Council of Associations of long cycle Engineers from a University or a Higher School of Engineering of the European Union

SEII
European Society for Engineers and Industrialist

Employability of civil engineering graduates and the Bologna process – findings of surveys conducted by the European Council of Civil Engineers (ECCE) AND by the EUCEET Association

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(respectively Chair and Vice-Chair of the Standing Committee on Education & Training, European Council of Civil Engineers)

CLAIU-EU Conference in partnership with SEII
13 - 14 March 2014, Brussels

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European Council
of
Civil Engineers

European Council of Civil Engineers
ECCE

ECCE was created in 1985 out of the common concern of the professional bodies for Civil Engineers in Europe that the Civil Engineers working together across Europe could offer much more for the sustainable development and the quality of life of the European Citizens putting forward reliable, safe, economical and environmentally, socially acceptable solutions for the constructions and infrastructure.

ECCE has members representing civil engineering professional associations from 26 countries.

EUCEET ASSOCIATION

Brief history

- Founded under Belgian Law on 12th March 2007

- The Association is an outcome of the sustainability strategy outlined in the application for EUCEET III project (2006-2009)

- Statutes and bylaws were prepared by a Task Force (Jean Berlamont and Iacint Manoliu) approved by the EUCEET MC in Vilnius, on 8 December 2006

- The EUCEET Association has 57 members, among which 53 universities and 4 professional associations.

EUCEET
(European Civil Engineering Education and Training)

Thematic Network founded on 14 July 1997 in Barcelona by partners in two Tempus projects **CESCOOP – CESNET,** initiated and coordinated by the Technical University of Civil Engineering Bucharest

EUCEET founding members

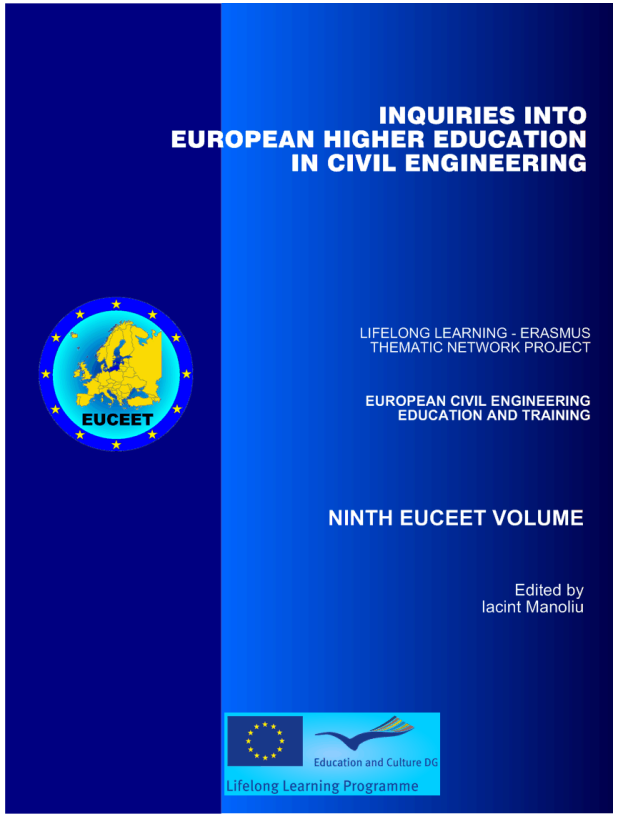
DE	Technical University Berlin
ES	Universidad Politecnica de Madrid
ES	Universitat Politecnica de Catalunya Barcelona
FR	**Ecole Nationale des Ponts et Chaussées**
IT	Politecnico di Torino
PT	Instituto Superior Tecnico Lisbon
RO	**Technical University of Civil Engineering Bucharest**
UK	Imperial College London
UK	City University London

decided to apply for a EU funded TN projects under the call for 2008/2009

EUCEET partnership

SOCRATES Code	Number of partners							
	EUCEET I			DISS	EUCEET II			EUCEET III
	1998/1999	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2006/2009
EDU.4	43	50	59	66	97	100	101	75
ASS.1	7	8	13	13	14	14	14	20
ASS.2	2	2	2	2	1	1	1	2
ASS.3	1	1	1	1	1	1	1	1
RES	5	5	5	5	6	6	6	4
SER					7	9	9	4
Total	58	66	80	87	126	131	132	106
	(20)	(24)	(25)	(25)	(29)	(29)	(29)	(29)

EUCEET = 9 volumes



- 7 volumes in the series: "Inquiries into European Higher Education in Civil Engineering"

- Proceedings of the joint EUCEET – ECCE Conference "Challenges in civil engineering profession in Europe at the beginning of the Third Millennium", Sinaia, July 2001

- Special volume: "Civil Engineering Education in Europe - 2004

to be downloaded from:

www.euceet.eu

The EUCEET Association

Founded on 12th March 2007 under Belgian Law, as an expression of the sustainability strategy promoted by the Thematic Network

General Assemblies:

- ✓**October 2008, Warsaw**
- ✓**November 2009, Paris**
- ✓**December 2010, Barcelona**
- ✓ **November 2011, Patras**
- ✓ **November 2012, Pisa**
- ✓ **October 2013, Moscow**

Conferences:

- ✓ First international Conference (24-25 November 2011, Patras, Greece) ***"New Trends and Challenges in Civil Engineering Education"***
- ✓ Second international Conference (14th-15th October 2013, Moscow, Russia) ***"Civil engineering education: are we meeting the needs of the industry and society?"***

Civil engineering education and the Bologna process

Bologna Declaration, June 19th , 1999

Action line 2

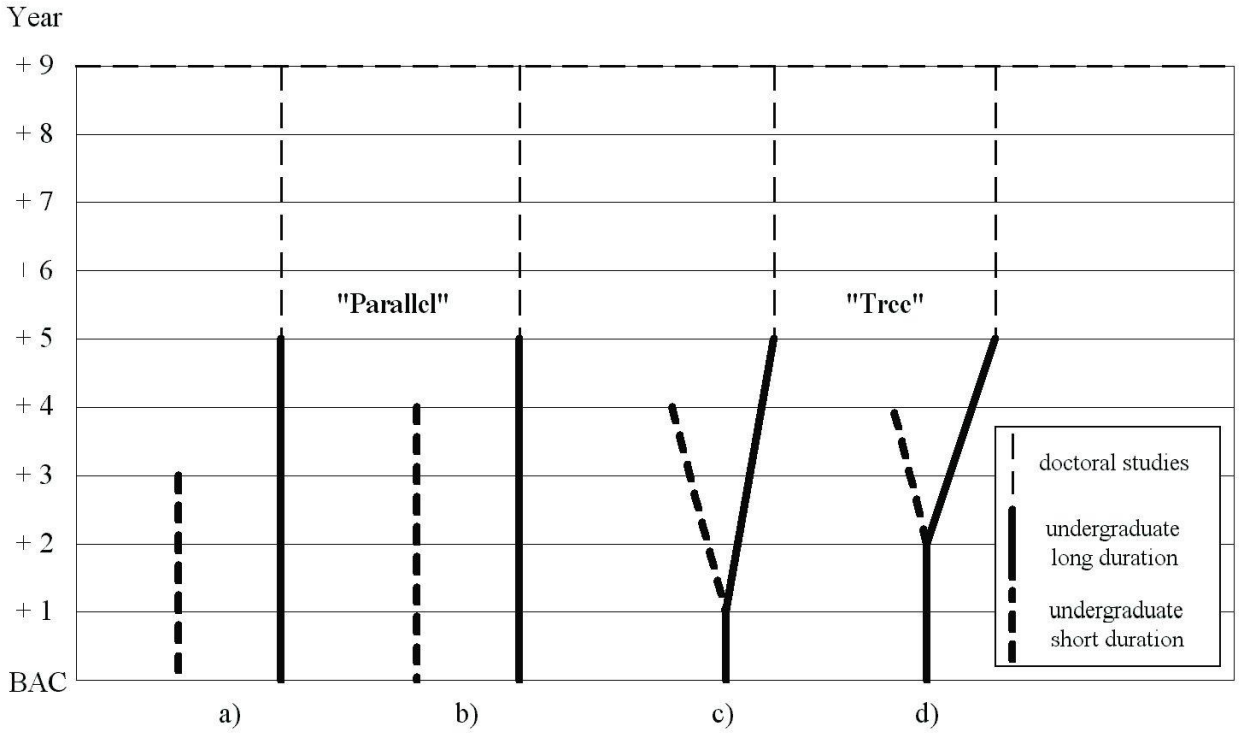
"Adoption of a system of easily readable and comparable degrees, also through the implementation of the Diploma Supplement, in order to promote European citizens employability and the international competitiveness of the European higher education system. ***Adoption of a system essentially based on two main cycles, undergraduate and graduate. Access to the second cycle shall require successful completion of first cycle studies, lasting a minimum of three years. The degree awarded after the first cycle shall be relevant to the European labour market as an appropriate level of qualification.*** *The second cycle should lead to the master and/ or doctorate degrees as in many European countries."*

Civil engineering education in Europe in 1999

A rather simple and clear situation.

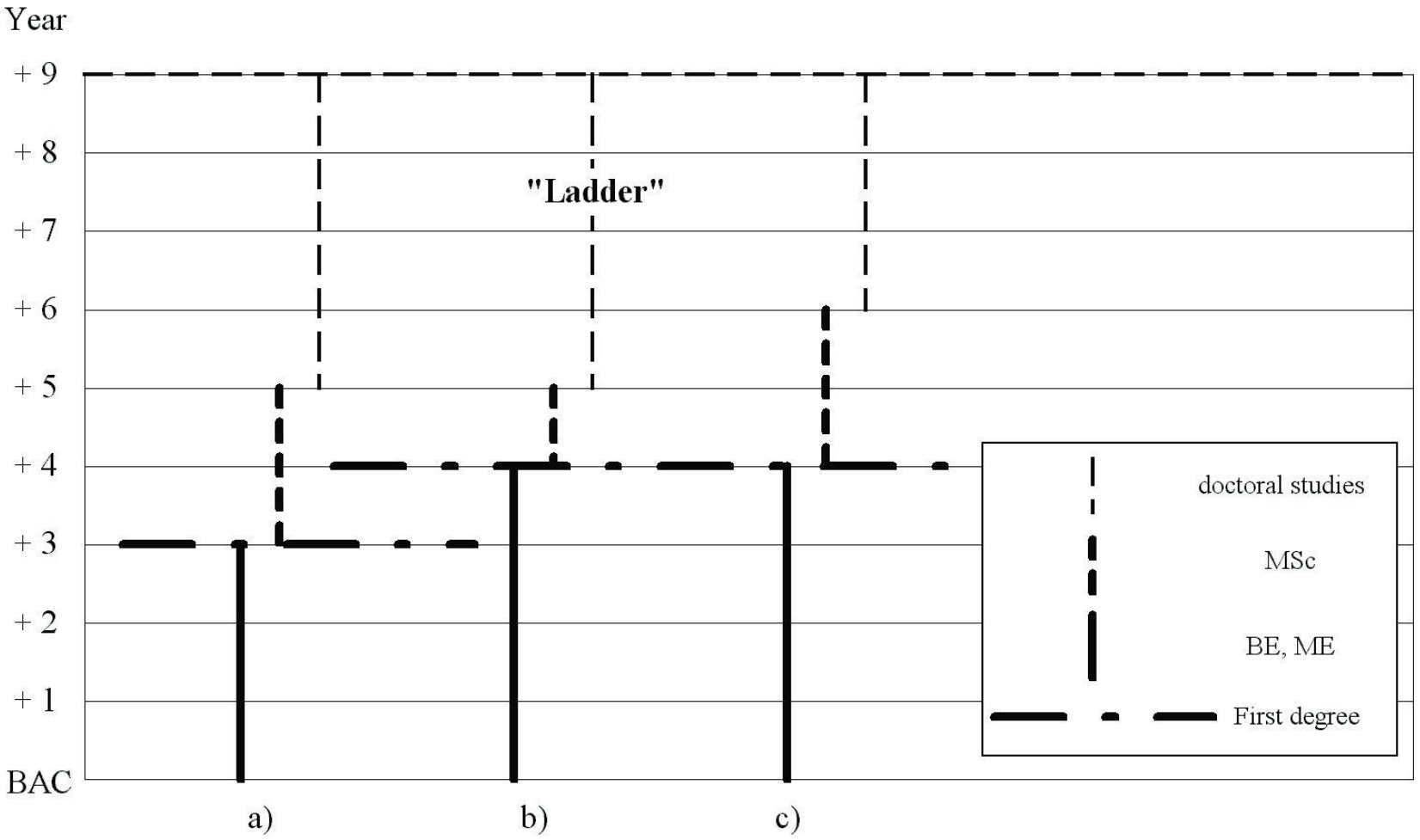
Two basic systems:

The "***continental*** "or "***binary*** "system, characterized by the coexistence in most European countries, of the two parallel types of engineering education: of ***long duration,*** of 5 year (exceptionally 6 years) and of ***short duration***, of 3… 4 years



Civil engineering education in Europe in 1999

The "***anglo-saxon***"or "***two-tier***"system, with undergraduate courses leading to **Bachelor of Engineering degree** followed by postgraduate studies leading to **a Master of Sciences degree**.



Providers of Civil engineering education in Europe in 1999, belonged to two distinct sectors:

- University sector

  (Universities, Technical Universities, Grandes Ecoles)

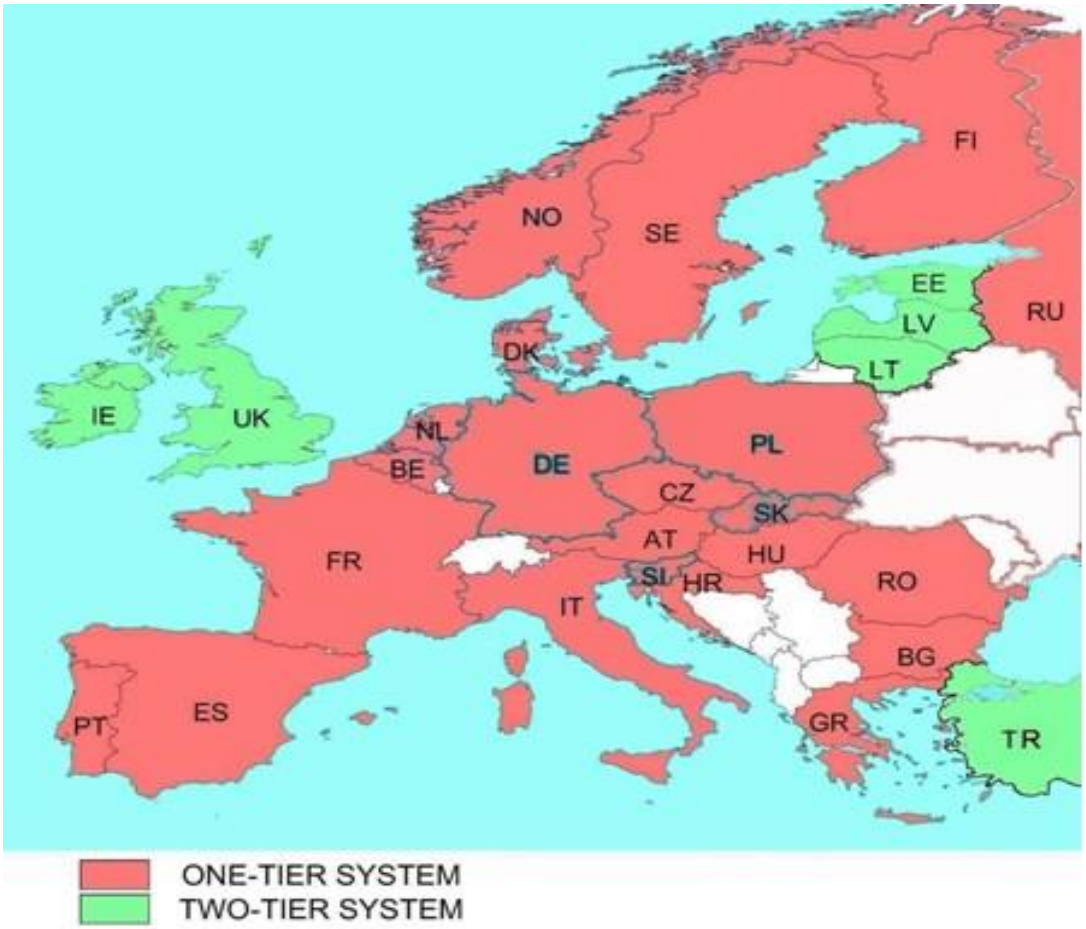
- Non-university sector

  (Fachhochschulen - AT, BE, Hogescholen –NL, BE-Flanders, Engineering Colleges - DK, Polytechnics - FI, Technological Education Institutes – GR, Technical Colleges – HU, Polytechnic Institutes – PT, University Colleges – NO, RO, SE, etc.

Institutions aimed to provide short duration, professionally oriented programmes.

Phases in the shift from the long duration (integrated) programmes to two-tier (Bachelor - Master) programmes

1999 – 2000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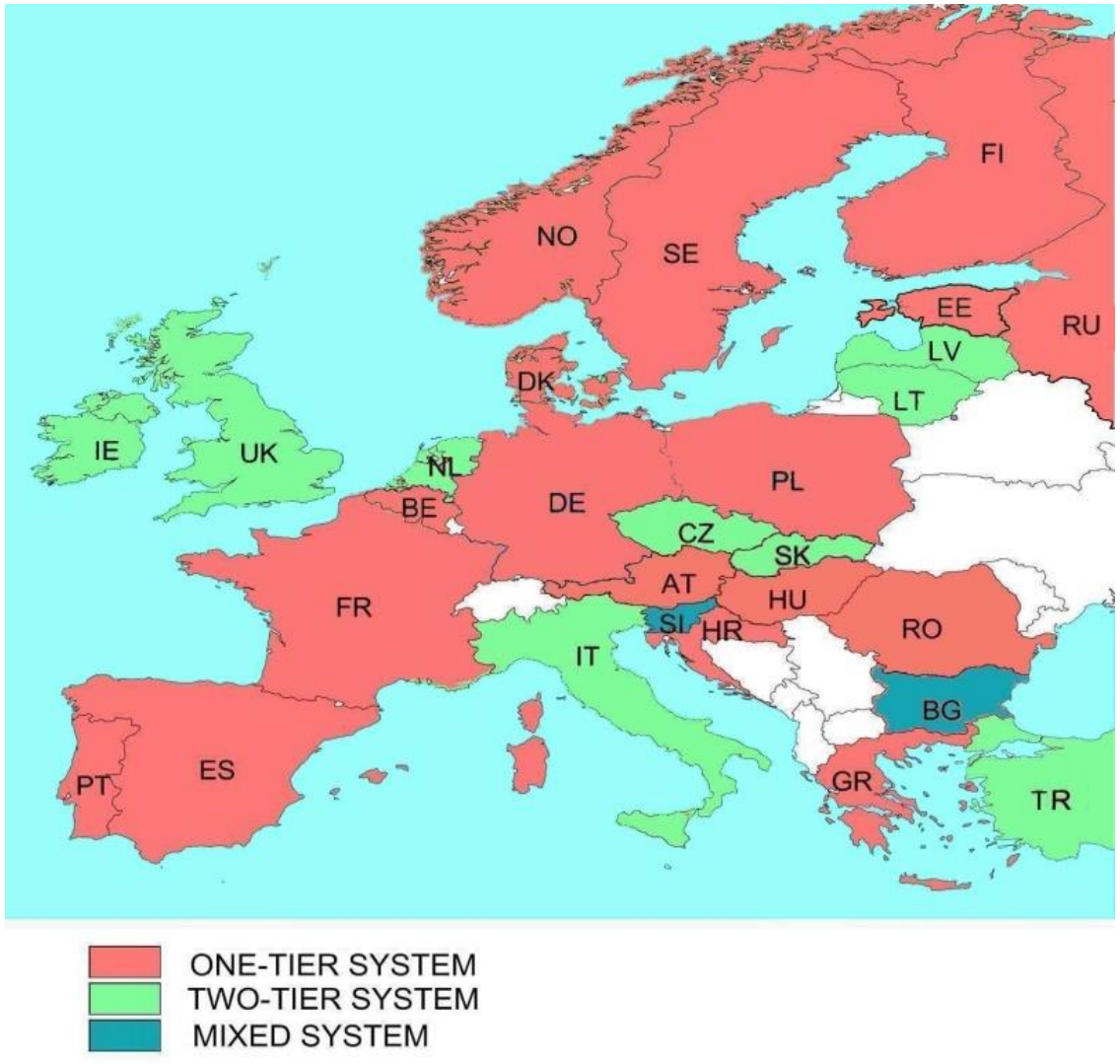
ONE-TIER SYSTEM
TWO-TIER SYSTEM

2003 – 2004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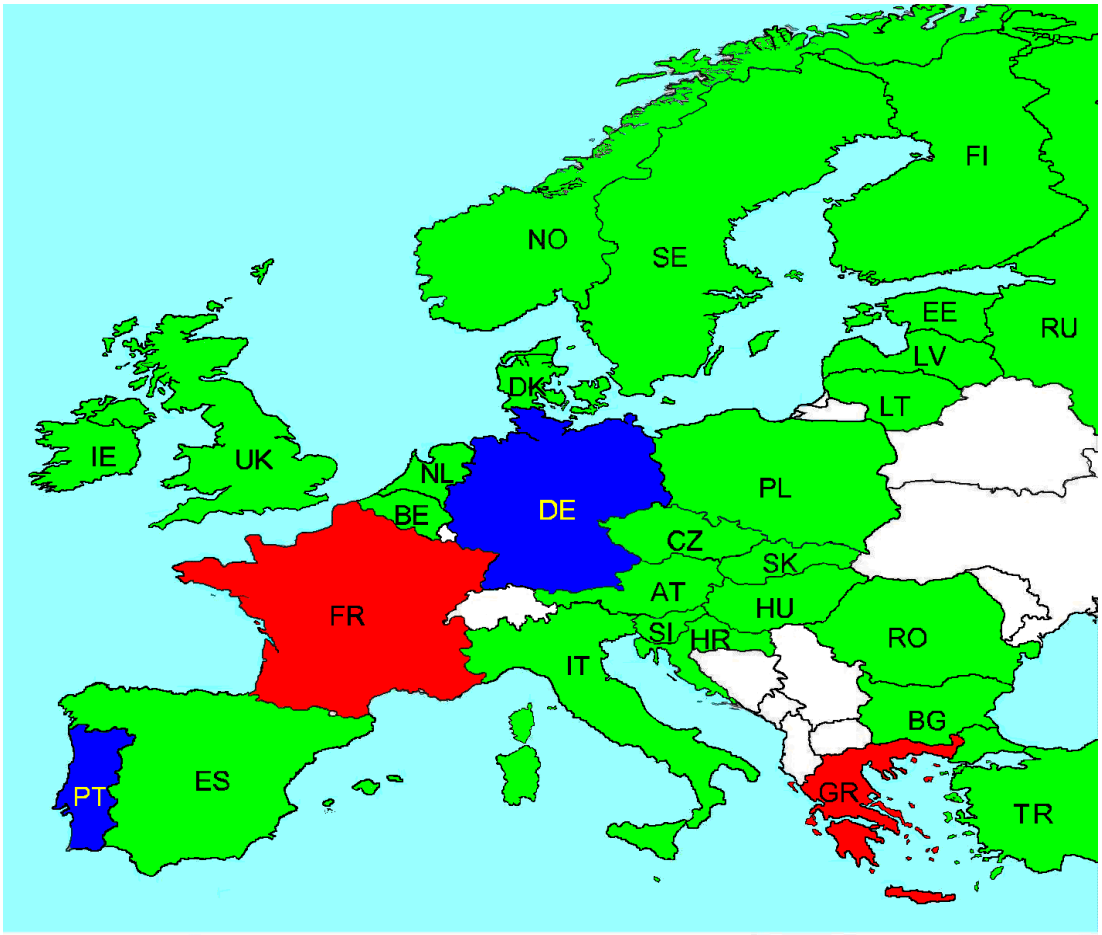
ONE-TIER SYSTEM
TWO-TIER SYSTEM
MIXED SYSTEM

2012 – 2013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ONE-TIER SYSTEM
TWO-TIER SYSTEM
MIXED SYSTEM

EUCEET III survey on the implementation of the two-tier study programmes in civil engineering education across Europe following the Bologna process

(responses from 45 universities in 24 countries)

How is regarded in your university the first cycle degree in civil engineering?

"a" being itself relevant to the European labour market, conferring employability

- Budapest University of Technology and Economics
- ALL Romanian universities
- UP Madrid
- Politecnico di Milano
- Riga T.U.
- Tallin T.U.
- UK universities

"b" as a break or pivot point suitable for mobility

- Helsinki U.T.
- University of Beira Interior
- University of Pisa
- University of Maribor
- TU Delft
- K.U. Leuven
- FH Oldenburg
- Rzeszow T.U.

Both “a” and “b”

- CTU Prague
- Slovak T.U.
- I.S.T. Lisbon
- Chalmers U.T.
- U. Porto
- T.U. Műnchen
- Vilnius Gediminas T.U.
- U. Ljubljana
- Warsaw U.T.
- Middle East T.U.
- Istanbul U.

ECCE-EUCEET study conducted in 2013:

"The impact of the Bologna process in civil engineering education and profession in Europe"

Phase I: *Bologna process and the academic world*

A. Survey on the education system

EUCEET-ECCE study

Survey on the education system

Answers were received from 21 countries: BE, BG, CZ, DE, EE, ES, FI, FR, GE, GR, IE, IT, HR, HU, NL, PL, PT, RO, RU, SI, UK, TR

No	Question	BE	BG	CZ	DE	EE	ES	FI	FR	GE	GR	HR	HU	IE	IT	NL	PL	PT	RO	RU	SI	TR	UK
1.	How many education institutions are offering civil engineering programmes in your country	9[1]	5	4	45	3	X[2]	19[3]	87	10	5	5[4]	8	5[5] 11[6]	[7]	2	48	34	9	160	2	>100 ~120 [8]	65
2.	Is there a differentiation among institutions the answer to the 1st question was referred to YES NO	☒ ☐	☒ ☐	☐ ☒	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☐ ☒	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☐ ☒	☒ ☐	☐ ☒	☒ ☐	☒ ☐

[1] Please note that the answers do not hold true necessarily for the whole of Belgium since there are slight differences in the French speaking part and in Flanders

[2] Many, hard to know as the name of the bachelor degree is not uniform. Around 20 will be offering the bachelor (chartered) and around 11 the master of Civil Engineering (four private universities) (chartered)

[3] +lower level institution

[4] There are four faculties of civil engineering and one polytechnic that offer studies of civil engineering.

[5] Universities

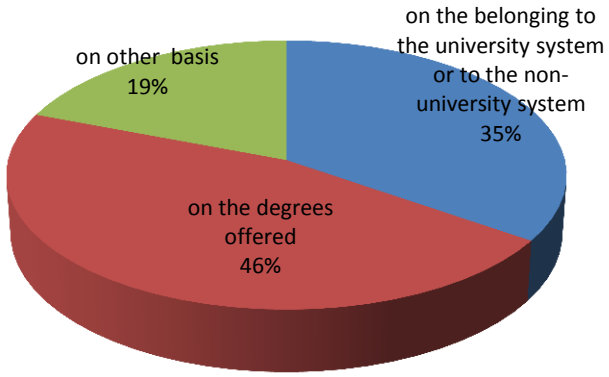
[6] Universities of applied science

[7] Many, hard to know as the name of the bachelor degree is not uniform. Around 20 will be offering the bachelor (chartered) and around 11 the master of Civil Engineering (four private universities) (chartered)

[8] **(>90 Civil Engineering departments, evening programmes in >30)**

Question 3

If the answer to the previous question is YES, on which basis is made the differentiation?



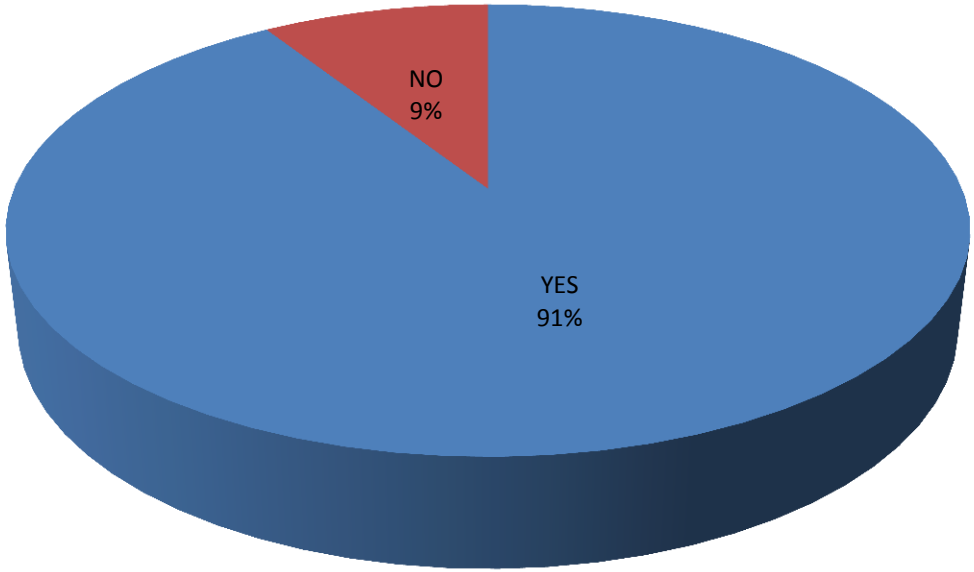
No	Question	BE	BG	CZ	DE	EE	ES	FI	FR	GE	GR	HR	HU	IE	IT	NL	PL	PT	RO	RU	SI	TR	UK
3.	•on the belonging to the university system or to the non-university system •on the degrees offered •on other basis *(please, specify)*	☐ [1]	☒	☐	☒ [2]	☒ [3]	☒	☒	☒	☒	☐	☒ [4]	☒	☒	☒	☒ [5]	☐	☒	☐	☒	☐	☒ [6]	☒

Notes:

1) BE, duration of master programme. Orientation to more scientific or more applied approach
2) DE, education with different specification like internationality (European Civil Eng. Management), management and legislation, building and facility management etc
3) EE, Applied oriented (polytechnics) 4-year study does not give the degree.
4) HR, In Croatia we have a binary system for civil engineering education [both university (academic) and vocational (professional) studies] and three cycles [undergraduate, graduate and postgraduate university (academic) programmes and undergraduate and specialist graduate vocational (professional) study programmes].
There are four faculties of civil engineering and one polytechnic that offer studies of civil engineering.
Faculties have the possibility to offer university and vocational study programmes. Polytechnics can offer only vocational programmes. Three Faculties offer both university and vocational study programmes on different levels. One Faculty offers only university study programmes and in the same city the vocational programmes are offered by the Polytechnic.
5) DUT: civil engineering, University of Twente: civil engineering and management
6) TR: **(curriculum emphasis)**

Question 4

Was the structure of the civil engineering programmes changed as a result of the Bologna reform?



No	Question	BE	BG	CZ	DE	EE	ES	FI	FR	GE	GR	HR	HU	IE	IT	NL	PL	PT	RO	RU	SI	TR	UK
4.	Was the structure of the civil engineering programmes changed as a result of the Bologna reform? YES NO	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☐ ☒	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☒ ☐	☐ ☒	☒ ☐

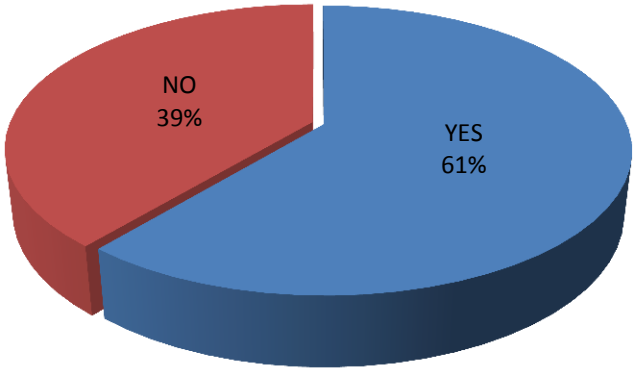
Question 5

If the answer to the previous question is YES, in which academic year started to be implemented in your country the changes induced by Bologna in the structure of the civil engineering programmes?

2002	2003	2004	2005	2005	2005	2005	2006	2007	2009	2010
EE, NL	HU, CZ	CZ	BG, FR, FI	IE	HR	RO	PT	DE , PL	SI	IT, RU, ES

Question 6

Were the changes, to which the previous questions were referred to, introduced simultaneously in all higher education institutions?



Question 7

If the answer to the previous question is NO, in which academic year was completed the reform of civil engineering programmes?

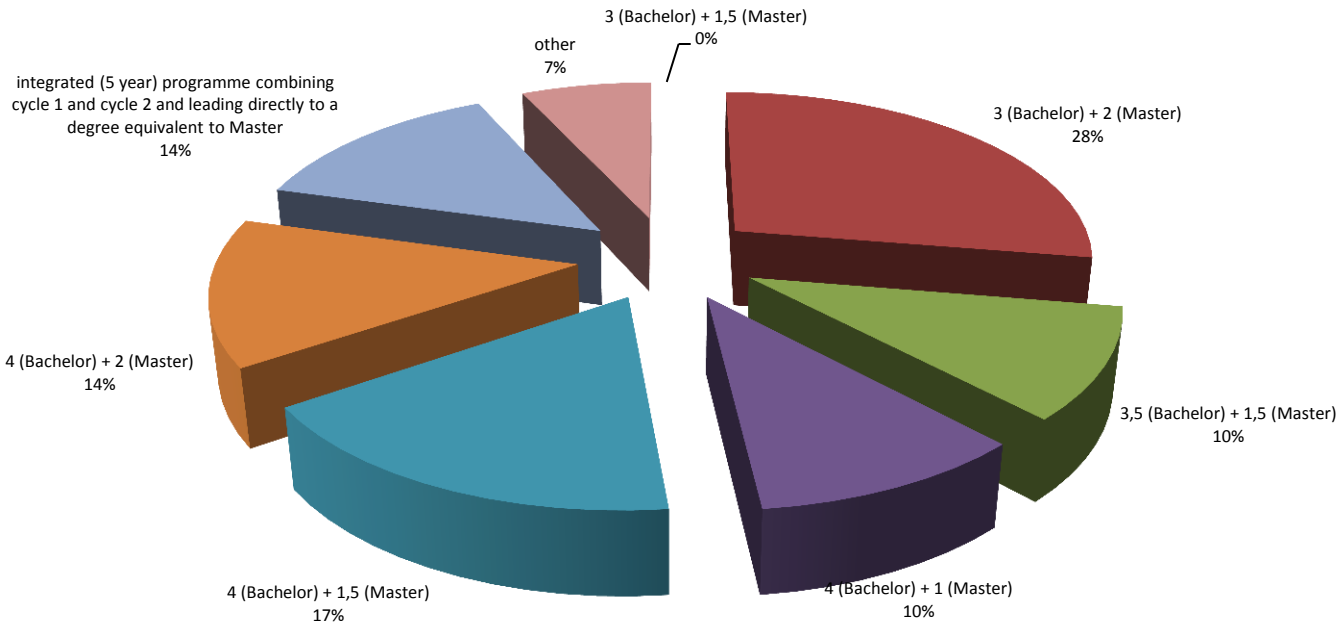
1999	2002	2004	2005	2009	2010
UK	CZ	BE	HU, FI	PT	DE, PL

EUCEET-ECCE study

Survey on the education system

Question 8

If, as a result of the Bologna reform, a system in cycles was introduced in your country, which was the system?



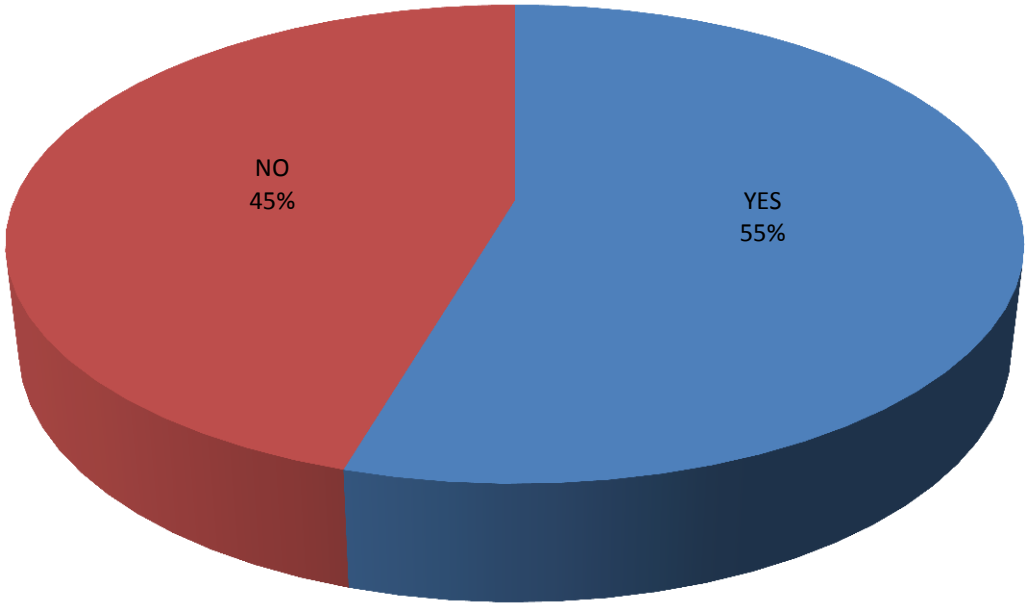
No	Question	BE	BG	CZ	DE	EE	ES	FI	FR	GE	GR	HR	HU	IE	IT	NL	PL	PT	RO	RU	SI	TR	UK
8.	• 3 (Bachelor) + 1,5 (Master) • 3 (Bachelor) + 2 (Master) • 3,5 (Bachelor) + 1,5 (Master) • 4 (Bachelor) + 1 (Master) • 4 (Bachelor) + 1,5 (Master) • 4 (Bachelor) + 2 (Master) • integrated (5 year) programme combining cycle 1 and cycle 2 and leading directly to a degree equivalent to Master • other *(please, specify)*	☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☒ ☒ ☒ ☐ ☒ ☐	☐ ☐ ☐ ☐ ☒ ☐ ☐ ☐	☐ ☒ ☒ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☒ ☐ ☒[1]	☐ ☐ ☐ ☐ ☒ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☒ ☐ ☐ ☐ ☐	☐ ☐ ☒ ☐ ☐ ☐ ☒ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☒ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐[2]	☐ ☐ ☐ ☒ ☐ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐ ☐ ☒ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☒ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐[3]	☐ ☐ ☐ ☒ ☐ ☐ ☐ ☒

Notes:

1) Applied oriented (polytechnics) 4-year study does not give the degree.
2) 3 + 2 for technical studies, 3 + 1 for all other studies
3) (Unrelated to the Bologna reform, 4+2 cycle system was introduced in all universities in 1981. It was even older in some.)

Question 9

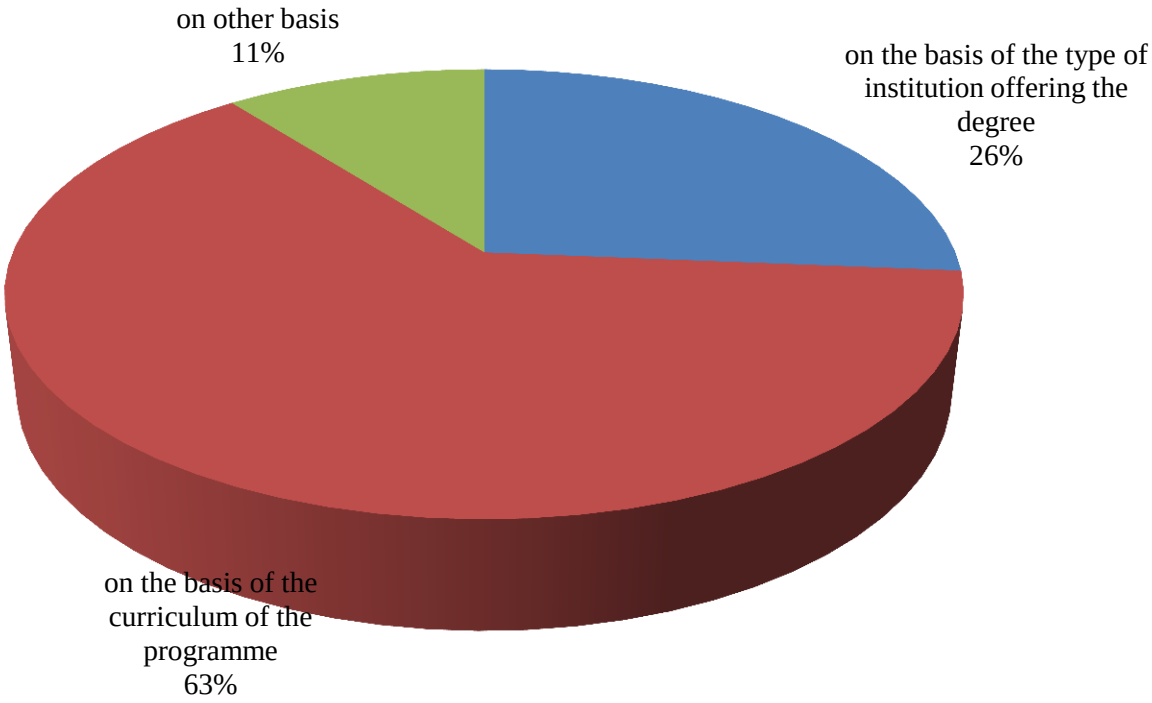
One can speak about the existence in your country of different types of Bachelor programmes, such as "*academic bachelor*" and "*professional bachelor*"?



NO	CZ	DE	EE	GE	GR	HU	IE	IT	IT	PT	RO	TR
YES	BE	FI	NL	PL	RU	BG	ES	FR	HR	IT	SI	UK	UK

Question 10

If the answer to the previous question is YES, on which basis is made the differentiation?



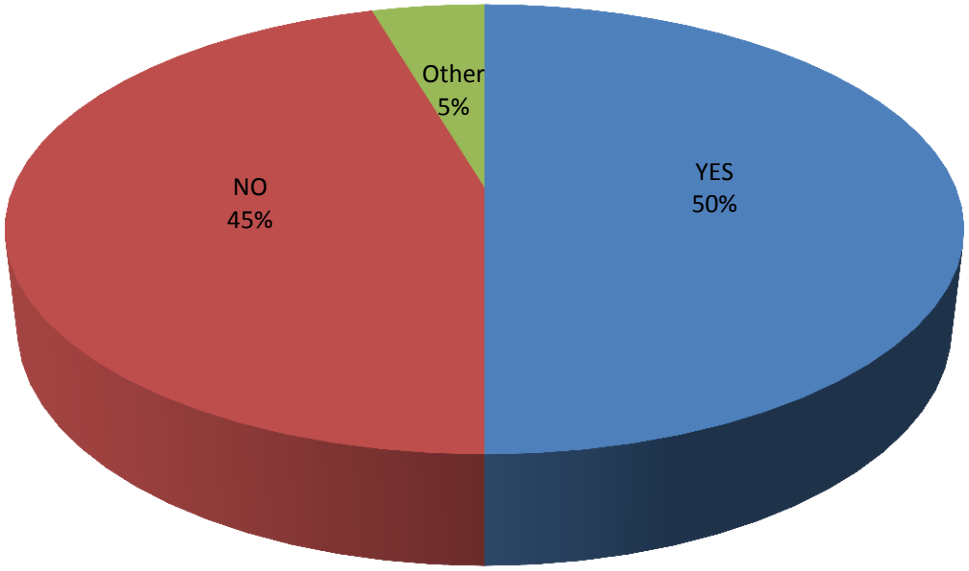
- on the basis of the type of institution offering the degree: **BE, FI, GE, HR, NL**
- on the basis of the curriculum of the programme : **FR, BG, FI, FR, GE, HR, ES, IT, NL, PL, RU, SI**
- on other basis: **GE, UK**

Note:

- **HR,** Polytechnics can offer only vocational programmes.
  Faculties have the possibility to offer university and vocational study programmes, so at the faculty the differentiation is made on the basis of the curriculum of the programme.

Question 11

One can speak about the existence in your country of different types of Master programmes, such as "*academic master*" and "*professional master*"?



Notes:

DE: differentiation mostly due to different former systems Technical University --- Universities of Applied Sciences (Fachhochschulen (FH))

HR: We have **master of civil engineering** for students that graduate on the university (academic) graduate study programme and **vocational** (professional) **specialist of civil engineering** for students that graduate on the specialist vocational graduate study programme.

Question 12

There is a system of credits used in your country for civil engineering programmes?

YES 100%

Question 13

If the answer to the previous question is YES, which system is used?

ECTS	YES in all cases excepts GR (courses are credited by ECTS and weights counting for the final diploma degree), RU and TR where (credits are given only for lectures + lab, study excluded)
Other	No

Phase I: *Bologna process and the academic world*

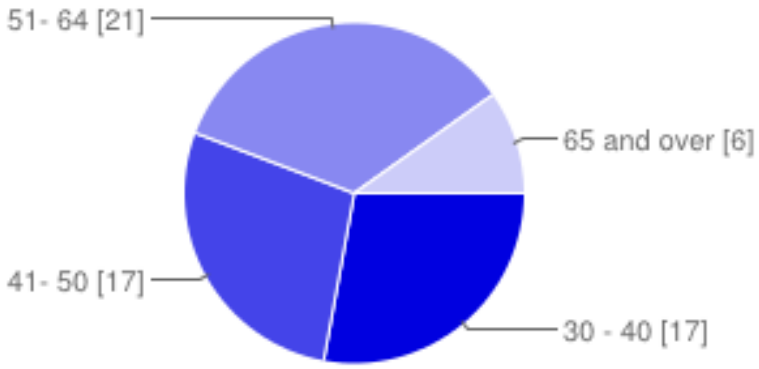
B. Survey conducted among academics

EUCEET-ECCE study

Survey conducted among academics

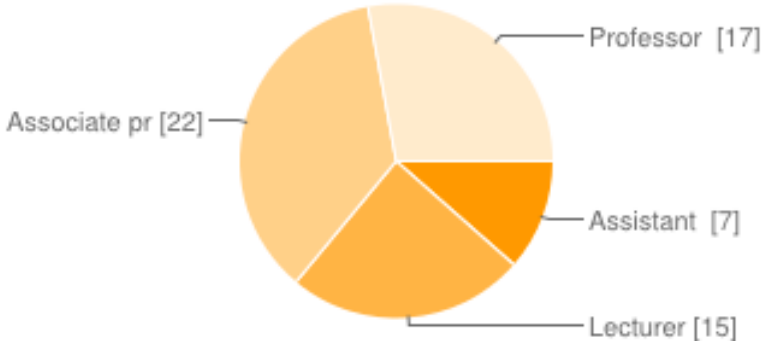
82 answers were from 14 countries: CZ, DE, DK, EE, ES, FI, FR, GE, GR, IE, IT, HR, HU, NL, PL, PT, RO, RU, SI, UK, TR

The age group of respondents



30 - 40	17	28%
41- 50	17	28%
51- 64	21	34%
65 and over	6	10%

Didactic degree of respondents



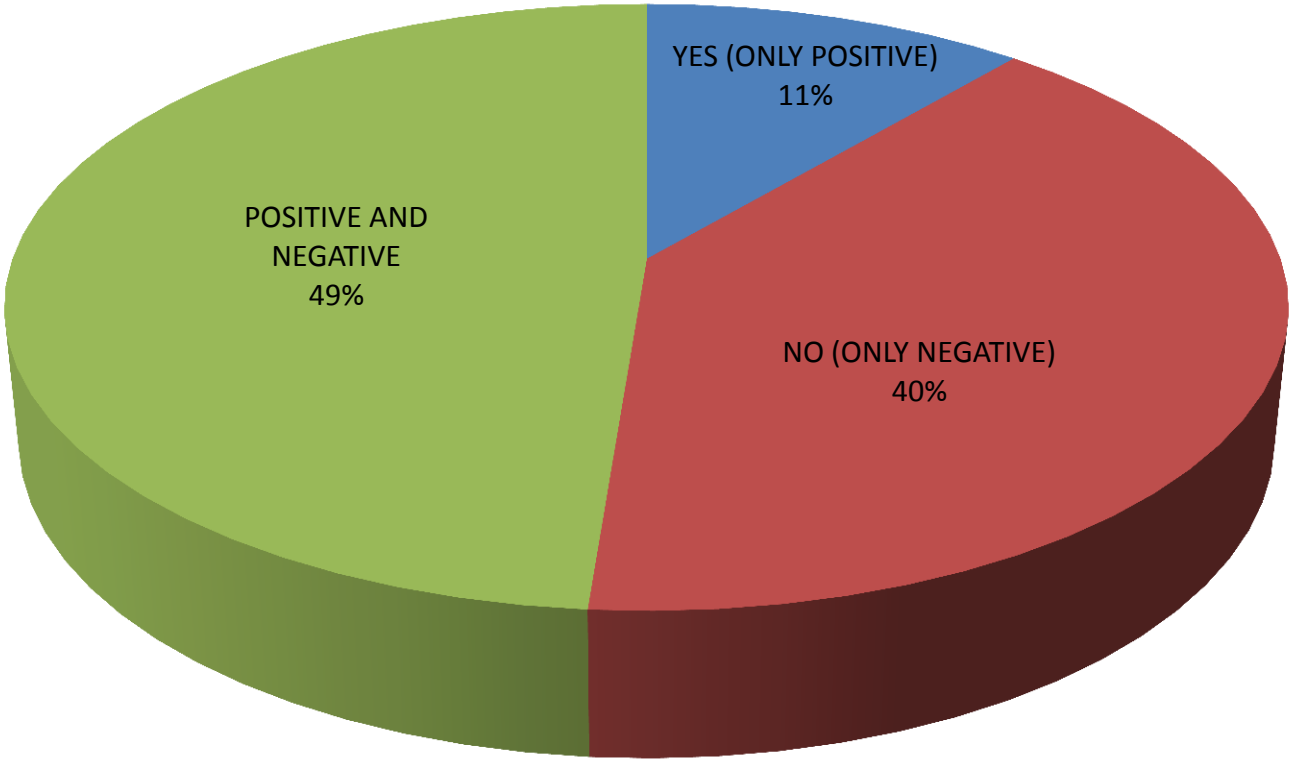
Assistant	7	11%
Lecturer	15	25%
Associate professor	22	36%
Professor	17	28%

EUCEET-ECCE study

Survey conducted among academics

Question 1

Do you consider that the changes induced by the Bologna process have a positive effect on the civil engineering education in your country?

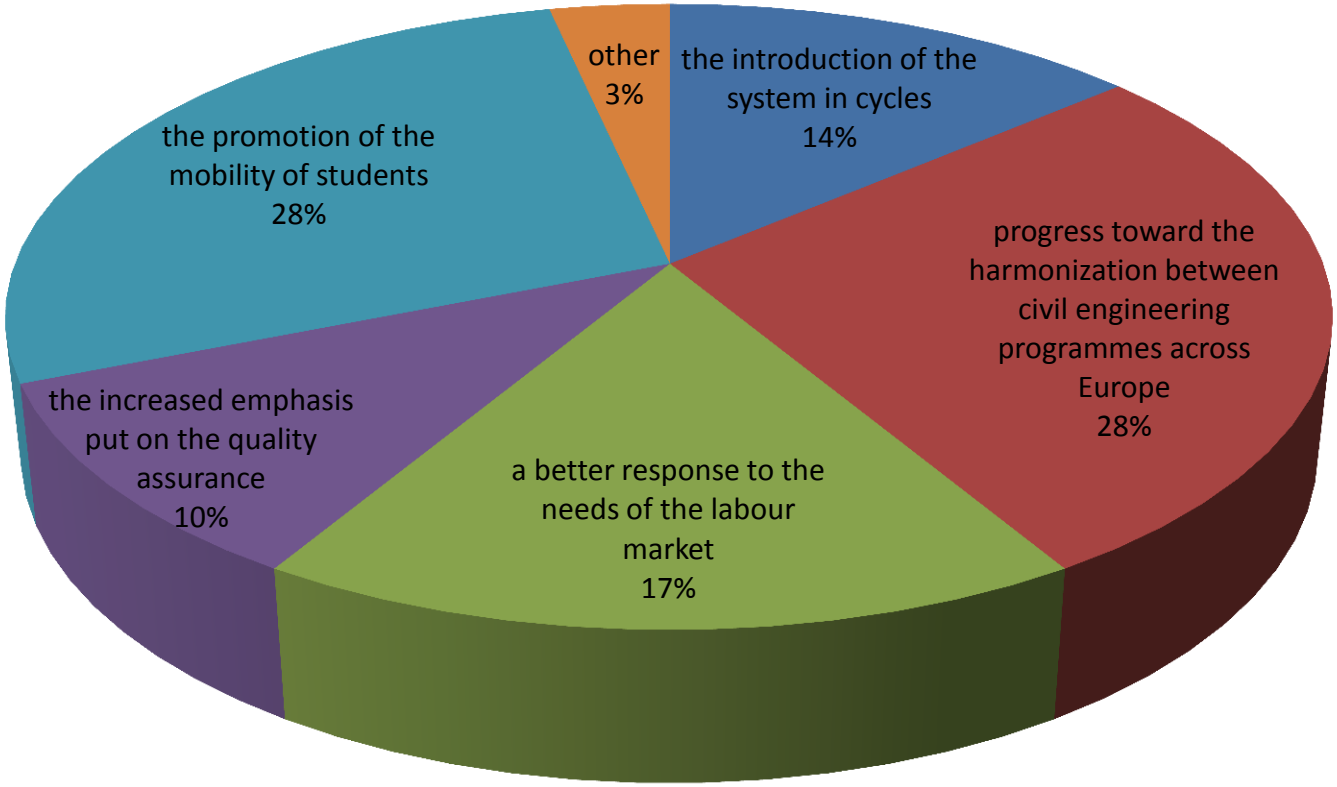


EUCEET-ECCE study

Survey conducted among academics

Question 2

If the answer to the previous question is YES, which are the reasons that caused the positive effect?

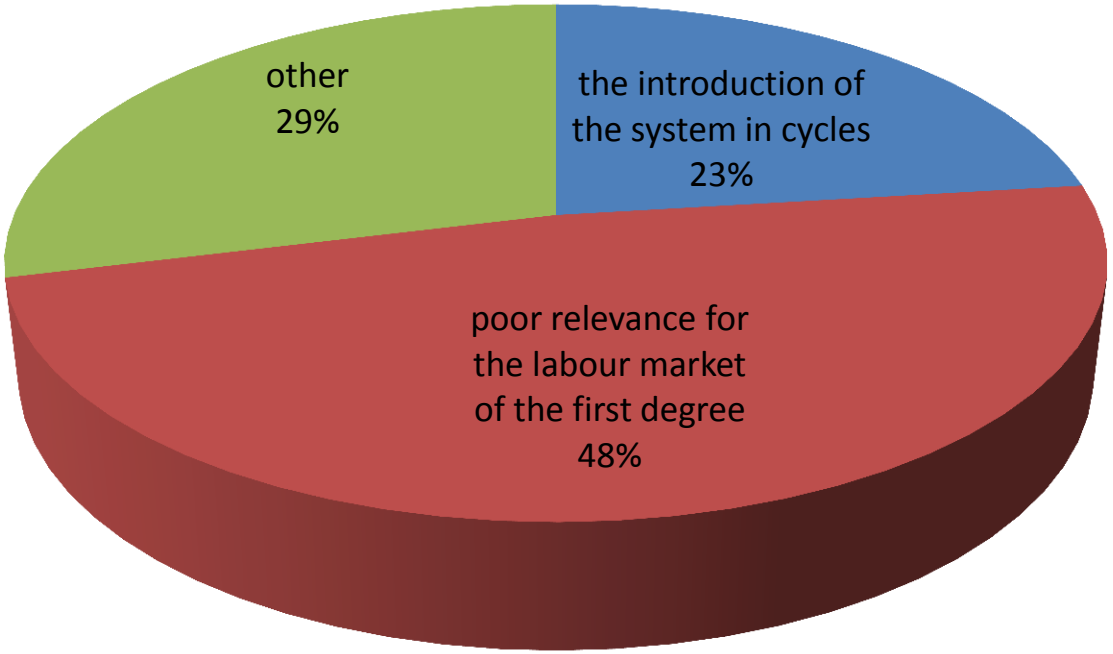


EUCEET-ECCE study

Survey conducted among academics

Question 3

If the answer to the question 1 is NO, which are the reasons that caused the negative effect?

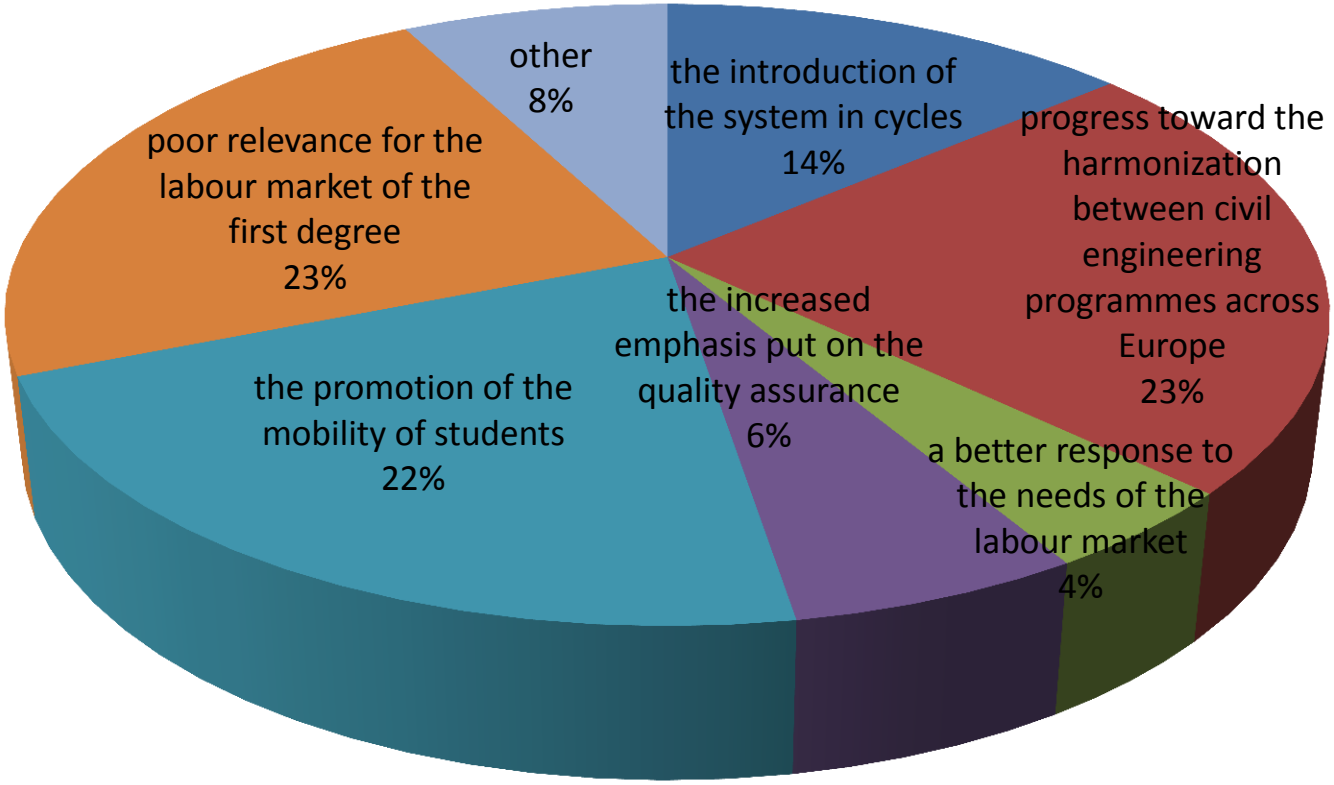


EUCEET-ECCE study

Survey conducted among academics

Question 4

If the answer to the previous question 1 is POSITIVE AND NEGATIVE, which are the reasons of your evaluation?

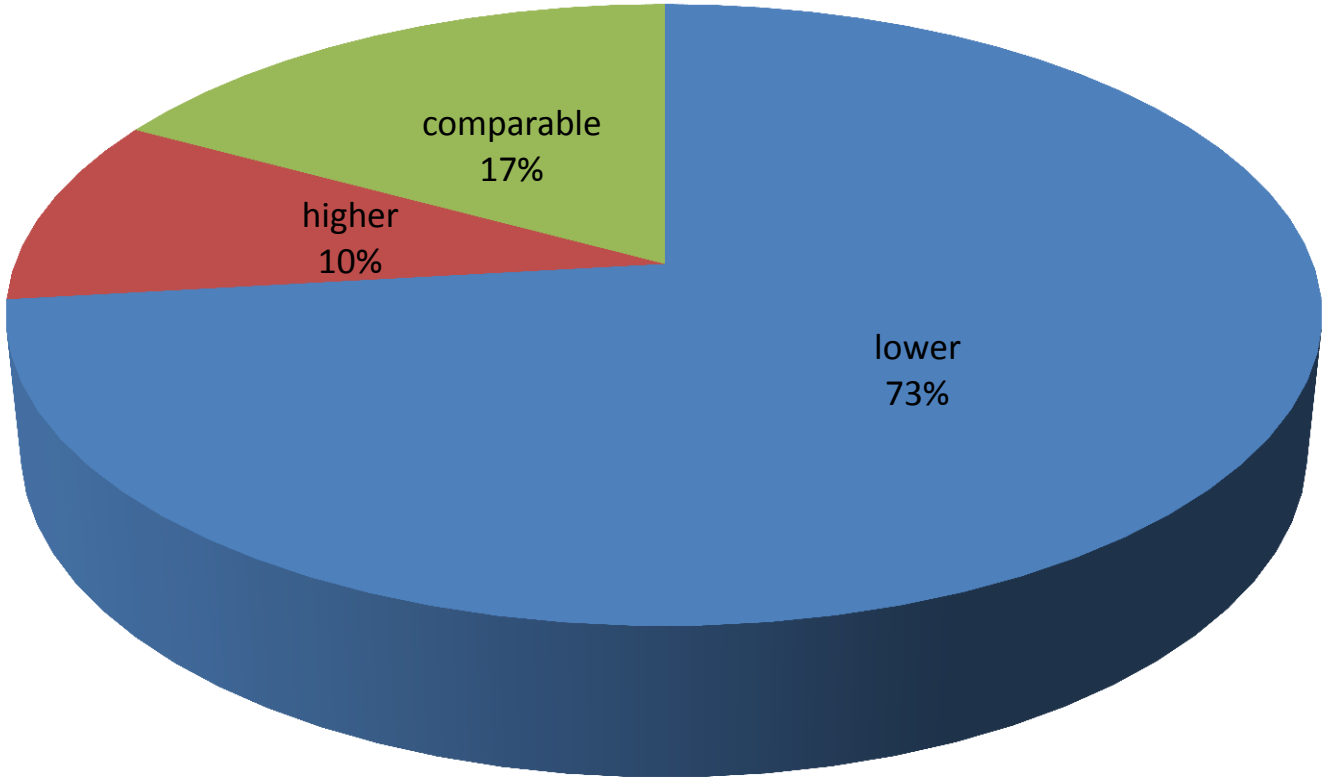


EUCEET-ECCE study

Survey conducted among academics

Question 5

How can be appreciated the level of the graduates of civil engineering programmes in your country in the last 5 years as compared to the one 20-25 years ago**?**

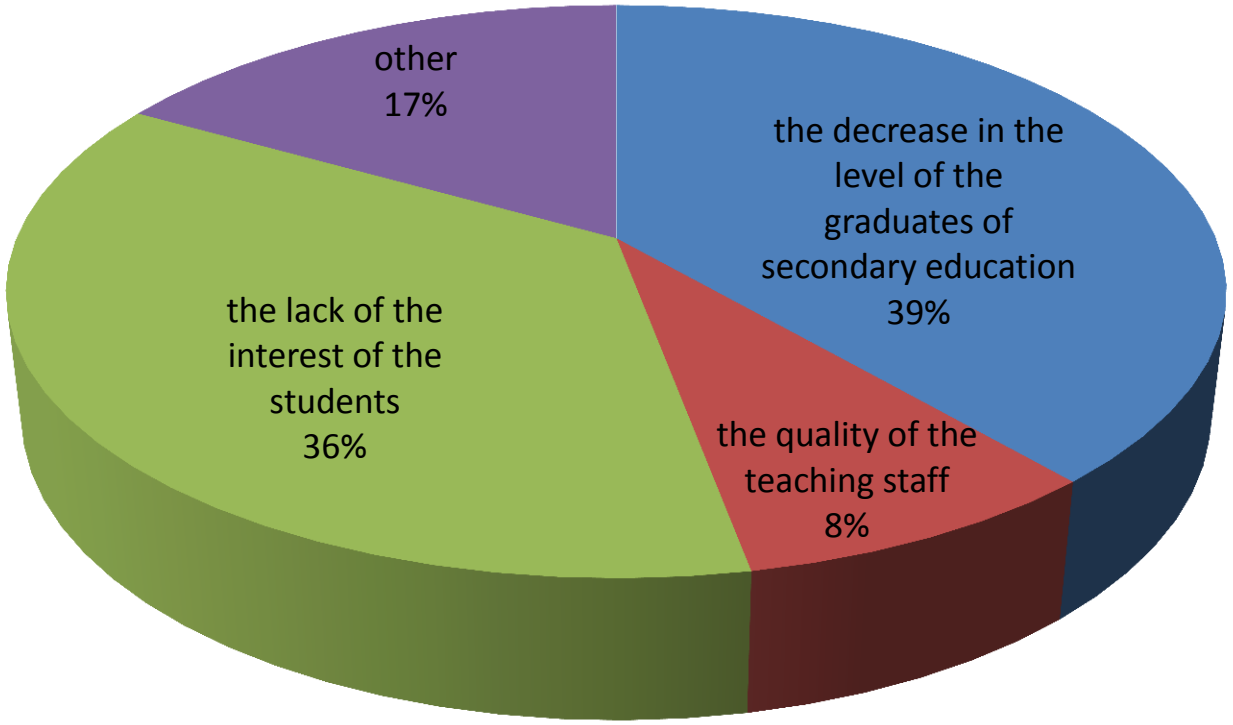


EUCEET-ECCE study

Survey conducted among academics

Question 6

If the answer to the previous question is lower, which are, in your opinion, the reasons for this evaluation? If the answer to the previous question is lower, which are, in your opinion, the reasons for this evaluation?



Few samples from the comments added by some respondents to the survey conducted among academics

Survey conducted among academics

- In this time of recession with high unemployment rate in Croatia it is difficult to say that the first degree has poor relevance for the labour market. There are jobs in civil engineering that do not require the level of master in civil engineering but if there is a possibility to employ a master or a bachelor for the same salary then it is logical to employ a master.

- The most important difference is that college now looks more like high school and as a consequence the students are less independent and teaching looks more like give them some examples and ground rules for the exam and if they reproduce similar tasks at the exam and/or colloquium that's that. No tricky questions please! And from mind breaking tasks new and improved ideas emerge and students are the best materials for such ideas! Don't suppress that!

Survey conducted among academics

- Structuring high education by study cycles is not good because:
  1) sends in the second cycle some disciplines whose knowledge are needed in the first cycle;
  2) some disciplines who rely on basic disciplines are studied concurrently with them, not after they. - The survey does not enable to express the negative opinion and to point real threats related to general lowering of education level which was caused by Bologna process. The idea to unify the education could have a positive influence on weak technical universities. In case of “high standard” universities it caused a waste of time and irrelevance of learning programs.

- The newly introduced Bachelor's degree has not been accepted either by public or by employers. Both groups consider Master's degree the only proper degree of a university graduate. (b) Since university funding is mostly based on enrollment, the universities give preference to the number of students over the demands put on the knowledge and skills of the graduates. The Bologna process should be abandoned and reversed.

Phase II: *Bologna process and the professional world*

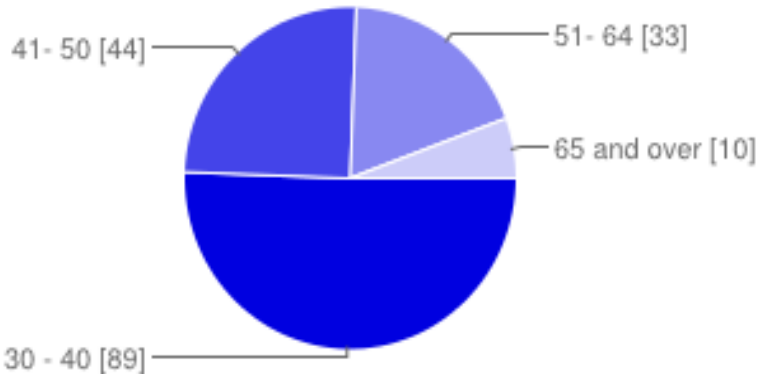
Survey conducted among professionals

EUCEET-ECCE study

Survey conducted among professionals

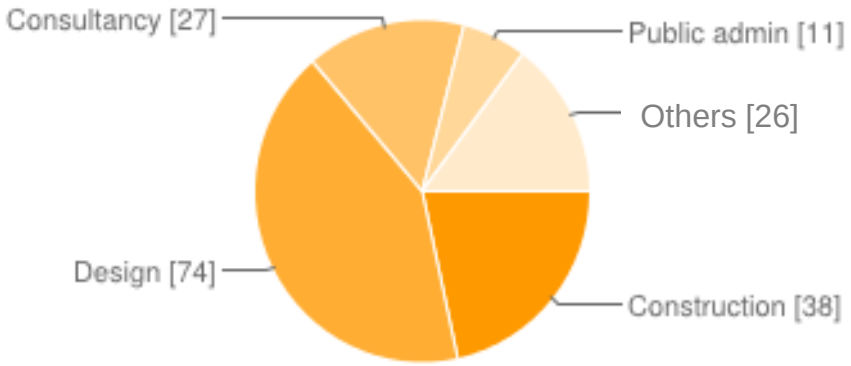
176 answers were received from 8 countries: HR, HU, EE, MT, SR, SI, RO, PL

The age group of respondents



30 - 40	89	51%
41- 50	44	25%
51- 64	33	19%
65 and over	10	6%

Respondents work in …



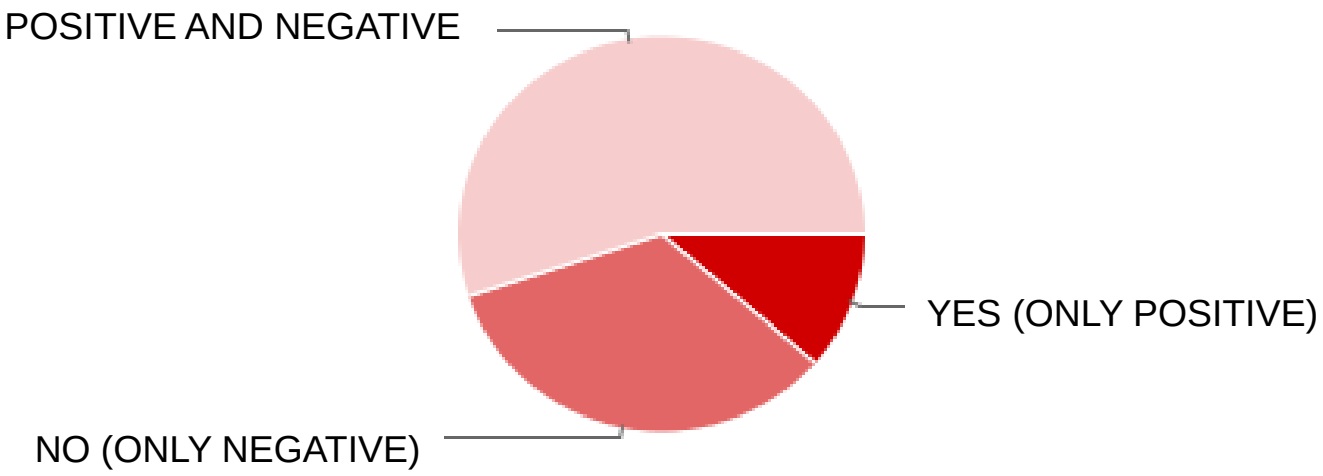
Construction company	38	22%
Design	74	42%
Consultancy	27	15%
Public administration	11	6%
others	26	15%

EUCEET-ECCE study

Survey conducted among professionals

Question 1

Do you consider that the changes induced by the Bologna process have a positive effect on the civil engineering education in your country?



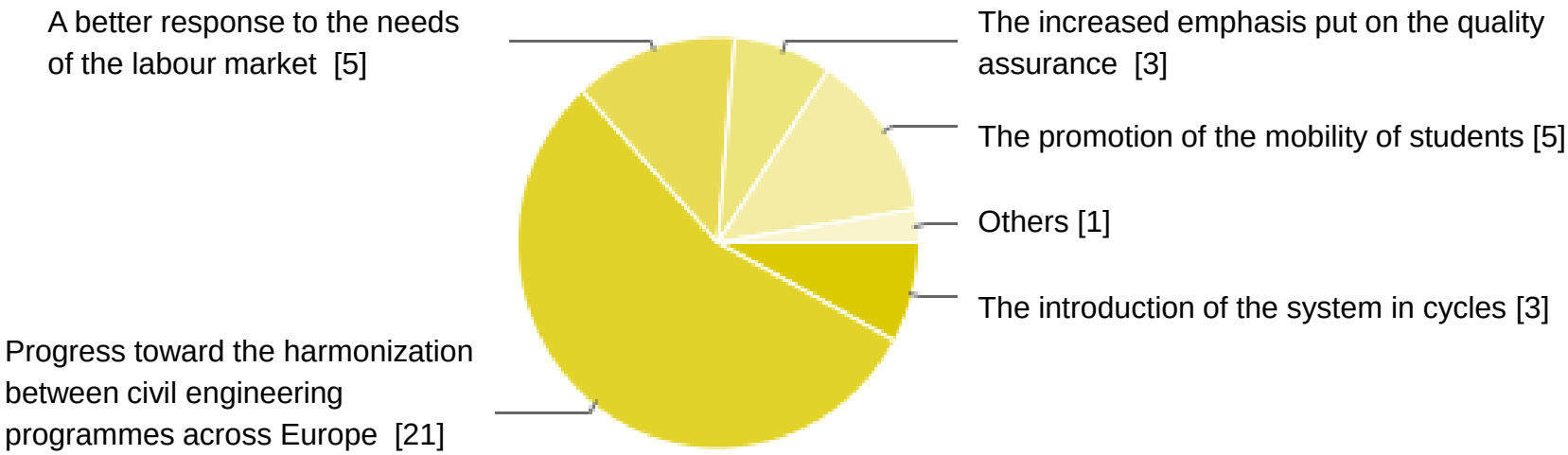
YES (ONLY POSITIVE)	**20**	11%
NO (ONLY NEGATIVE)	**59**	34%
POSITIVE AND NEGATIVE	**97**	55%

EUCEET-ECCE study

Survey conducted among professionals

Question 2

If the answer to the previous question is YES, which are the reasons that caused the positive effect?



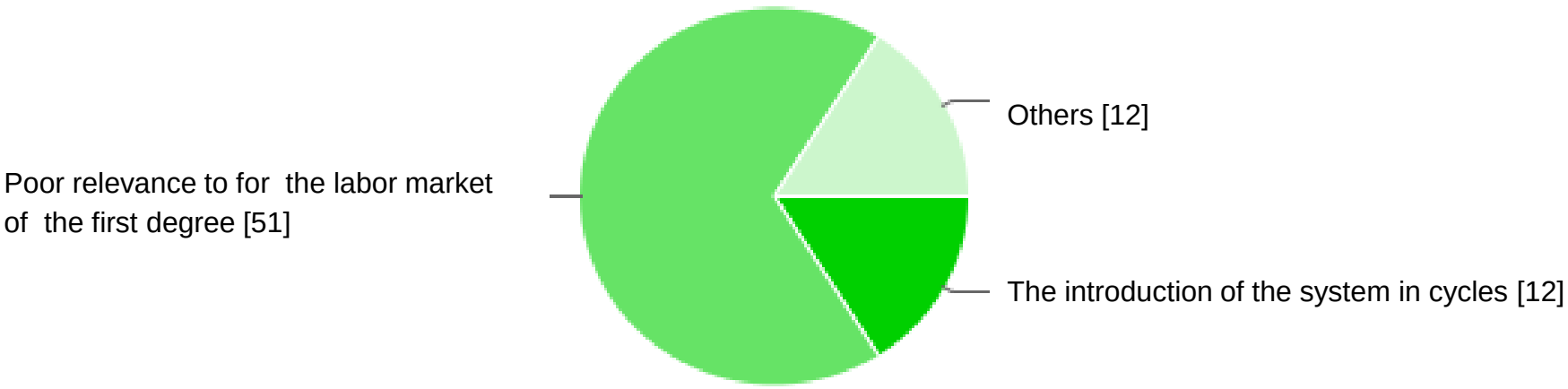
Progress toward the harmonization between civil engineering programmes across Europe	**21**	**55%**
A better response to the needs of the labour market	**5**	**13%**
The promotion of the mobility of students	**5**	**13%**
The introduction of the system in cycles	**3**	**8%**
The increased emphasis put on the quality assurance	**3**	**8%**
Others	**1**	**3%**

EUCEET-ECCE study

Survey conducted among professionals

Question 3

If the answer to the question 1 is NO, which are the reasons that caused the negative effect?



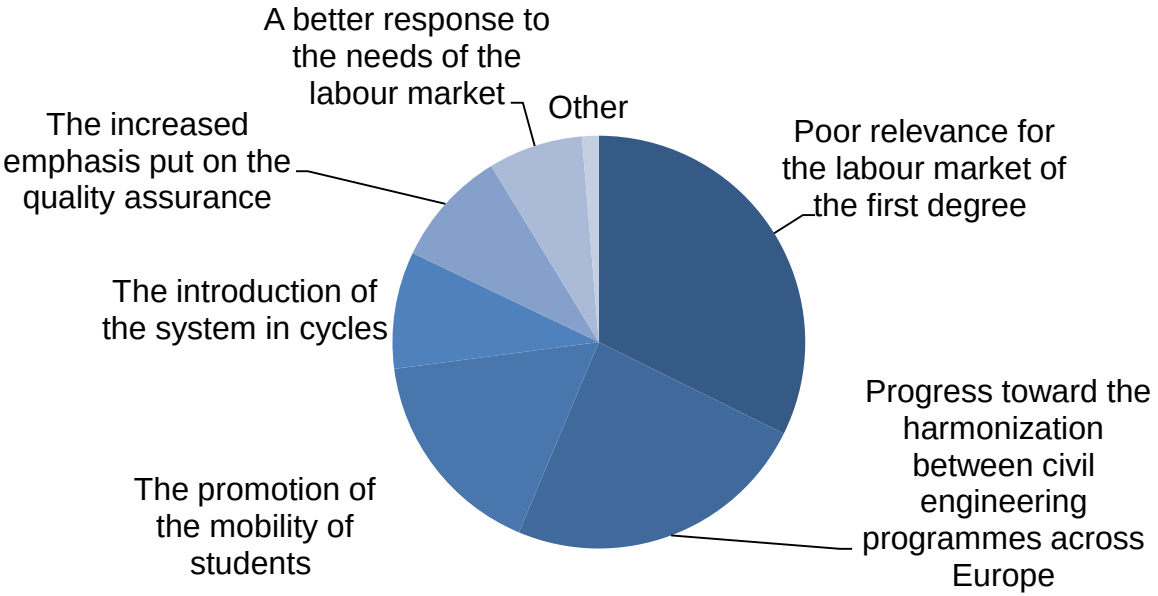
The introduction of the system in cycles	**12**	16%
Poor relevance for the labour market of the first degree	**51**	68%
Other	**12**	16%

EUCEET-ECCE study

Survey conducted among professionals

Question 4

If the answer to the previous question 1 is POSITIVE AND NEGATIVE, which are the reasons of your evaluation?



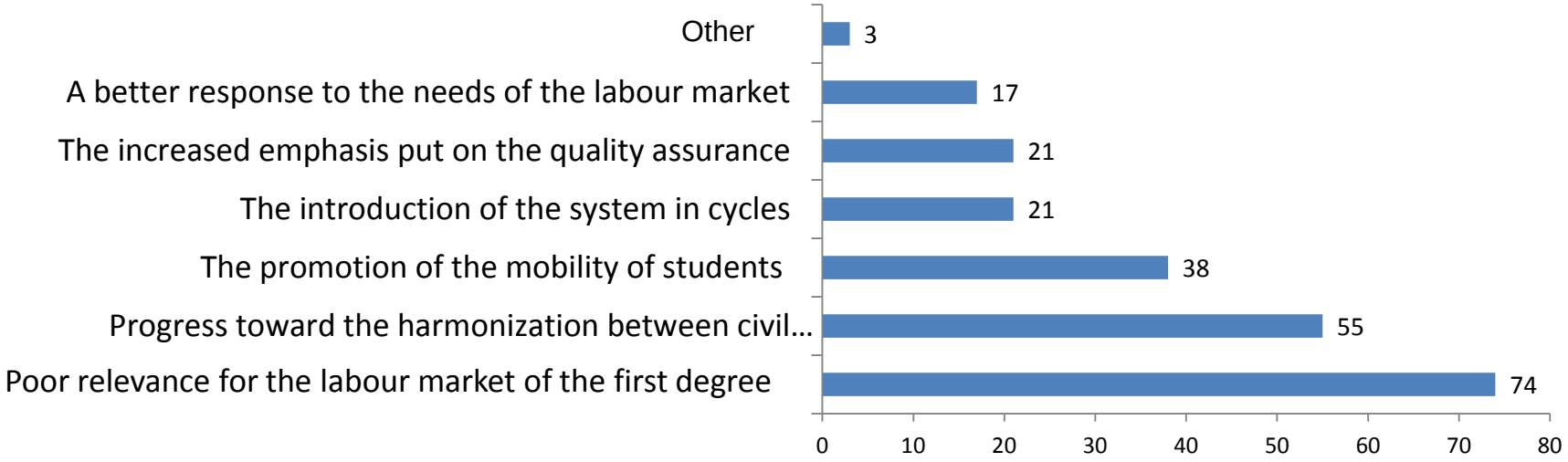
Poor relevance for the labour market of the first degree	**74**	32%
Progress toward the harmonization between civil engineering programmes across Europe	**55**	24%
The promotion of the mobility of students	**38**	17%
The introduction of the system in cycles	**21**	9%
The increased emphasis put on the quality assurance	**21**	9%
A better response to the needs of the labour market	**17**	7%
Other	**3**	1%

EUCEET-ECCE study

Survey conducted among professionals

Question 4

If the answer to the previous question 1 is POSITIVE AND NEGATIVE, which are the reasons of your evaluation?



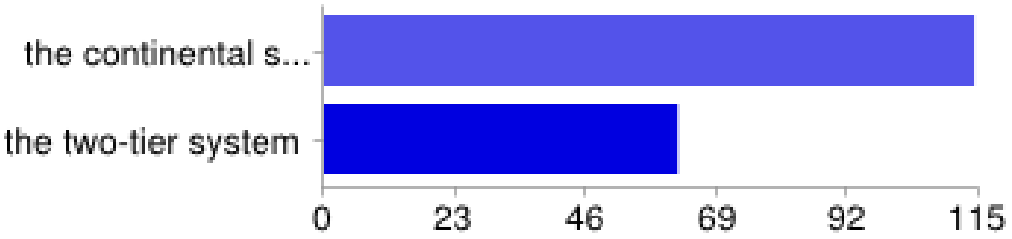
Poor relevance for the labour market of the first degree	**74**	32%
Progress toward the harmonization between civil engineering programmes across Europe	**55**	24%
The promotion of the mobility of students	**38**	17%
The introduction of the system in cycles	**21**	9%
The increased emphasis put on the quality assurance	**21**	9%
A better response to the needs of the labour market	**17**	7%
Other	**3**	1%

EUCEET-ECCE study

Survey conducted among professionals

Question 5

In almost all European countries, the “continental system”, consisting of 5-year integrated programmes more theoretically oriented, run in parallel with the 3 or 3,5 year programme, more oriented toward practical aspects of civil engineering, was replaced by the two-tier system of 3+2, 4+2, 3,5+1,5 type.
Which of the two systems is more suitable for the education of civil engineers?



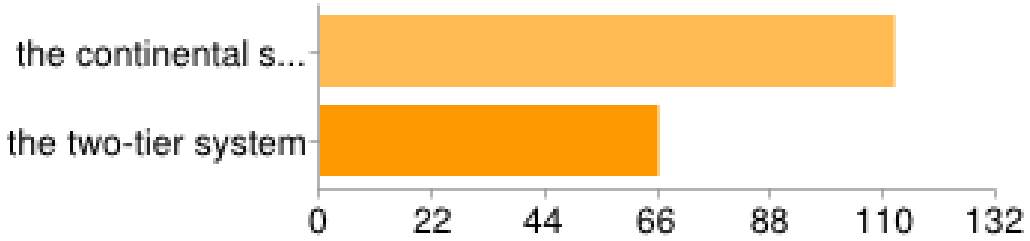
the continental system	**114**	65%
the two-tier system	**62**	35%

EUCEET-ECCE study

Survey conducted among professionals

Question 6

With respect to the previous question, which of the two system is more appropriate for the needs of the construction industry?



the continental system	**112**	63%
the two-tier system	**66**	37%

EUCEET-ECCE study

Survey conducted among professionals

Question 7

In what follows, is given a list of generic competences
Select from the 12 generic competences 5 you consider to be the most important for a young graduate of the first cycle.

Capacity for applying knowledge in practice	**134**	16%
Basic knowledge of the field of study	**110**	13%
Capacity to learn	**104**	12%
Ability to work in a team	**90**	10%
Capacity to adapt to new situations	**88**	10%
Elementary computing skills (word processing, database, other utilities)	**64**	7%
Capacity for generating new ideas (creativity)	**63**	7%
Capacity for analysis and synthesis	**62**	7%
Critical and self critical abilities	**49**	6%
Knowledge of a second language	**46**	5%
Interpersonal skills	**29**	3%
Oral and written communication in the native languages	**23**	3%

EUCEET-ECCE study

Survey conducted among professionals

Question 7

In what follows, is given a list of generic competences
Select from the 12 generic competences 5 you consider to be the most important for a young graduate of the first cycle.

Few samples from the comments added by some respondents to the survey conducted among professionals

Survey among professionals

- As a professional engineer in the field of structural engineering, and as a doctoral candidate I have some insight to the new system. My opinion is negative because I've been told by my colleagues in the education system that the bar for passing exams is lowered, and they need to keep it that way. This negatively influenced the adoption of basic knowledge by the students who in turn used the flaws of the system to their advantage by "walking through" most basics without actually knowing anything. I wish the system to be back to five-year-cycle (continental system).

- The Bologna process was a good idea for the mobility of students, but it failed, one of the reasons the mobility of the students is not possible. The second is that every university has their own statute for terms of study.

Survey among professionals

- Too many types of degrees! Only two basic are sufficient. Upgrade can be made with mr.sc. and dr.sc. in scientific field and in practical by some extra classes and/or degrees. We need more studies like this one to see what is appropriate education.

- Immediate return to the continental system - 5 years. Dividing the cycle of studying in two parts we are not to develop the ability for analysis and synthesis, creativity in solving unknown problems and in creating new ideas.

- The "continental" system will be reintroduced immediately, before completing destroy the whole civil engineering system. As soon as possible! No further comments!

A message received a few days ago

“I'm civil engineer by the Spanish school ETSECCPB (within the UPC-BarcelonaTech University).

I'm working in France, in an engineer company. And I need a document which accredits my engineering school level (ETSECCPB), in order to the company where I work could compare it with the French ones.

I know my school takes active part of the EUCEET Association, that's why I'm writing to you. Could you help me to found/have this document?”

Conclusions

- Most academics and proffesionals find that changes induced by the Bologna process have positive and negative effects

- Positive: promotion of mobility and progress toward the harmonization between civil engineering programmes across Europe

- Negative: Poor relevance for the labour market of the first degree

- A further detailed analysis of the labor market should be done

Thank you for your attention