Researchers

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Agenda

• Motivation
• The concept of “21st century skills”
• Research questions and objectives
• Research design and process
• Results
• Future research
Motivation for this research

1. Changing society and labour market/transition into next economy

2. Perspective from students on 21st century skills unknown
Research objectives

1. To clarify the concept of 21st century skills for RUAS

2. To define whether existing curricula need to be adjusted to be in line with the 21st century skills students already possess or deem important to further develop
The concept of “21st century skills”

**Foundational literacies**
- Literacy
- Numeracy
- Scientific literacy
- Internet, Media Technology literacy
- Financial literacy
- Cultural & civic literacy
- Environmental literacy

**Competencies**
- Critical thinking / problem solving
- Creativity
- Communication
- Collaboration
- Entrepreneurship

**Life skills**
- Curiosity
- Initiative
- Persistence
- Adaptability
- Leadership
- Social & cultural awareness
- Health and psychological awareness
Research questions

Central question:

Which 21st century skills do Rotterdam UAS students think they need to develop during their studies in order to increase their employability?

Sub-questions:

1. What are the student's perceptions of the importance of 21st century skills for future employment?

2. To which level have they already acquired 21st century skills at the beginning of their study?

3. What is the student's perception of the importance of experiences in an international setting on the development of 21st century skills?
Research methods

**Mixed method**

1. Desk research
2. Focus group - RBS
3. Pilot study - 2nd year RBS (IBMS students)
4. Survey 1st year students – CMI, IBK, RBS and WdKA
Results from the pilot study
Results – Pilot study

Pilot study 21st Century Skills - 2nd Year IBMs students

n = 90
Results from the surveys
# Results – 1st year students

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Sample 2016</th>
<th>2016</th>
<th>Sample 2017</th>
<th>2017</th>
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<tr>
<td>CMI</td>
<td>32</td>
<td>15</td>
<td>1147</td>
<td>17</td>
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<tr>
<td>IBK</td>
<td>22</td>
<td>7</td>
<td>779</td>
<td>15</td>
<td>858</td>
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<tr>
<td>RBS</td>
<td>78</td>
<td>48</td>
<td>1504</td>
<td>30</td>
<td>1517</td>
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<tr>
<td>WdK</td>
<td>32</td>
<td>8</td>
<td>864</td>
<td>24</td>
<td>895</td>
</tr>
<tr>
<td>Total</td>
<td>164</td>
<td>78</td>
<td>4294</td>
<td>86</td>
<td>4639</td>
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</tbody>
</table>

## Schools within the Rotterdam University of Applied Sciences

![Bar chart showing the number of schools](chart.png)
Results – 1st year students

GAP year prior to RUAS

- 72% Yes
- 28% No

Have you heard of ‘21st century skills’?

- 77% Yes
- 23% No

Education prior to RUAS

- MBO
- HAVO
- VWO
- Other

Age

- 17-20
- 21-25
- 26-30
Results – Importance of 21st Century Skills
Results – Already developed 21st Century Skills
Results – 21st Century Skills

Green $p < 0.05$

Blue $p > 0.05$ (not significant between schools)
Results – Delta Foundational literacies

- Delta Foundational literacies
  - Delta Literacy
  - Delta Numeracy
  - Delta Scientific literacy
  - Delta IMT literacy
  - Delta Financial literacy
  - Delta Cultural literacy
  - Delta Environmental literacy

* p < 0.05
Results – Delta Competencies

* $p < 0.05$
Results – Delta Life skills

* p < 0.05
Results – Contribution of social activities outside RUAS
Results – Contribution of international activities

School activities contributing to development of 21st Century Skills

- Placement outside the Netherlands
- Exchange outside the Netherlands
- Thesis outside the Netherlands
- Placement in the Netherlands
- Study trip abroad
- Guest speakers
- Lecturers Experience
- Lecturers Knowledge
- Travel
- International friends
- International projects
- Thesis in the Netherlands
- International classmates
- International week
- Social media
- Peercoach
- Job
- Membership

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Legend:
- WiK
- RBS
- IEK
- CMI
Conclusions
### Conclusion

*What are the student's perceptions of the importance of 21st century skills for future employment?*

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
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<tr>
<td>Creativity</td>
<td>Collaboration</td>
<td>Collaboration</td>
<td>Persistence</td>
<td>Persistence</td>
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<tr>
<td>Adaptability</td>
<td>Financial literacy</td>
<td>Financial literacy</td>
<td>Social and cultural awareness</td>
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<tr>
<td>Curiosity</td>
<td>Persistence</td>
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<td>Creativity</td>
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</tr>
<tr>
<td>Communication</td>
<td>Cultural literacy</td>
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To which level have they already acquired 21st century skills at the beginning of their study?

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<td>Social and cultural awareness</td>
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Conclusion

What is the student's perception of the importance of experiences in an international setting on the development of 21st century skills?

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</tr>
<tr>
<td>Exchange outside the Netherlands</td>
<td>International guest speaker</td>
<td>Exchange outside the Netherlands</td>
<td>Exchange outside the Netherlands</td>
</tr>
<tr>
<td>Thesis outside the Netherlands</td>
<td>Placement in the Netherlands</td>
<td>Thesis outside the Netherlands</td>
<td>International project</td>
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<tr>
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<td>Exchange outside the Netherlands</td>
<td>Study trip abroad</td>
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Road forward

1. Follow-up study with 4th year students / a longitudinal research.
2. Operationalization of different 21st Century Skills and translating the elements of 21st Century Skills per schools to learning outcomes.
3. Developing didactical methods which are most effective and efficient for teaching 21st Century Skills.
4. Connection with every advisory board of the schools discuss the set 21st Century Skills for their domain. A comprehensive approach using the full strength of the triple helix
5. Framework 21st Century Skills is a dynamic framework, looking for developments outside the domains.
Research Centre Business Innovation

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