

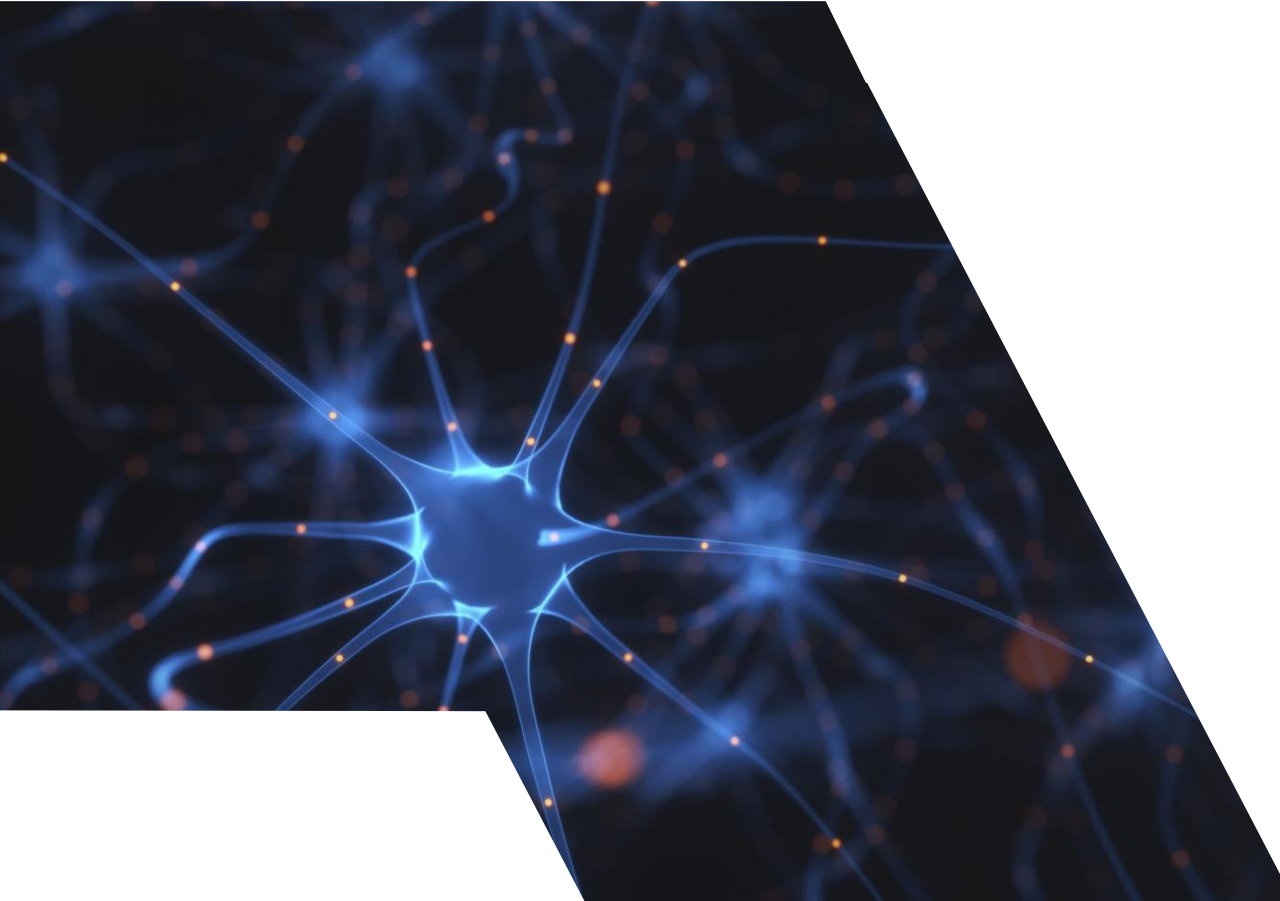
# RESEARCH BASED LEARNING THAT IS WHY WE NEED DIPLOMA THESES

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# RESEARCH BASED LEARNING THAT IS WHY WE NEED DIPLOMA THESES



- RBL – what does it mean?
- Diploma thesis
- Goals or ILOs
- Challenges
- Possible solutions
  - professionalisation of the roles
  - tools

*Ask questions at any moment*

# Classification of programmes based on two dimensions: the degree of student engagement and emphasis on content or research process (Healey, 2005)

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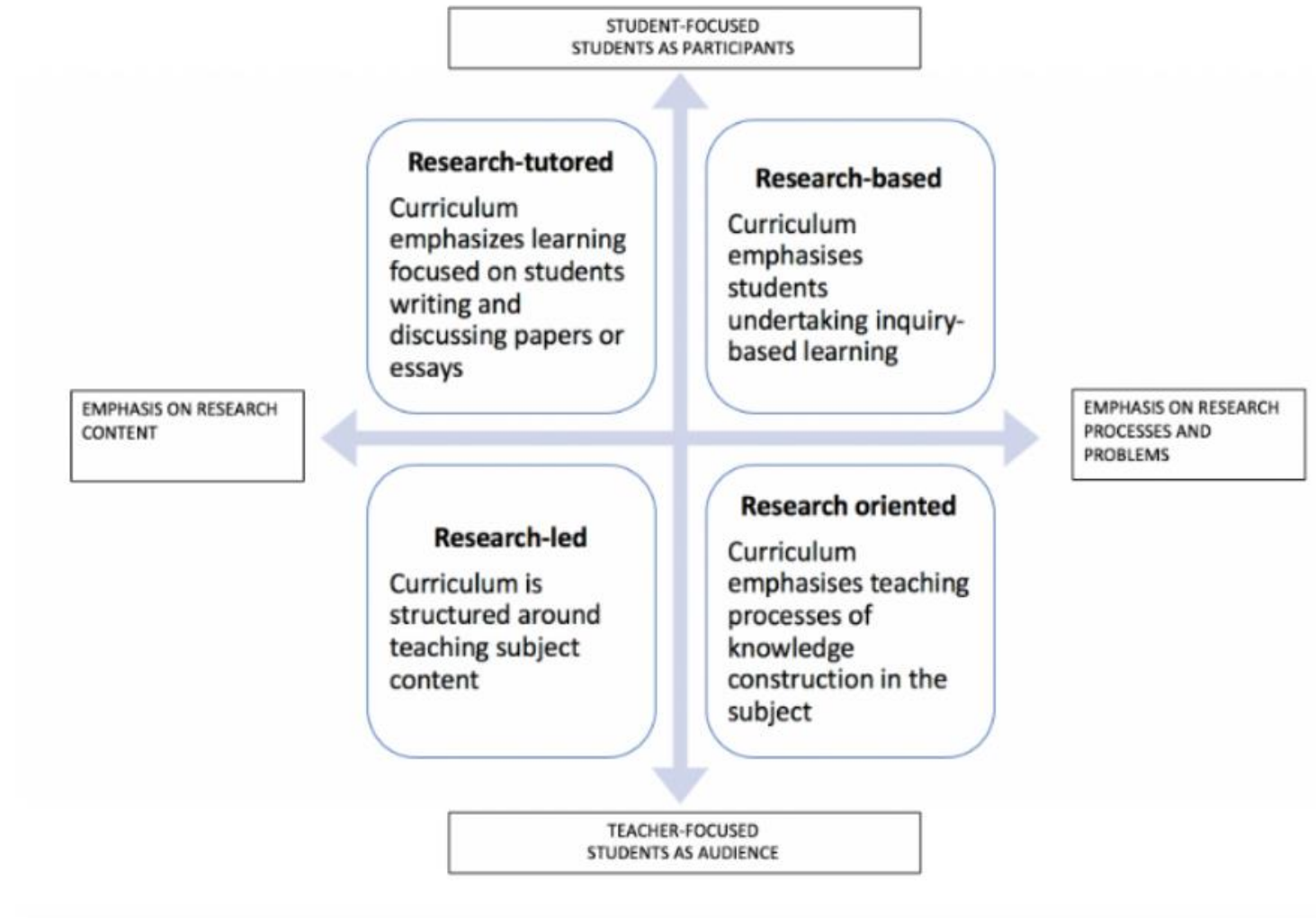


Image: Curriculum Design and the Research-Teaching Nexus, re-created from information in Healy (2005).

# Research-based learning

- Research-based learning involves students either learning through research e.g. by dealing with primary literature or by doing research themselves.  
<https://europe-creates.eu/toolkit-for-co-creative-learning/research-based-learning/>
- The learner potentially gains significant motivation as a result of their participation in real-life research. This has been seen to be the catalyst for learners to delve deeply into topics. <https://www.learnlife.com/methodologies/research-based-learning>
- Research-based learning (RBL) consists of a framework that helps to prepare students to be lifelong inquirers and learners. <https://www.solutiontree.com/blog/research-based-learning-a-lifelong-learning-necessity/>


# Diploma thesis as an example of RBL

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# Why do we need diploma theses?

(the JU syllabuses examples)

- 
- implementation of the experimental master's thesis in accordance with the promoter's instructions,
  - development and submission of a master's thesis,

**Really ?**

- acquisition/development of the ability to conduct independent scientific research,
- analysis of the received data and their interpretation
- ability to write a scientific dissertation
- acquisition of the ability to collect, evaluate (selection and evaluation) and analyze scientific information resources
- cooperation in a team.
- developing and strengthening ethical attitudes in scientific and research work – respect for academic freedom and values

# Why do we need diploma theses? (2)

## Opportunity to develop research skills

- Diagnosing problems
- Posing research questions and hypotheses
- Hypothesis testing
- Interpret results and draw conclusions
- Searching for alternative solutions
- Constructing (mental) models
- Critical approach to research (own and others' research)
- Presentation, discussion, building coherent argumentation

Have students learnt this  
before their final year?

There is room for  
improvement.



# Why do we need diploma theses? (3)

## **This is a unique opportunity to develop autonomy and responsibility (EQF)**

According to the Polish Qualification Framework, the master's degree is ready to:

- critical evaluation of knowledge and received content, recognition of the importance of knowledge in solving cognitive and practical problems and consulting experts in case of difficulties with solving the problem on their own
  - fulfilling social obligations, inspiring and organizing activities for the benefit of the social environment
  - initiating actions for the public interest, thinking and acting in an entrepreneurial manner
  - responsible performance of professional roles, taking into account changing societal needs, including:
  - developing the achievements of the profession
  - maintaining the ethos of the profession
  - comply with and develop the rules of professional ethics and work towards compliance with these principles
-



# Challenges accompanying the cooperation of promoters with BSc and master's students

**STEM-CPD@EUni**

Co-funded by the Erasmus+ Programme of the European Union

## Challenges in work with master and PhD students

Michał Woźniakiewicz + 4 • 7h

**Challenges in work with master and PhD students**

- RBL definition**  
Research-based learning refers to involving learners directly in authentic research projects. This has an impact on a variety of levels. The learner potentially gains significant motivation as a result of their participation in real-life research. This has been seen to be the catalyst for learners to delve deeply into topics. (<https://www.learnlife.com/methodologies/research-based-learning>)  
In this respect RBL in Master's and PhD theses should emphasize the new findings in a discipline based on the conducted research.
- Timing - coordinating timing of students' degree programmes with research funding and publication pressure**
  - lack of time and partial commitment
- Challenge in supervision of Master and PhD students.**  
Add the note with the challenge you met upon supervision of Master and/or PhD student!
- Self-discipline issues**
  - encourage them to be self-confidence finishing the project
- Decrease of Motivation in time**
  - Trying to avoid micro managing**  
Guiding the students without telling them what to do in every step but rather teaching them how to approach and solve problems.
- Recruiting and selecting students with appropriate background and motivation**
- Assess the students' needs for optimal support**
- Design appropriate project**
  - will the project results satisfy the publication

# What can help us? – professionalization of the role of the ad(super)visor (1)

## Arrangements with students:

- **Purpose of cooperation:** defense of work? Exploring something interesting? Acquiring skills? Other?
- **Prior knowledge,** existing skills and resulting needs
- **Mutual expectations,** especially in terms of roles and tasks, level of independence
- **Type of relationship:** Master-apprentice? Mentor? Coach? Tutor? Friend? Older brother?
- Rules of communication: channels, frequency,
- Principles of cooperation in a research team, a group of master's students
- Tools used
- Schedule
- ...

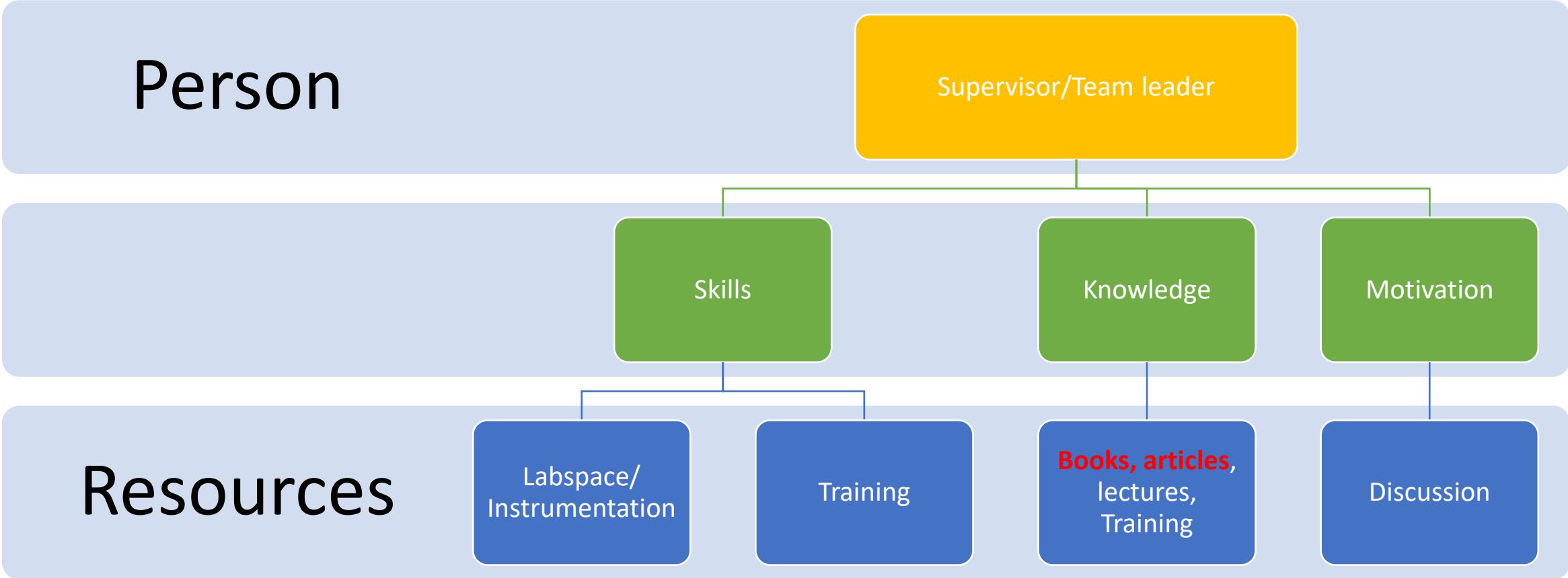
# Tools

1. Survey (completed separately, then discussed)
2. Individual contract
3. ...

	Supervisor	Rating	Student
1.	It is the supervisor's responsibility to select the research topic.	1 2 3 4 5	The student is responsible for selecting her/his own topic.
2.	The supervisor should decide which theoretical framework and/or methodology is most appropriate.	1 2 3 4 5	The students should decide which theoretical framework and/or methodology they wish to use.
3.	The supervisor should develop an appropriate program and timetable of research and study for the student.	1 2 3 4 5	The student should develop their own program and timetable of research.
4.	The supervisor should ensure that the student has access to the resources and facilities that they need.	1 2 3 4 5	It is the student's responsibility to locate and access all necessary resources and facilities.
5.	It is the supervisors' responsibility to advise the student of all relevant policies, procedures and requirements.	1 2 3 4 5	The student is responsible for being familiar with the relevant policies, procedures and requirements.
6.	It's up to the supervisor to build an appropriate professional relationship with the student.	1 2 3 4 5	It is the student's responsibility to manage the relationship with their supervisor.
7.	The supervisor should insist on regular meetings with the student.	1 2 3 4 5	The student should decide when she/he wants to meet.
8.	The supervisor should check regularly that the student is working consistently and on track.	1 2 3 4 5	The student should work independently and not have to account for how and where time is spent.
9.	It is the supervisor's responsibility to ensure that the thesis is finished by the required submission date.	1 2 3 4 5	It is up to the student to finish within the allocated timeframe.
10.	The supervisor should insist on seeing all drafts of work to ensure that the student is on the right track.	1 2 3 4 5	It's up to the student to decide when to show drafts of their work.
11.	The supervisor should assist in the writing, editing and presentation of the thesis.	1 2 3 4 5	The writing of the thesis should only be the student's own work and they must take full responsibility for presentation of the thesis.
12.	The supervisor is responsible for deciding when the thesis can be submitted for examination.	1 2 3 4 5	The student should decide when they are ready to submit the thesis for examination.

Adapted from: Moses, I. (1985). Supervising postgraduates. HERDSA Green Guide No 3, Kensington: Higher Education Research & Development Society of Australasia.

# To be an ad(super)visor – sharing knowledge, skills and resources



# Selected minimum requirements for the advisor

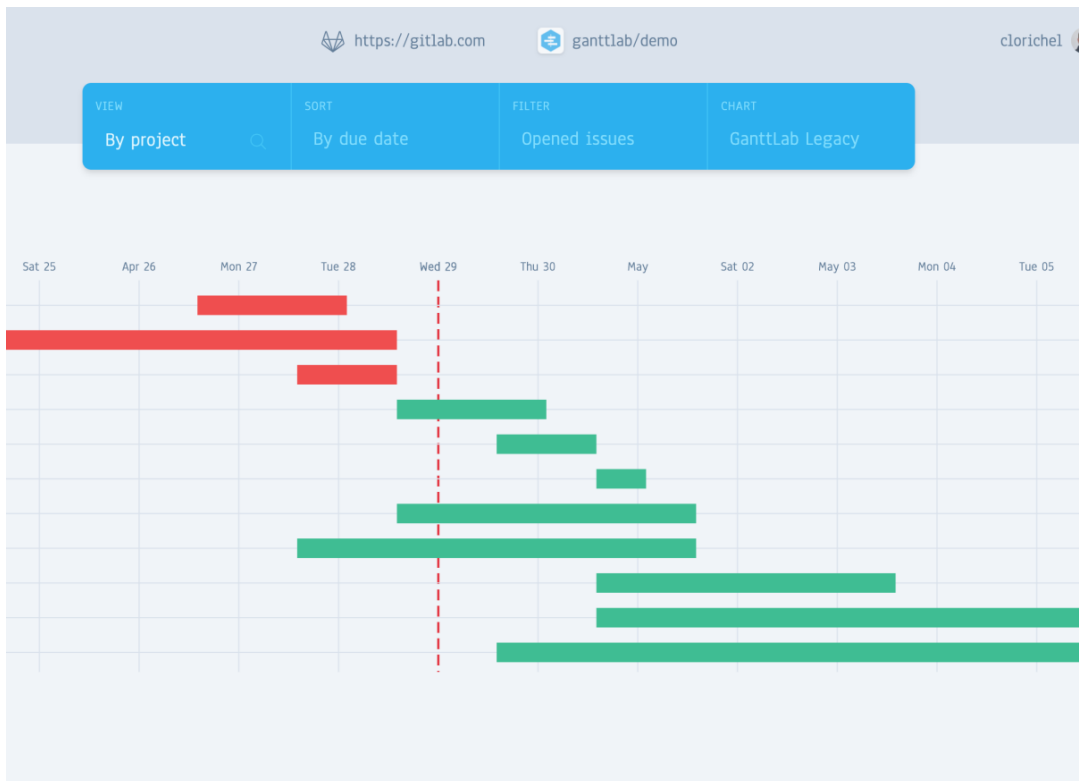
- The advisor makes sure that the topic and course of the master's thesis allow to achieve the assumed learning outcomes.
- (S)he helps the student to put research in a broad context.
- (S)he challenges the student and makes the student enthusiastic about their work.
- In the dialogue with the student, (s)he decides on the structure of the text before starting work.
- Together with the student, (s)he evaluates the progress of work, systematically provides feedback.
- (S)he offers the possibility of valorization of the master's thesis (for example, as an article, a paper for a conference, ...)



# Maximum help the advisor can give

- The student is left independent.
- The student must have the opportunity to demonstrate that he/she has achieved his/her own learning outcomes.
- You can check the text up to once for language. Feedback on content, on the other hand, can and should be provided continuously.
- There is agreement that not all master's theses will be of very high quality and will receive top marks, and even that some students may not achieve the goals of the master's thesis despite the support offered. This means that a bachelor's degree is not a guarantee of a master's degree, as the goals of both degrees are different.

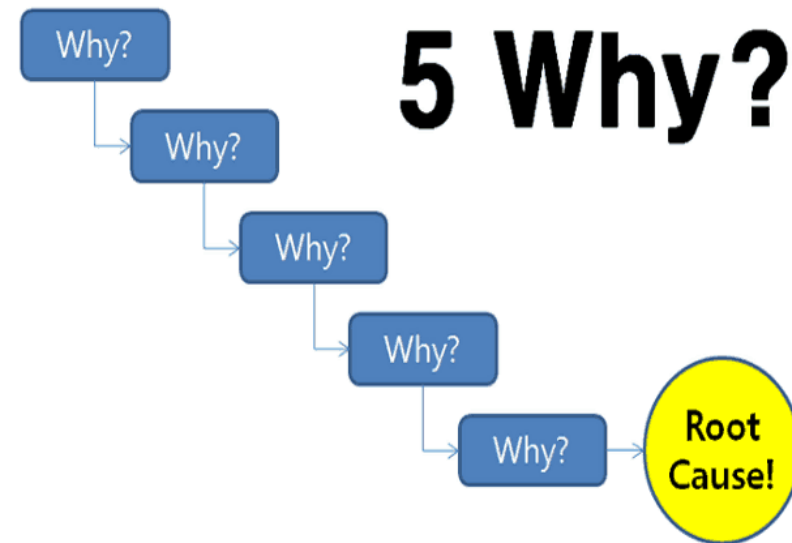
# Tools and methods – professionalization of the advisor's role (2)



- Use of project management and project education (PBL) tools:
- GANTT's plot (eg. GitHub),
- to do list (MS TEAMS)
- ISHIKAWA's Diagram
- Decision tree
- Etc. etc.

# 5 x Why?

- iterative technique of asking questions,
- each answer forms the basis of the next question,
- used to study cause-and-effect relationships (including the depth of the student's knowledge),
- It encourages analytical thinking, distinguishing causes from symptoms and identification of the problem.





# References – Research Based Learning

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- Willison, J. and O'Regan, K. (2008). *The Researcher Skill Development Framework*. <https://www.adelaide.edu.au/rsd/framework/rsd7/>

# Research-based learning – take home message

- Research-based learning involves students either learning through research e.g. by dealing with primary literature or by doing research themselves. <https://europe-creates.eu/toolkit-for-co-creative-learning/research-based-learning/>
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