references and important papers
- Management of relations with other universities
- Support of professional student conferences with other universities
- Applying and improving international standards of teaching

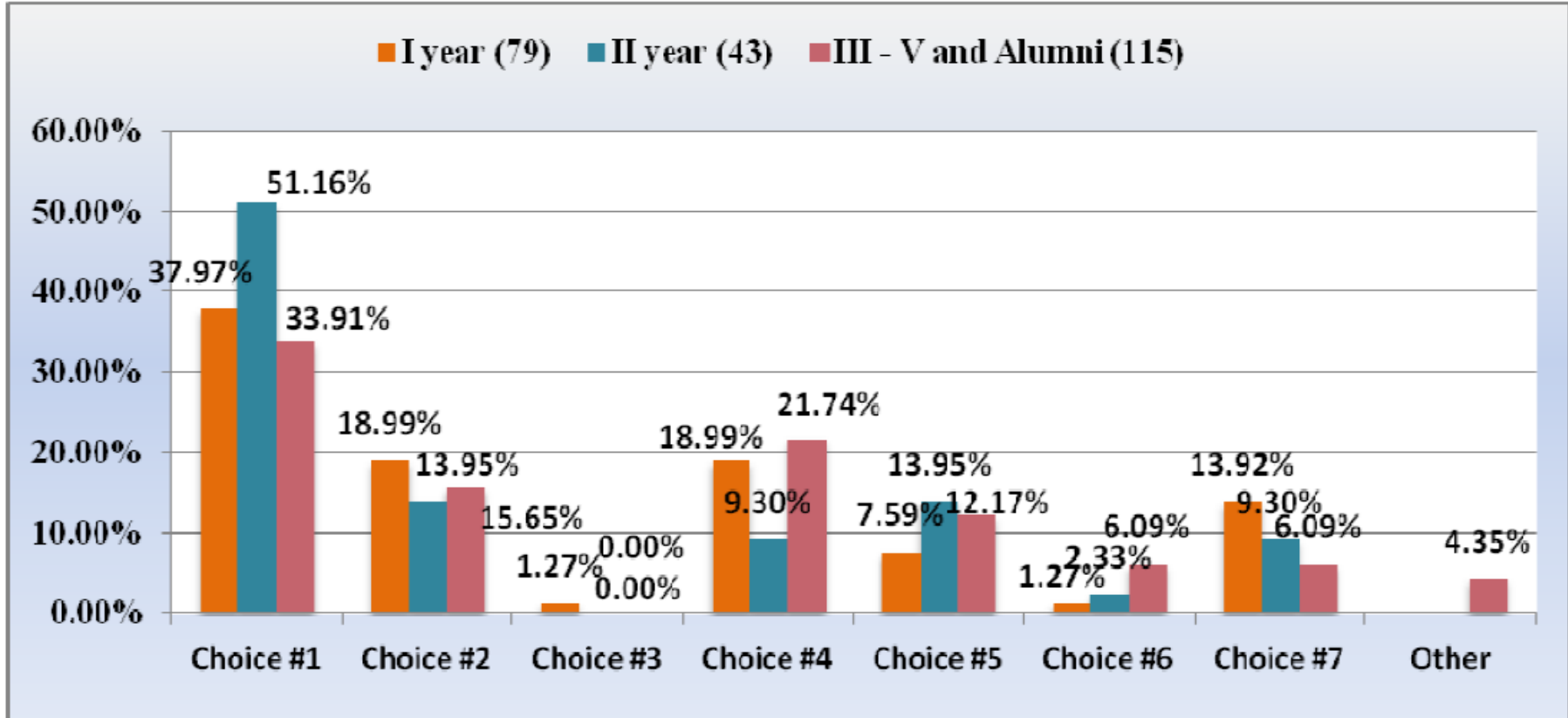
OUTPUTS

EDUCATIONAL PROCESS

OUTPUTS

- **Tangible**
 - **Diplomas** (B.Sc./M.Sc./Ph.D)
- **Intangible**
 - **Knowlegde** – which enables her/him to understand
 - **Know-how** – which enables her/him to do
 - **Wisdom** – which enables her/him to set priorities
 - **Character** – which enables her/him to co-operate and become respected and trusted member of society

MOTIVATIONS IN DECISION PROCESS



Choice #1 - Engineering area for which you have been interested many years ago

Choice #2 - Engineering area for which the market demand is the highest

Choice #3 - How fast and easy studies at certain Department can be finished

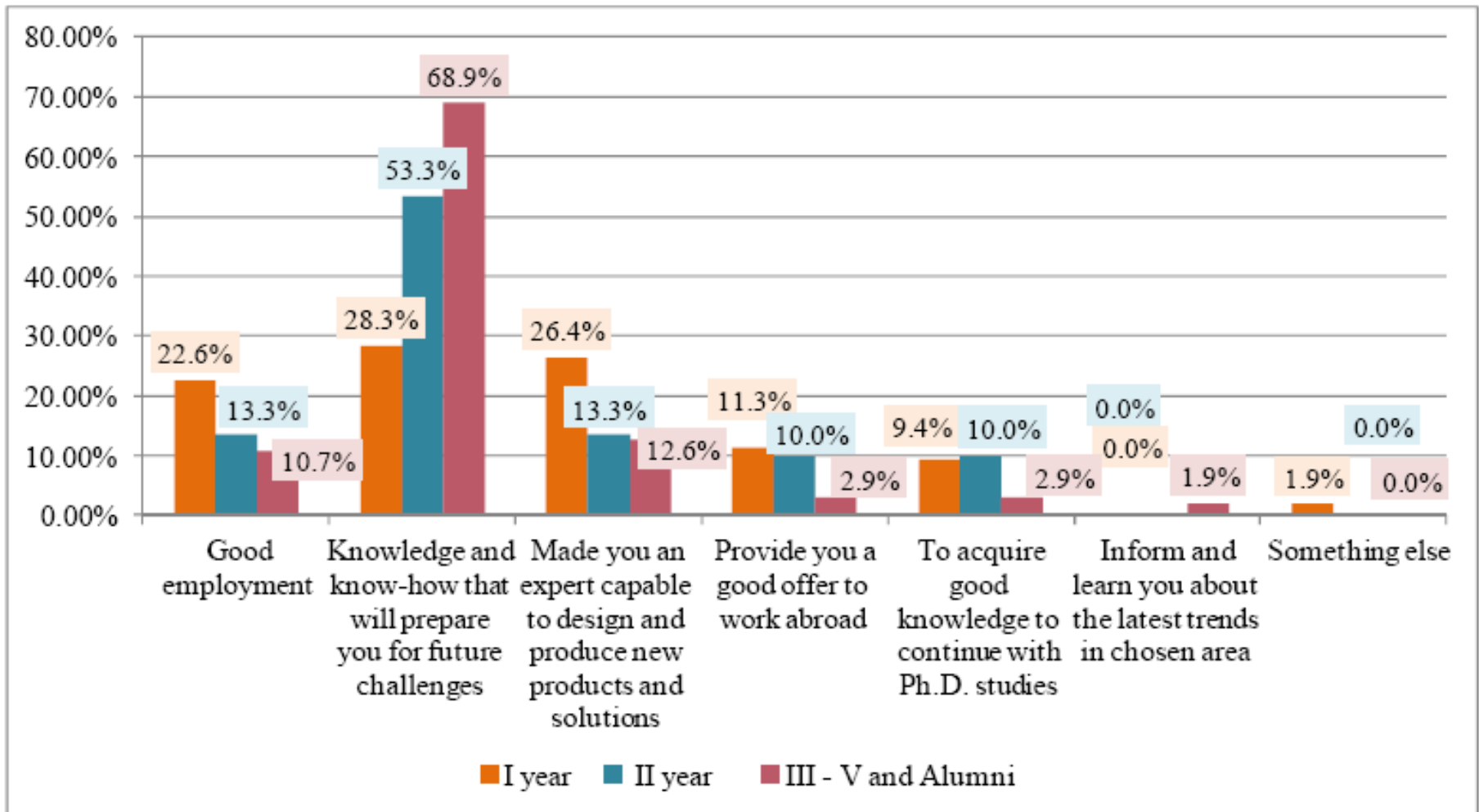
Choice #4 - Future perspective of the chosen area and industry

Choice #5 - Relevant recommendations of professors and former students

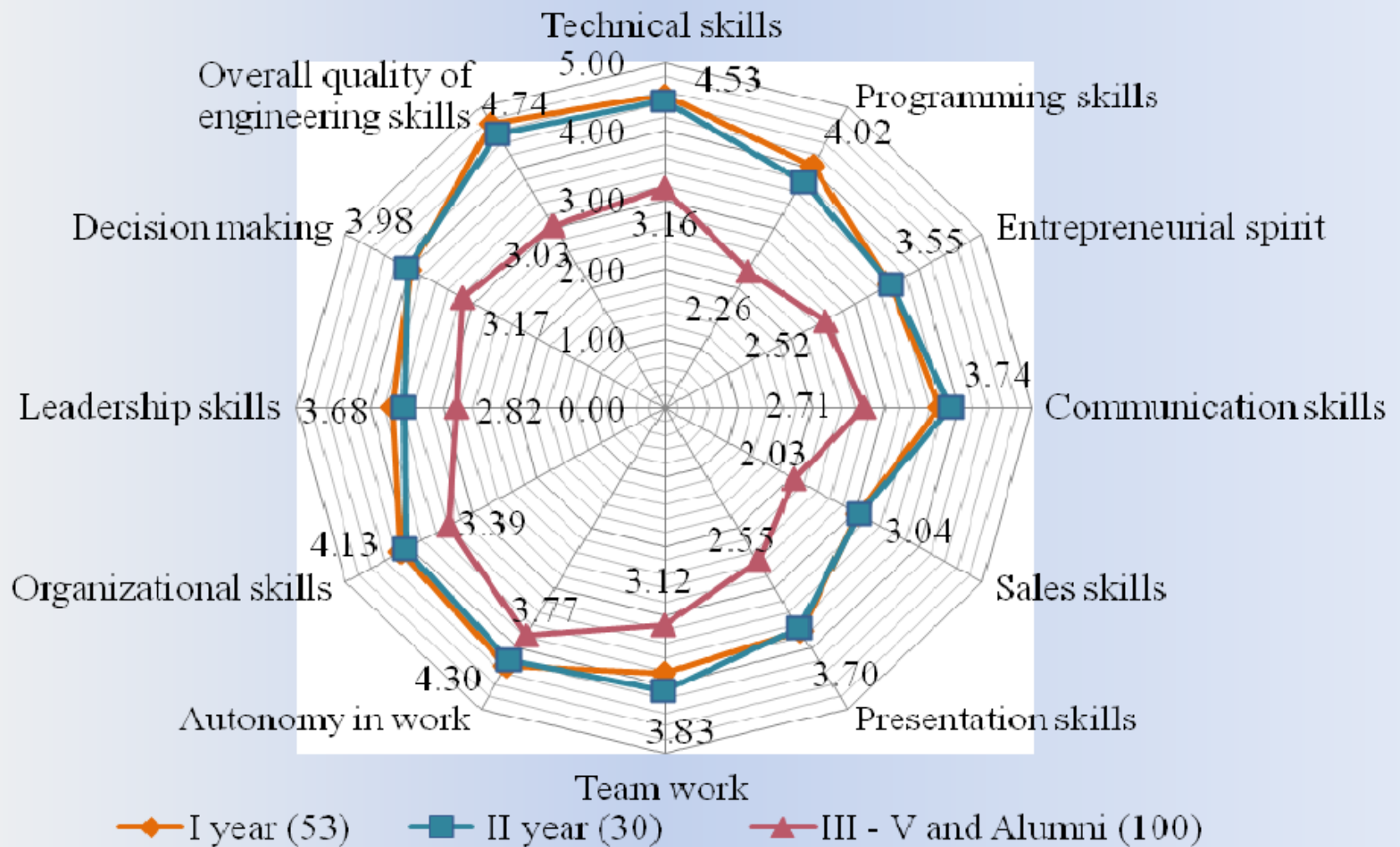
Choice #6 - Same as current dearest colleagues

Choice #7 - Intention to continue with the scientific work and further education

EXPECTATIONS AND AMBITIONS IN CAREER OF EE STUDENTS



AVERAGE RATES OF DIFFERENT ENGINEERING SKILLS



STRATEGIC PLAN FOR THE FUTURE

- **VISION** – CHOICE TO BE AN ENGINEER CAN MAKE ANY BOUNDARIES DISSAPEAR, ALLOWING THE ENGINEERS TO SHAPE THEIR UNIQUE CAREER PATH AND MANAGE THE KNOWLEDGE
- **MISSION** - WE'LL HELP THE YOUNG ENGINEERS TO AVOIDE BECOMING GLADIATORS IN THE ENVIRONMENT OF HIGH COMPETITION AND INTENSE CRISIS. EMPOWERING OUR PEOPLE WITH SKILLS OF GLOBAL VALUES, THEY WILL BE ABLE TO REDESIGN THE MARKET ITSELF THROUGH INOVATIONS AND SMALL COMPANIES CREATION

EDUCATIONAL STRATEGIES

- One of the main and the first strategic assignment would be to make **engineers' practices clear, visible, approachable for any engineering talent from his/hers early age**. We'll help them to clearly say yes/no to this profession
- We would test the students opportunities to **manage their knowledge to be the best according to their potentials**
- The next aim would be **to act and grow globally**, putting the efforts to gain international credentials. Through active cooperation in a global network of electrical engineers **we'll make the boundaries disappear for our engineers**. Learning in an international arena we'll improve ourselves
- The last, but certainly not the least important, task includes our vision to benefit the current society and industry through making engineers capable **to create and innovate** and to put their own dreams and career visions into practice

Thank you for the attention!

Natasa Neskovic - natasha@etf.rs