STUDY OF COMPETENCES 2014

THE MOST IMPORTANT CONCLUSIONS FROM THE CONDUCTED RESEARCH

1.1. Introduction to the Study

Objective: **comparison of expectations of selected sectors in Kraków:**

- information technology, including information and communications technology,
- architecture,
- construction, including an additional study of vocational and technical education (carried out on behalf of the Provincial Labour Office – WUP - in Kraków),

concerning the competences of students and graduates of universities with the learning outcomes pursued by Kraków universities.

Engaged entities:

- Centre for the Evaluation and Analysis of Public Policies of UJ (lead expert: prof. Jarosław Górniak) and the Interdisciplinary Centre for Organizational Research and Development at the Institute of Psychology UJ (lead expert: prof. Małgorzata Kossowska)
- The Municipality of Kraków
- Provincial Labour Office in Kraków

The study was conducted with the support of: **ASPIRE Association** (Andrew Hallam), **Association of Polish Architects SARP** (Bohdan Lisowski) and the **Galician Chamber of Construction** (Piotr Hrabia).

1.2. Research Implementation – Outline

As part of the work:

Hundreds of job advertisements have been analysed

Dozens of consultations and in-depth interviews with experts have been conducted

Data from over 100 companies employing a total of 9,000 employees have been analysed and reanalysed

Data from nearly 30 fields of study and training, which in 2015 will be completed by almost 4,000 students and pupils, have been analysed and reanalysed

The following competences have been inventoried in particular sectors:

from 31 to 39 competences in the area of specialist knowledge and skills

from 11 to 17 competences in the area of business knowledge and skills
from 14 to 17 competences in the area of soft skills

from 11 to 13 requirements concerning foreign languages and other requirements

1.3. Research Methodology

DEMAND:

Initial stage – consultations with experts, analysis of job advertisements, analysis of industry reports

Structured interviews – directors of companies, HR departments, managers

Creation of the Demand Sheet – a list of competences with definitions (specialist knowledge and skills, business knowledge and skills, soft skills, other expectations)

On-line surveys – the estimated number of recruitments of graduates (2015 and 2020), the requirements concerning the competences, assessment of their importance, difficulty in obtaining the competences and the tasks of universities

SUPPLY:

Initial stage – development of the expected learning outcomes and the "Supply Sheet"

On-line surveys – the person responsible for the form of the curriculum; assessment of the level of obtained learning outcomes and university tasks in terms of their teaching

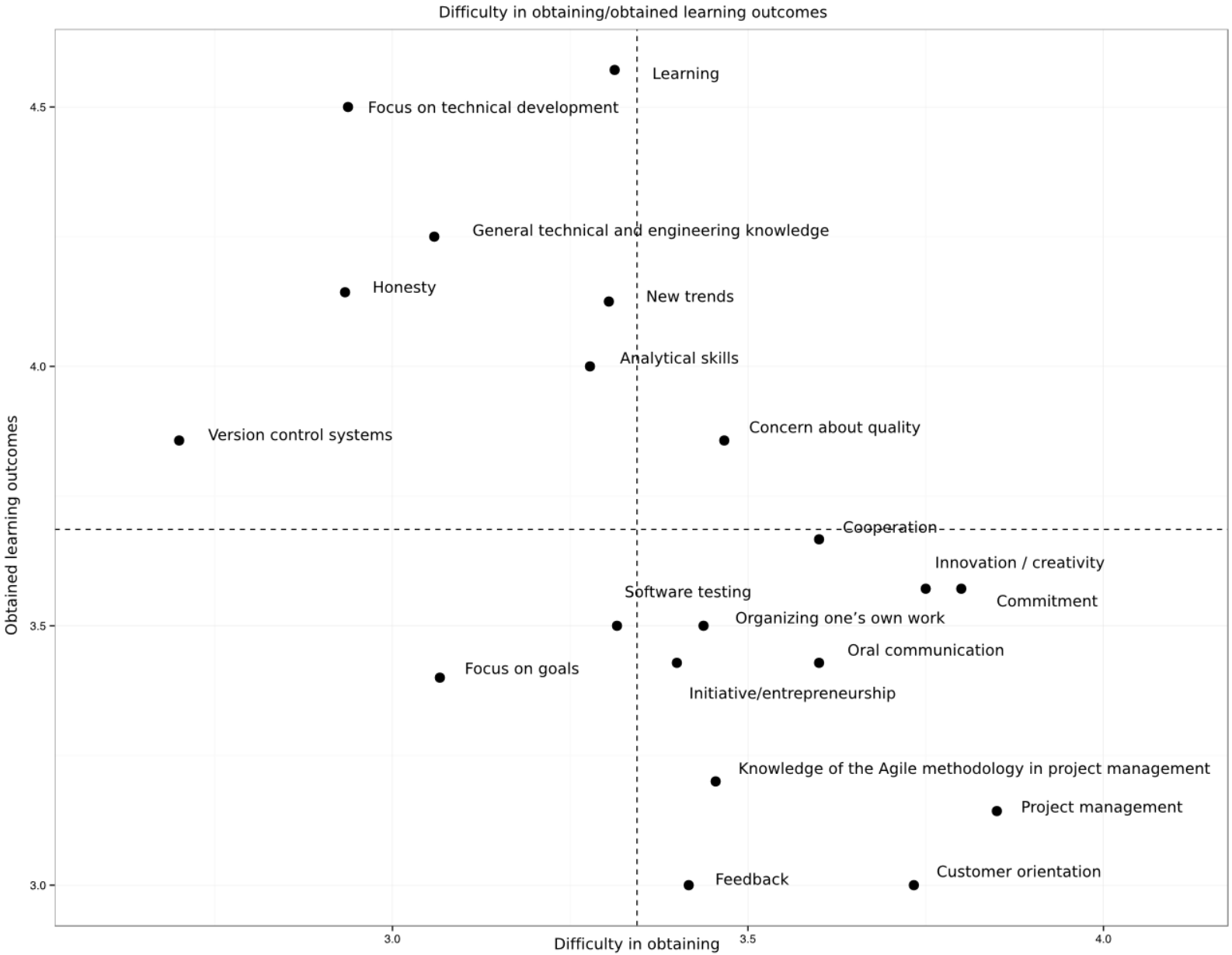
Structured interviews – representatives of selected fields of study at universities

2.1. IT Sector – Competences of Today and Tomorrow

15 core competences (requirements) today	Important in 2015
English	4.82
Cooperation	4.81
Customer orientation	4.79
Honesty	4.76
Commitment	4.74
Focus on technical development	4.70
Concern about quality	4.68
Learning	4.68
Organizing one's own work	4.67
Focus on goals	4.65
Feedback	4.57
Innovation/creativity	4.52
Analytical skills	4.50
Knowledge of AGILE methodology in project management	4.46
Software testing	4.38

15 core competences (requirements) of tomorrow	Important in 2020
Cooperation	4.79
Concern about quality	4.76
Learning	4.76
English	4.75
Commitment	4.71
Knowledge of AGILE methodology in project management	4.65
Feedback	4.64
Analytical skills	4.61
Customer orientation	4.59
Focus on technical development	4.56
Focus on goals	4.53
Software testing	4.48
Honesty	4.47
Organizing one's own work	4.44
Project management	4.40

2.2. IT Sector – Study of Competences (Difficulty in Obtaining and the Obtained Learning Outcomes)



2.3. IT Sector – The Dynamics of the Employment of Graduates

Employment of graduates in 2015	Employment of graduates in 2020
23.5%*	**41.2%***
Growth in employment of graduates	

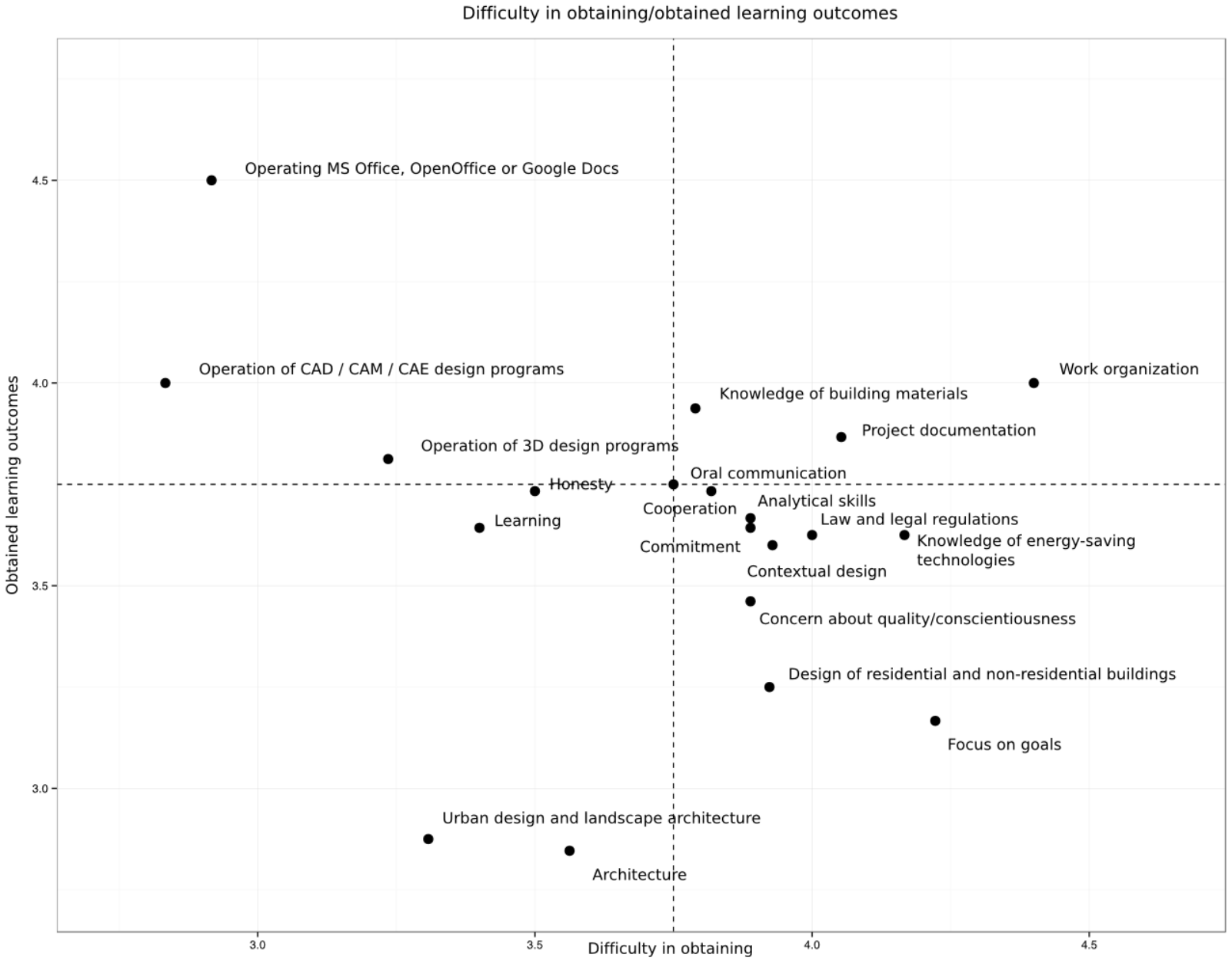
* Graduates who will be employed in 2015 and 2020 as a percentage of current employment status (taking into account all legal forms)

3.1. Architecture – Competences of Today and Tomorrow

15 core competences (requirements) today	Important in 2015
Honesty	4.92
Oral communication	4.86
Concern about quality/conscientiousness	4.78
Construction of residential and non-residential buildings	4.77
Operation of CAD / CAM / CAE design programs	4.71
Operating office software	4.69
Project documentation	4.67
Focus on goals	4.67
Learning	4.60
Organizing one's own work	4.58
Analytical skills	4.56
Contextual design	4.53
Architecture	4.50
Knowledge of energy efficient technologies	4.50
Commitment	4.50

15 core competences (requirements) of tomorrow	Important in 2020
Concern about quality/conscientiousness	5.00
Operation of CAD / CAM / CAE design programs	4.92
Honesty	4.91
English	4.83
Learning	4.80
Analytical skills	4.78
Knowledge of energy efficient technologies	4.74
Operating office software	4.67
Technical English	4.67
Organizing one's own work	4.64
Construction of residential and non-residential buildings	4.62
Project documentation	4.60
Operation of 3D design programs	4.58
Commitment	4.55
Focus on goals	4.44

3.2. Architecture – Study of Competences (Difficulty in Obtaining and the Obtained Learning Outcomes)



3.3. Architecture – The Dynamics of the Employment of Graduates

Employment of graduates in 2014	Employment of graduates in 2019
17.1%*	**26.1%***
Growth in employment of graduates	

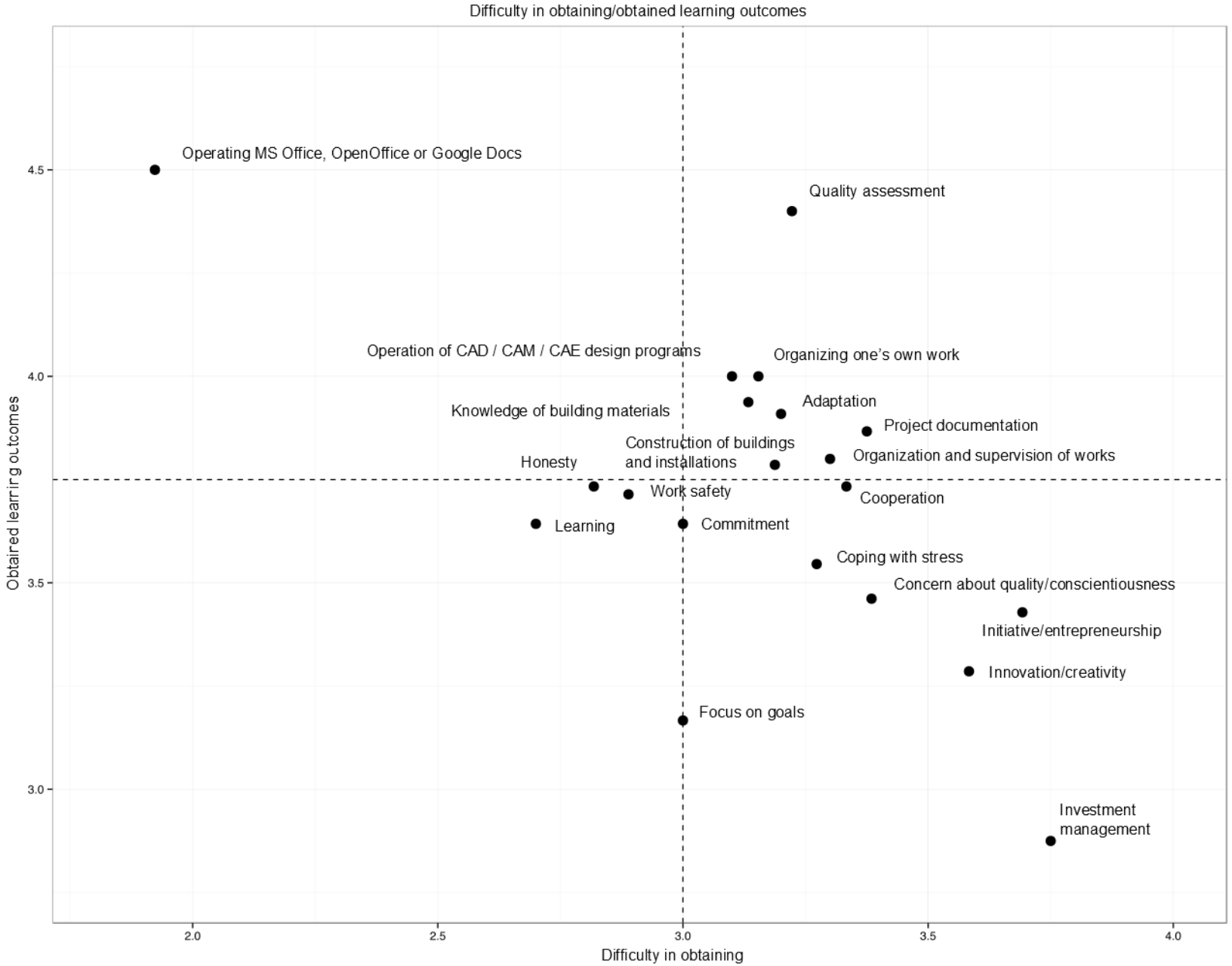
* Graduates who will be employed in 2015 and 2020 as a percentage of current employment status (taking into account all legal forms)

4.1. Construction (Higher Education) – Competences of Today and Tomorrow

15 core competences (requirements) today	Important in 2015
Honesty	4.92
Knowledge of building materials	4.83
Operating office software	4.79
Initiative/entrepreneurship	4.71
Organization and supervision of works	4.70
Work safety	4.67
Commitment	4.67
Time availability	4.64
Construction of buildings and installations	4.61
Operation of CAD / CAM / CAE design programs	4.60
Innovation/creativity	4.60
Learning	4.58
Coping with stress	4.58
Organizing one's own work	4.57
Cooperation	4.57

15 core competences (requirements) of tomorrow	Important in 2020
Organization and supervision of works	5.00
Operation of CAD / CAM / CAE design programs	4.80
Work safety	4.78
Initiative/entrepreneurship	4.77
Knowledge of building materials	4.76
Honesty	4.75
Cooperation	4.75
Time availability	4.73
Operating office software	4.71
Construction of buildings and installations	4.71
Innovation/creativity	4.64
Commitment	4.64
Concern about quality/conscientiousness	4.62
Focus on development	4.62
Analytical skills	4.62

4.2. Construction (Higher Education) – Study of Competences (Difficulty in Obtaining and the Obtained Learning Outcomes)



4.3. Construction (Higher Education) – The Dynamics of the Employment of Graduates

Employment of graduates in 2014	Employment of graduates in 2019
3.2%*	**4.3%***
Growth in employment of graduates	

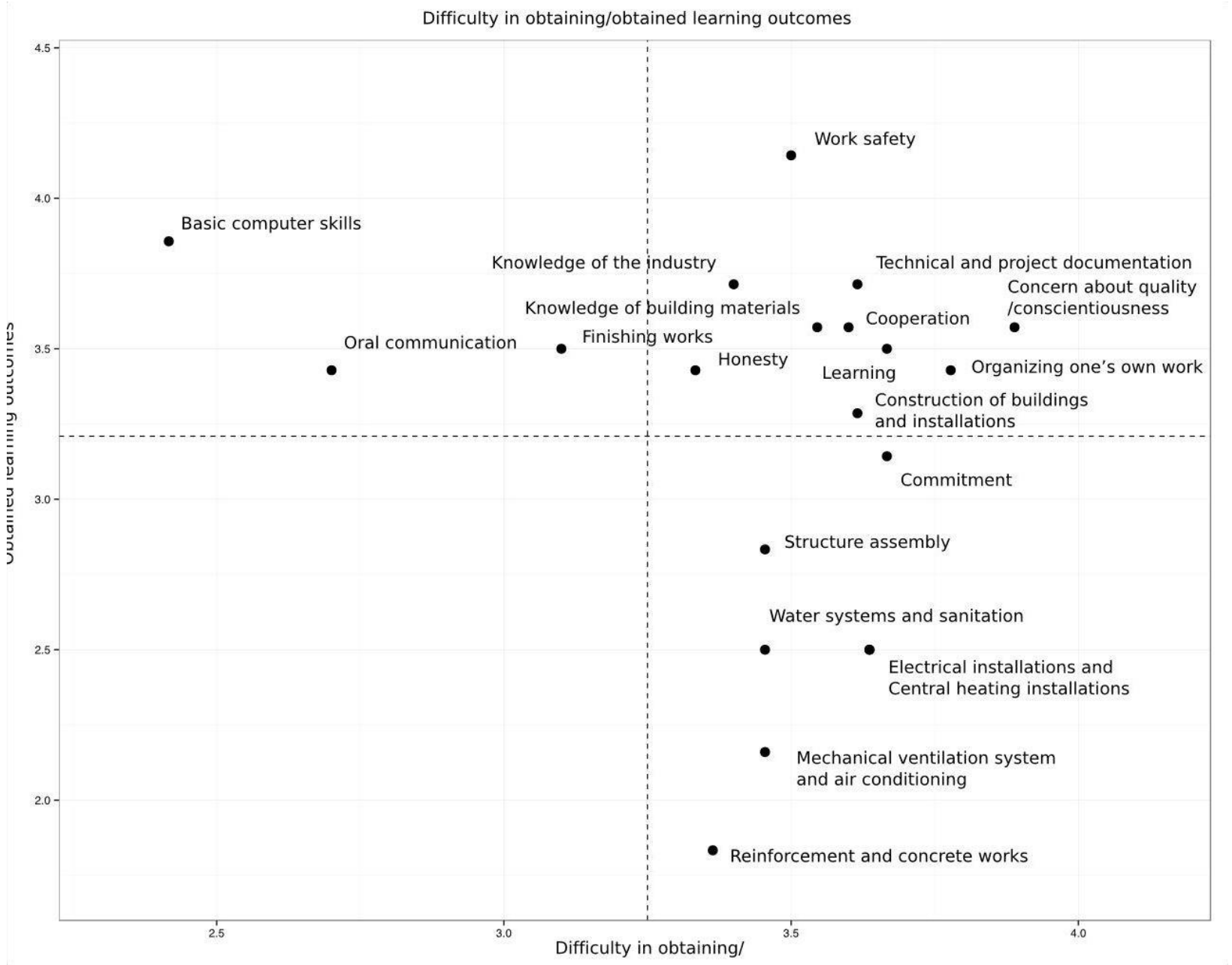
* Graduates who will be employed in 2015 and 2020 as a percentage of current employment status (taking into account all legal forms)

5.1. Construction (Vocational and Technical Education) – Competences of Today and Tomorrow

15 core competences (requirements) today	Important in 2015
Honesty	4.92
Concern about quality/conscientiousness	4.83
Work safety	4.54
Organizing one's own work	4.50
Commitment	4.50
Learning	4.50
Construction of buildings and installations	4.46
Knowledge of building materials	4.46
Reinforcement and concrete works	4.45
Water systems and sanitation	4.42
Basic computer skills	4.42
Technical and project documentation	4.38
Finishing works	4.38
Cooperation	4.38
Structure assembly	4.33

15 core competences (requirements) of tomorrow	Important in 2020
Concern about quality/conscientiousness	5.00
Honesty	4.92
Commitment	4.75
Work safety	4.69
Cooperation	4.69
Organizing one's own work	4.67
Knowledge of building materials	4.62
Basic computer skills	4.58
Technical and project documentation	4.54
New trends	4.54
Organizing the work of a small team	4.54
Learning	4.50
Water systems and sanitation	4.50
Structure assembly	4.50
Knowledge of the industry	4.50

5.2. Construction (Vocational and Technical Education) – Study of Competences (Difficulty in Obtaining and the Obtained Learning Outcomes)



5.3. Construction (Vocational and Technical Education) – The Dynamics of the Employment of Graduates

Employment of graduates in 2014	Employment of graduates in 2019
9.0%*	**12.6%***
Growth in employment of graduates	

* Graduates who will be employed in 2015 and 2020 as a percentage of current employment status (taking into account all legal forms)

6.1. The Study of Competences 2014: Conclusions

Each of the analysed industries, although for different reasons, **occupies and should occupy an important place in the strategic map of development of the city of Kraków.**

Employers in all industries **are quite optimistic about the development perspectives and declare a growth in the creation of new jobs** for graduates.

The IT sector, followed by architecture and construction**, will develop most dynamically in terms of employment.**

The results of the previous editions of the Study of Competences have been confirmed - **soft skills are very important for employers**, including: cooperation and commitment, attitudes: e.g. **honesty and loyalty**, and command of **English**.

The most important specialized (professional) competences recognized by employers are:

- in the architectural sector: design of residential and non-residential buildings, operation of CAD / CAM / CAE design programs, project documentation, contextual design, architecture, knowledge of energy efficient technologies
- in the construction sector: knowledge of building materials, organization and supervision of works, construction of buildings and installations, operation of CAD / CAM / CAE design programs, quality assessment, project documentation
- in the IT sector: software testing, version control systems, general technical and engineering knowledge, technical documentation, software design, human-computer interaction

6.2. The Study of Competences 2014: Conclusions

Universities are doing **much better in educating technical and specialized competences than soft skills and business skills.**

University and business representatives agree as to the **responsibility of universities in the field of teaching specialist knowledge and skills**. Greater divergence occurs in the area of **soft skills** - employers who expect them from job applicants **do not believe that universities are responsible for the training of these skills.**

Cooperation between business and education is not systemic - both in the IT industry and construction and architecture, it relies heavily on direct contacts and the exchange of short-term resources.

In the construction and architectural sectors, the number of university graduates is not a problem, the challenge is the quality of the competences of a large part of graduates – this opinion is confirmed by both universities and business representatives**. In the IT sector, the growing challenge is the number of graduates available in the labour market** (which, at the national level, is constantly falling).

Part of the deficits on the side of universities may be compensated by **the introduction of elements of design and problem teaching in courses** conducted in cooperation with universities and business. **This would require a greater openness on both sides.**

The role of the city should be the **creation of favourable conditions of work for entrepreneurs and cooperation between entities operating in the labour market.**

The challenge for business is to **change the perspective and mental models of human resource management from short-term to long-term**.

6.3. More Information in the Full Reports…

Basic **information about each sector**

A full list of **competences and learning outcomes** with definitions

Detailed data on each of the analysed competences, including:

- those important today
- those important in the 5-year perspective
- difficulty in obtaining
- obtained learning outcomes
- tasks of universities/schools according to business
- tasks of universities/schools according to universities/vocational schools

List of positions to which graduates are most often recruited

List of fields of study/specializations considered as best adjusted to the expectations of the industry

Description of results, conclusions and recommendations