

## THE HUGE POSITIVE IMPACT OF EXTRACURRICULAR ACTIVITIES AT TELEKI HIGH SCHOOL

“

*The Huge Positive  
Impact of  
Extracurricular  
Activities at TELEKI  
High School*

”

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Accredited talent support center

College professor,

Physics teacher,

talent center coordinator

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## THE HUGE POSITIVE IMPACT OF EXTRACURRICULAR ACTIVITIES AT TELEKI HIGH SCHOOL

### 1. Introduction

#### History of TDK

**The Scientific Student Circle: TDK is a more than 70-year-old movement.**

- helps talented young people get involved in

#### Talented

- students
- **younger generation**, learners (only at BME, from 2022 )

1950 – first conference

- talent development in Hungarian higher education started from 1950



**UNIQUE**

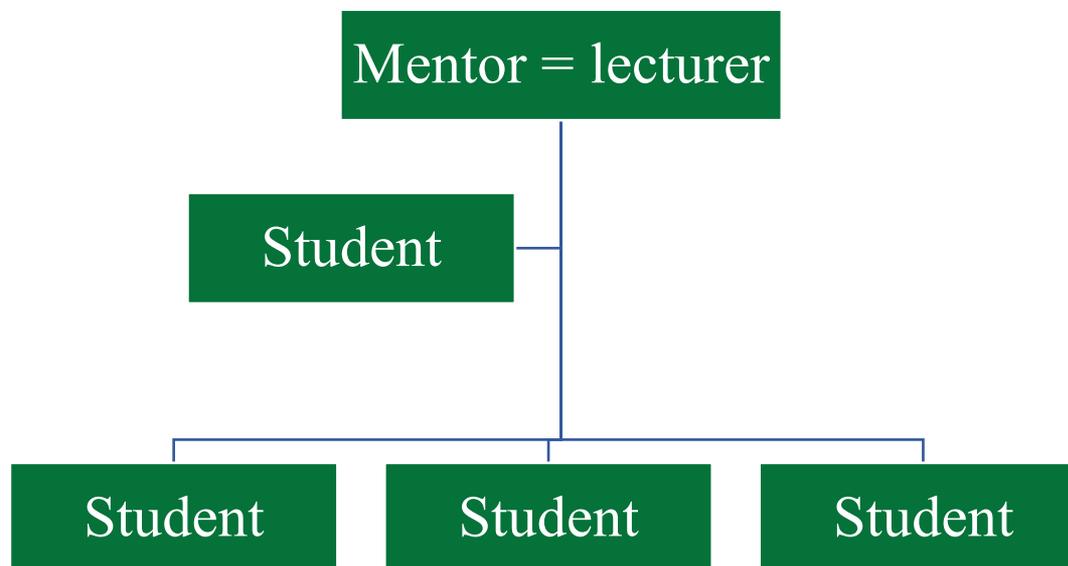
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## THE HUGE POSITIVE IMPACT OF EXTRACURRICULAR ACTIVITIES AT TELEKI HIGH SCHOOL

### 1. Introduction

#### Student's workflow



#### What are they doing



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### 2. Methods

- **Inquired Based Learning**

Hypothesis

Observation

Analyzing

Interpreting

Conclusion

- **Cooperative learning**

- **Project method**



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### 3. Outcome of work

Yearly conference organised by university

- for 2 years younger generation is also accepted



- points for entrance to univ.

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## **4. 2T – Talent Management in Teleki**

(Experimental Learning and Digital Innovation in Physics Education, Motivation, Understanding, and Talent Development)



**Accredited  
Talent Support  
Center  
(renewed:2026)**

**part of the  
talent  
support  
centers  
network**

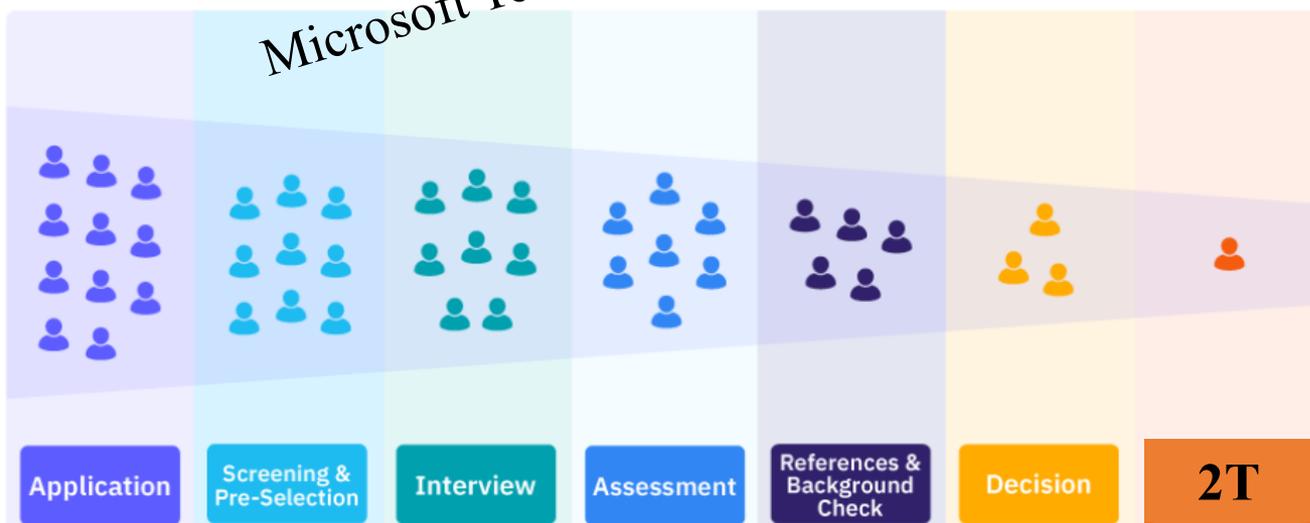
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### 4. 2T – Talent Management in Teleki

How do we start ? promotional activities (Researcher's night, lectures, etc..)

#### Selection Process: The 7 Steps

Microsoft Teams



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### 5. Aim of 2T

- competition
- final year exam in Physics
- research activities



### • Core principles:

- enrichment,
- acceleration,
- individual differentiation



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### 5. Aim of 2T

- research projects and TDK activities
- most were carried out in the laboratories of the Budapest University of Technology and Economics (BME)



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## 6. Project implementation

## Budapest University of Technology and Economics (BME)



**BME**

Student Research Societies

Search paper Registration Login

### Conferences

- Faculty of Architecture TDK - 2025
- Faculty of Civil Engineering TDK - 2025
- Faculty of Economic and Social Sciences TDK - 2025
- Faculty of Mechanical Engineering TDK - 2025
- Faculty of Transportation Engineering and Vehicle Engineering TDK - 2025
- Faculty of Natural Sciences TDK - 2025
- Faculty of Chemical Technology and Biotechnology TDK - 2025
- Faculty of Electrical Engineering and Informatics TDK - 2025
- BME High school TDK - 2024

### Current

#### Welcome in the website of the Students' Scientific Conference (TDK)!

This unified TDK portal (web site) provides a common platform for the TDK (Student Research Societies) at BME organized by the faculties beside allowing freedom and flexibility required by the different sciences, professions and arts.

Please, select the corresponding faculty shown by symbol on the left side of the screen in case of interest for having information about its TDK activity, conferences, presenters, articles and placing, etc.

#### Important!

**For those who had a username on the old TDK portal, the system (provided that the Neptun code was entered correctly) will offer to connect them with the old user during the first directory login. If this is missed, contact the faculty TDK president or secretary for further action!**

Students and supervisors from BME are recommended to use the eduID authentication. The supervisor must register/login in the portal to be selectable by the student. The registration is valid if the supervisor confirms and provides his/her department, status (position) and Neptun code. The supervisor appears only in the list to be selected afterwards.

If you had a profile on the old TDK portal and after login with eduID the system doesn't offer to connect the old and new profile, please contact the TDK administrator of your faculty!

Report errors and comments related to the portal at: [tdk\\_portal\\_admin@bme.hu](mailto:tdk_portal_admin@bme.hu). For easier interpretation, please attach a screenshot if possible.

### Timetable, deadlines

**⚠ Az az egyes karokon / konferenciákon a határidők eltérhetnek a központi ütemezéstől!**

- 09/01/2025 - 09/30/2025  
**Registration period**  
Registration deadline.
- 10/01/2025 - 11/02/2025  
**Paper submission period**  
TDK and IDK paper submission period. (may vary by faculties)
- 11/03/2025 - 11/17/2025  
**Review submission deadline**  
Review period
- 11/19/2025  
**Conference day**  
TDK and IDK conference

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### 6. Project implementation

Research topics (2025-2026 school year) where

- Vehicles, and their environment speak the same language

(**self-driving cars**)



- Safe railway crossing
- Investigation of polyhydroxybutyrate production in *Cupriavidus* species as a function of the temperature
- PET bottles, **plastic waste recycling**, 3 D printing
- Coffee as a green reducing agent in the synthesis of **gold nanoparticles**
- In the tracking of the Aurora Borealis



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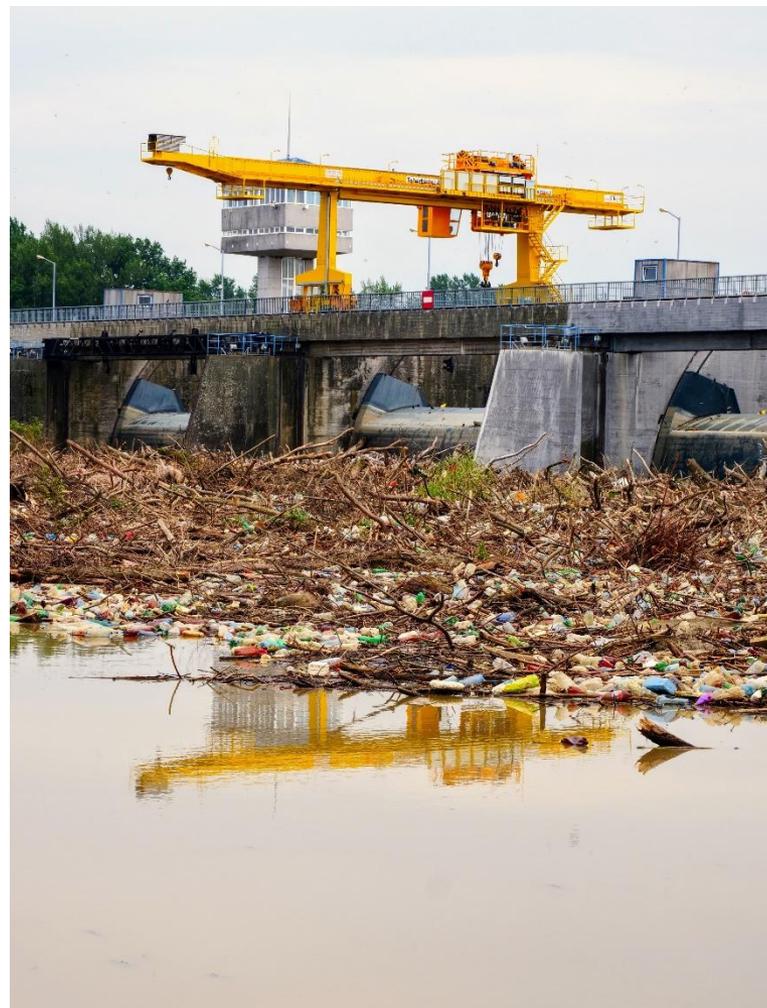
## **6. Project implementation**

### **Concrete examples**

# TDK dolgozat: Folyami műanyag hulladékból készült filament vizsgálata

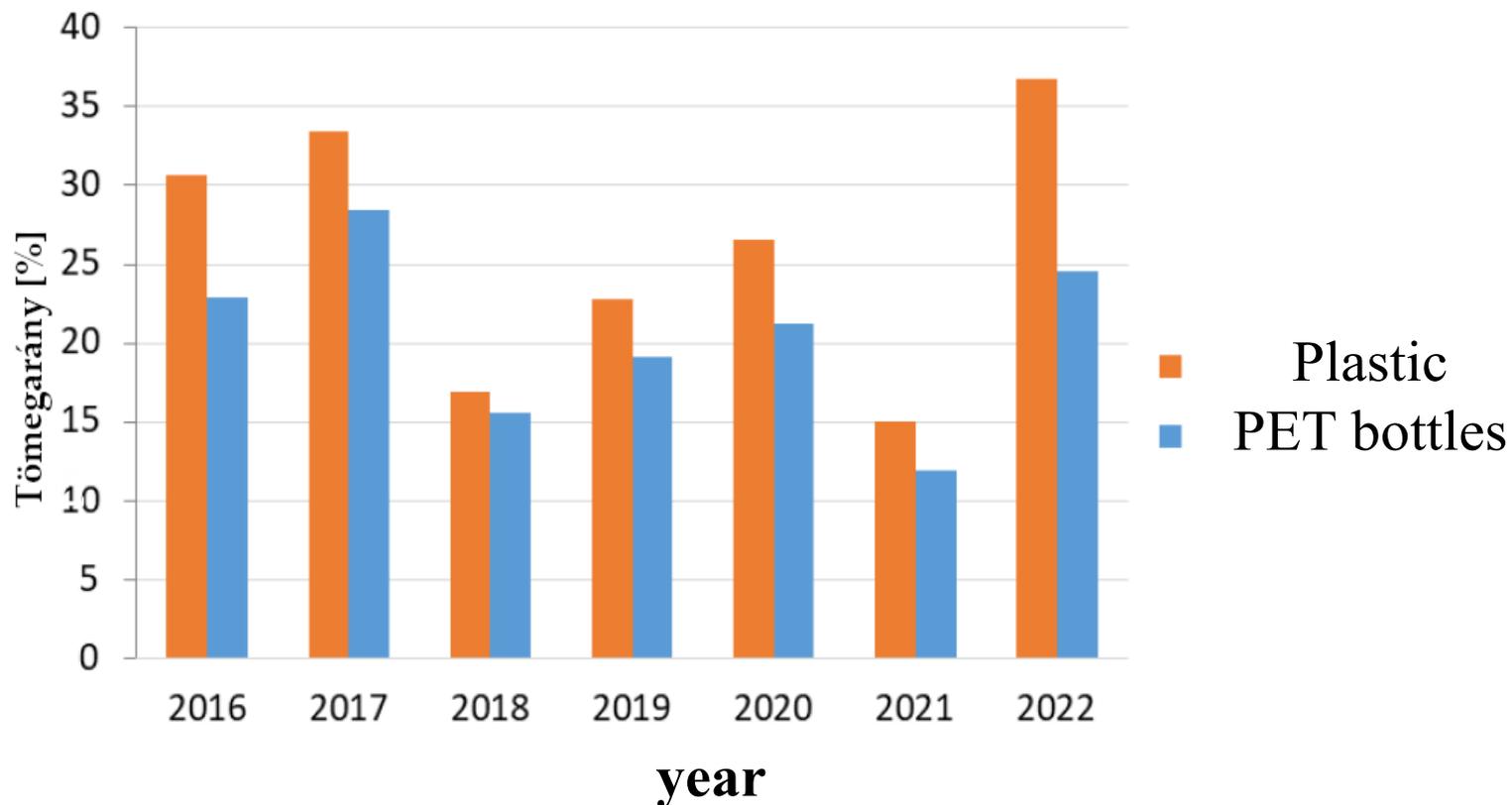
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plastic waste, recycling



1

## plastic waste, recycling



PET plastic bottles collected from the Tisza

3

## Experimental setup

tPET előkészítés:

dirty tPET



Washing



Drying with a centrifuge



3

## Experimental setup

Cleaned up tPET



Drying cabinet



Grinding



3

## Experimental setup

Extrusion



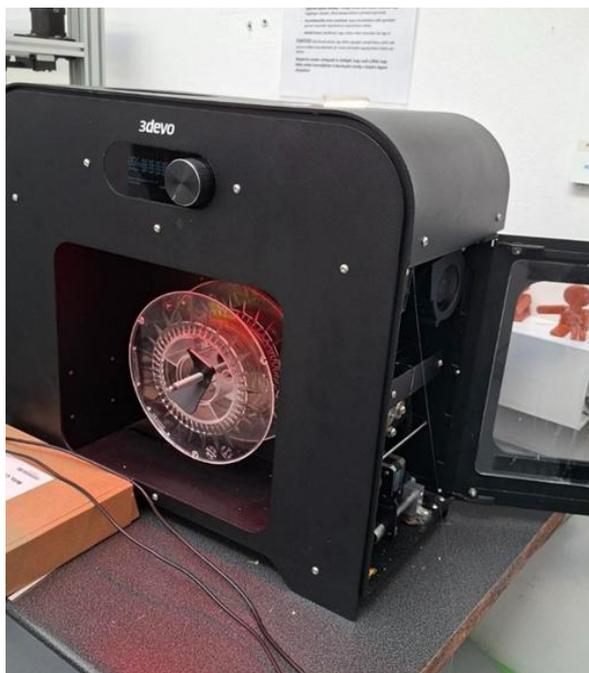
Fiber grinding



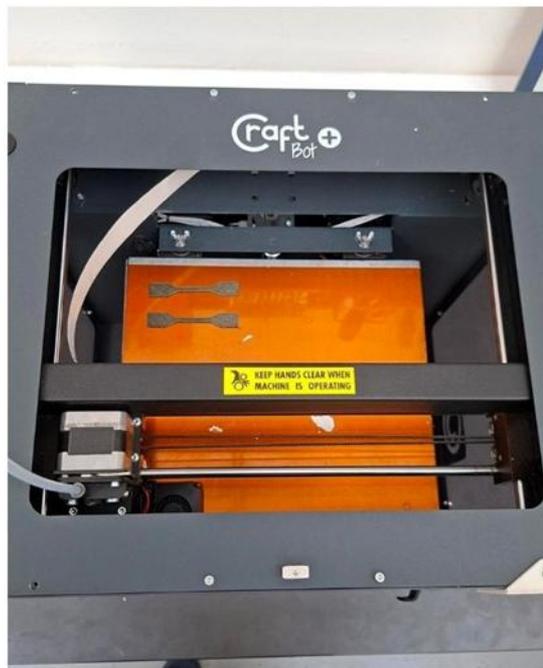
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## Experimental setup

Filament production



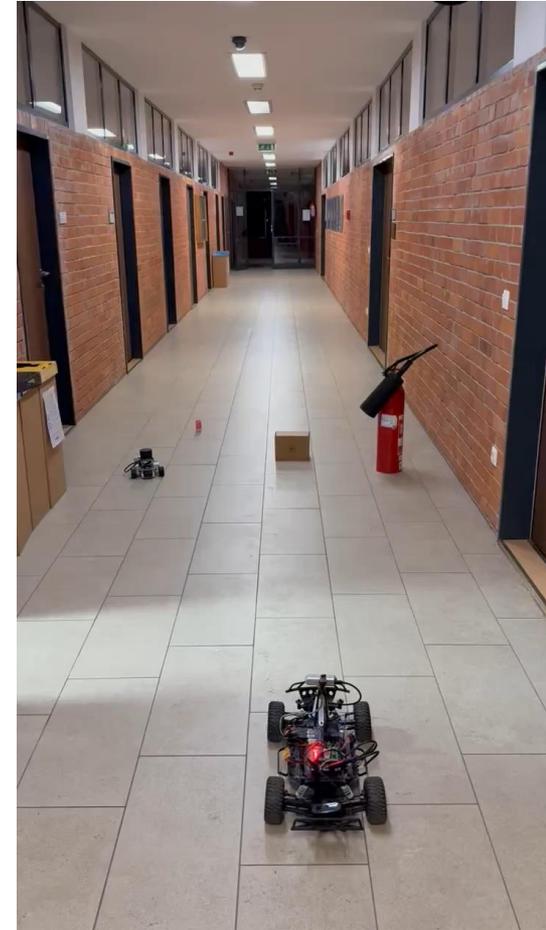
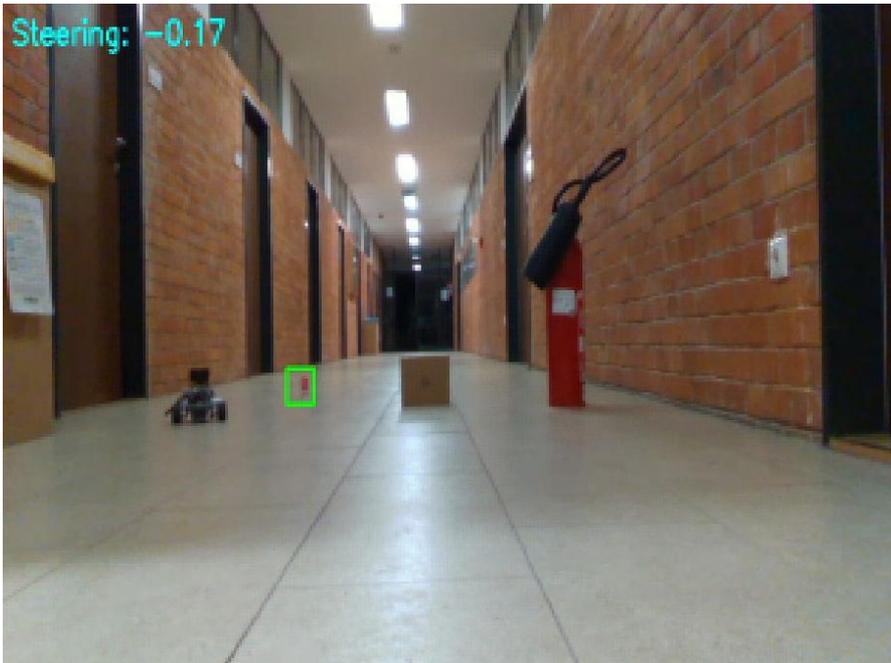
3D printing



6

## Results

Go to...

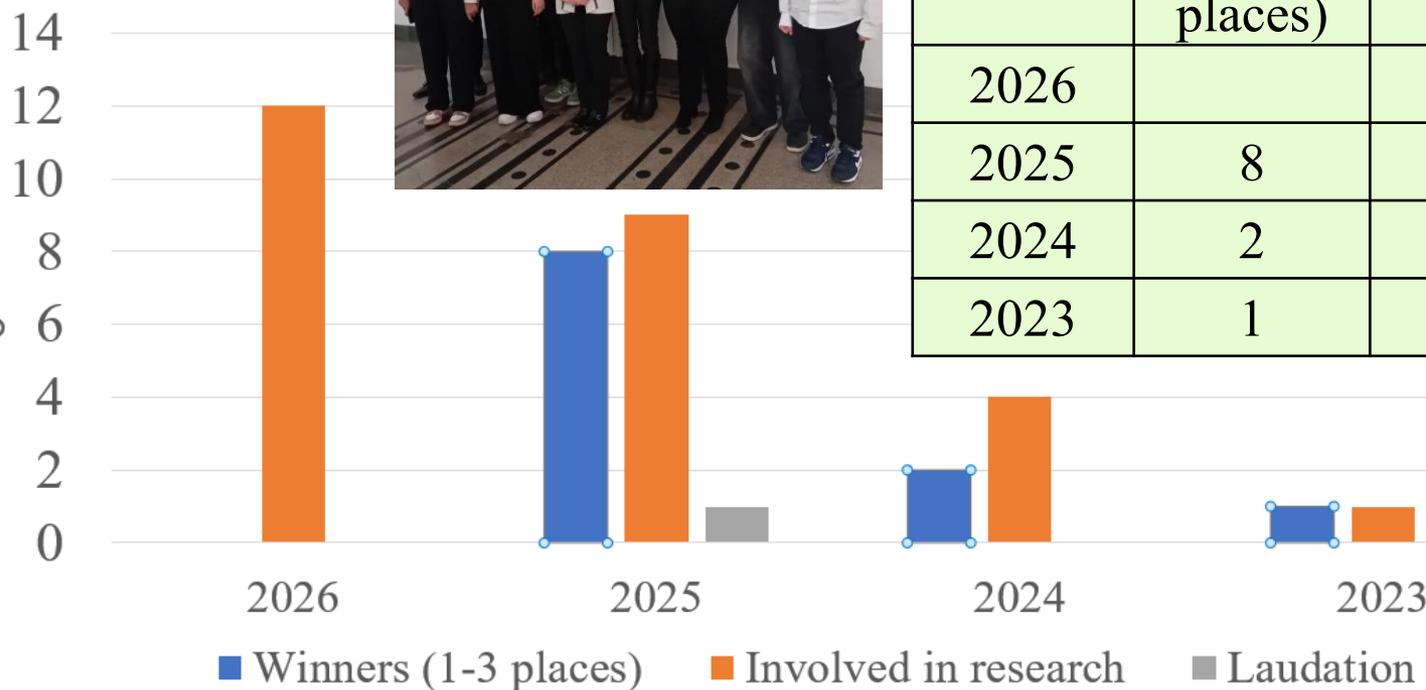


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**7. Results**



Year	Winners	Involved in research	Laudation
	(1-3 places)		
2026		<b>12</b>	
2025	8	<b>9</b>	1
2024	2	<b>4</b>	
2023	1	<b>1</b>	



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### 7. Results

students became able to:

- distinguish between essential and non-essential factors in investigations;
- interpret phenomena and differentiate between scientific and pseudoscientific views;
- draw valid conclusions from experiments;
- present experimental data graphically;
- understand major physical discoveries and systematize their knowledge.

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### 7. Conclusions

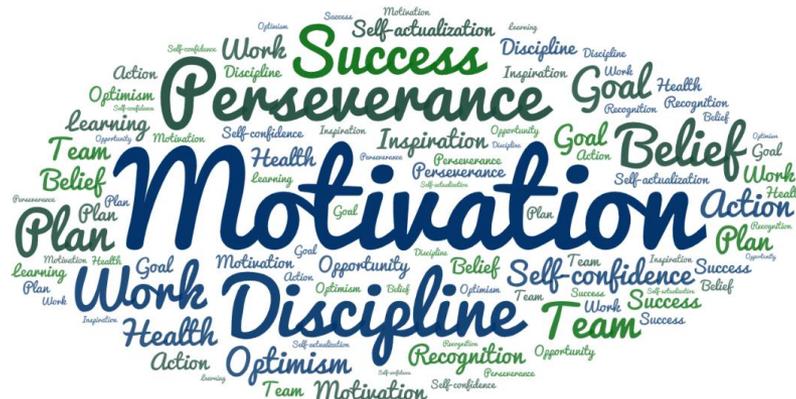
- STEM activities
- university collaboration

**transform curiosity into discovery  
and  
inspire future scientists and engineers**

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### 7. Conclusions

- The **personality of the teacher** and mentor has a direct impact on the students
- We ourselves influence the students, we motivate them
- **Extracurricular activities** determine students' career choices



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### 9. Acknowledgement

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### 10. References

- „What is Cooperative Learning? - Definition & Methods Retrieved from <https://study.com/academy/lesson/what-is-cooperative-learning-definition-lesson-methods.html>,” 2015. Available: <https://study.com/academy/lesson/what-is-cooperative-learning-definition-lesson-methods.html>
- B. Jarosievitz, ICT and Multimedia in Physics Education, In: GIREP-ICPE-EPEC 2017 Conference, Dublin, Ireland, 2017, 26. p., 2017.
- <https://sapro.moderncampus.com/blog/how-to-improve-student-engagement-with-science>
- <https://www.aihr.com/blog/what-is-talent-management/>
- <https://www.academy.vic.gov.au/resources/talent-management-framework>

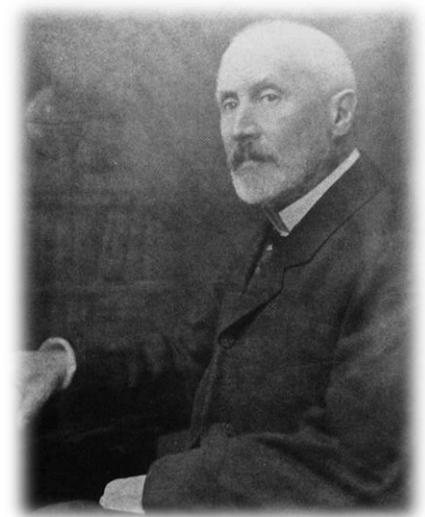
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"In the cultivation of sciences, not only the  
mind but also the heart plays a role."

*(Baron Lóránd von Eötvös*

*native form of this personal name is*

*Eötvös Loránd*



**Thank you for your attention!**

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