



Deliverable 2.5

‘Training in PWR’

Project Name: Students’ Personalised Learning Model, Based on the Virtual Learning Environment of Intellectual Tutoring "Learning with No Limits" – SMART-PL

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The SMART-PL consortium consists of the following partners:

No.	Role	Short Name	Legal Name	Country
1	COO	TalTech	TALLINNA TEHNIKAÜLIKOOL	EE
2	BEN	KU Leuven	KATHOLIEKE UNIVERSITEIT LEUVEN	BE
3	BEN	PWR	POLITECHNIKA WROCLAWSKA	PL
4	BEN	IFNUL	IVAN FRANKO NATIONAL UNIVERSITY OF LVIV	UA
5	BEN	KRNU	KRYVORIZKYJ NATIONALNYJ UNIVERSYTET	UA
6	BEN	KKNU	V. N. Karazin Kharkiv National University	UA
7	BEN	KHNU	KHMELNITSKY NATIONAL UNIVERSITY	UA
8	BEN	ONPU	ODESSA NATIONAL POLYTECHNIC UNIVERSITY	UA
9	BEN	IHE OF NAESU	INSTITUTE OF HIGHER EDUCATION OF THE NATIONAL ACADEMY OF EDUCATIONAL SCIENCES OF UKRAINE	UA
10	BEN	KSU	KHERSON STATE UNIVERSITY	UA
11	BEN	NAHEQA	NATIONAL AGENCY FOR HIGHER EDUCATION QUALITY ASSURANCE	UA
12	BEN	UKRSEITSO C	PUBLIC ORGANIZATION "UKRAINIAN SCIENTIFIC AND EDUCATIONAL IT SOCIETY"	UA
13	BEN	FFUTURE	Kryvyi Rih Foundation of the Future	UA



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¹**Types.R:** Document, report (excluding the periodic and final reports); **DEM:** Demonstrator, pilot, prototype, plan designs; **DEC:** Websites, patents filing, press & media actions, videos, etc.; **OTHER:** Software, technical diagram, etc.

²**Dissemination levels:** Public — fully open (e.g. web); Sensitive — limited under the conditions of the Grant Agreement; EU classified — RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision [2015/444](#).



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1 Background

SMART-PL is a 3-year project, focused on introducing a model of personalised learning, based on the virtual learning environment of Intellectual Tutoring "Learning with No Limits". Intellectual tutoring is a set of learning tools: SMART online platform for virtual personalised learning and formative student assessment; co-working centre with equipment for organising hybrid learning, which increases the educational process's efficiency and gives both teachers and students more opportunities. "Learning with No Limits" means that all students are welcomed - regardless of age, personality, socioeconomic status, or educational needs, regardless of the opportunity to be present in the audience or not. The project is divided into 7 WPs which are linked to promoting the cooperation of partners to implement the European experience of personalised learning; improving educational programs of universities; increasing transparency and comprehensibility of education and assessment for students (including the results of non-formal education), reducing students' anxiety as for their professional expertise and forming their confidence to achieve efficient results; to improve the quality of teaching materials; to facilitate students' mobility, including in virtual mode, on a university/country scale, inter-university/country levels); to create extra opportunities to get higher education for people with disabilities and specific academic needs through inclusive education and the implemented model of personalised learning and hybrid technologies.

The fundamental principle of the project is a personalised approach aimed at forming a highly qualified competitive specialist who can conduct innovative activities and has the skills of continuous professional development. The personalised approach is characterised by innovative teaching methods, designed to encourage collaboration between students and teachers, emphasising the central role of students in controlling their learning.

2 Introduction

The purpose of the document is to present all activities and results completed during the SMART-PL training session, held in Wrocław Polytechnic University / PWR at 12-16 June 2023, and summarize the decisions made by the team of project participants during the meeting.



The document is intended for SMART-PL team members, Members of Board management, members of quality assurance team.

3 Description of the activity

3.1 Scope

The scope of the document is to provide an overview of the activities, presentations and decisions made during the training session in PWR, Wroclaw for the team members of SMART-PL project. The document is structured as follows:

- Training objectives;
- Partners' presentations;
- List of participants;
- Attendance list;
- Photos from the training;
- Meeting's minutes.

3.2 Training objective

The objective of the training in PWR, Wroclaw was to familiarise Ukrainian participants about the current practices and policies used in Wroclaw Polytechnic which supports the student-centred approach, tailored assessments, building tuned academic trajectory based on identified gaps of students' knowledge. Hosts will share the information about special approach called Challenge Based Learning and how PWR students are benefiting from it.

This training directly contributes to the SMARTPL specific objectives, namely:

1. Enhance student's motivation to learning through applying the by-the-learner approach and create conditions to meet students' individual needs associated with differentiation and personalization of academic trajectories.
4. Improve educational programs of universities by updating the process of formation of competencies and the distribution of program results of student learning between educational components; to improve the quality of teaching materials.

Bases on the identified objectives of the training visit, the agenda and content of the lectures were proposed by local team leader from KU Leuven.

3.3 Partners' presentations and delivered lectures

Here comes the short overview of the topics discussed by PWR presenters during the SMARTPL training session in Wroclaw.



Challenge Based Learning is a teaching method that puts students in front of real-world challenges, through which they acquire knowledge and experience in specific content areas. Acting according to this method, students can propose new solutions for existing environments. The CBL approach is designed to empower students to take ownership of their learning and develop critical thinking, problem-solving, and collaboration skills.

One of the main benefits of CBL is that it provides students with an opportunity to apply their knowledge and skills to real-world problems. This approach helps students to develop a deeper understanding of the subject matter and how it can be used to solve real-world problems. By working on real-world challenges, students can also develop a sense of purpose and motivation, which can lead to higher levels of engagement and achievement.

Another benefit of CBL is that it encourages students to work collaboratively and develop teamwork skills. In a CBL environment, students work in teams to solve complex problems, which requires them to communicate effectively, share ideas, and work together to achieve a common goal. This approach helps students to develop interpersonal skills that are essential for success in the workplace and in life.

Finally, CBL helps students to develop critical thinking and problem-solving skills. By working on real-world challenges, students are required to analyse complex problems, identify potential solutions, and evaluate the effectiveness of their solutions. This approach helps students to develop a growth mindset and a willingness to take risks, which are essential for success in the 21st century. Overall, CBL is an effective teaching method that can help students to develop the skills and knowledge they need to succeed in the real world.

Prof. Agnieszka Bieńkowska and prof. Katarzyna Tworek, both from Faculty of Management, PWR, underlined the importance of developing both creative and analytical thinking skills in students. It provides practical tools and methods that educators can use to empower students in their learning journey, such as flipped classroom, role-playing, peer feedback, design thinking, and story-telling.

By taking ownership of their learning, students can choose the assignments or assessments that align with their learning goals and interests, as long as they meet the specified criteria. Teachers may also provide opportunities for students to revise or resubmit their work to meet the desired standards. This approach, called specification grading, allows students to demonstrate their mastery of specific learning outcomes or criteria. This personalized learning approach can be beneficial for students as it allows them to develop their skills and interests in a way that is meaningful to them, while also meeting the desired learning outcomes.



The presentation made by Elżbieta Komarzyńska emphasizes the importance of developing both creative and analytical thinking skills in students. It provides practical tools and methods that educators can use to empower students in their learning journey, such as flipped classroom, role-playing, peer feedback, design thinking, and story-telling.

By taking ownership of their learning, students can choose the assignments or assessments that align with their learning goals and interests, as long as they meet the specified criteria. Teachers may also provide opportunities for students to revise or resubmit their work to meet the desired standards. This approach, called specification grading, allows students to demonstrate their mastery of specific learning outcomes or criteria. The emphasis is on students taking ownership of their learning and demonstrating their proficiency based on the specified criteria. This personalized learning approach can be beneficial for students as it allows them to develop their skills and interests in a way that is meaningful to them, while also meeting the desired learning outcomes.

All partners' presentations made by coordinating institution can be found in Annex 1.

3.4 List of participants

Archil Chochia – Senior researcher, member of SMART-PL management team of TalTech

Mariusz Mazurkevich – team leader in PWR, responsible for the training session

Prof. Svitlana Kalashnikova – Institute of Higher Education of the National Academy of Sciences of Ukraine

Olena Lytovchenko – Institute of Higher Education of the National Academy of Sciences of Ukraine

Prof. Vitaliy Kukharskyi – Ivan Franko National University of Lviv

Dr. Roksoliana Svizinska – Ivan Franko National University of Lviv

Yevheniia Revenko – Kherson State University

Tetiana Cherkashina – Kherson State University

Prof. Natalia Morkun - Kryvyi Rih National University

Prof. Madiia Holiver - Kryvyi Rih National University

Dr. Svitlana Kostiuk - Kryvyi Rih National University

Hanna Lysiuk – Odessa National Polytechnic University

Taia Petik – Odessa National Polytechnic University

Prof. Tetiana Hovorushchenko – Khmelnytskyi National University

Dr. Yelysaveta Hnatchuk – Khmelnytskyi National University

Maryna Lytovchenko – Karazin National University, Kharkiv

Daria Yashkina – Karazin National University, Kharkiv



3.5 Attendance list

All participants have signed the SMARTPL attendance lists for all training dates. The lists are collected by the coordinator.

3.6 Photos from the training



Figure 1 – PWR training, get together



Figure 2 – Presentation by Elżbieta Komarzyńska-Świeś on Tutoring in PWR



Figure 3 – KhNU participants at the PWR training

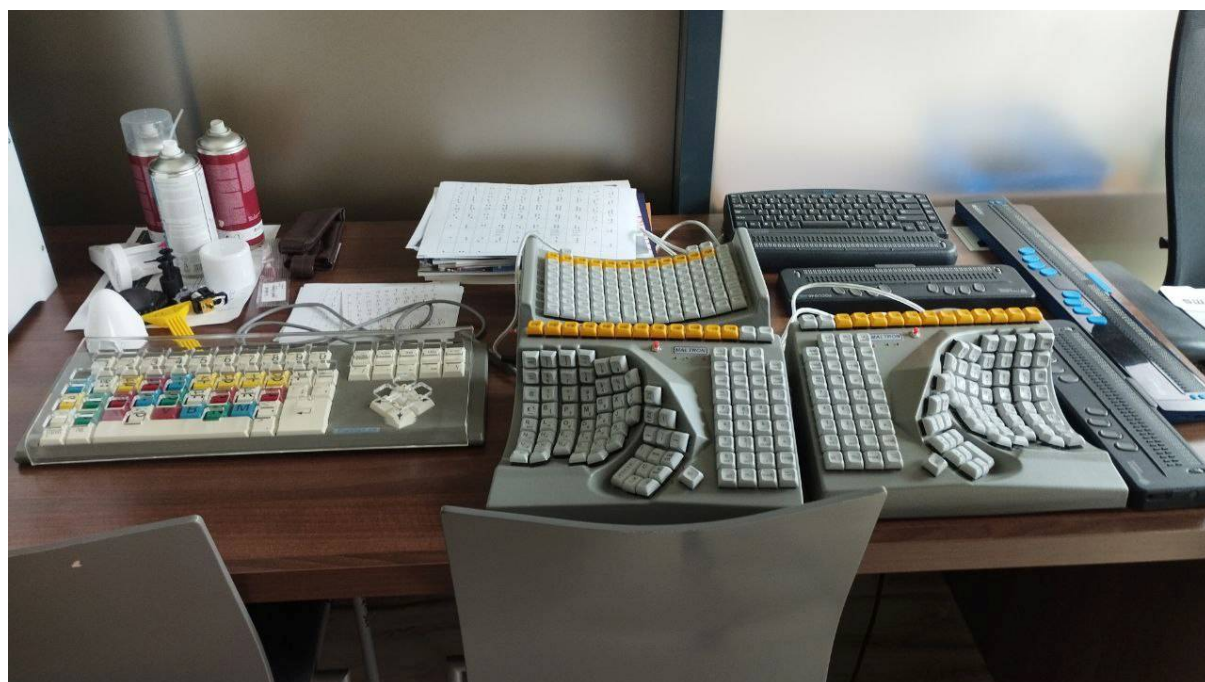


Figure 4 – Visit to the Laboratory of special needs of students



Figure 5 – Joint photo at the end of the training session in Wroclaw

3.7 Meeting minutes

Meeting minutes are summarised for both training sessions in PWR and KU Leuven and are presented at the report on Deliverable D.2.2. Training in KU Leuven.

4 Conclusions

The report on Deliverable 2.5. describes the training session, held in Wroclaw Polytechnic university / PWR for the group of Ukrainian participants June 12-16, 2023. Parties have explored and discussed in detailed various implementations of PWR policies on a student personalised learning approach and how it can be efficient in developing students' hard and soft skills. The following advantages were identified by the working group:

It caters to individual needs and strengths. Each student has different skills, interests, learning styles and paces. A personalised approach allows students to tailor their learning experience based on their specific needs and abilities. This ensures they can fully develop their potential and acquire the skills most relevant to them.



Students have more control over their learning. In a personalised approach, students have more autonomy and choice over what and how they learn. This empowerment and sense of ownership can motivate students and increase their engagement in the learning process.

It facilitates skill development beyond traditional subjects. With personalised learning, universities can offer a wider range of opportunities for students to develop transversal skills like critical thinking, teamwork, communication, creativity, etc. This combination of hard and soft skills better prepares students for the job market.

Students can learn at their own pace. Personalised learning allows students to progress through material and acquire skills at the pace that suits them best. This caters to different speeds of knowledge absorption and skill mastery.

Students get customized support. With personalised learning, universities can offer students tailored guidance, feedback and assistance based on what they specifically need to improve and progress. This provides the optimal conditions for each student to develop their full skills potential.



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the European Union**

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Annex 1. PWR presentations



Faculty of Management



Politechnika
Wrocławska

CHALLENGE BASED LEARNING WITH STUDENTS' DYNAMIC CAPABILITIES EMPOWERING (CBL/SDC)

Prof. Agnieszka Bieńkowska
A/Prof. Katarzyna Tworek

Faculty of Management, Wrocław University of Science and Technology





1. Generational diversity

Generation:

- is a group of people born in the same period (a generation was once considered to last 25 years, but nowadays that time has shortened)
- are people who have been shaped by similar events and experiences
- members of a given generation have a similar hierarchy of values and attitudes on many issues

Generational diversity is an opportunity, as hiring people of different ages and experiences is considered essential for above-average performance.

Without age diversity, an organization risks getting caught in the trap of "groupthink," which can stifle innovation and limit its ability to adapt its operations to a changing environment.





1. Generational diversity

BABY BOOMERS The generation of the post-war baby boomers (1946-1964, 18 years)	• Stability and job security • Traditional values • Hierarchy and healthy competition
Generation X Devoted to work (1965-1980, 15 years)	• Fixed salary and job security • Loyalty to the organization • Fringe benefits • Work-life balance
Generation Y (Milenials) Raised in prosperity (1981-1996, 15 years)	• Development opportunities and educational funding • Flexible working hours • Impact on the organization's operations • Less inclination to look for a lifelong employer - more frequent change of place of employment
Generation Z (Connected) Virtual world generation (1997-2012, 15 years)	• Impact on the organization's operations • Opportunities for development • Mobility flexibility
Generation Alfa Virtual world+ generation (2013-...,)	• ...

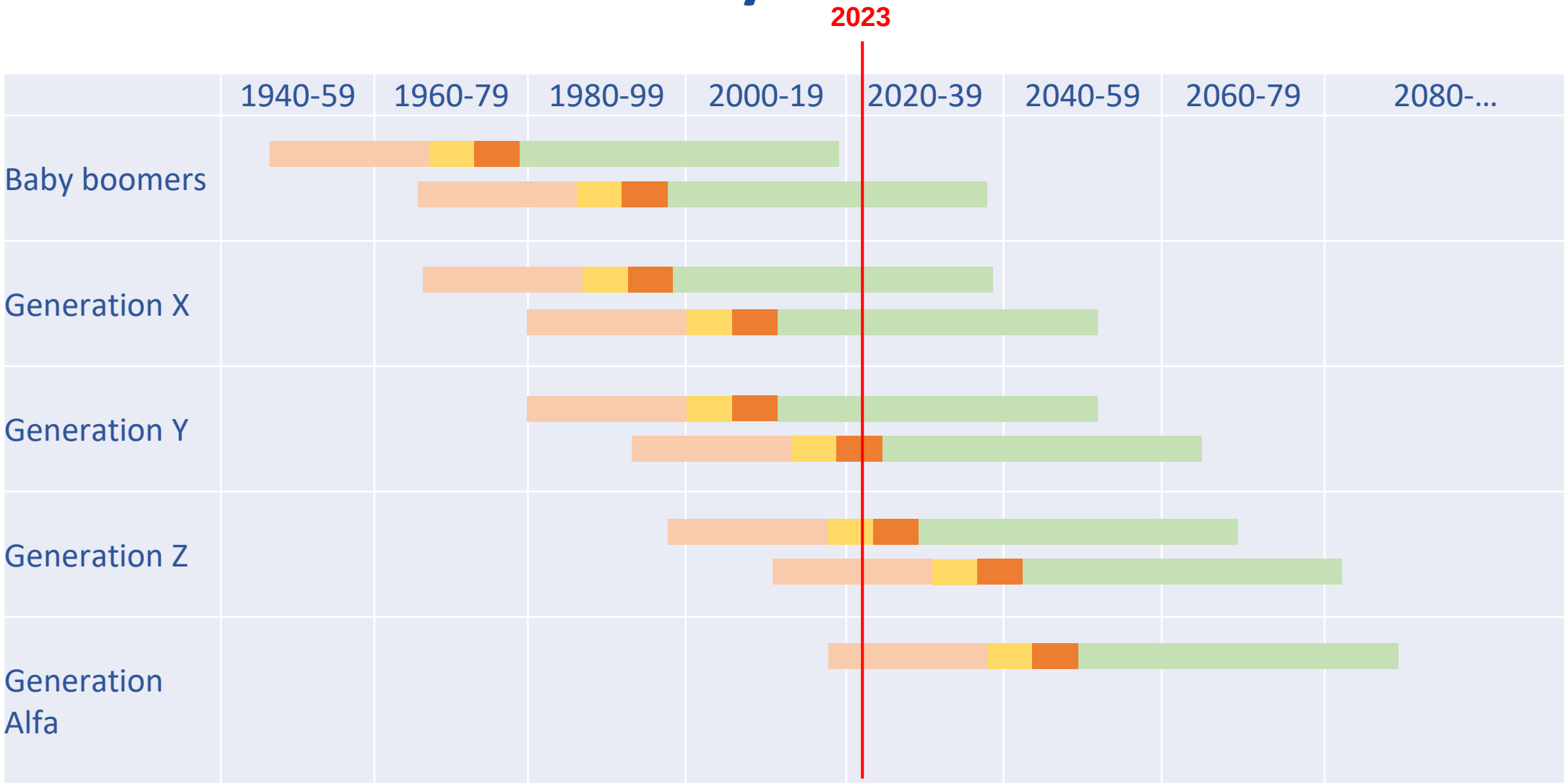
Source: based on <https://forsal.pl/artykuly/1107773,pokolenie-baby-boomers-x-y-i-z-w-jednej-firmie-jak-pogodzic-ich-oczekiwania.html>

	Births – start date	Births – end date	Duration	Początek (1) studiów (+20)	Początek (2) studiów (+20)	Początek (1) SD (+25)	Początek (1) SD (+25)	Początek (1) pracy (+30)	Początek (2) pracy (+30)	Koniec pracy (1) (+70)	Koniec pracy (2) (+70)
Baby boomers	1946	1964	18	1966	1984	1971	1989	1976	1994	2016	2034
Generation X	1965	1980	15	1985	2000	1990	2005	1995	2010	2035	2050
Generation Y	1981	1996	15	2001	2016	2006	2021	2011	2026	2051	2066
Generation Z	1997	2012	15	2017	2032	2022	2037	2027	2042	2067	2082
Generation Alfa	2013			2033		2038		2043		2083	





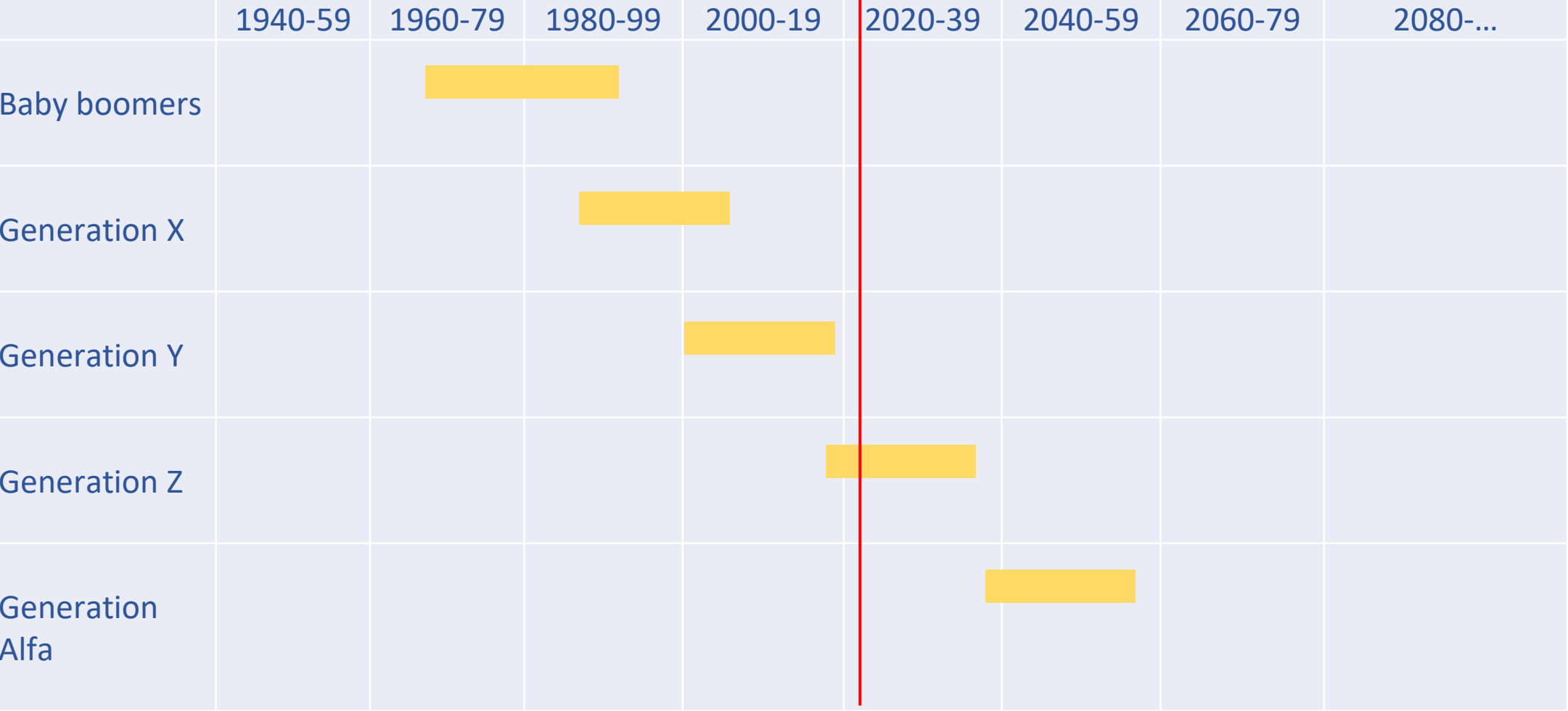
1. Generational diversity





1. Generational diversity

Students



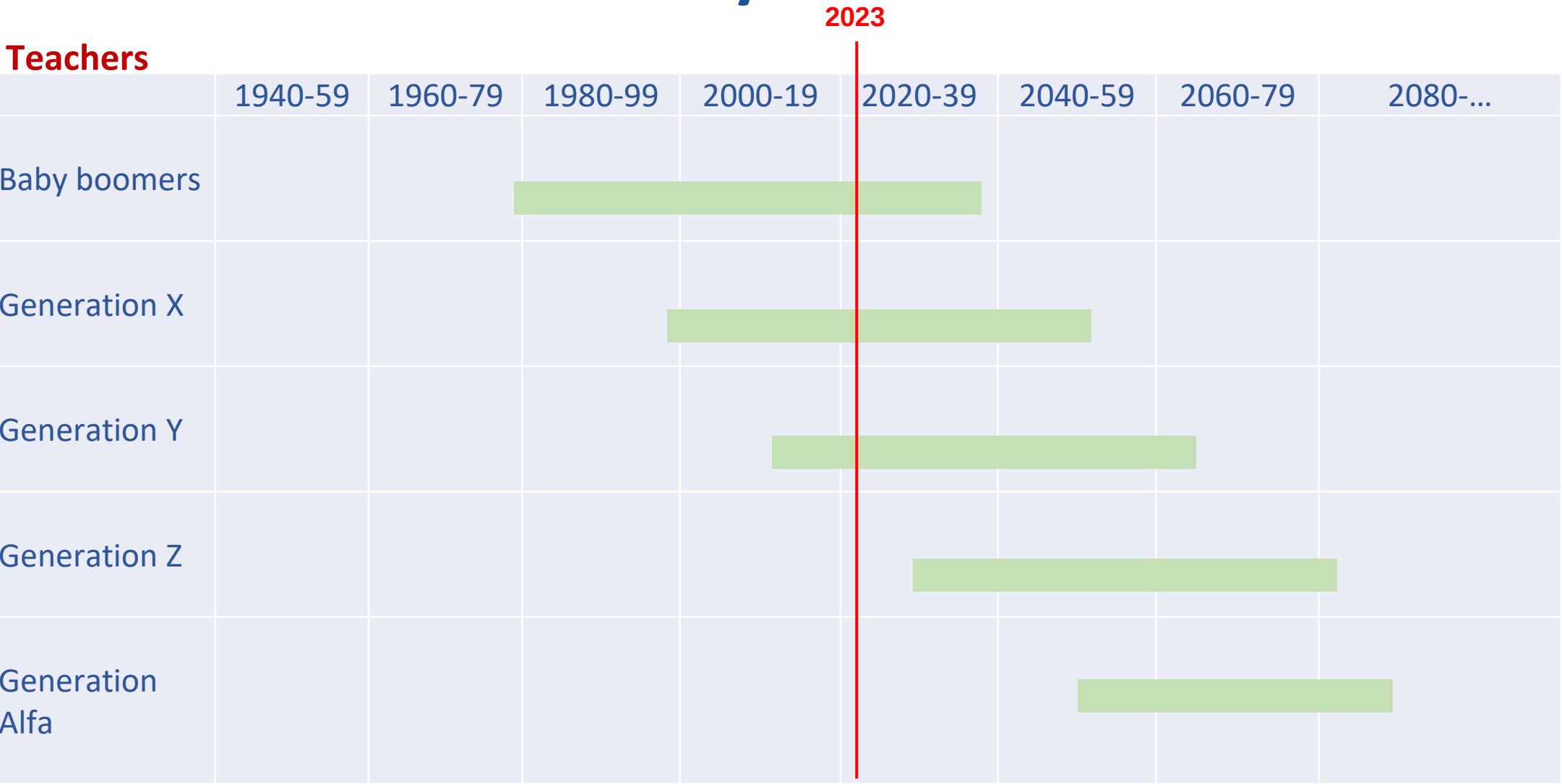
2023





1. Generational diversity

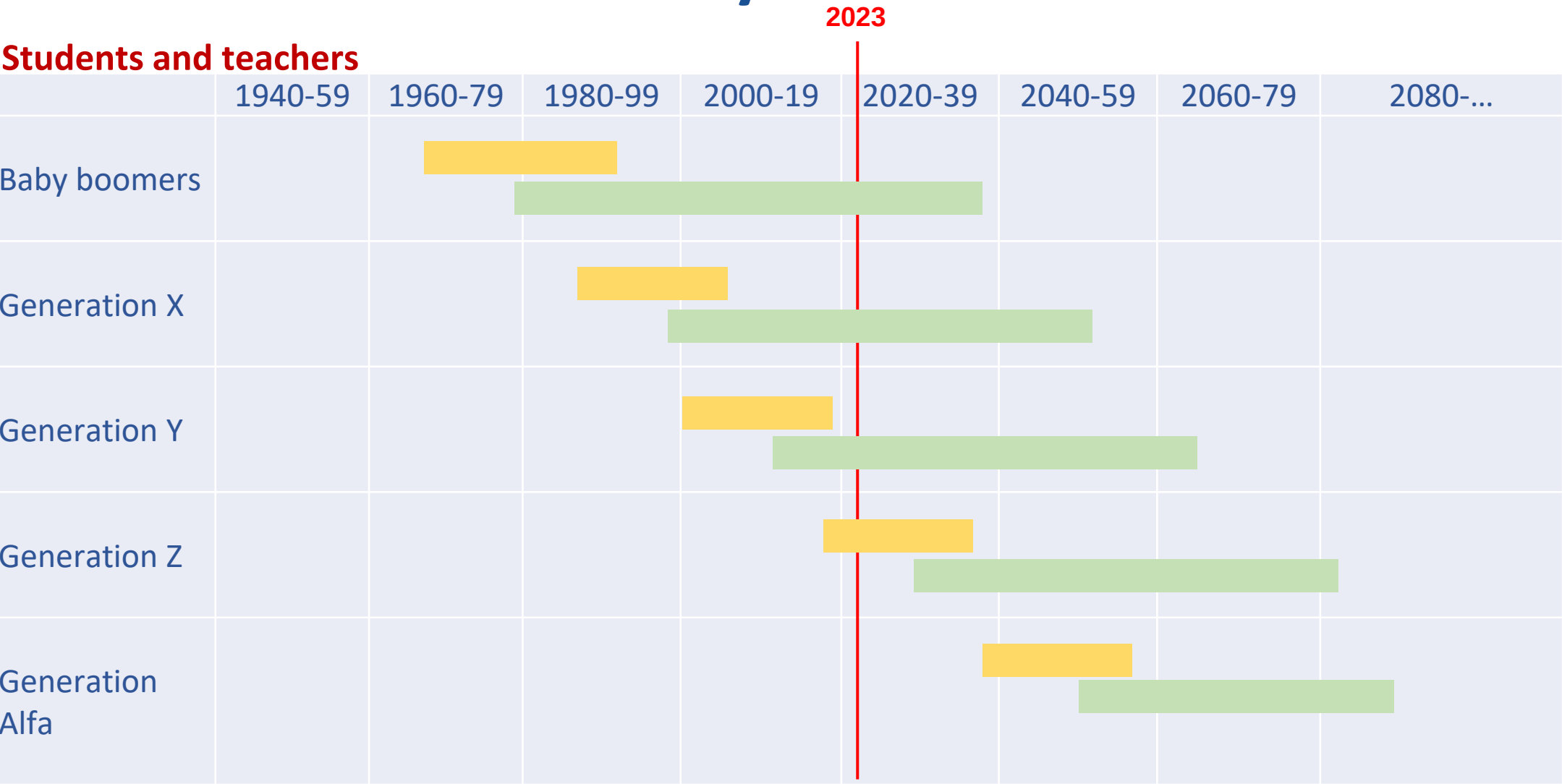
Teachers





1. Generational diversity

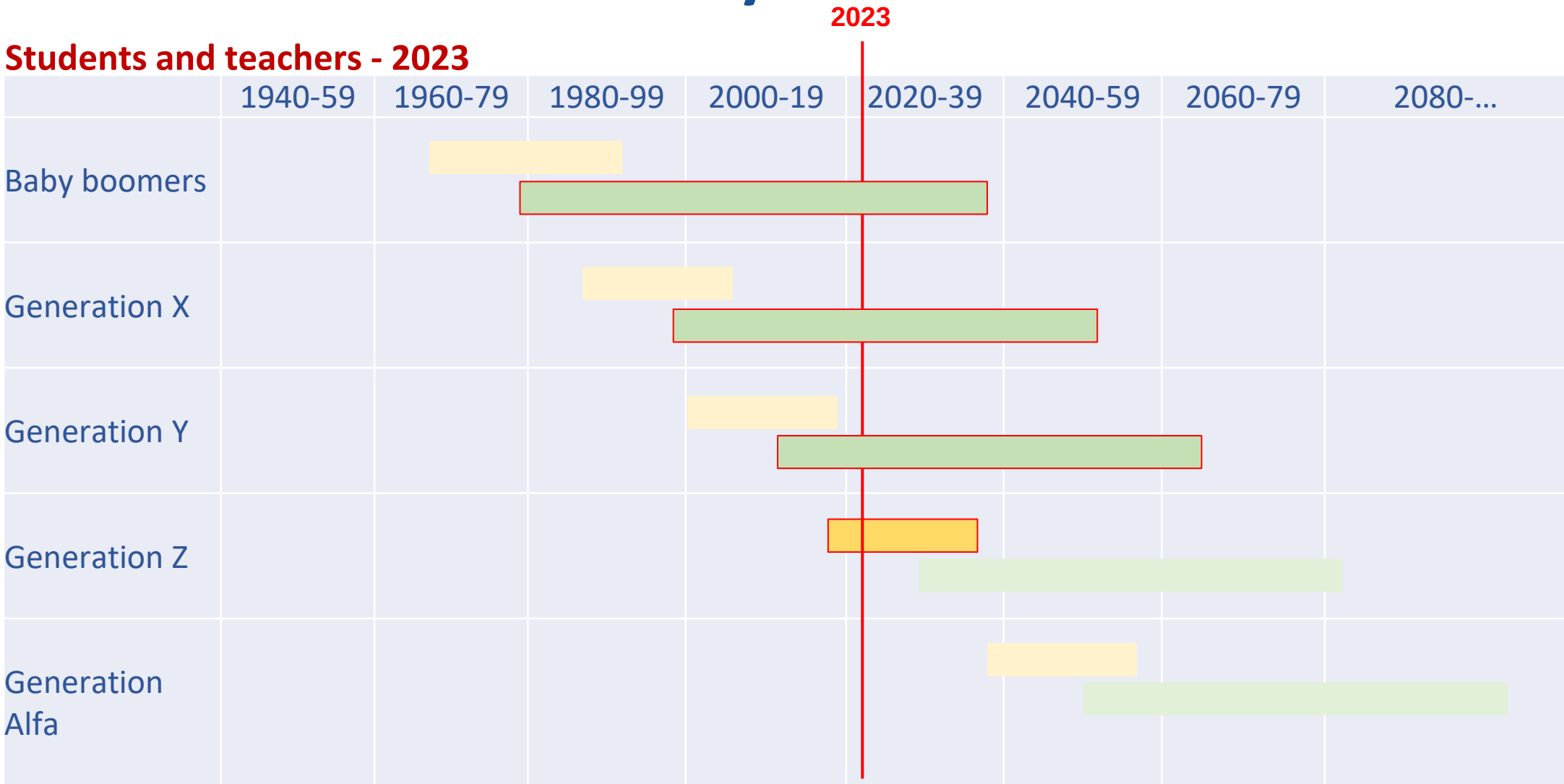
Students and teachers





1. Generational diversity

Students and teachers - 2023



POKOLENIE Z (Connected)
Pokolenie wirtualnego świata
(1997-2012, 15 lat)

- Wpływ na działalność organizacji
- Możliwości rozwoju
- Elastyczność mobilność





2. Dynamic capabilities

Generation Z changes jobs several times in a lifetime - is it possible to be educated according to current market demands?

- Lack of ability to predict all needs in the future.
- It is necessary to equip the graduate with the ability to creatively solve complex problems.
- Necessary to equip the graduate with the ability to constantly adapt to changing conditions.

Jak Pokolenie Z widzi przyszłość?

Raport
Studiując w świecie
niepewnego jutra:
perspektywy,
sprawczość,
wizje przyszłości.



https://raporty.iuw.edu.pl/raport-2022_2/



GENERATION Z (Connected)

Virtual world generation
(1997-2012, 15 years)

- Impact on the organization's operations
- Opportunities for development
- Mobility flexibility



2. Dynamic capabilities

- organization (DC)

- "the ability of an organization to integrate, build and reconfigure internal and external capabilities in order to adapt the organization to rapid changes in its environment" (Teece, Pisano and Shuen, 1997)
- "organizational processes with resources - especially the processes of integrating, reconfiguring, achieving and releasing resources - in order to match and even create changes in the market" (Eisenhardt and Martin, 2000)

- employees (EDC)

- "The ability to integrate, build and reconfigure the competencies of employees in the context of adapting them to the requirements of the changing environment and interacting directly with the performance of tasks on the job (Bienkowska, Tworek, 2020); the dynamic capabilities of employees refer to both the solution of current problems and the long-term improvement of work processes on the job



2. Dynamic capabilities

- employees (EDC)

- **Sensitivity to changes in the environment** (the ability to recognize changes, recognize opportunities and threats that could potentially affect the performance of the job at the workplace),
- **The ability to adapt to changes in the environment** (preventive actions, preventing the emergence of problems in the workplace),
- **Skills to proactively solve problems that arise in the workplace** (if they occur), innovation in the workplace,
- **Skills for continuous personal development and learning** (Bienkowska, Tworek, 2020).





2. Dynamic capabilities

DC-based learning (DCL)

Dynamic Capability Based Learning (DCL) is teaching using methods and techniques to develop students' dynamic capabilities, i.e. sensitivity to changes in the environment, the ability to adapt to these changes, proactive problem-solving, the ability for continuous personal development and learning.

Dynamic capabilities are not an alternative to content knowledge and skills, but a complementary component of them.

See more: https://wtm.wroclaw.pl/wp-content/uploads/2022/10/WTM-publicacja_po_konferencji-ETOS-LUDZI-NAUKI-2.pdf





2. Dynamic capabilities

Teacher

Teaching:

- administered vs active models of education
- individualism vs collectivism
- traditional vs using modern technology
- theory vs practice
- specialized vs holistic

Student

Learning:

- reproducibility vs creativity
- external control vs self-control
- passivity vs activity (commitment)
- reactivity vs proactivity
- feedback vs anticipatory feedback

Teaching & Learning





3. Challenge based learning

**CHALLENGE BASED LEARNING with
STUDENTS' DYNAMIC CAPABILITIES empowering
(CBL/SDC)**





CHALLENGE BASED LEARNING with SDC empowering (CBL/SDC)

- a teaching model in which students are confronted with very serious challenges, through which they acquire knowledge and experience in specific content areas, and acting according to this method, students can propose new solutions for real/existing environments
- **extended module of proactive challenge identification, problem solving and independent learning**
- the role of the lecturer is to set interdisciplinary issues together with students, and then connect them to current events in the immediate environment, the world, and frame them as a problem/challenge (the teacher becomes a mentor)

More: <https://www.challengebasedlearning.org/toolkit/>





Change Management

Challenge based learning



Master programme in
Management field



Curriculum framework (in polish)

Dylematy współczesnej cywilizacji			
Marketing nowoczesny	Język obcy II A1 lub A2		
Koncepcje zarządzania zmianą	Laboratorium zmiany I		
Zarządzanie wiedzą i własnością intelektualną	Blok społeczny (GK)	Laboratorium zmiany II	Zarządzanie zmianą CBL
		Pomiar i utrwalanie efektów zmian	Zarządzanie zmianą
Controlling	Metody i narzędzia zarządzania zmianą	Moduł analityczny	
Pomiar efektywności organizacji	Zaawansowane zarządzanie projektami		Język obcy I B2+
Moduł metod ilościowych w zarządzaniu	Blok psychologiczny	Blok ekonomiczno-prawny	Seminarium dyplomowe II
		Symulacja i wizualizacja danych	Blok etyka
Strategiczne zarządzanie organizacją	Badania operacyjne	Zintegrowane systemy informatyczne zarządzania	Laboratorium zmiany III
		Praca dyplomowa I	Zarządzanie ciągłością działania
	Seminarium dyplomowe	Warsztat badacza	Blok CSR
			Fizyka środowiska pracy II
			Praca dyplomowa II
I	II	III	IV
28h/tydzień	27 h/tydzień	24h/tydzień	15h/tydzień

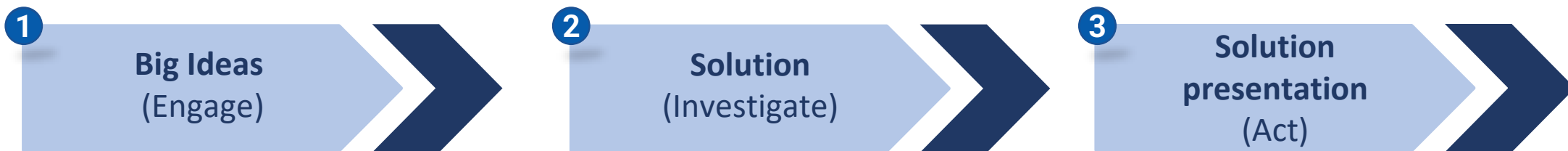
Kursy
specjalnościowe



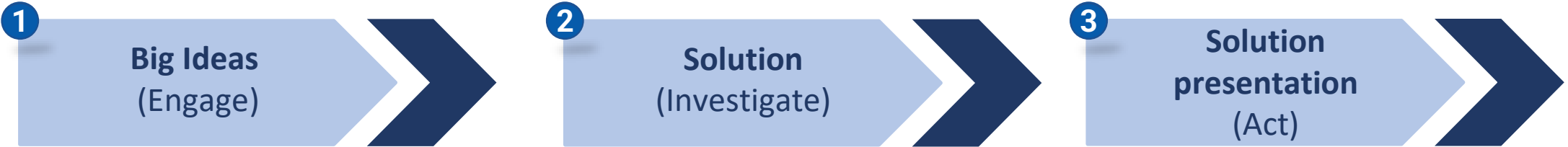
Challenge Based Learning method

A model of teaching in which students are put in front of very serious **challenges**, through which they acquire knowledge and experience in specific content areas, and acting according to this method students can propose new solutions for real/existing environments

IMPORTANT: throughout the process, all Challenge participants are expected to document their experiences, reflect on their practice and share their experiences

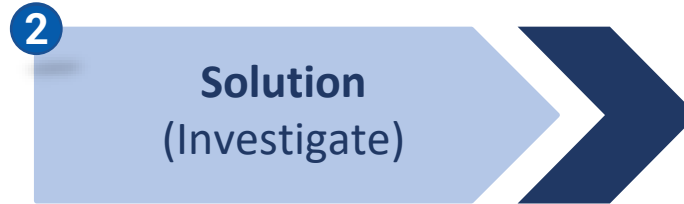


3 phases of challenge based learning



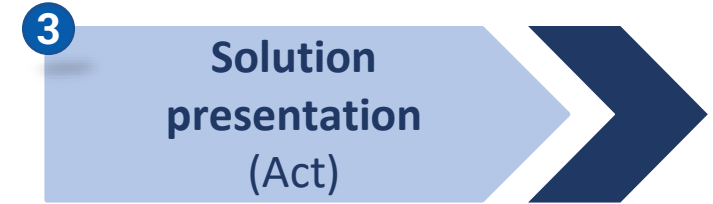
- **Broad ideas**
- **From ideas to challenges**
- **Essential Questions**

1. Planning (development of a plan of action strategy for the implementation of the model and a proposal for a student challenge)



- **Building foundations for Solution**
- **Try & fail**
- **Build resources and ask questions**

2. Practical action (students develop a plan and schedule of activities)
3. Actual work (students prepare ways to cope with the challenge)



- **Evidence based solutions**
- **Authentic Audience**
- **Asses effectiveness od the Solution**

4. Presentation of results (publications, seminars, conferences)





**CENTRUM DOSKONAŁOŚCI
DYDAKTYCZNEJ**



**Politechnika
Wrocławska**

CDD Case Study

CDD – Centrum Doskonałości Dydaktycznej

Center for Teaching and Learning WUST



CENTRUM
DOSKONAŁOŚCI
DYDAKTYCZNEJ



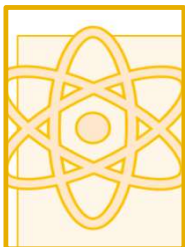
Politechnika Wrocławska



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DYDAKTYCZNEJ



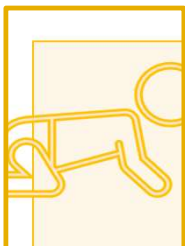
Politechnika
Wroclawska



How it started



What we made



Where are we now



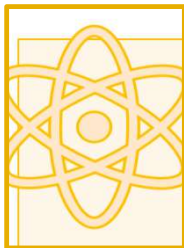
What we are planning



CENTRUM
DOSKONAŁOŚCI
DYDAKTYCZNEJ



Politechnika Wrocławska



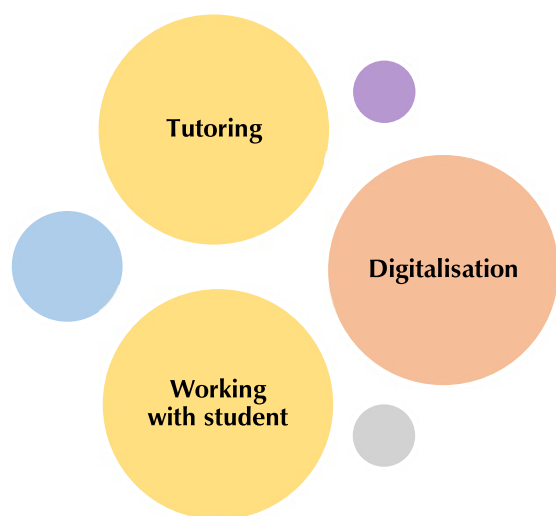
How it started



CENTRUM
DOSKONAŁOŚCI
DYDAKTYCZNEJ



Politechnika Wroclawska



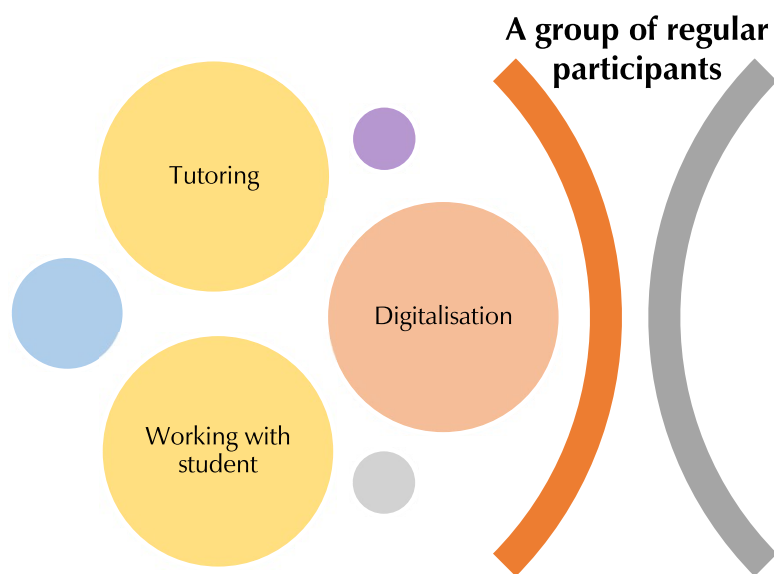
**Different training, not
synchronized, from project to
project**



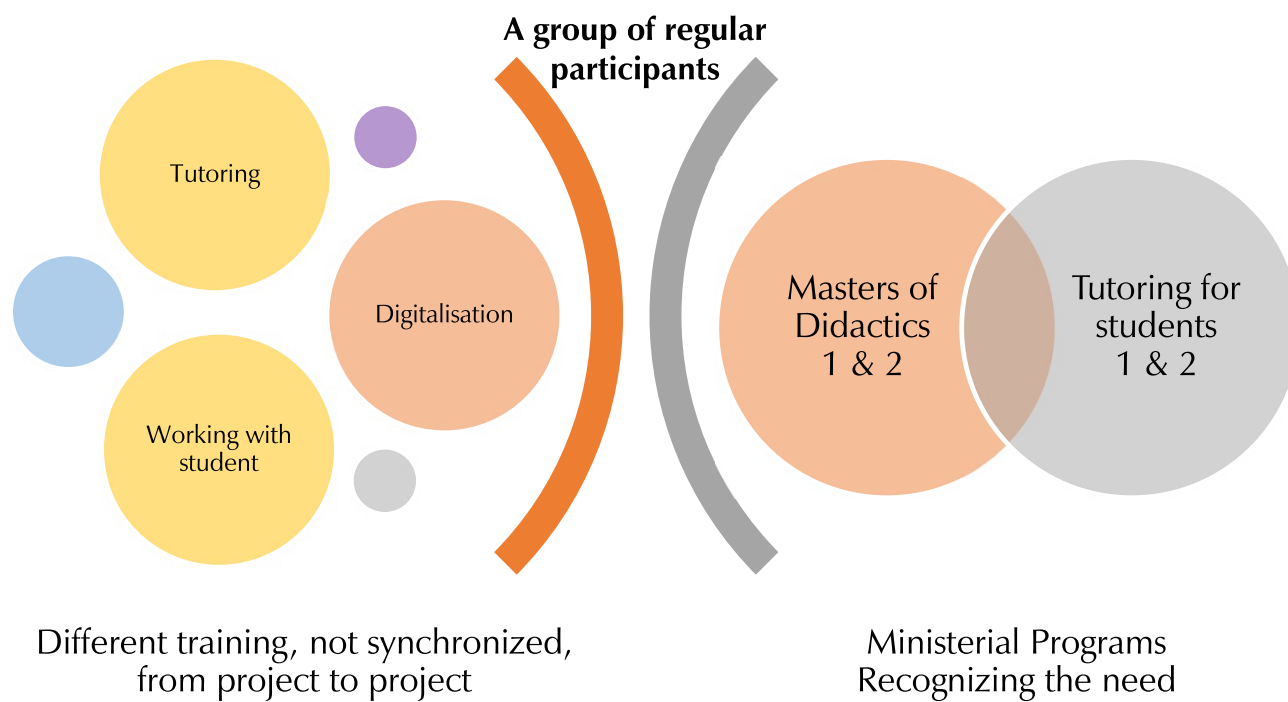
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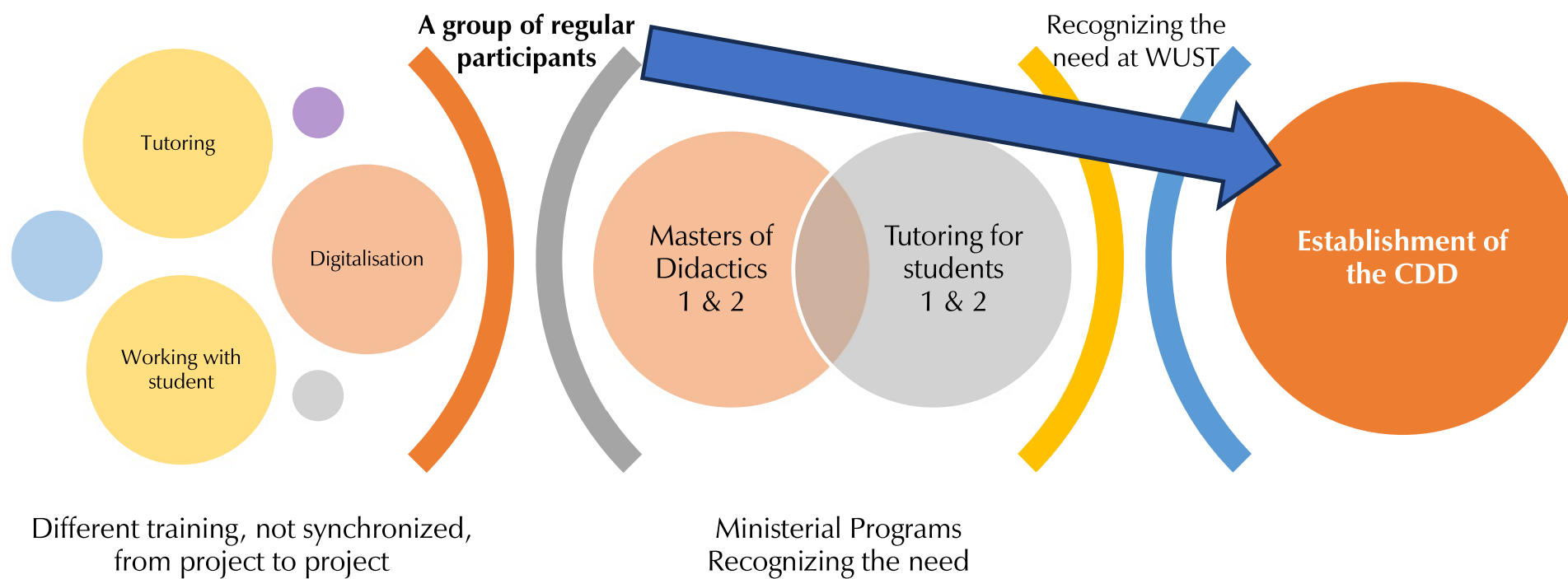


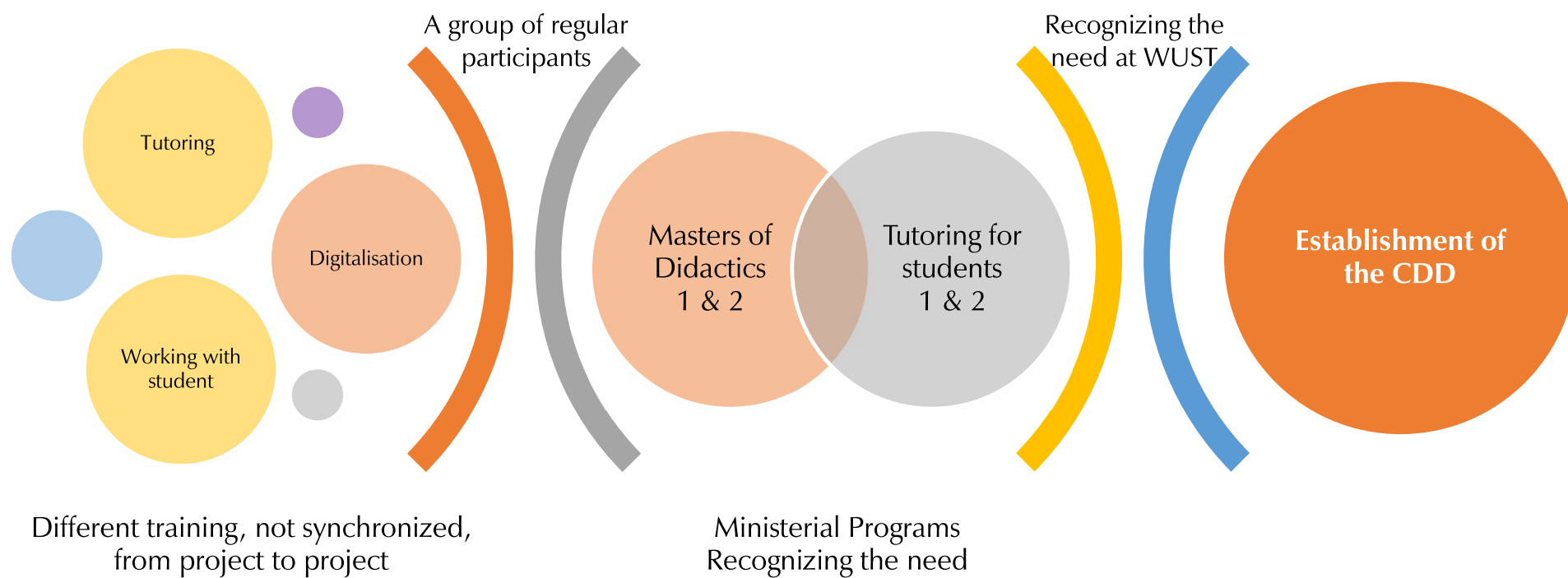
Politechnika Wrocławska



Different training, not synchronized,
from project to project







20??

2019-2022

09.2021



CENTRUM
DOSKONAŁOŚCI
DYDAKTYCZNEJ



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What we made



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Politechnika Wroclawska

Good Didactic Days 2022



TES Teaching Excellence Seminars



Teaching Excellence of the University – National grant



Good Didactic Days 2023





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DYDAKTYCZNEJ



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Where are we now



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DYDAKTYCZNEJ



Politechnika Wrocławska

Teaching Excellence of the University

- Diagnostic part
- Supervision part
- Training part

Local exchanges

- Visits to other universities
- Invitations of external guests

RESOURCE ALLOCATION AND INFRASTRUCTURE

The degree to which an institution funds and locates teaching development, and the ways in which a CTL designs programming for the campus, indicates its centrality. Depending upon institutional mission, size, and Carnegie classification, some of these elements (like staffing) may be aspirational, or outside of Center scope.

	BEGINNING/DEVELOPING	PROFICIENT/FUNCTIONING	ACCOMPLISHED/EXEMPLARY
BUDGET	Funding for the Center is largely in the form of support for specific events or programs.	Center has appropriate institutional budget, although it may fluctuate from year to year. Budget may encompass both programming and personnel costs, although personnel may be part of central administration budget. Funds are available to support the professional development of some Center staff. Budget may be supplemented by cost-sharing with other units, one-time campus allocations, or external grants.	Center budget is funded proportional to campus mission, vision, and strategic direction. Budget absorbs rates of fluctuation from year to year and allows for long-term planning, staffing, and growth. Budget encompasses programming, personnel costs, services (e.g., food, outside speakers), and supplies. Funds are available to support the professional development of all Center staff. Budget is supplemented by cost-sharing with other units or one-time campus allocations. Budget is sufficient without external sources of funds but CTL may hold a gift fund, secure external grants, or partner on grants.
LOCATION & SPACE	Center utilizes space that may be shared among multiple institutional units. Center staff may be housed in a location separate from where programming and services are offered.	The Center has dedicated space and can be located without difficulty. There is adequate office space for staff; access to a classroom, lab, and spaces for meetings, programs, and events. Center space is inviting and adequately resourced but design may not meet current demand/need and/or reflect pedagogical principles and practices.	CTL is in a location that is easily found and accessible, with ample office space for staff. May include a workspace for instructors. CTL has dedicated classroom, lab, and meeting/event space. Center space is welcoming, engaging, and resource rich. CTL features new spaces or repurposes existing space configured with technology. Pedagogical principles and practices drive space design, including educational technology implementation.
STAFFING	CTL may be led by a faculty committee (some with release/reassigned time) or by an individual administrator, faculty or staff member who may be less than full time. The committee/individual charged with leading the CTL is beginning to develop a background in the field of faculty/educational development. CTL struggles to meet requests.	CTL has an individual charged with supporting educational development. Center staff includes a director, although may be less than full-time. Staffing is relatively lean. At least one member of the CTL staff has a background in the field of educational development. Requests from faculty may exceed the staff's capacity.	Center has a dedicated staff that includes a full-time director who may also hold other titles. Staffing is substantial and may include a program coordinator, associate or assistant director, instructional/technology consultant, faculty associate, postdoc, graduate student or undergraduate assistant, full- or part-time. Multiple members of CTL staff have backgrounds in educational development. Staff is able to meet most or all requests for services and is sufficient to meet operational needs (e.g., publicity, archiving).
ONLINE RESOURCES	Center's website is in development or is established with basic information about Center's location, contact information, and schedule of events. Center staff are considering how/whether to provide instructional resources online.	Center may extend its reach via web pages that are current and easily navigable; some instructional resources and program materials may be available online.	Center significantly extends its reach via a dynamic online presence. Web pages are current and easily navigable. Instructional resources and program materials are online and may include asynchronous programming (webinars), electronic newsletters, blogs, and links to other print and visual materials.
COMMUNICATION & REPUTATION	Center staff is developing a marketing plan. Communication is largely event-based and is accomplished through flyers, word of mouth, and emails. CTL is developing a needs assessment to better understand the diverse interests of faculty across departments, career stages, and appointment types.	Regular communication is offered to the campus (e.g., via email, newsletter, or social media). CTL is beginning to develop a reputation for providing programs responsive to instructor/constituencies' needs. Some departments/appointment types may be overrepresented in attendance, while others may be underrepresented. Programming may be perceived as for certain departments/appointment types only, e.g., humanities, tenure-track faculty.	CTL provides proactive and timely outreach via email, newsletters, social media engagement, and "on the road" events. Center has strong reputation for programs highly responsive to identified needs and increases awareness on campus through promotional materials. Programming is well attended and perceived as open and available to all.

PROGRAMS AND SERVICES

Teaching and learning centers develop evidence-based, mission-dependent programming based upon instructor, student, and campus need. While the domains below may be context-specific, relationships and community remain key indicators of Center viability.

	BEGINNING/DEVELOPING	PROFICIENT/FUNCTIONING	ACCOMPLISHED/EXEMPLARY
SCOPE	Programs and services are responsive to the expressed needs of some CTL constituencies but are not fully aligned with Center mission and goals. Programs are limited in variety and ability to scale.	Programs and services are responsive to expressed needs of many/all CTL constituencies and are aligned with mission and goals. Programming may not be scalable, or largely targets a particular career stage, appointment type, or disciplinary area.	Programs and services are responsive to and advance needs and initiatives as defined by the institution, are aligned with CTL mission and goals, and are grounded in literature on teaching, learning, and educational development. A diverse array of programs is designed to reach broad campus constituencies.
TARGET AUDIENCE	Center programs and services target individual instructors, including those with contingent appointments, post-doctoral fellows, or graduate students (as applicable for the institution).	Plus: Center programs and services target cohorts that represent instructors at similar career milestones (e.g., new faculty), roles (e.g., non-tenure-track faculty), common interests or responsibilities (e.g., teaching crucial gateway courses, or teaching multi-cultural content), or those from the same academic department or program.	Plus: Center collaborates with other centers, or disseminates to a wider audience beyond the institution, through online resources, programs, and scholarly communications (e.g., presentations and publications).
CONTENT	CTL programs address course design, topics in teaching effectiveness, and/or use of specific technologies.	Plus: CTL programs address curriculum and learner-centered design that is inclusive of all students, motivating and effective learning activities and assignments for culturally diverse classrooms, and fair and equitable assessment.	Plus: CTL offers a programmatic approach that provides a continuous professional development model for instructors as learners, offering targeted, motivating and inclusive instruction that supports faculty growth. Programming addresses a strategic campus need, e.g., increasing graduation rates among all student groups, developing faculty leadership.
APPROACH	CTL programs and services disseminate content related to teaching and support implementation mainly through one-time workshops, individual consultations, and self-help resources (e.g., online). Center may rely heavily on outsourced programming sources.	Plus: Center offers an array of original programs (e.g., individual consultation with feedback, discipline-specific/customized workshops or seminars in a series, communities of practice, institutes/retreats) that disseminate content related to teaching and strongly support implementation.	Plus: Center offers longitudinal programming designed according to principles of adult learning. Center offers an array of original programs and curricular opportunities (e.g., courses, certificates) that disseminate content related to a range of educational development needs. CTL strongly supports implementation and encourages reflective practice (e.g., retreats, grants to support scholarly approaches to teaching and learning, curriculum projects, conference travel).
REACH ¹	Depending upon campus mission and size, CTL reaches a small fraction of instructors. Participation is not representative of appointment types, career stages, departments/colleges. CTL thinks strategically about how to incentivize participation, e.g., how to reach faculty with part-time or contingent appointments for whom developmental activities are not included as part of regular faculty work.	CTL reach is growing. Participation is somewhat representative of appointment types, career stages, departments/colleges. Center is able to offer modest incentives to select constituencies to encourage and recognize engagement in CTL initiatives.	Depending upon campus size and mission, CTL reaches a critical mass of instructors. Participation is strategically distributed across appointment types, career stages, and departments/colleges to serve critical institutional initiatives. Incentives for instructors, especially those for whom developmental activities are not part of their regular workload, might include stipends to offset additional time commitments, paid course release time, conference registrations, or leadership opportunities to impact teaching culture, policies, and procedures.
IMPACT	Center collects data on the numbers of participants using services and self-reports of program value, usefulness, and satisfaction. Data are used for planning, resource allocation, and to inform and enhance programs and services.	Plus: Center collects evidence of program outcomes, which may include measurements of the impact on participants' teaching beliefs/attitudes, implementation of teaching practices, adoption of reflective strategies, and direct/indirect diffusion of effective practice. Center uses this evidence to improve program design.	Plus: Center collects evidence of program outcomes on student learning and/or institutional culture of teaching. Center engages in the scholarship of educational development that can inform and enhance the CTL's programs and services through presentations and publications.

A CENTER FOR TEACHING AND LEARNING MATRIX
<https://podnetwork.org/resources/center-for-teaching-and-learning-matrix/>



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What we are planning



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Politechnika Wrocławska

FERS raising staff competences – National grant

Good Didactic Days 2024



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DOSKONAŁOŚCI
DYDAKTYCZNEJ



Politechnika Wroclawska



What will be your way?

Дякую за увагу!

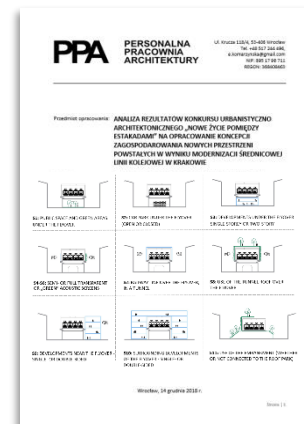
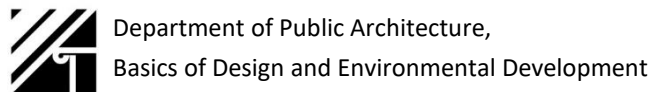
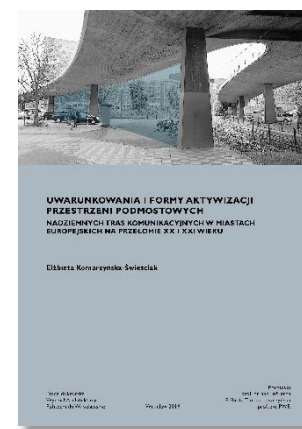
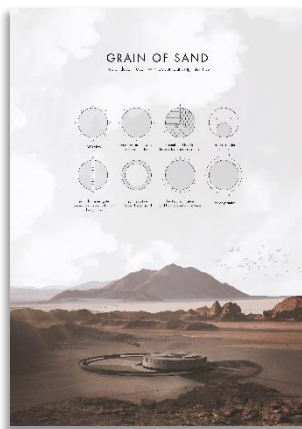
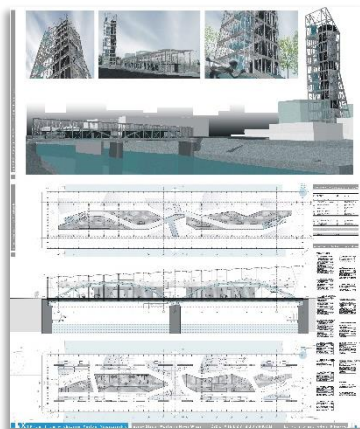
piotr.derugo@pwr.edu.pl

Empowering Minds: Tools and Methods for Cultivating Creative and Analytical Thinking in Students



Elżbieta Komarzyńska
Ph.D, Eng. Arch.

LET ME INTRODUCE MYSELF...



PERSONALNA
PRACOWNIA
ARCHITEKTURY

KIRSCHKE
PRACOWNIA
PROJEKTOWA

GRUPA
5



LET ME INTRODUCE MYSELF...



What do you teach?



Who do you teach?



WHAT THEY
NEED?

WHAT INTERESTS
THEM?

WHAT MAKES
THEM AWAKE?

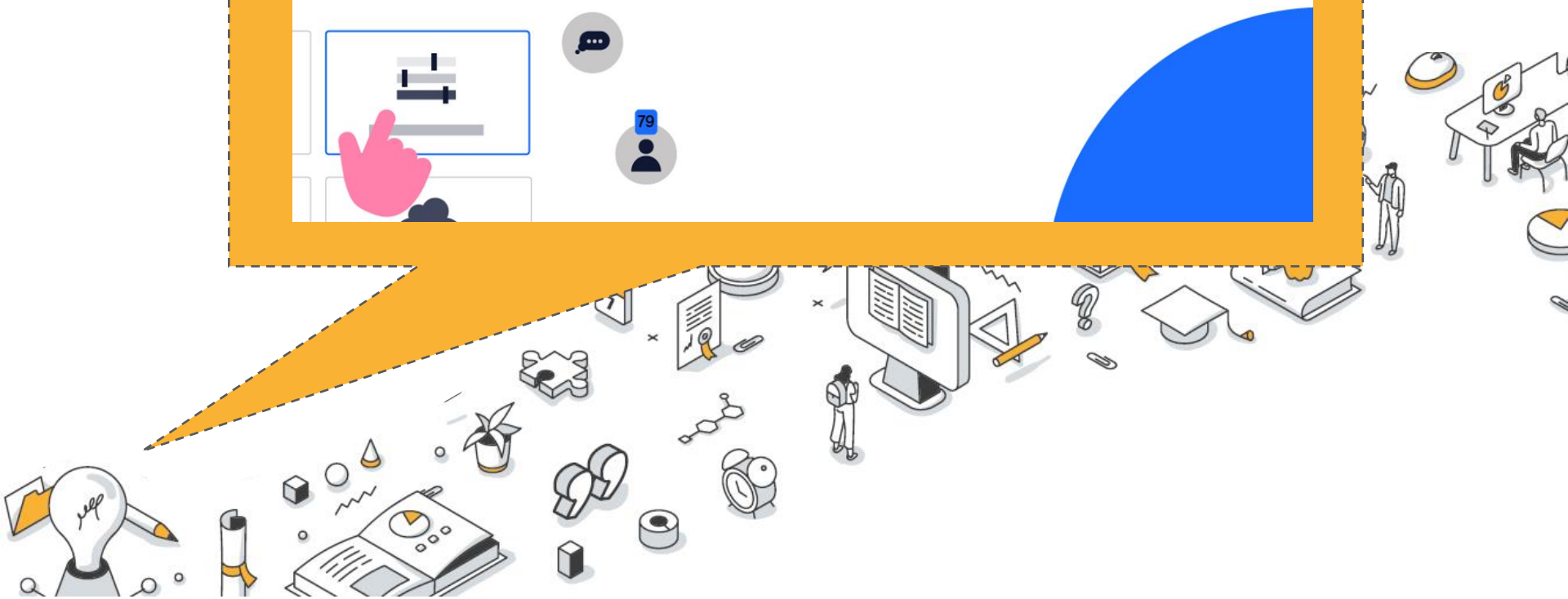
WHO THEY
ARE?

WHAT WILL BE THEIR
CHALLENGES IN THE
FUTURE?





Mentimeter



Join at menti.com use code 2628 1379

 Mentimeter

Instructions

Go to

www.menti.com

Enter the code

2628 1379



Or use QR code



What your students need?



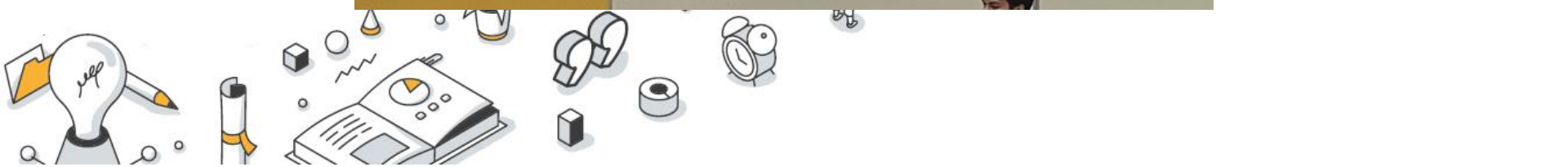
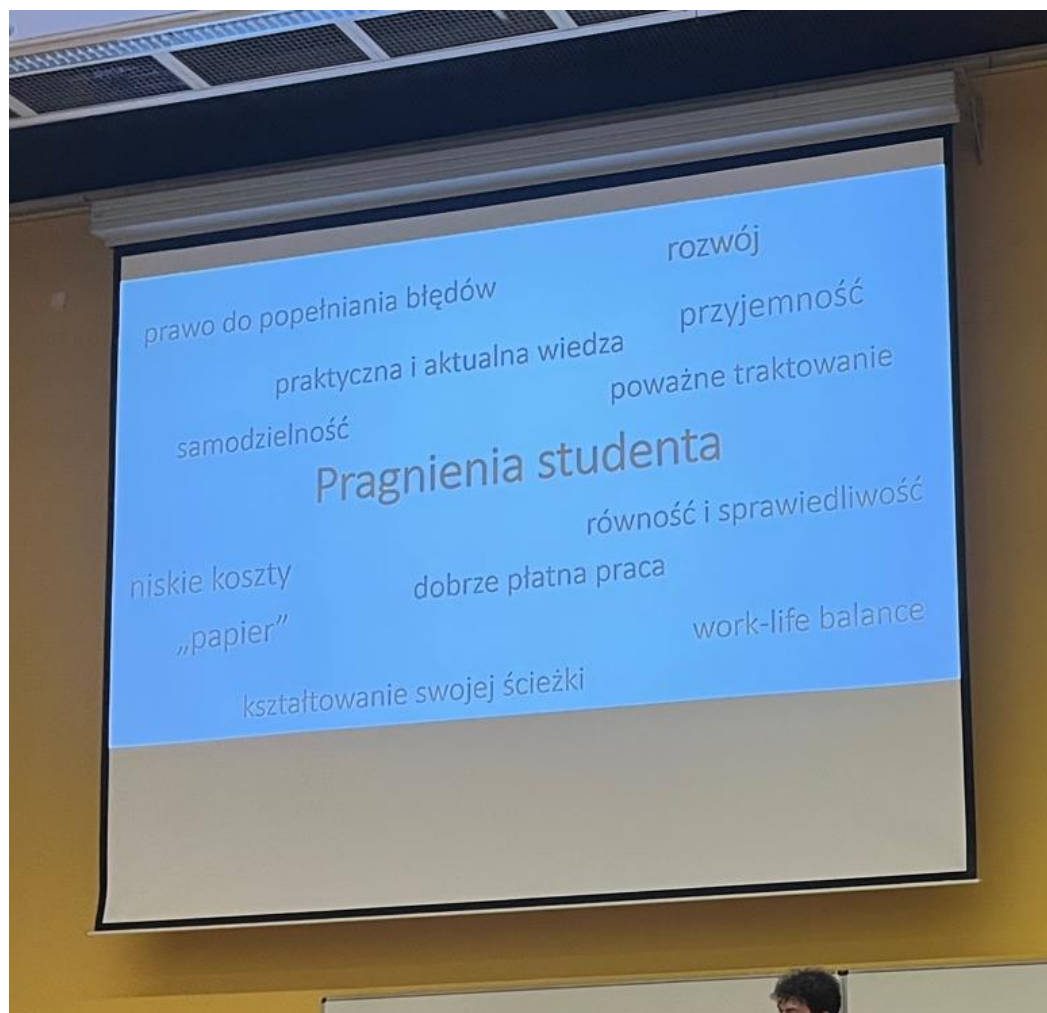




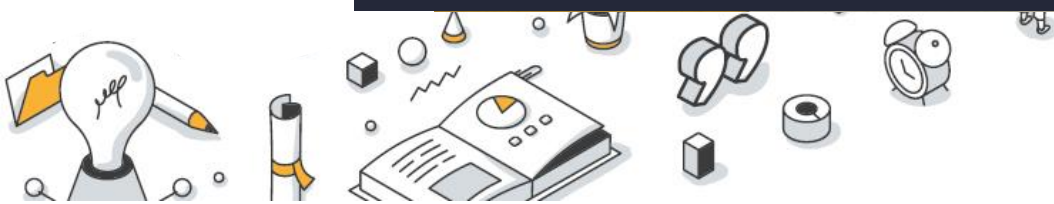
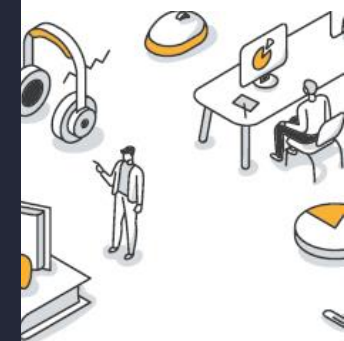
What your students need?







pleasure
equality and justice
low cost
well paid job
serious treatment
right to makes mistakes
practical and up-to-date knowledge
self-reliance
development
work-life balance
shaping their own path
diploma



What kind of
competencies will your
students need in the
future?



infuture
hatałska
foresight
institute

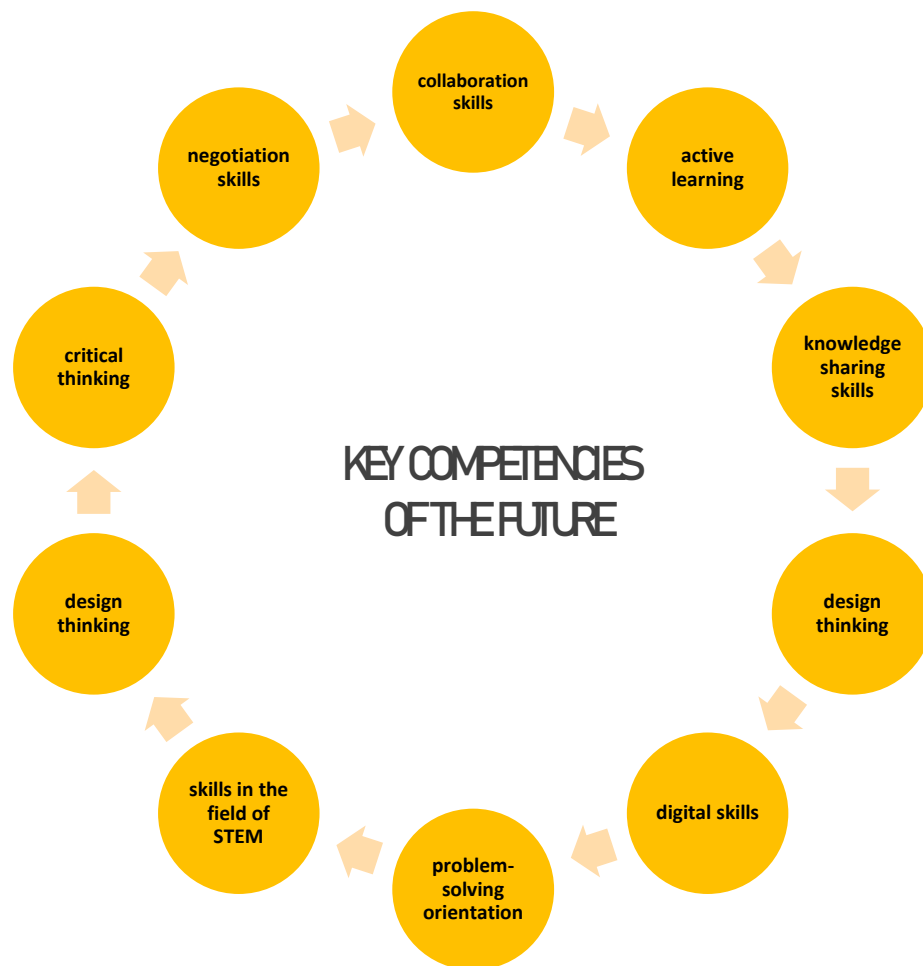


Future Employee

Report "Future Employee" (2019) infuture Hatałska Foresight Institute

- Factors of change that will impact the job market
- 5 future scenarios for the job market
- Key competencies of the future
- Sample employee profiles

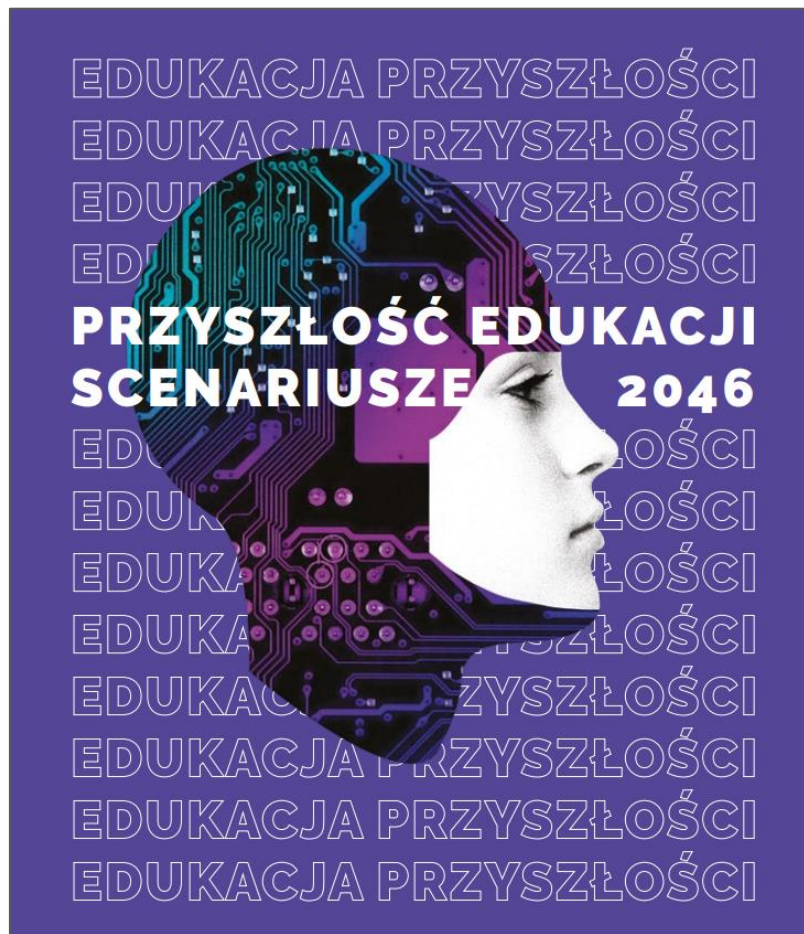




Report "Future Employee" (2019)
infuture Hatalska Foresight
Institute

"Based on quantitative and qualitative data obtained from employees and specialists in the job market, it can be forecasted that among the key competencies of the future, in addition to the indicated skills in the field of STEM (science, technology, engineering, math), there will also be: the ability for active learning, creativity, knowledge sharing, collaboration with others, problem-solving orientation, critical thinking, and negotiation skills."





Report "Future of Education: Scenarios 2046"
(2021)

infuture Hatalska Foresight Institute
+ Collegium Da Vinci

The planned several-month-long research process aimed to develop future scenarios for education in the perspective of the next 25 years.



TOP 5 COMPETENCIES OFTOMMOROW

1.

collaboration skills

3.

data analysis

4.

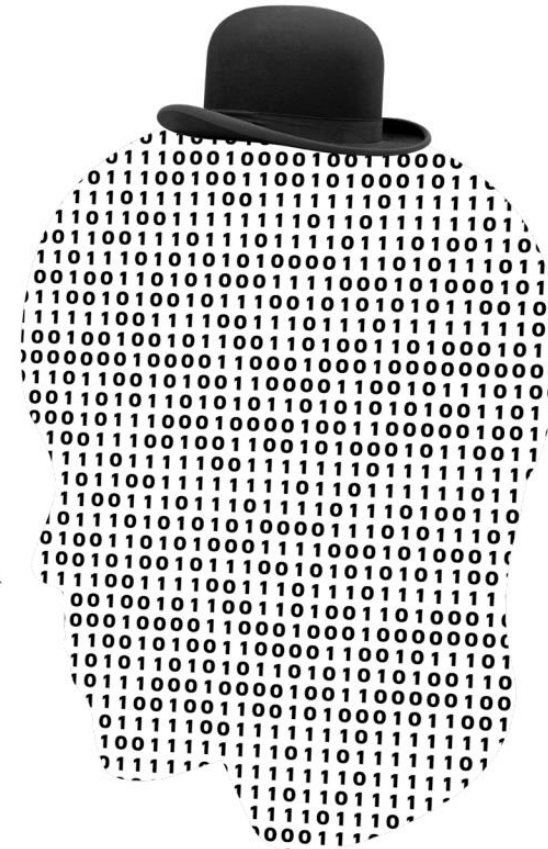
solving complex problems

2.

digital & technical competencies

5.

creativity



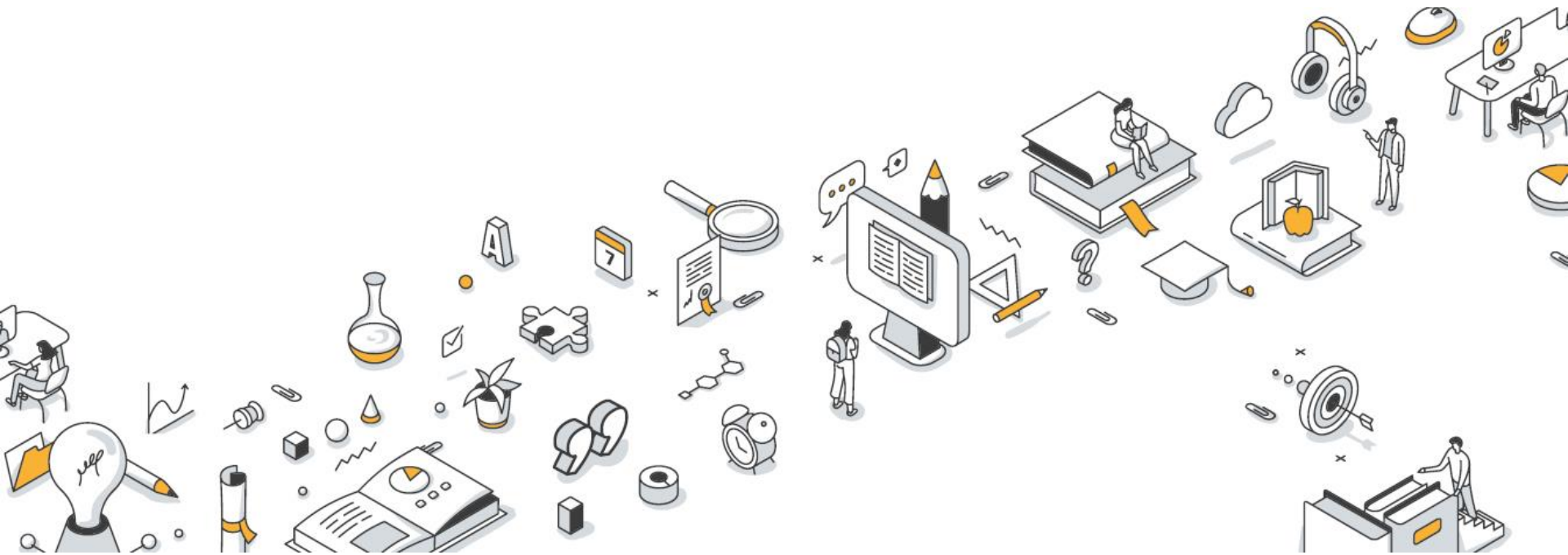
Report "Future of Education: Scenarios 2046" (2021)
infuture Hatalska Foresight Institute + Collegium Da Vinci



Do we really teach these skills at the university?



Empowering Minds by...
Just letting students do things

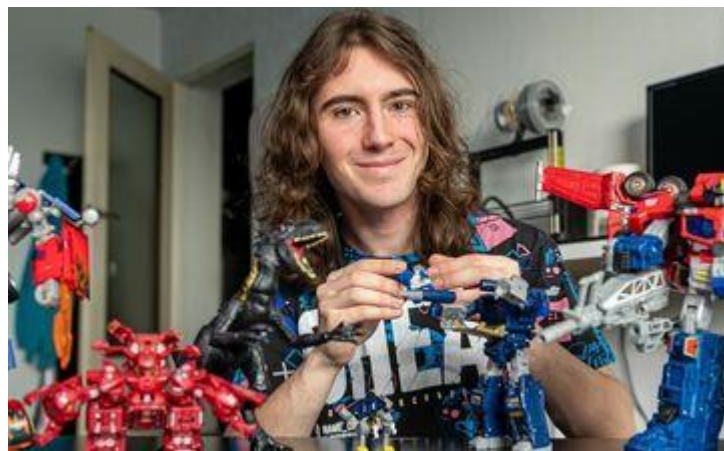


Let them out!



Let them follow their passions!

#Jestem z PWi



Let them meet experts!



K2 ZAPRASZA
MATEUSZ MASTALSKI
LEAD DESIGN ARCHITECT
**Henning
Larsen**

16 MARCA 2021
GODZ. 11.00
KURS: PA1 BUDYNKI
UŻYTECZNOŚCI PUBLICZNEJ
PLATFORMA ZOOM

TEMAT WYSTĄPIENIA: PROJEKTOWANIE W CZASACH
POTRZEBY NATYCHMIASTOWEGO DZIAŁANIA



K2 ZAPRASZA
ARCH. RAFAŁ ZELENT
ARCH. KRZYSZTOF MYCIELSKI
GRUPA 5 ARCHITEKCI

27 KWIETNIA 2021
GODZ. 10.00
KURS: PA1 BUDYNKI
UŻYTECZNOŚCI PUBLICZNEJ
PLATFORMA ZOOM

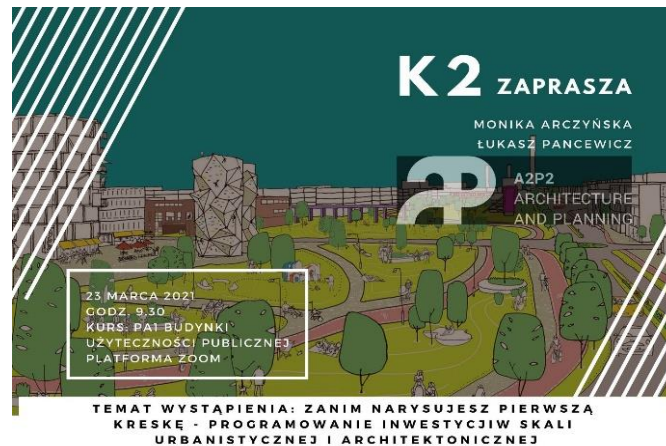
TEMAT WYSTĄPIENIA: TOŻSAMOŚĆ I KONTEKST



K2 ZAPRASZA
ARCH. MICHAŁ ZAWADZKI
MAĆKÓW PRACOWNIA PROJEKTOWA

20 KWIETNIA 2021
GODZ. 10.00
KURS: PA1 BUDYNKI
UŻYTECZNOŚCI PUBLICZNEJ
PLATFORMA ZOOM

TEMAT WYSTĄPIENIA: BIUROWIEC NOWY TARG WE WROCŁAWIU



K2 ZAPRASZA
MONIKA ARCZYŃSKA
ŁUKASZ PANCEWICZ

A2P2
ARCHITECTURE
AND PLANNING

23 MARCA 2021
GODZ. 9.30
KURS: PA1 BUDYNKI
UŻYTECZNOŚCI PUBLICZNEJ
PLATFORMA ZOOM

TEMAT WYSTĄPIENIA: ZANIM NARYSUJESZ PIERWSZĄ
KRESKĘ - PROGRAMOWANIE INWESTYCJI W SKALI
URBANISTYCZNEJ I ARCHITEKTONICZNEJ

Let them work with experts!



dr inż. arch.
Elżbieta Komarzyńska



dr inż. arch. krajobrazu
Aleksandra Gierko



dr hab. inż. arch.
Krzysztof Cebrat, prof. PWR



dr hab. inż. arch.
Paweł Kirschke, prof. PWR



dr hab. inż..
Romuald Tarczewski, prof. PWR

medusagroup 

 **Basecamp**

3XN

GRUPA **5**

**MA
CK
OW**

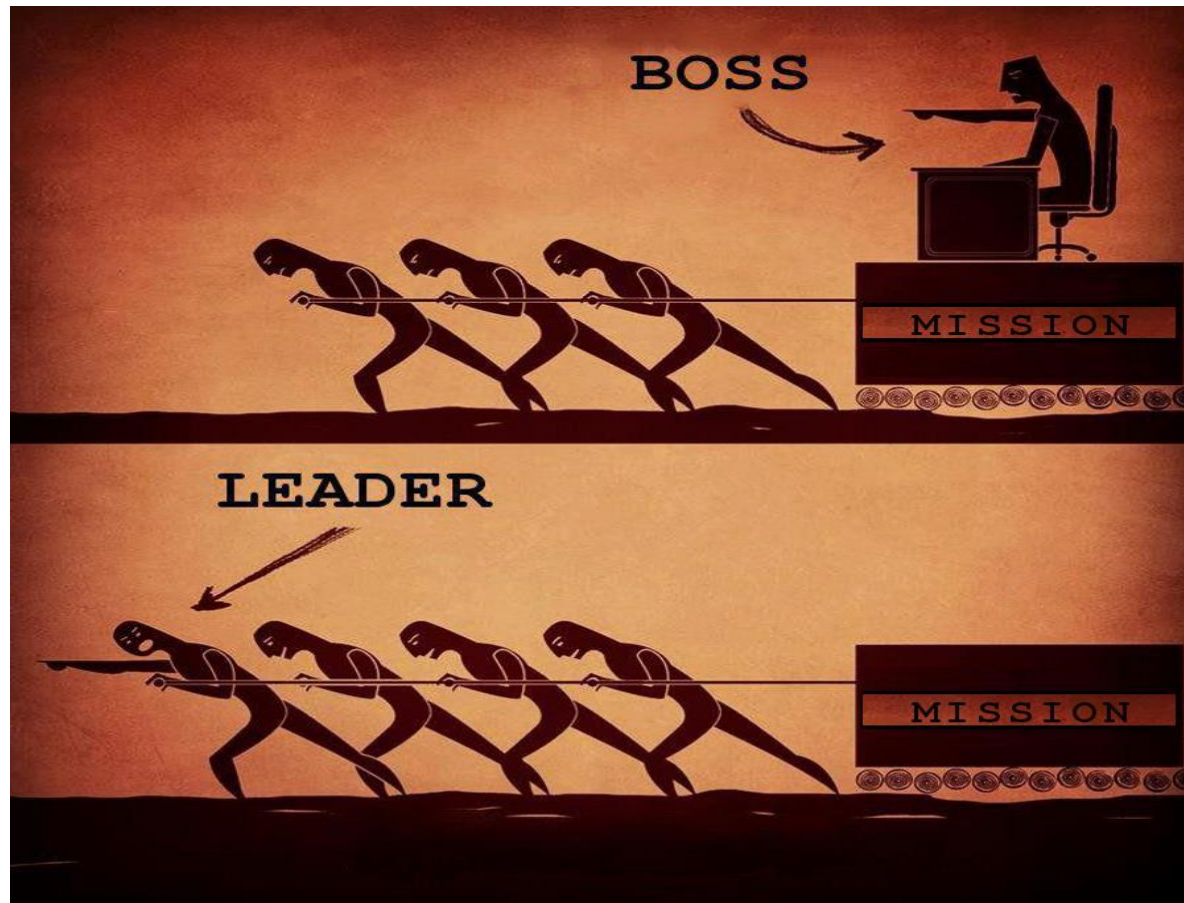
Colliers

**Henning
Larsen** —

Let them get to know each other!

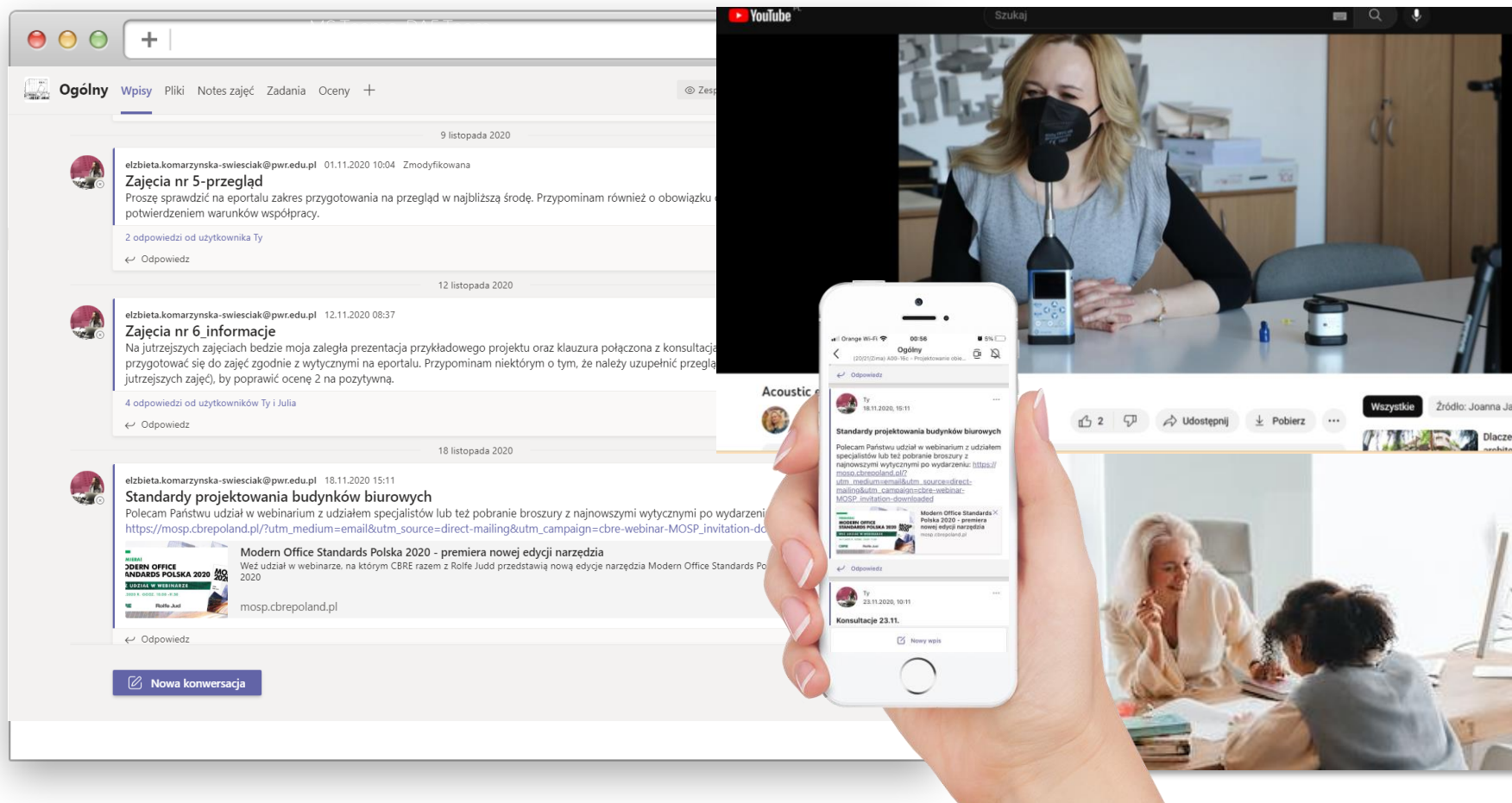


Let them be leaders!



We follow the student, not lead them

Let them be approach you!



Let them be experts!

CREATIVITY

Ideas, alternatives,
possibilities
Lateral thinking



PROCESS

Thinking about thinking
Planning for action



FACTS

Information and data
Neutral and objective
What do I know?
How will I get the information I need?



De Bono
Thinking hats



CAUTION

Caution, critical thinking
Why something may not work

FEELINGS

Intuition, hunches
My feelings right now
No reasons are given



BENEFITS

Optimism
Positives, plus points
Logical reasons are given



Let them be experts!



Let them be tutors!



Let them stress a bit less and still learn a lot!



Piece of cake!
I prepared this
question myself!

Let them have fun!



Let them get clear feedback!

	Levels of Achievement				
Criteria	First	2:1	2:2	Third	Fail
Project Content	70 to 100 points You analyse intriguing examples and evidence	60 to 69 points You discuss some interesting examples and evidence	50 to 59 points You mention some interesting examples/evidence	40 to 49 points You do not discuss any interesting examples	0 to 39 points There are hardly any examples at all
Intellectual Ambition	70 to 100 points You have crafted a compelling, original argument	60 to 69 points You have identified an original argument and begun to analyse it	50 to 59 points You have introduced an original idea	40 to 49 points You have not introduced an original argument	0 to 39 points There is no attempt to introduce an original argument
Evidence and Research	70 to 100 points Your project is supported by a variety of strong, properly cited evidence. Your claims are backed up by research and evidence	60 to 69 points You do a good job of providing evidence, although there are several claims you make that need stronger support	50 to 59 points You use evidence well in some ways, but there is room for improvement. Remember the evidence you use is a key part of your argument	40 to 49 points You need to use evidence more effectively to support your project	0 to 39 points You should review the assignment instructions
Grammar and Style	70 to 100 points Your writing is concise and	60 to 69 points For the most part, your	50 to 59 points Sometimes your writing is not	40 to 49 points Your writing needs	0 to 39 points The document

Let them feel comfortable!



Desks in rows



Pairs in rows



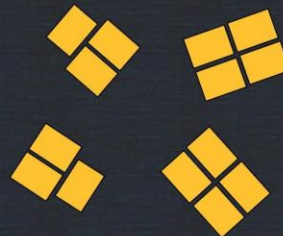
The 'horseshoe'



The 'double horseshoe'



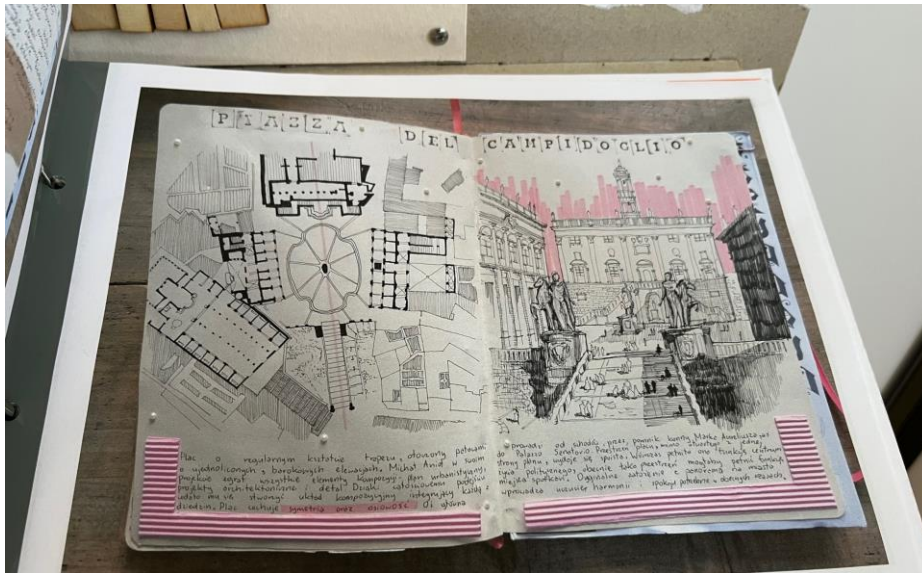
Clusters



Letters: the 'L', the 'T', and the 'E'



Let them find their own style!



<https://vimeo.com/610055445>

Let them make reflections!



Let them shine!

18.10
26.10
ODLNOŚLAŚKI
FESTIWAL ARCHITEKTURY

DOFA

18.10
26.10
ODLNOŚLAŚKI
FESTIWAL ARCHITEKTURY

DOFA

18.10
26.10
ODLNOŚLAŚKI
FESTIWAL ARCHITEKTURY

DOFA

1:200 WROCŁAW NA MIARĘ NASZYCH MOŻLIWOŚCI

1:200 WROCŁAW NA MIARĘ NASZYCH MOŻLIWOŚCI

1:200
WROCŁAW
NA
MIARĘ
NASZYCH
MOŻLIWOŚCI

'13

AKU
URA
MIASTA



19.10 so

15.00 1:200 Wrocław na miarę
naszych możliwości
Otwarcie wystawy, dyskusja
Muzeum Architektury

Wrocławskie Centrum Doskonałości Dydaktycznej (CDD) w ramach projektu "Wrocławskie Centrum Doskonałości Dydaktycznej" organizuje wystawę "1:200 Wrocław na miarę naszych możliwości". Wystawa jest częścią projektu "Wrocławskie Centrum Doskonałości Dydaktycznej" i ma na celu popularyzowanie wiedzy o architekturze i urbanistyce. Wystawa jest częścią projektu "Wrocławskie Centrum Doskonałości Dydaktycznej" i ma na celu popularyzowanie wiedzy o architekturze i urbanistyce.

- 18.10
- 19.10
- 20.10
- 21.10
- 22.10
- 23.10
- 24.10
- 25.10
- 26.10

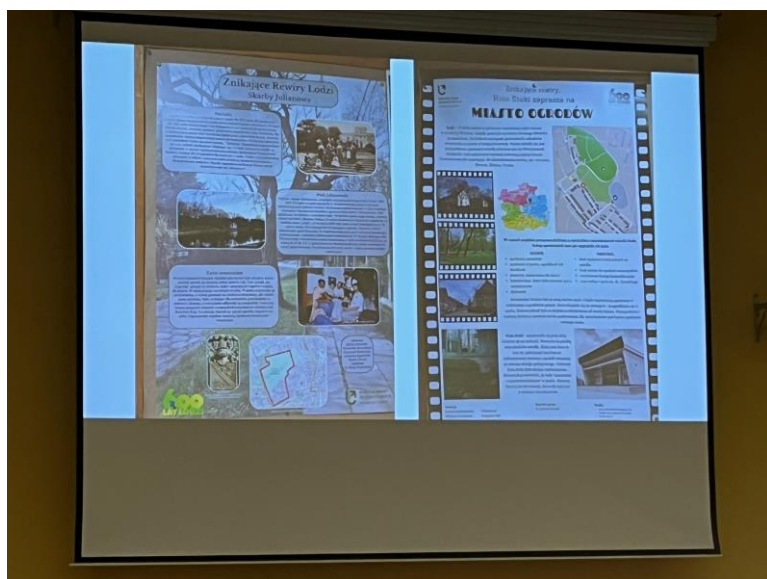


Let them shine!



INFORMACJA WIZUALNA PRZY PRZEJŚCIU ŚWIDNICKIM WE WROCŁAWIU [DOFA 2013]

Let them touch sth real!



Propozycje tematów / zajęć w edukacji STEAM, na których można wykorzystać PBL

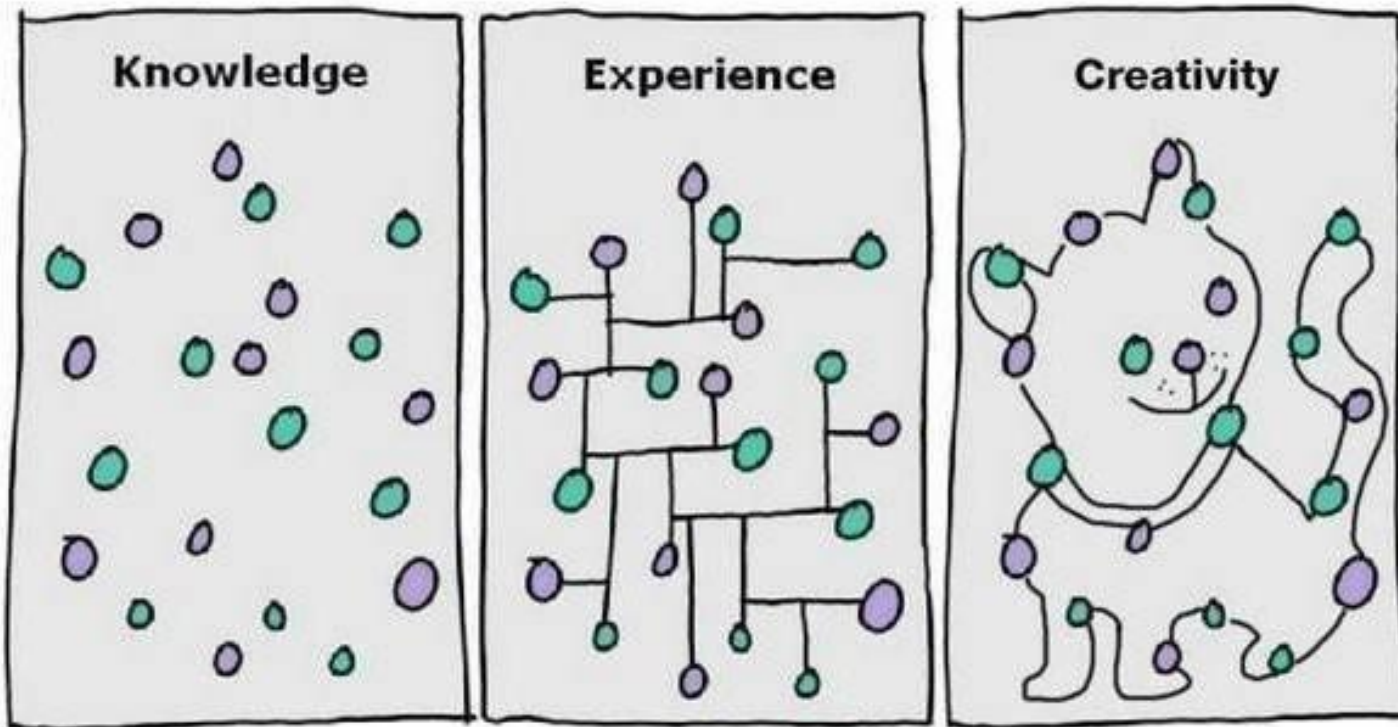


<https://youtu.be/TajdzNhCl9k>

<https://youtu.be/tackp9wSGsg>



Let them connect the dots!



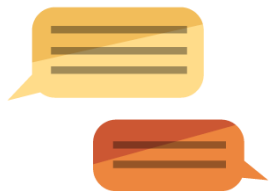
Let them take ownership of their learning!



Let them take ownership of their learning!

In specification grading, teachers allow students to demonstrate their mastery of specific learning outcomes or criteria. Teachers provide clear specifications or guidelines for what is expected of students in terms of knowledge, skills, or performance. Students are given the autonomy to choose the assignments or assessments that align with their learning goals and interests, as long as they meet the specified criteria. Teachers may also provide opportunities for students to revise or resubmit their work to meet the desired standards. The emphasis is on students taking ownership of their learning and demonstrating their proficiency based on the specified criteria.

Let them develop soft skills!



Communication



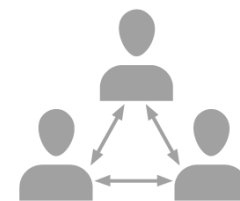
Self-motivation



Leadership



Responsibility



Teamwork



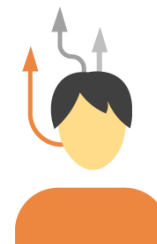
Problem solving



Decisiveness



Ability to Work
Under Pressure
and Time Management



Flexibility

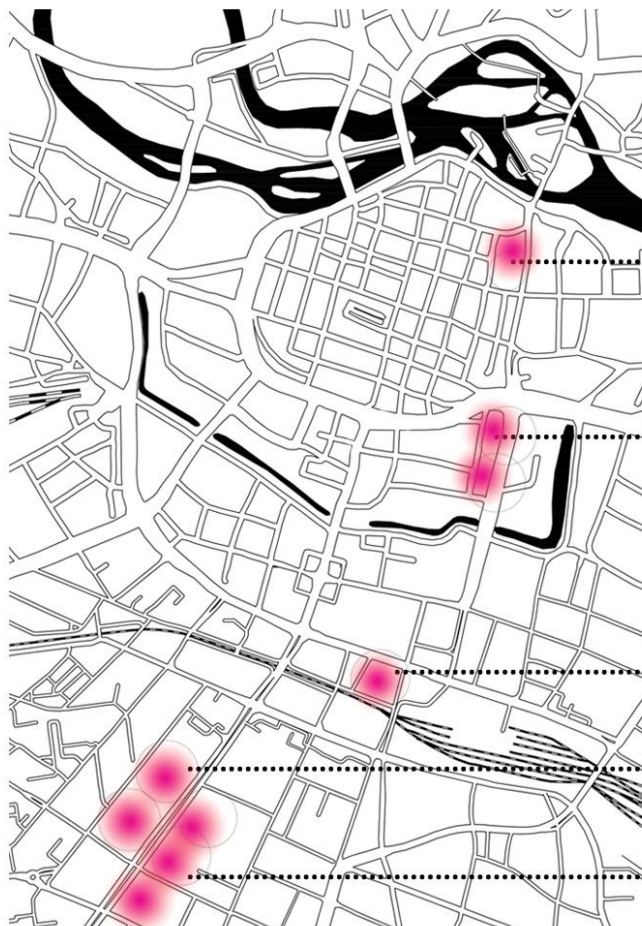


Negotiation
and Conflict Resolution

Let them work on real problems!

Problem Based Learning Model





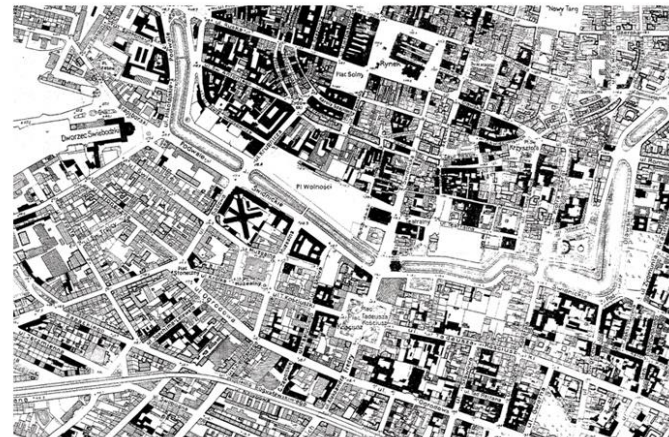
PLAC NOWY TARG

PL. DOMINIKAŃSKI
UL. PIOTRA SKARGI

UL. J. PIŁSUDSKIEGO

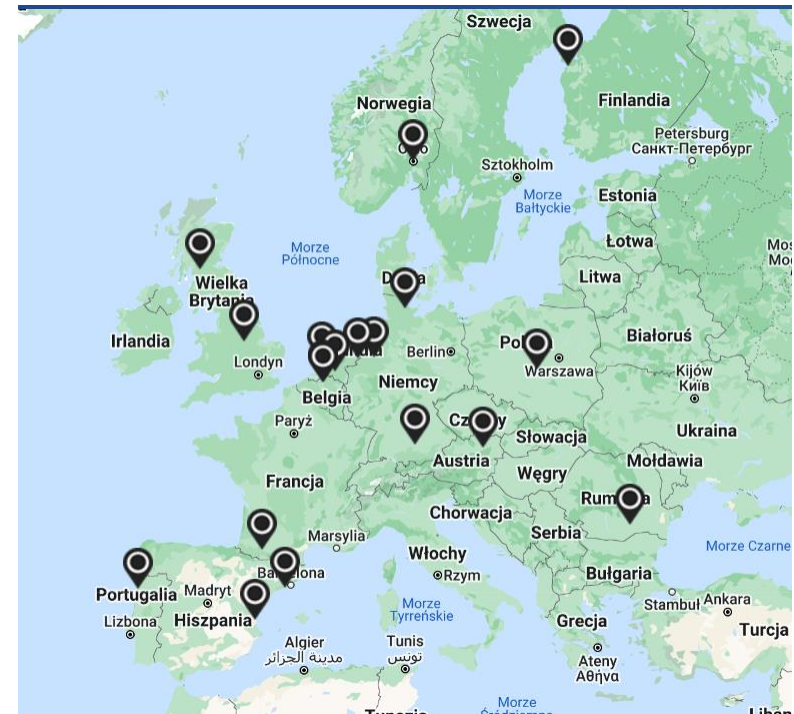
UL. POWSTAŃCÓW
ŚLĄSKICH (ZACHÓD)

UL. POWSTAŃCÓW
ŚLĄSKICH (WSCHÓD)



Topics/Activities Proposals in STEAM Education where PBL can be Applied

Mechanical Engineering and Applied Computer Science	
1	VW Golf Tuning
2	How to help the doctor in the treatment?
3	What is this rock?
4	D.I.Y. - Global Village Construction Set
5	How to assist elderly people in sit-to-stand motion?
6	The longest container ships
7	The cause of the failure of the control mechanism.
Telecommunications and Computer Science	
1	How to make scientific experiment more exciting for the youngsters?
2	How to teach electricity and electronics to elementary school children?
3	i-Environment
4	Fit-Hero
5	How to identify moving objects and estimate their motion using a moving camera?
6	Fall detection for people with balance disorders using mobile technology.
Computer Science	
1	How to improve medical and health awareness?
2	How to improve medical and health awareness?
3	Go shopping
4	How to make higher "pass rate" of exams for University students?
5	Employers and employees
Biomedical Engineering	
1	How to make nano ferro fluid for magnetic hyperthermia?
2	How to support agricultural scientists in plant roots examination?
3	Carbon nanotubes synthesis on thin films dedicated for medical applications
4	Smart Braille Writer



IFE ŁÓDŹ



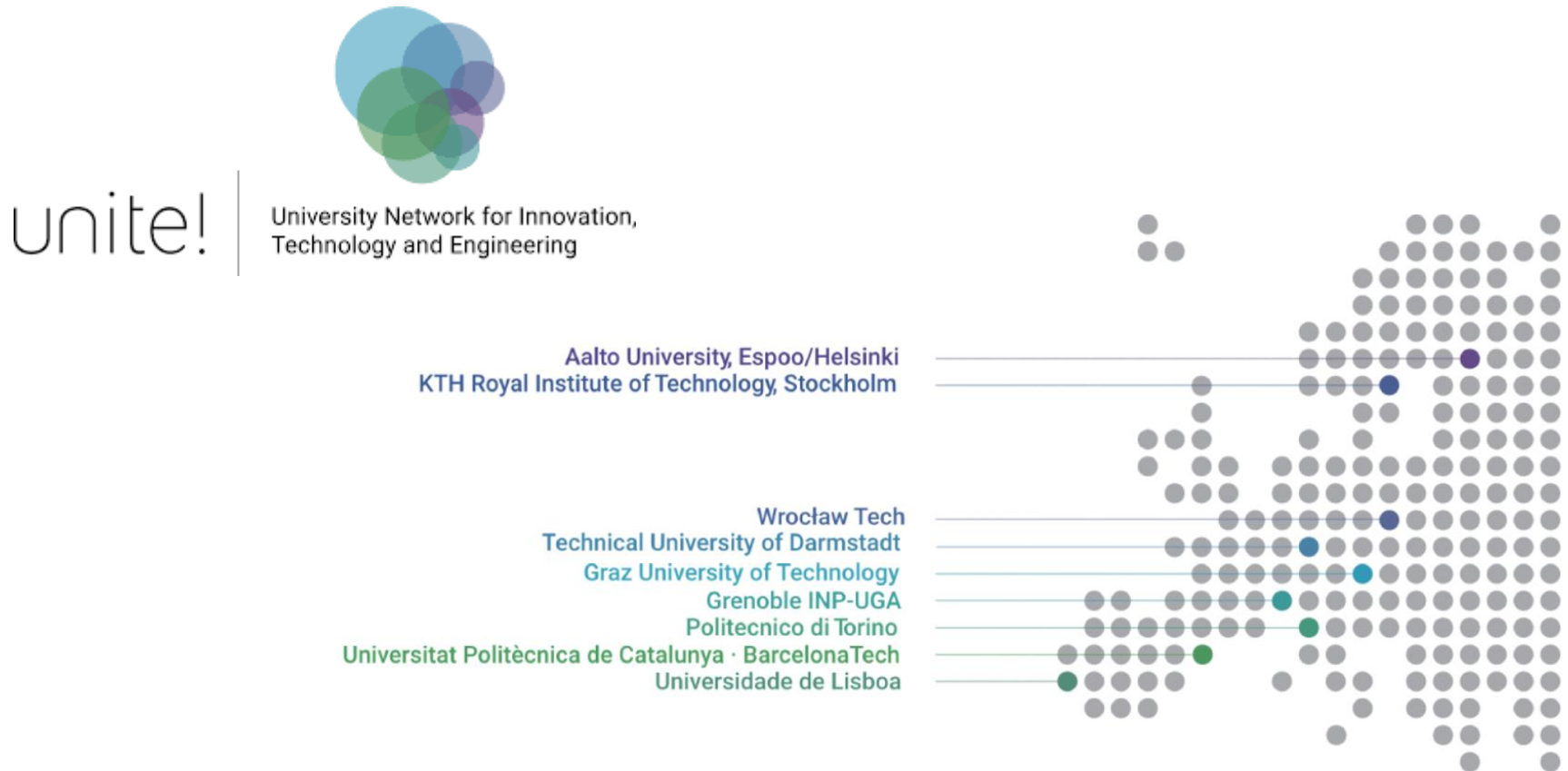
EPS

Topics/Activities Proposals in STEAM Education where PBL can be Applied

Biotechnology	
1	How many chaperones are needed to assist one misbehaving protein?
2	Turbidity in beer and its prevention
3	Food coloring
Business and Technology	
1	Lost in Laundry
2	Gold Solutions
3	The SAGAX
4	The product was launched with the 4 weeks delay
5	The problem we encountered is the time and resources wasted preparing and searching for the documentation required by law and by the specification of the process
6	Slow and unorganized production of wooden furniture in "Nowa Szkoła"
7	Technology Park
Gestion et Technologie	
1	TRW - employeur branding
2	Comment diminuer le niveau des dechets chez Stora Enso Łódź?
3	ISOLA - retards de livraison des machines-outils commandees par Micel
4	PROEXP Bufet PAUZA
5	Logica Transmission de pieces
6	Ville de Lodz - industrie dominante DE FIL EN AIGUILLE
Mechanical Engineering and Applied Computer Science	
1	How to manipulate with the lifetime of the steel bowl?
2	Destructive side of energy accumulation and its influence on human safety on the basis of three phenomena.
3	New approach to attracting young people to mechanics
4	Still Moving Project
5	Why did the car lose its power?
6	Unleash the potential of bicycle
7	The Big Blue
Telecommunications and Computer Science	
1	Electronic support for Acoustic Table Tennis
2	Accidents Detection
3	3D Volumetric Display

Business and Technology	
1	
2	
3	Intelligent Power Supply Design Solutions
4	"Parts ordered for pre-series (prototype) production are missing"
5	
Gestion et Technologie	
1	"Le véhicule électrique selon PEVET - Comment commercialiser le nouveau produit?"
2	Optimisation de l'organisation du travail
3	Comment gérer et optimiser les aspects réglementaires de l'entreprise Micel?
Biotechnology	
1	The case of Baxter-Tuta's Blood Bags. An Engineering Solution that must be based on an Interdisciplinary Knowledge
2	Risk assessment of the synthetic dyes in everyday beverages and soft drinks
3	Can yeast produce biosurfactant ?
Business and Technology	
1	Sensory marketing
2	Corporate Pricing Policy
3	Public issue of stocks
4	Reduction of Customer Call Rate for big home appliances.
5	Adoption of a milkrun system and its influences on a supply chain as well as organisation's environment
6	Constructing an optimal algorithm for internal mail service at Lodz University of Technology
7	How to improve the continuous management of the RFQ workflow

Organization of Interdisciplinary Interuniversity PBL Course within the Unite! University Network



Unite! Seed Fund Initiative

Financial boost for innovative ideas from the teachers, researchers and students across the Unite! alliance

Let them celebrate!



Developing students' creative and analytical thinking skills and fostering enthusiasm for practical tasks



Student Portfolio



Collaborative Design in studio



Pin-up board project presentation



Tactile exercise of physical model making



Study trip



Site Survey



Individual consultations with the instructor

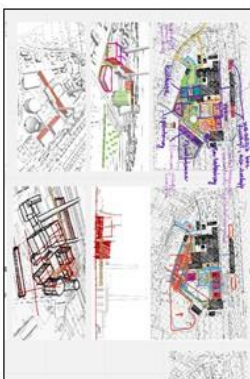


Physical Design Studio

Student Portfolio on Miro Smartboard



Collaborative Design via BIM Cloud, Miro Board, etc.



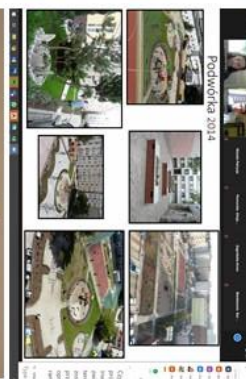
Project presentation on Miro Smartboard



Digital 3D modeling



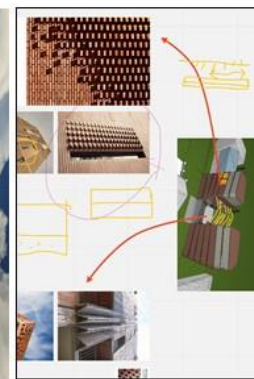
virtual tour and / or online meetings with practicing architects



Virtual site visit



Accesible consultancies via sharing screen



Virtual Design Studio

1. "You don't have to study at a university.
Let's go beyond its walls!
2. Less grading, more discussions!
3. Fewer rules, more freedom!
4. Studying is a team game."



**"We are all here to learn – You from Us,
and We from You."**



**The role of a facilitator
is not to have all the
answers**





strong subject knowledge + emphasizing critical thinking, problem-solving, and creativity

flexible + open-minded + continuously seek opportunities for professional development and growth

And for dessert... recommended sources:

- <https://cdd.pwr.edu.pl/> - Our Center for Teaching Excellence (our training programs, events, know-how...) PL
- https://soundcloud.com/degrees_of_freedom - (podcast on innovative teaching) EN
ESPECIALLY:
https://soundcloud.com/degrees_of_freedom/s2-ep4-humanising-higher-education
- <https://www.rug.nl/let/onze-faculteit/organisatie/diensten-en-voorzieningen/cliq/?lang=en> EN
(teacher talks, blog, know-how...)





Wrocław
University
of Science
and Technology

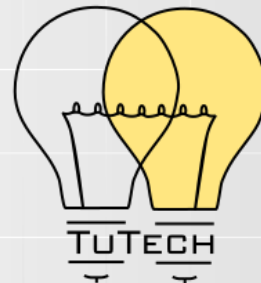
Wrocław, 15 June 2023

Education - does personalised mean better?

Personalised education through a student's eye

Oliwia Frankiewicz, Christopher Jones

Student organisation TuTech



HR EXCELLENCE IN RESEARCH



Agenda

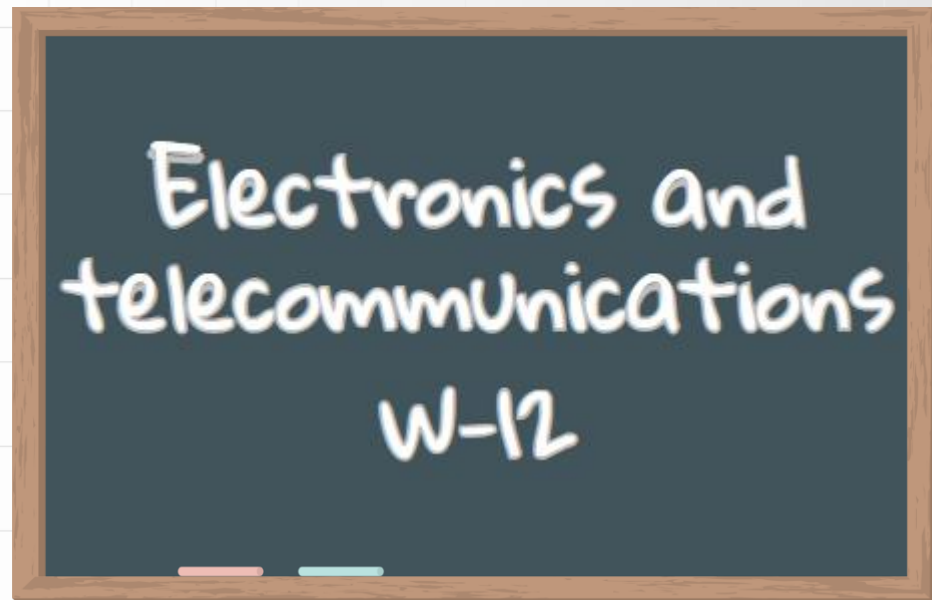
- About us
- Tutoring:
 - What is it ?
 - What can it offer?
- Education - does personalised mean better?
- Student organisation TuTech
- Q&A

About us

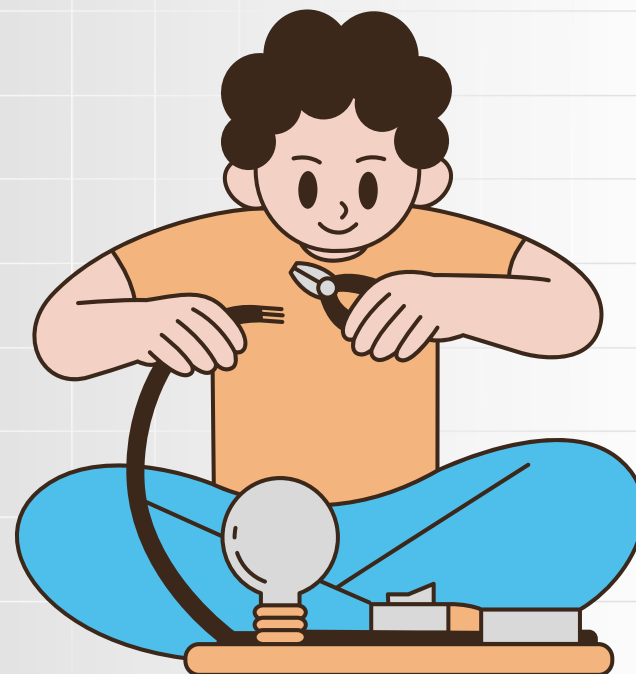
Oliwia



About us



Chris



Tutoring - what is it?



~~Lecture
Exercise
Laboratory~~

TUTOR  **TUTEE**
RELATIONSHIP

Tutoring - what is it?

Classification of tutoring according to its purpose:

- academic tutoring,
- developmental tutoring.

Usually, the person being a tutor is a:

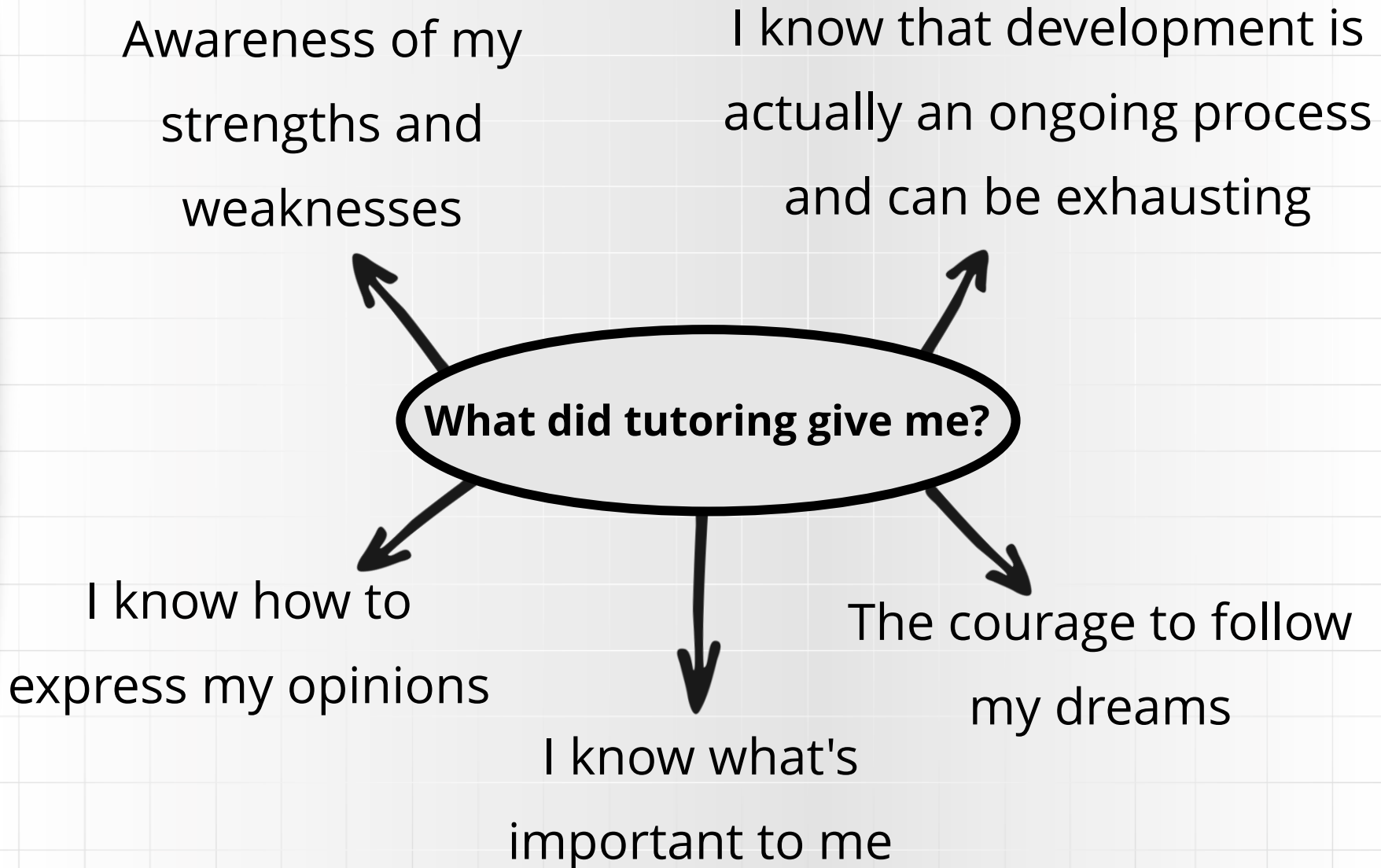
- teacher,
- peer,
- parent.

Tutoring - what can it offer?

Stages of my tutoring:

- ☐ Getting to know myself.
- ☐ Working with unsupportive beliefs.
- ☐ Naming and recognising emotions.
- ☐ Working on good communication.
- ☐ Taking part in a programme about individual needs of women studying at faculties with a majority of male students.

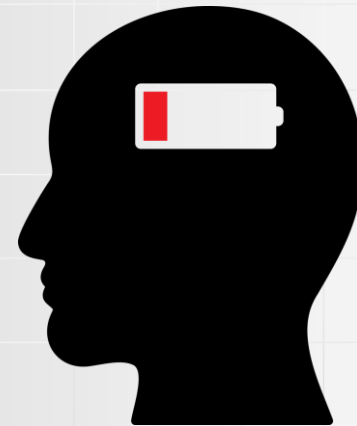
Tutoring - what can it offer?



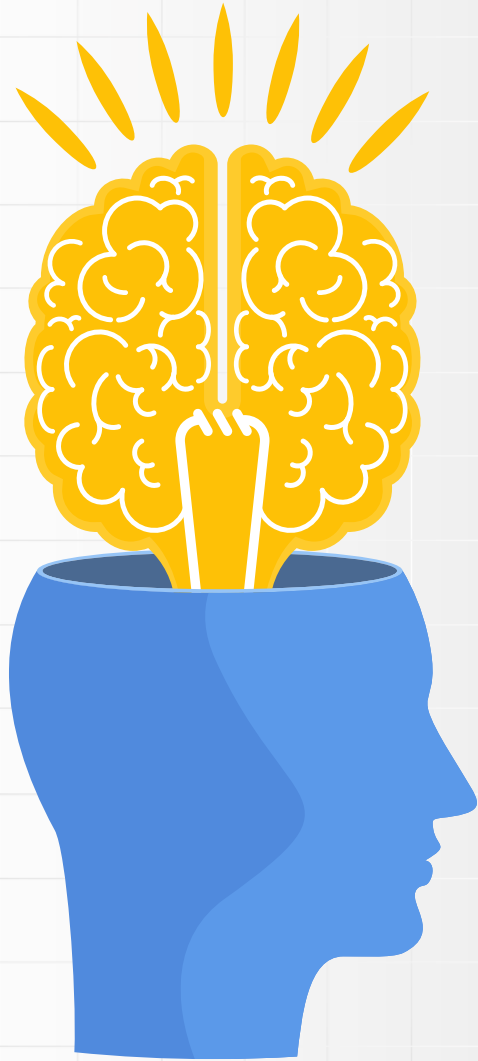
Education - does personalised mean better?



Downsides of tutoring



Education - does personalised mean better?



*„Everyone takes as much
as they are ready for. That
is what tutoring is.”*

Education - does personalised mean better?



Effective communication is fundamental

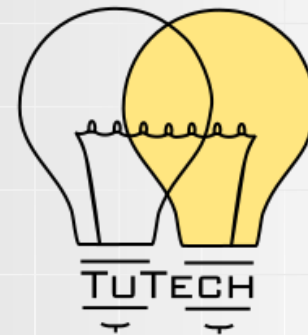
Education - does personalised mean better?

Effective communication is fundamental

- Do I have good communication with my students?
- Do I ask them for their opinions?
- Do they ask me questions?
- Is there a safe space for discussion in my classes?



Student organisation TuTech



Personal development



Education



Tutoring

What do we do in TuTech?



Survey on individual educational needs of students in Poland



Seminar for university teachers on Generation Z



1st Tuteech National Scientific Conference under the theme: 'Tutoring in the eyes of students'



Seminar for university teachers on tutoring and its effects



BY STUDENTS ABOUT
STUDENTS

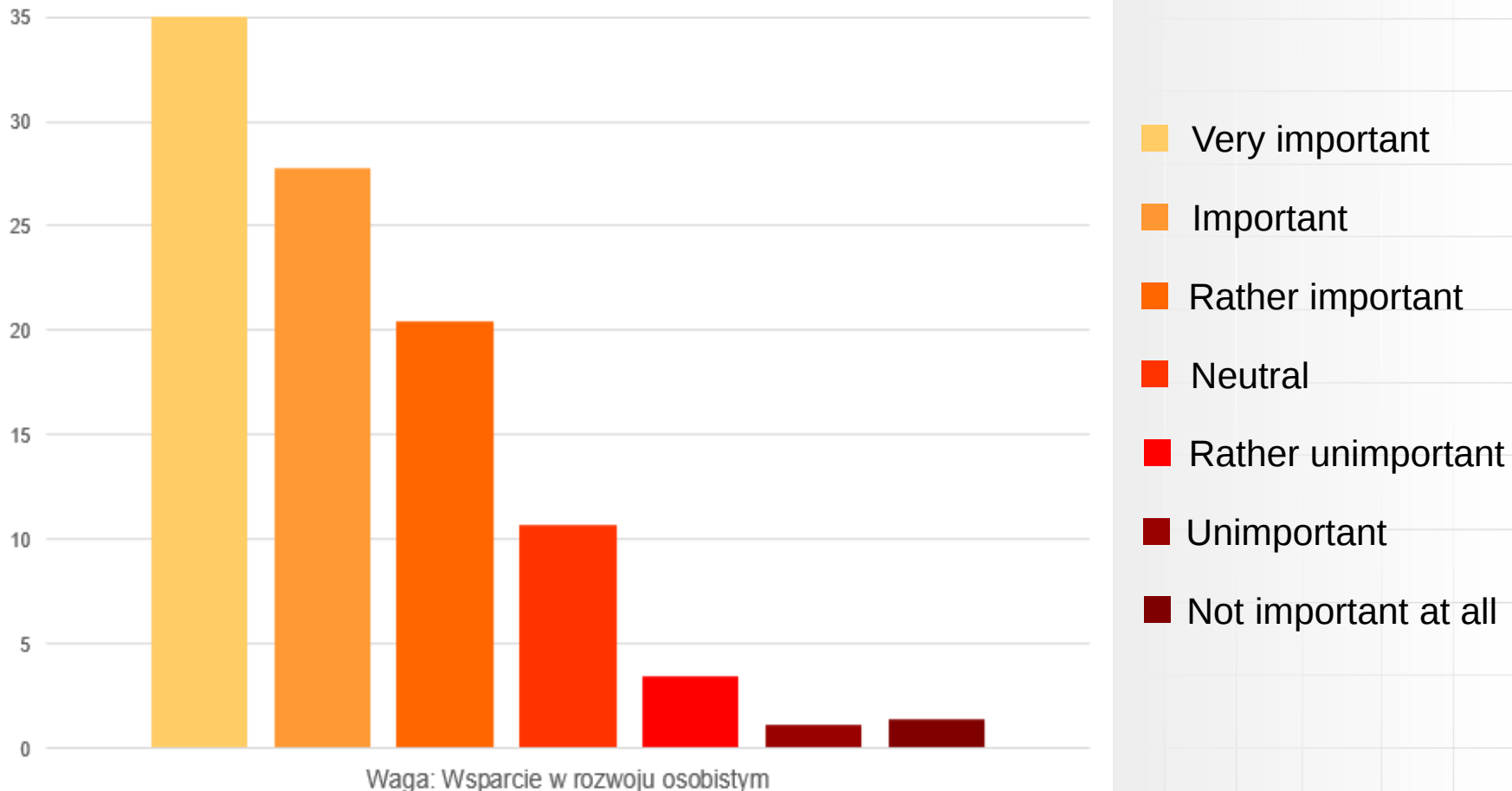
SURVEY

ABOUT INDIVIDUAL
EDUCATIONAL NEEDS



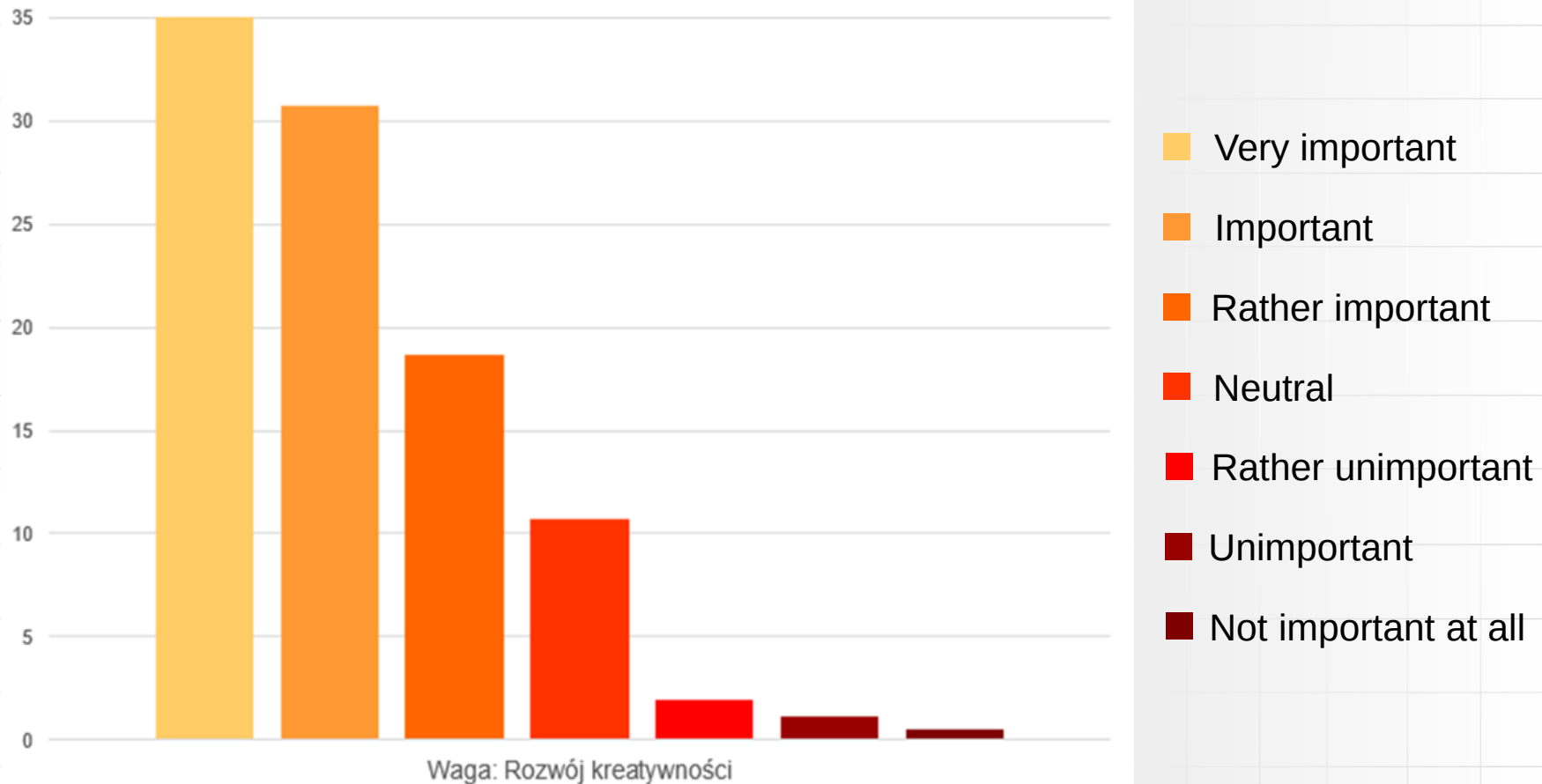
Support in personal development

Weight of need



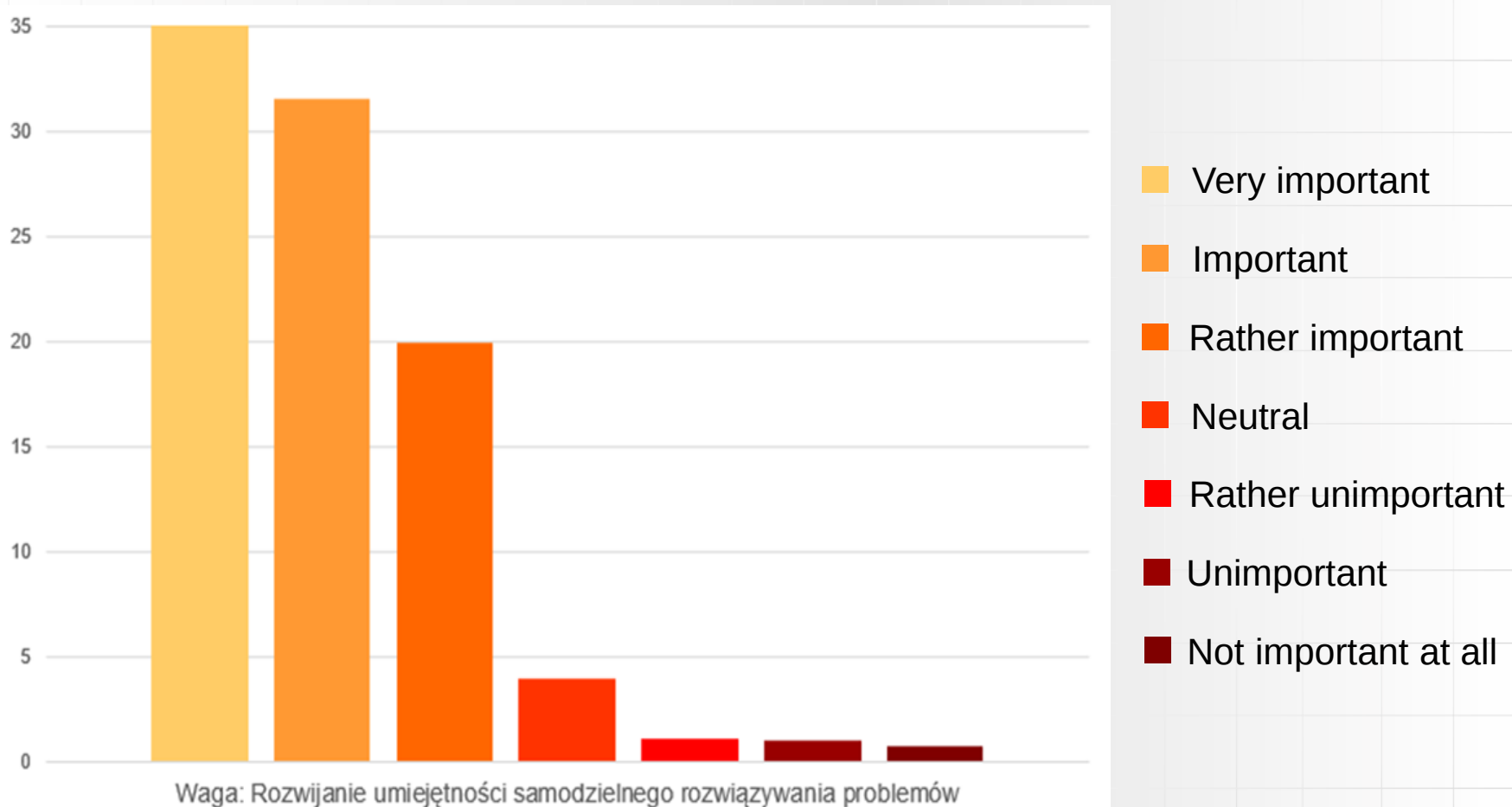
Developing creativity

Weight of need



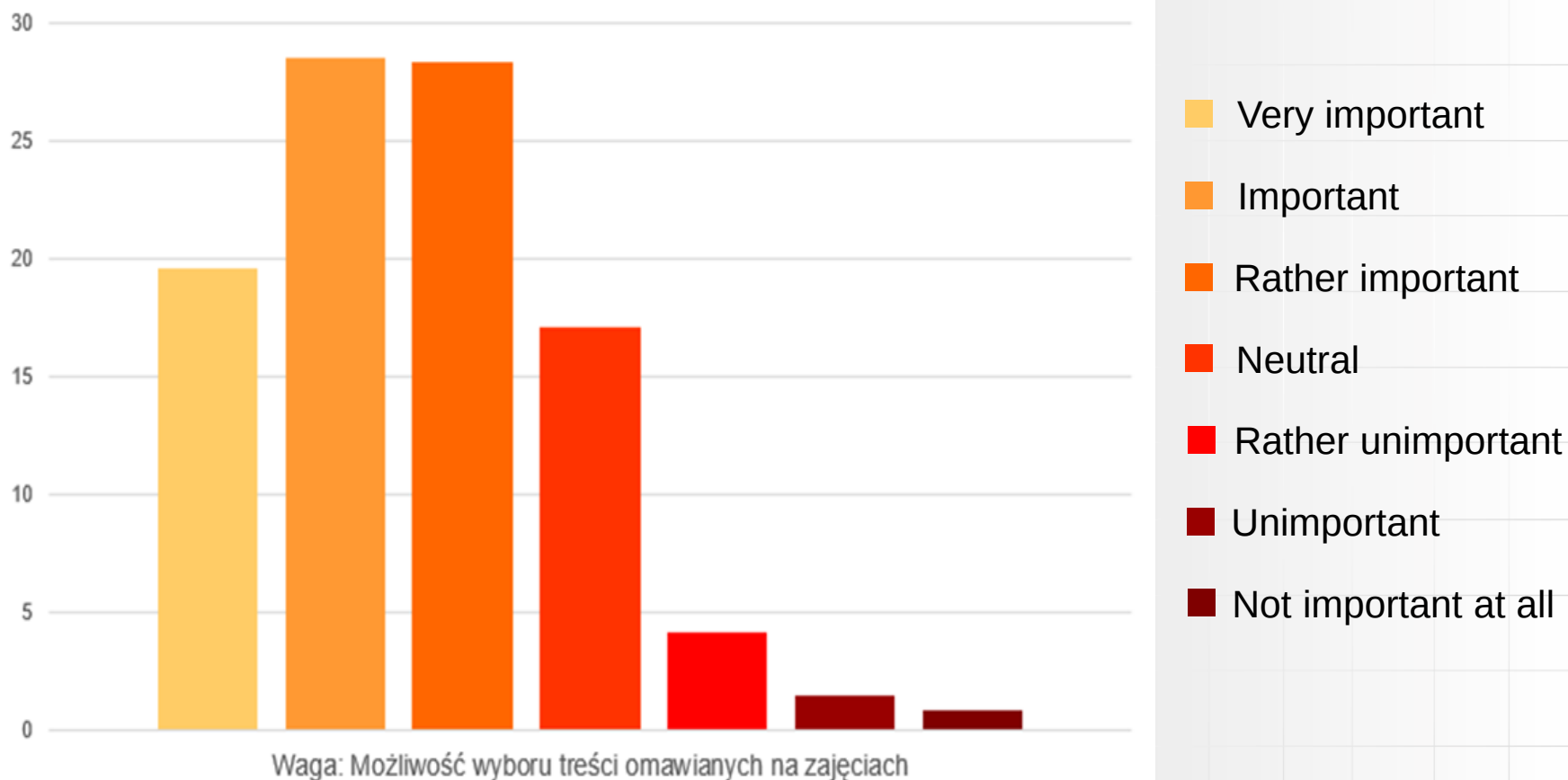
Developing problem-solving skills

Weight of need



Possibility to choose the topics discussed in class

Weight of need



What other needs did students indicate?

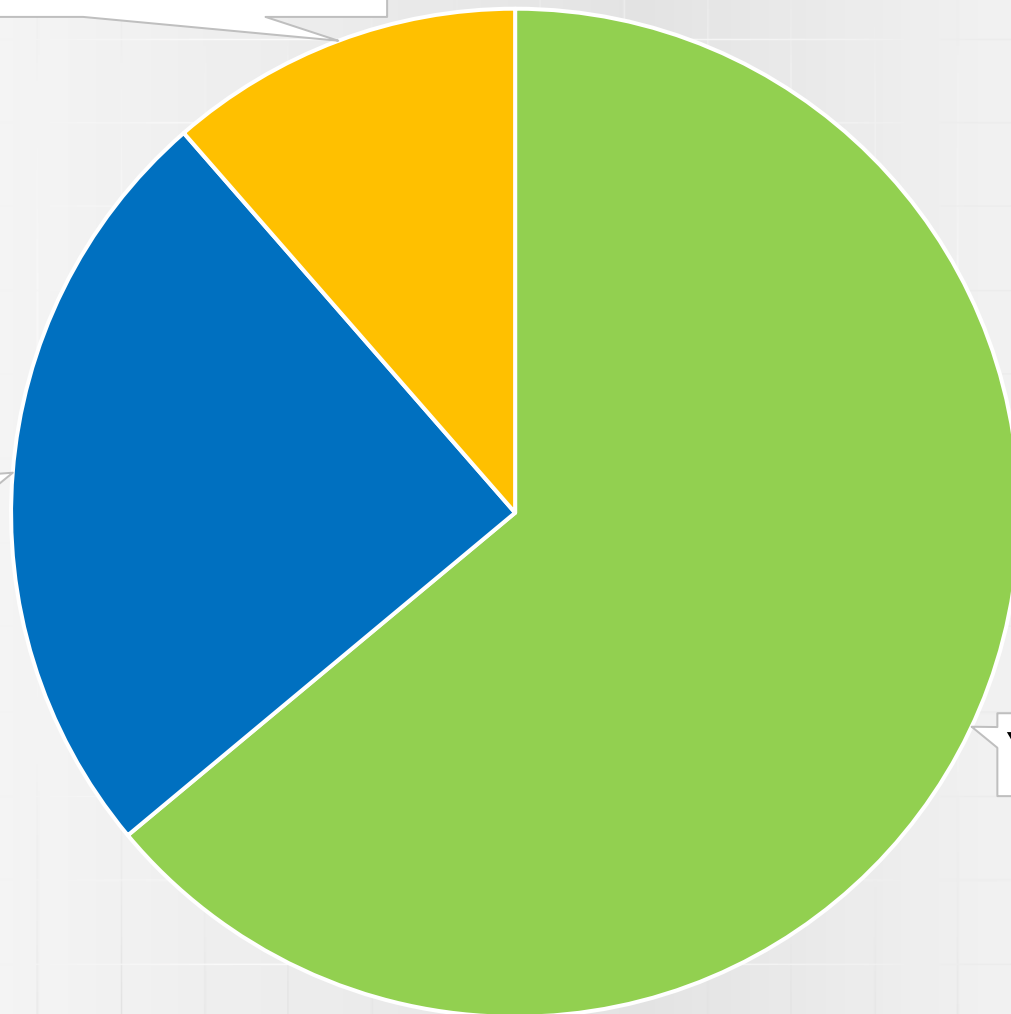
- ➡ Good student-teacher communication
- ➡ Support for further career development
- ➡ Safe space for self-expression and discussion
- ➡ Gaining practical skills
- ➡ Individual approach of the teacher to the student taking into account his/her abilities and needs

Would you like to participate in tutoring?

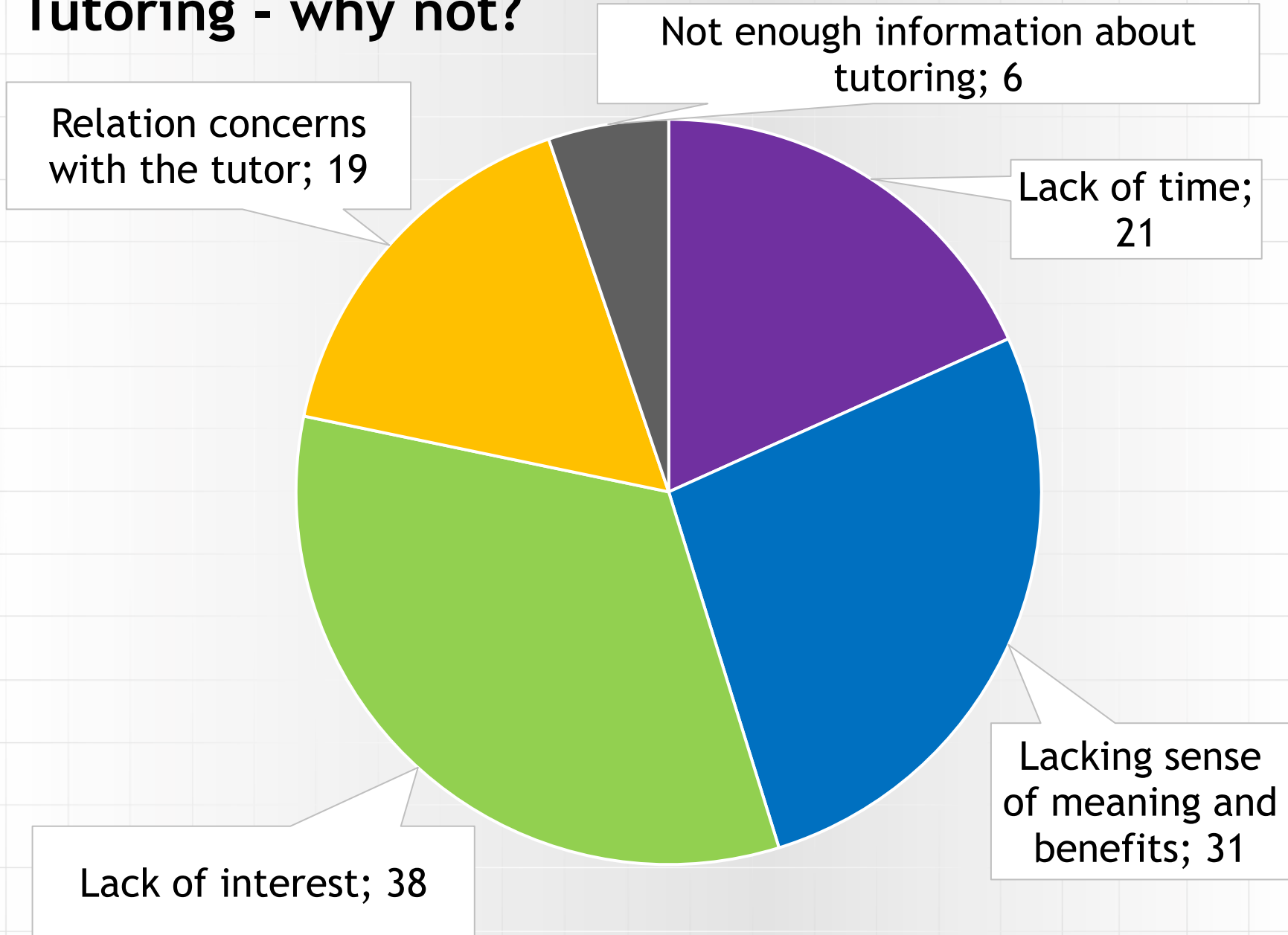
I already took part; 70

No; 151

Yes; 392



Tutoring - why not?



"Thanks to tutoring I learned about the specifics of working in a lab. I did my projects and gained confidence in presenting my achievements in the form of articles and presentations at conferences. Tutoring in my first degree became the inspiration for my thesis."

Academic-developmental tutoring
- Stanisław Oliszewski

"The tutoring sessions allowed me to learn more about my academic interests and develop my skills in the field I was studying in. It had a positive impact on my confidence in the later stages of my studies and became a milestone on my way to academic and personal independence."

Academic tutoring
- Agata Biesiekierska

"Tutoring helped me through the most difficult period of my studies. It motivated me to get up in the morning and gather knowledge about prosthetics, biosignals and the brain-computer interface. Thanks to my tutor, I knew what topic to choose for my engineering thesis so that I would feel satisfied while working on it."

Academic-developmental tutoring
- Maciej Kazalski

"For me, the best measure of the work I have done since I started tutoring is the increased comfort in my daily life, which also translates into successes in other areas of my life."

Developmental tutoring
- Oliwia Frankiewicz

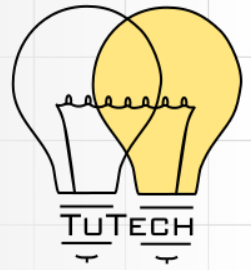
"Taking part in tutoring was one of my best decisions at university. Thanks to tutoring, I was able to develop my interests in an area that I am really involved in, which goes beyond my degree programme. I pursued the goals I had set with the support of my tutor, and this was a source of motivation for me. Of course, there were some worse moments, as there are in any area of life, but I can highly recommend tutoring to anyone who wants to do something more beyond their studies."

Academic tutoring
- Mateusz Drąg



“The one who asks questions doesn’t lose his way”
~ African Proverb

You can find us here:



Our website: <https://tutech.pwr.edu.pl/>



Thank you very much for the invitation
and we hope to see you again!
~TuTech



Thank you for your attention!