Co-created Interactive Courseware
CiC NEXTBOOK
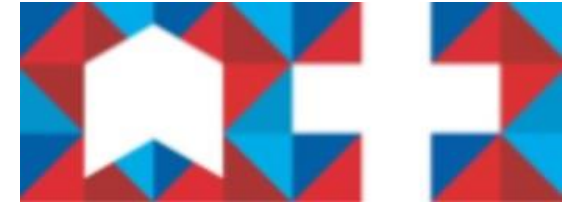
Pedagogical Framework Proposal for Co-creation
Maribor, October 13, 2022

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ROADMAP

scenario

- essential role of educational technology in the quickly evolving Education landscapes

- need for finding and developing strategies in response to the even more demanding sudden challenges (COVID-19)

- students' need to master 21st–century skills [critical thinking, active learning, collaboration, multidisciplinary cooperation…]

- "The strategic framework for European cooperation in education and training", pursuing to "improve quality and efficiency" to "enhance creativity and innovation" (EU, 2020)

- shifting and more demanding expectations bring new needs for tools that support the learning processes

However

scenario

- technical solutions are limited in flexibility

- demanding at initial set up, configuration, management, use

- lack of solutions for large groups of students
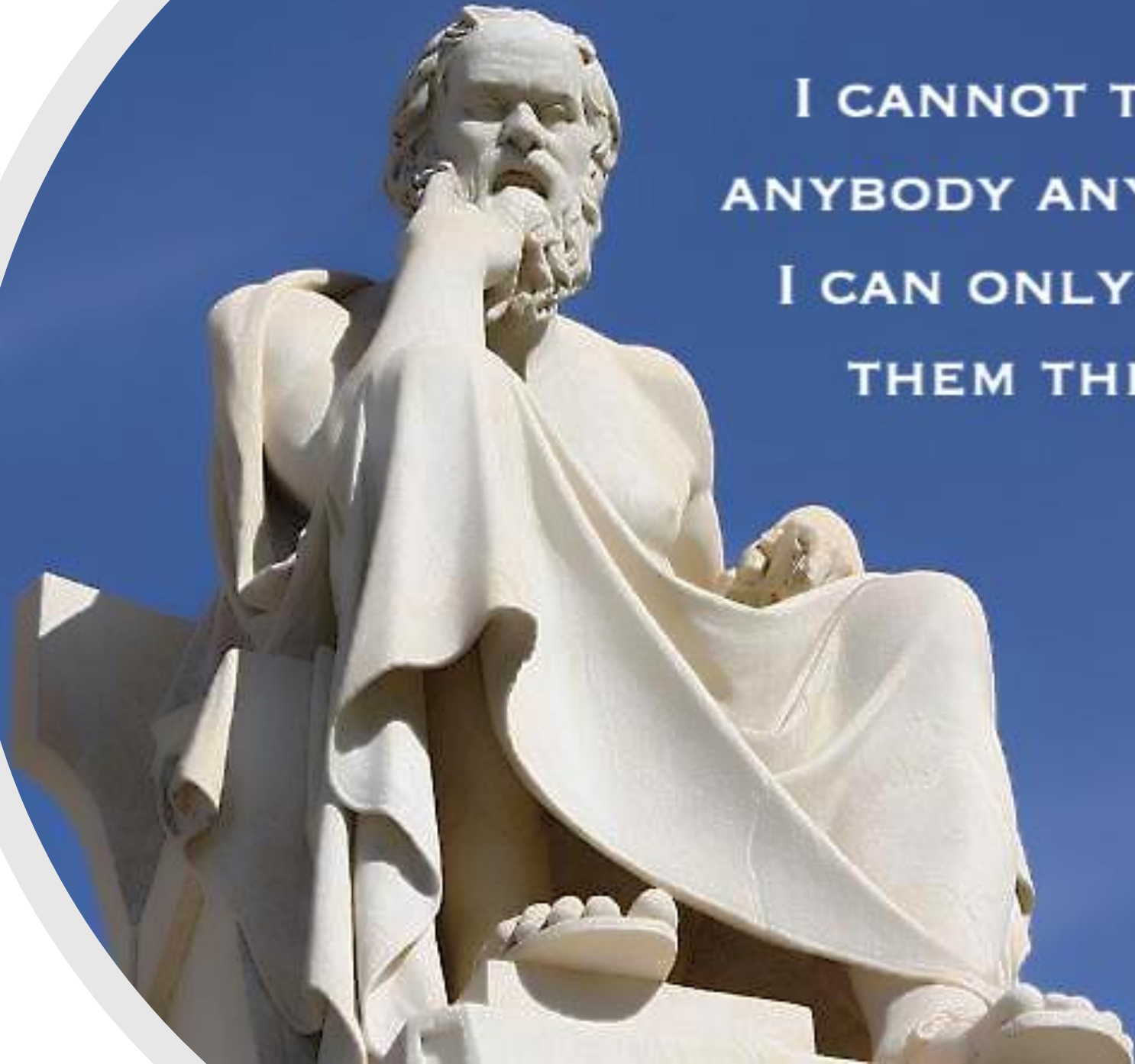
**direction
"solution"**

- increase students' engagement in the learning process

- shorten the loop in the support provided to students in the learning process

- increase students' collaboration and involvement in the learning & teaching processes

Cassidy et al. (2019); Kahu (2013);
Mercer-Mapstone & Bovill (2020)

I CANNOT TEACH ANYBODY ANYTHING, I CAN ONLY MAKE THEM THINK.

direction
"solution"
aims

increase
students'

engagement

participation

motivation

critical thinking

active learning

interaction

collaboration

What do we understand by "Co-creation"?

Co-creation

"institutions and students working together to improve students' experience and enhance their ability to act as partners in the learning processes"

Bovill (2014, 2015, 2019, 2020); Dollinger et al. (2018); Kahu (2013); Owens et al. (2020); Rengel et al. (2019); Mihans et al. (2008); Rock et al. (2015); Luescher-Mamashela (2013); Exetera et al. (2010)

What do we understand by "Co-creation"?

Co-creation

"students involved in the diverse facets of knowledge-building, including course material, learning tasks, peer assessment, feedback and feedforward to peers"

Bovill (2014, 2015, 2019, 2020); Dollinger et al. (2018); Kahu (2013); Owens et al. (2020); Rengel et al. (2019); Mihans et al. (2008); Rock et al. (2015); Luescher-Mamashela (2013); Exetera et al. (2010)

What do we understand by "Co-creation"?

Co-creation

"process of student engagement that encourages students and staff members to become partners who have a voice and a stake in the diverse facets of knowledge building and development"

CiC Partners (2021)

Co-creation _students' roles_

Co-creation / Co-production scope(s)

- contributors to course design and curricula (Mihans et al., 2008; Rock et al., 2015)

- intervenient in the governance of the respective higher education institution (Carey, 2013; Mercer-Mapstone & Bovill, 2020)

- collaborators on research projects with teachers and researchers (Werder and Otis, 2010)

Co-creation _students' roles_

Co-creation / Co-production scope(s)

- change agents (Dunne and Zandstra, 2011)

- representatives on committees for quality assurance and enhancement purposes (Luescher-Mamashela, 2013; Buckley, 2014)

- consultants providing feedback on teaching observations (Cook-Sather et al., 2014)

Focus

Co-creation

co-creation of courseware

- its impact on students' engagement and motivation

- the challenges and opportunities to higher education

- the pedagogical trends framing adopted approaches

- the settings in which these methodologies are applied

*Impact on students' engagement
and motivation*

Co-creation

- increases students' interest in participating more actively in the institution they are attending (Dollinger et al., 2018)

- important influence on achievement and learning in higher education (Kahu, 2013)

- fosters autonomy, collaboration, initiative (Felten et al., 2019,)

Co-creation

Challenges

- lack of student involvement due to unfamiliarity with the essential practices involved (Owens et al., 2020)

- extra effort required to actively construct knowledge when compared to traditional teacher-centred approach (Owens et al., 2020)

- integration of the diverse actors in a balanced and enriching context (Kahu, 2013)

Opportunities

Co-creation

- higher-order thinking and collaboration centered practices may inform from (Owens et al., 2020)

- student engagement in large classes (Exeter et al., 2010)

- integration of the diverse actors in a balanced and enriching context (Kahu, 2013)

- fostering of creation, retrieval, understanding, evaluation and use, as well as sharing information in all formats (UNESCO, n.d. op. cit. Drotner, 2020)

Pedagogical Trends
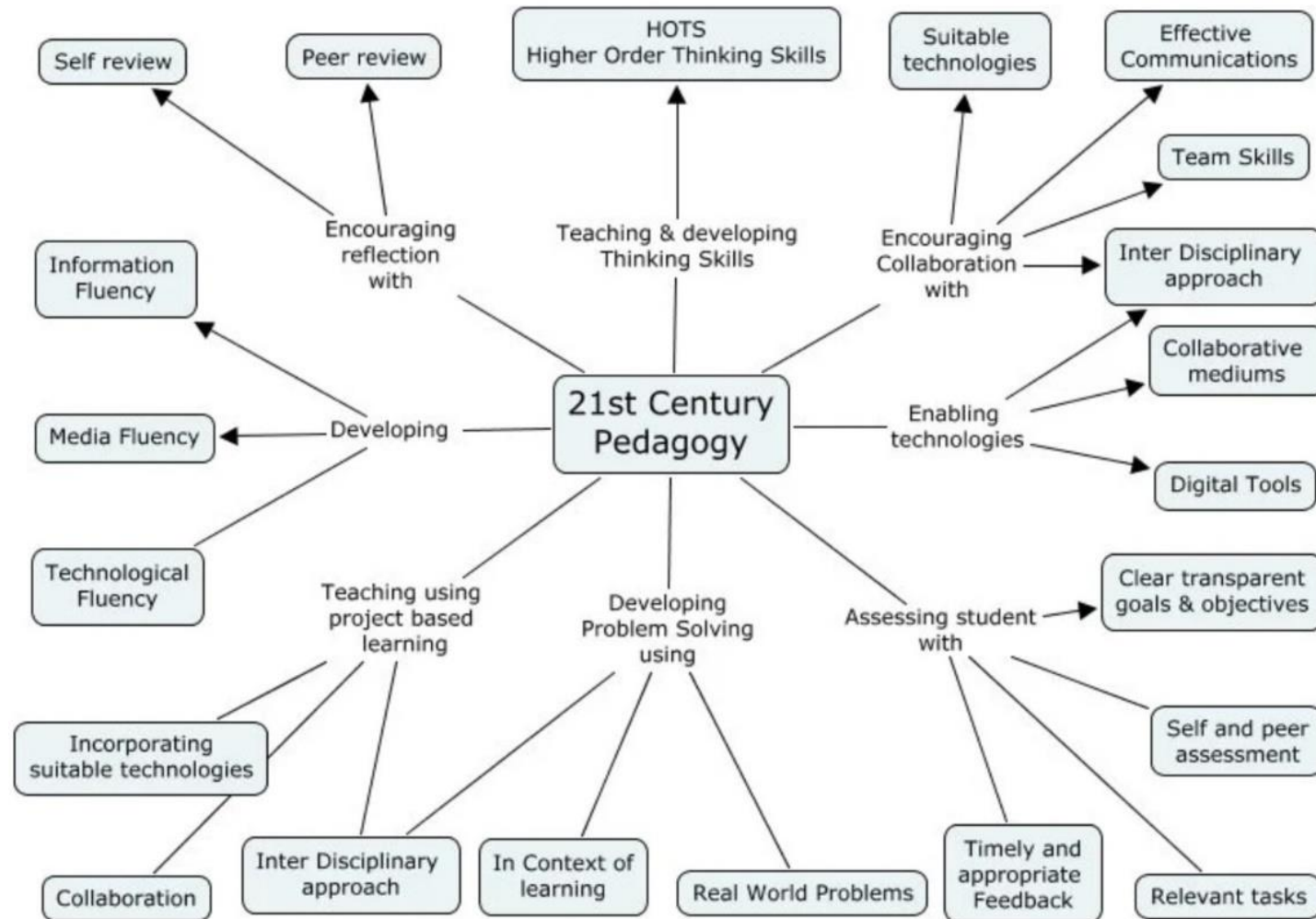
The 21st Century Pedagogy (TechThought Staff, 2018)

Pedagogical approaches

project-based learning

inquiry-based
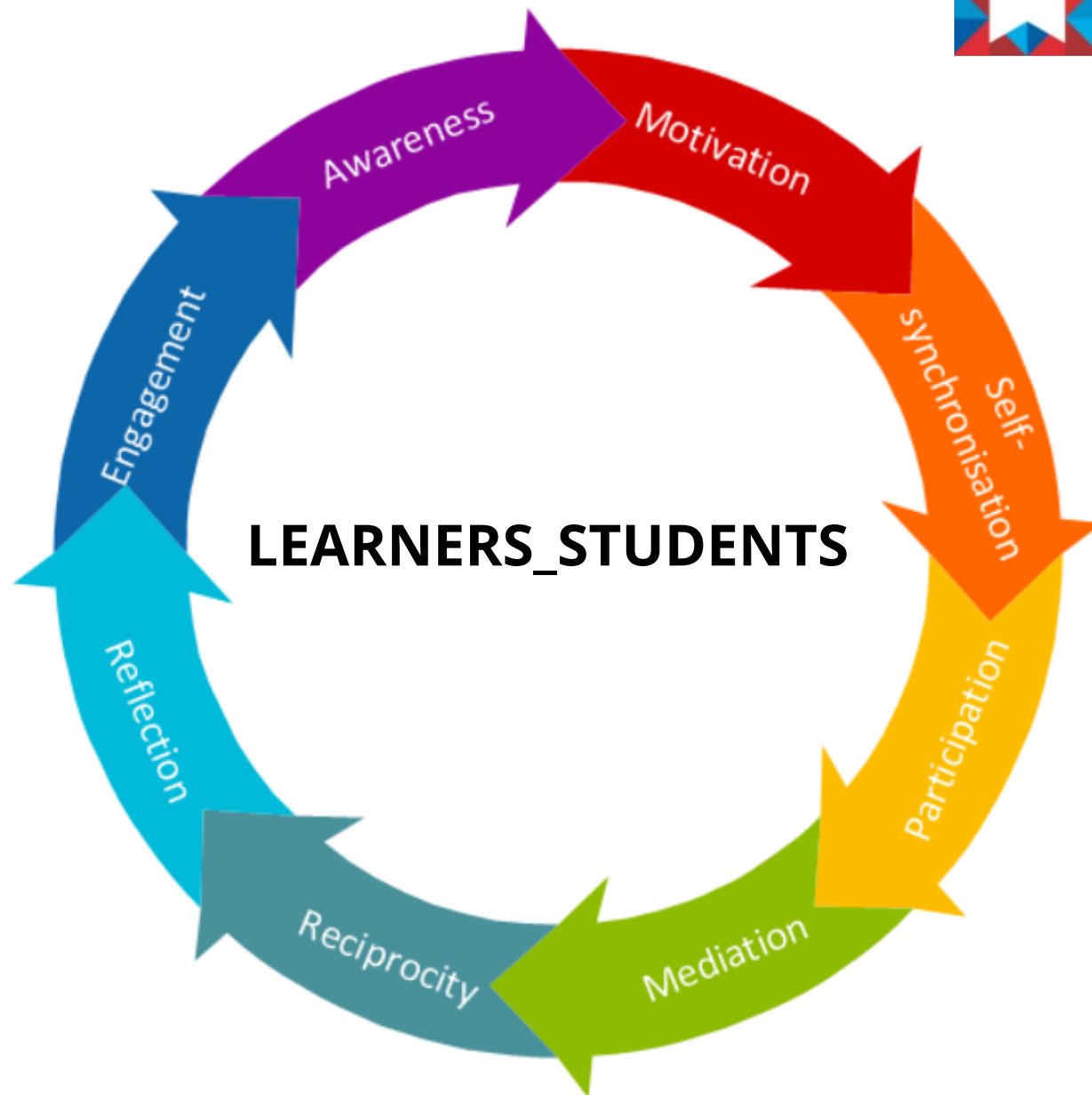
case-based

discovery-based

simulation-based

accidental learning

Pedagogy themes and associated pedagogies emerging from the Innovating Pedagogy reports (Sharples et al., 2015)

COLLABORATION LIFECYCLE

LEARNERS_STUDENTS

Awareness · Motivation · Self-synchronisation · Participation · Mediation · Reciprocity · Reflection · Engagement

DELPHI STUDY

portugal
netherlands
usa spain croatia
belgium
states united australia
palestine
chile uk england
germany

Delphi_ Experts' profile

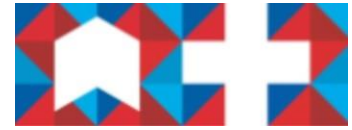#36 respondents

#diverse nationalities

Delphi_ Experts' profile

_ 9 teachers

_ 1 tutor, student advisor or counsellor

_ 2 Program director, police maker

_ 6 Teacher trainer

_ 14 researchers

_ 1 IT Expert

_ 3 none of the above roles fit

#36 respondents

#varied fields of study

#education related

Q22 - Rate your experience/expertise in the following domains.

Delphi_ Experts' profile

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Educational Technology	1.00	10.00	7.81	1.88	3.55	36
2	Pedagogy	5.00	10.00	7.89	1.45	2.10	36
3	Learning Analytics	0.00	10.00	6.69	2.54	6.43	36
4	Teaching	5.00	10.00	8.33	1.45	2.11	36
5	IT	1.00	10.00	6.25	2.22	4.91	36

#varied fields of study   #education related

What do you understand by the terms "co-creation of learning" and "interactive courseware" and what does this mean to you?

How strongly do you see the **potential** of the functionalities of interactive courseware to **impact** learning/ teaching/ training/ managing?

How would you **expect** that the incorporation of an interactive courseware and co-creation platform in education would **benefit** the organization...

How important do you consider the **challenges** below present for integrating courseware and a co-creation tool in an educational institution or company?

Delphi Study_questions

What do you understand by the terms "**co-creation of learning**" and "interactive courseware" and what does this mean to you?
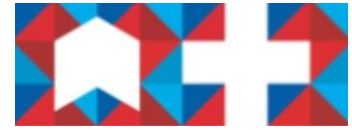
involves working together with different stakeholders (students included) to create, adapt, evaluate, analyse or optimize the learning process, the learning materials or curriculum, insights, values, or the learning community/environment

emphasises the collaborative nature of learning, as a result of social interaction

a learner has to actively participate in a learning community of peers

key that the different stakeholders can contribute equally (partnership)

can result from both synchronous and asynchronous interactions among the stakeholders.

Delphi Study_results

What do you understand by the terms "co-creation of learning" and "**interactive courseware**" and what does this mean to you?

*the user ... is able to provide **input** in some way.*

*various levels: courseware can facilitate **self-reflection** by providing automated feedback, but can also **connect** learners with each other and offer **authentic learning activities** through which the learner can learn from others*
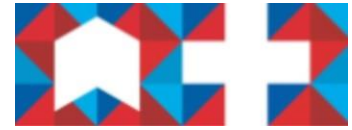
***tools** to aid in a learning process (in a course) that provide **tailored feedback**, based on performance or on a system's estimation of students' current knowledge/skills*

***resources** for learning and teaching that allowed students to **influence content** in a certain way*

Delphi Study_results

What do you understand by the terms "**co-creation of learning**" and "**interactive courseware**" and what does this mean to you?

Delphi Study_results
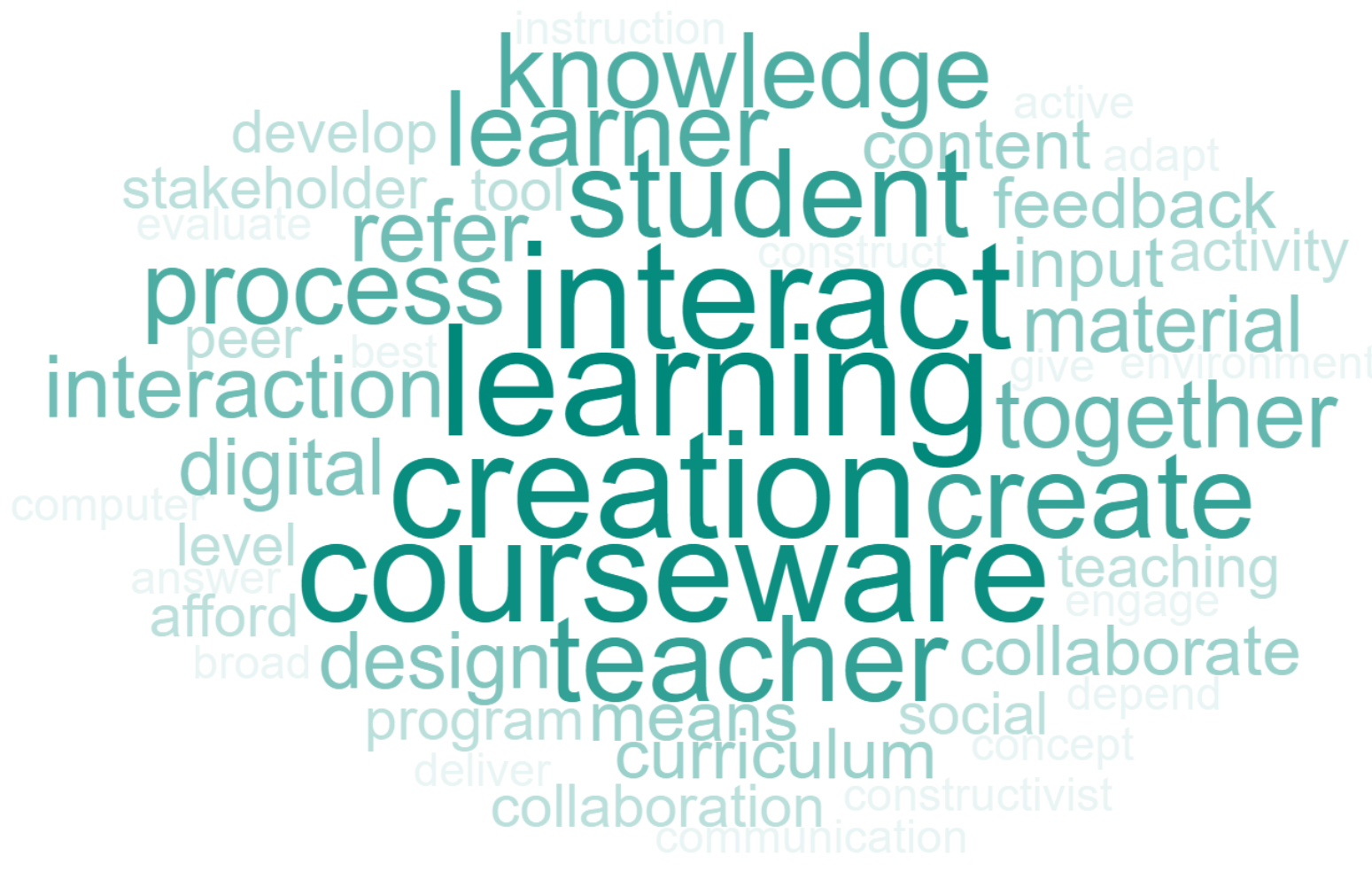
How strongly do you see the **potential** of the functionalities of interactive courseware to impact learning/teaching/training/managing

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Learner can ask questions directly on the shared materials without losing track of the specific item/content	2.00	10.00	6.73	1.88	3.53	30
2	Learners can discuss the materials with other participants directly.	3.00	10.00	7.67	1.72	2.96	30
3	Learners can contribute to the development/ improvement/ change of the shared materials.	2.00	10.00	7.00	2.23	4.97	29
4	Integration of video and 3D models	3.00	10.00	7.04	1.88	3.53	28
5	Integration of questions and specific tasks (multiple choice, open questions, role play, team dynamics, text analysis, brainstorming...)	4.00	10.00	7.72	1.84	3.37	29

Delphi Study_results

Most impacting features

Possibility to directly contributing to the materials

Involving students on design and implementation

Possibility to directly ask questions

sum up

Immediate, on-space feedback

Student-to-student feedback

Autonomous, self-paced learning

Collaborative tasks, sharing ideas, open discussion on site course material

Delphi Study_results

Suggested additional functionalities

Tasks/ activities that lead students to think - open, engaging, must-answer questions

Interactive models and tools for digital creativity

sum up

Myriad types of hypermedia elements: document chapters, links, illustrations, experiments, embedded tasks (e.g. multiple choice, gap-filling...)

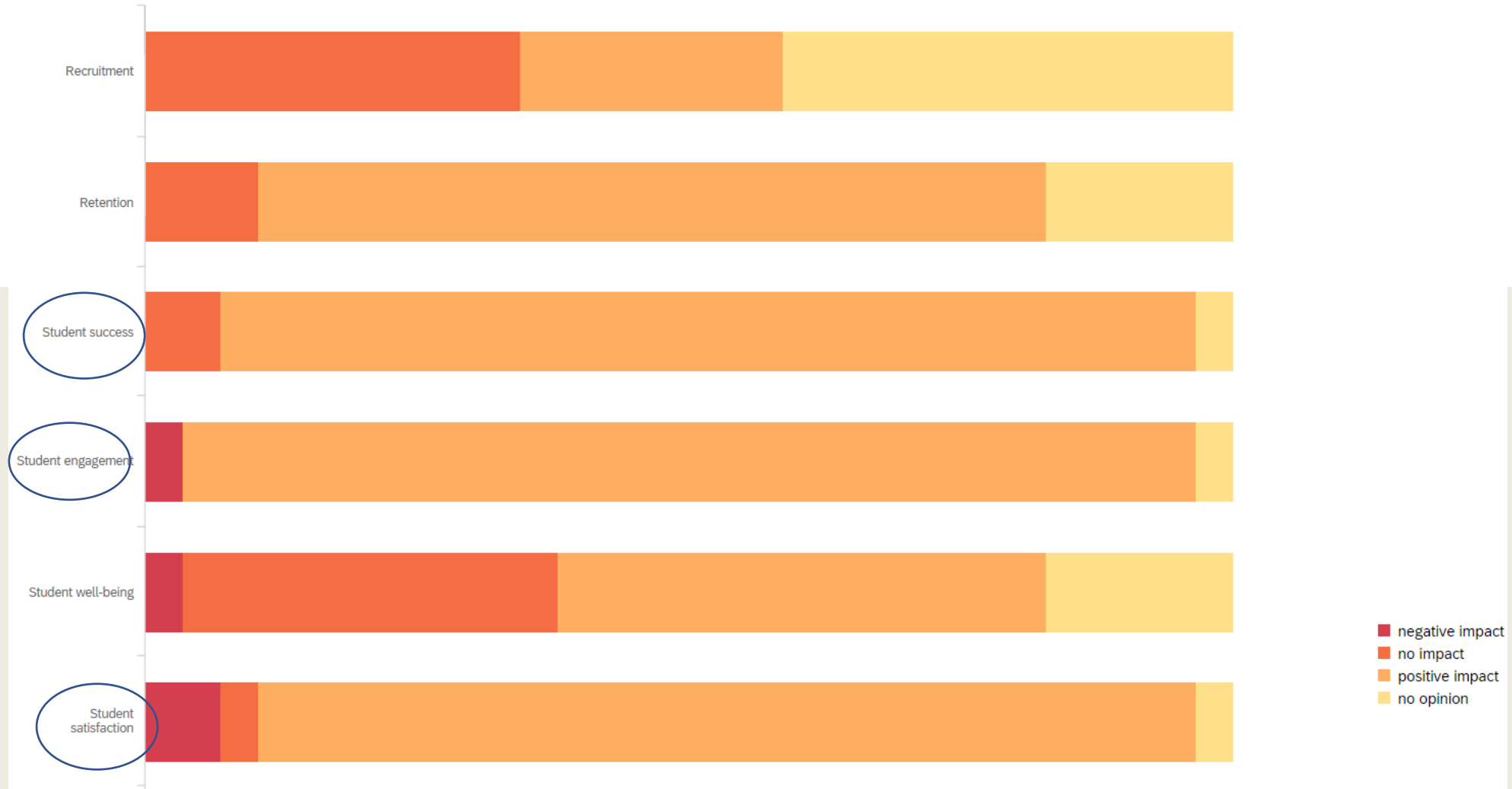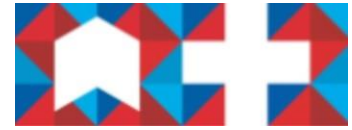Immediate feedback on activity/task performance

Delphi Study_results

How would you **expect** that the incorporation of an interactive courseware and co-creation platform in education would **benefit** the organization ...

Recruitment

Retention

Student success

Student engagement

Student well-being

Student satisfaction

Teacher professionalization

Teaching quality

Teacher well-being

*Teacher satisfaction*
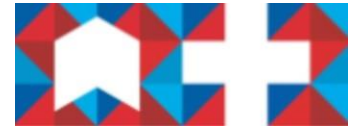
Delphi Study_results

How would you **expect** that the incorporation of an interactive courseware and co-creation platform in education would **benefit** the organization...

Recruitment

Retention

Student success

Student engagement

Student well-being

Student satisfaction

- negative impact
- no impact
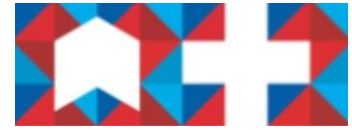- positive impact
- no opinion

Delphi Study_results

How would you **expect** that the incorporation of an interactive courseware and co-creation platform in education would **benefit** the organization...

Delphi Study_results
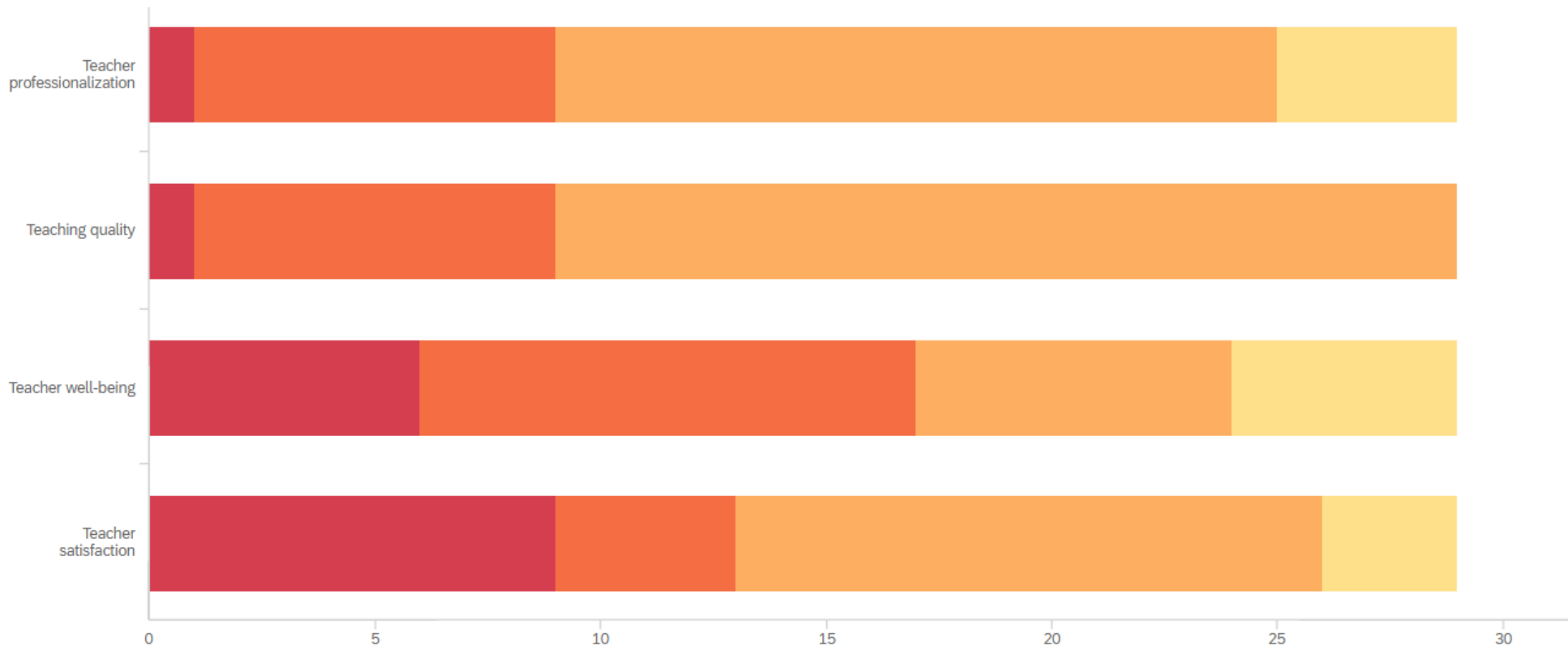
How important do you consider the **challenges** below present for integrating courseware and a co-creation tool in an educational institution or company?

Potential additional cost

Integration with existing platforms and tools

Resistance of students/participants/staff

Additional training of teachers

Additional training of students

Obtaining added value of interactive courseware
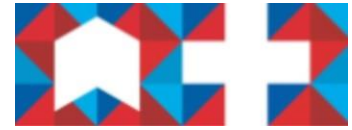
Delphi Study_results

Challenges

'Change management' - resistance of staff and students to change teaching/learning habits

Integration with existing learning platforms, technical system and tools

Integration into teaching and learning practices

Privacy - GDPR - storing loads of student specific data under this regulation may be difficult at larger scale

Delphi Study_conclusions

Challenges

Motivation and ability to design education environments in an interactive way

Include stakeholders in the planning and integration process

Benefits

Students' engagement

Students' success

Students' satisfaction

Delphi Study_conclusions

Challenge for you!

Reflect on your pedagogical approaches

Identify opportunities in using co-creation

Re-think, re-design, re-structure

Change, Engage, Motivate

Obrigad@!

IO1 Pedagogical Framework
CiC_Co-created Interactive Courseware

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GILT | ISEP | P.Porto