

MOTIVATING STUDENTS FOR COMPETITION IN PROGRAMMING



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WE ALL STARTED SOMETIME AND SOMEWHERE



"I became who I am thanks to my technical culture teacher - he recognized my talent and "pushed" me to the first student competition, where I won." – Mate Rimac



COMPUTER SCIENCE IN ELEMENTARY SCHOOL



- Computer science has been a compulsory subject since 2017. (only in the fifth and sixth grades)
- Two school hours per week
- Three levels of competition: school, county and state (during pandemic – online)



CHALLENGE I.



Equipment

- Outdated equipment
- One classroom for 20 classes
- Computers consist of basic equipment (case, monitor, mouse and keyboard)
- Reduced work options in pandemic



SOLUTION



- During pandemic - tablets for all students (sim cards)

Alternative ways to acquire equipment

- Projects
- Tenders



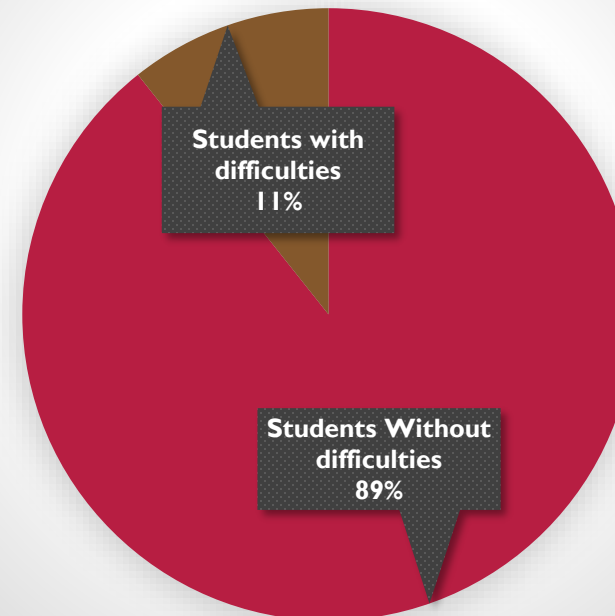
CHALLENGE II.



Student opportunities

- Different abilities, prior knowledge, interests and possibilities
- Different speed and volume
- Students with difficulties (out of 505 students, 54 have some difficulty)

Percentage of students with and without difficulties



SOLUTION



- Teaching assistants (City and EU funds)
- Additional classes



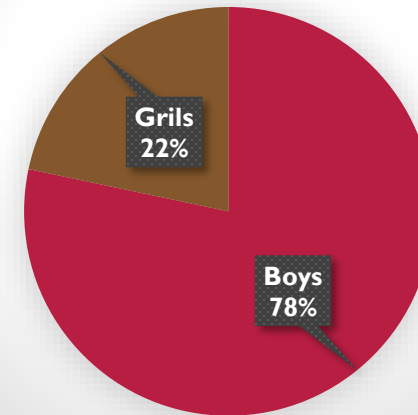
CHALLENGE III.



Boys vs girls

- Boys show more interest in programming
- Girls prefer to choose activities in the artistic field

Percentage of boys and girls at the national programming competition in 2022.



SOLUTION



- Extracurricular activities
- Workshops and education
- Erasmus + project for girls
RoboGirls



**Empowering girls
in STEAM through
robotics and coding**



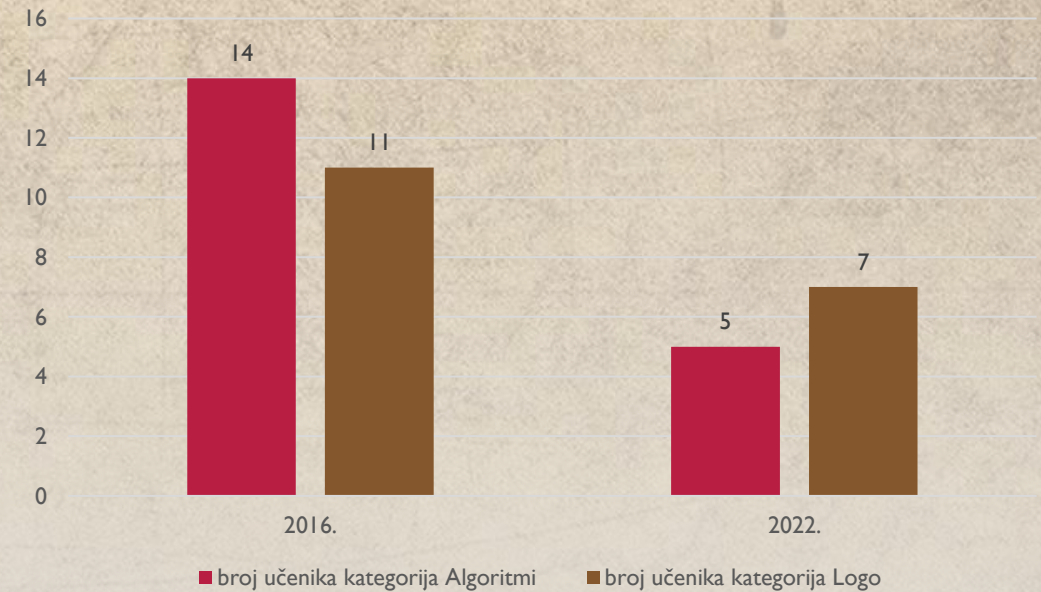
CHALLENGE IV.



Declining interest in programming

- Programming languages are considered difficult and complicated

Number of students in programming categories in 2016. and 2022. country competition (47.schools)



SOLUTION



- Winter Programming School (online during pandemic)
- Cooperate with numerous programming clubs



CHALLENGE V.

Teacher education

- Lack of education in all areas of computer science
- Number of qualified teachers who teach STEM subjects is decreasing
- Decreasing number of mentors at the Country programming competitions (2016.-7. mentors)



SOLUTION



- Online education and workshops
- Share our knowledge with our colleagues
- Transfer of good practice



CONCLUSION

"Knowledge is not knowledge to know, but knowledge is knowledge to give"



THANK YOU!

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