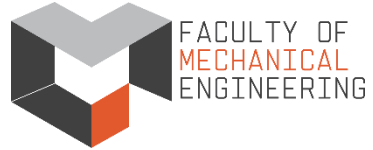




# Experiences with Entrepreneurial education in North Macedonia – stop the brain drain with entrepreneurship education

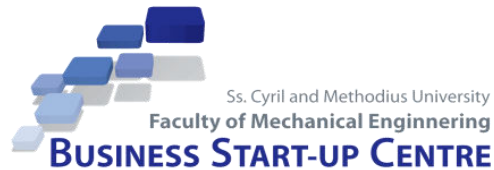


**Dr. Radmil Polenakovikj**

Professor at Faculty of Mechanical Engineering, Business Start-up Centre, Ss. Cyril and Methodius University, & National Center for Development of Innovation and Entrepreneurial Learning, Skopje, North Macedonia

**Liljana Polenakovikj MSc.**

Advisor at Bureau for Development in Education, Ministry of education and sciences, Skopje, North Macedonia



National Center for Development of Innovation and Entrepreneurial Learning



# About us (1)

## Prof. dr. Radmil Polenakovikj:

- Teaching Entrepreneurship since 1997 at Mechanical Faculty
- Established the **first University Business start-up centre in 2006** and the National Centre for Development of Innovation and Entrepreneurial Learning in 2009
- Since 2006 organized **national business plan competitions** for secondary schools & business pitch competitions for students and graduates
- **Supported the establishment of > 60 start-up companies**
- Involved in more than **100 projects** funded or supported by: EU programs (transnational, cross-border, FP7, Tempus, COSME, Erasmus+, thematic calls, etc.), OECD, World Bank, ETF, ADA, USAID, GTZ, CEI, UNCTAD, SEECCEL, UK Embassy, Denmark Embassy, Macedonian ministries and agencies, etc.
- Developed **national strategic documents** for Entrepreneurial learning; for Clusters development, Smart Specialization Mapping, etc.

# About us (2)

## Liljana Polenakovikj, MSc:

- **Mathematics teacher** in primary schools (1990 – 2008)
- **Advisor at Bureau for Development in Education**, Ministry of education and science (after 2009)
- Participated in numerous projects related to improvement of quality in education, innovative techniques for teaching, implementation of entrepreneurial topics in curriculums in primary schools, etc.
- Finalizing PhD thesis in **entrepreneurship education** with focus on primary education
- Developed model for **testing entrepreneurship competences** for primary and secondary school students

# An Overview of the National Entrepreneurship Education System (1)

## Before 2010:

- **Entrepreneurship** was subject (course) on the University postgraduate and **undergraduate level** - Economic Faculty (1992) and Mechanical Faculty (1997)
- **Junior Achievement** program started its activities in 1997/1998 for secondary schools
- **Donor driven programs** supported the entrepreneurship development and career guidance in secondary schools [USAID - USA, GIZ - Germany and KulturKontakt – Austria) – after 2005 mainly in VET schools (school companies, Career Centres, teacher training]
- Established **National Agency for Entrepreneurship promotion** - 2003

# An Overview of the National Entrepreneurship Education System (2)

## After 2010:

- **Law on Innovation activity – 2012**
- Introduction of **course Business and Entrepreneurship in 4<sup>th</sup> year of secondary schools - 2012**
- Establishment of the **Fund for Innovation and Technology Development (FITD) – end of 2013 & intensification of its activities after 2017**
- Adoption of **National Entrepreneurial Learning Strategy 2014 – 2020**
- Introduction of **course “Innovation” in Primary schools (IX grade) - 2013**
- Introduction of **courses “Innovation and Entrepreneurship” in I, II and III grade of Secondary education - 2013**
- Intensive **training of school teachers on Innovation and Entrepreneurship** topics (organized by Bureau for Development of Education) > **2000 teachers**

# An Overview of the National Entrepreneurship Education System (3)

## After 2010:

- Supported by the World Bank, **new compulsory and progressively evaluated Entrepreneurship and Innovation curriculum** was introduced in 2015 (the structure is presented on the next slide)
- Additional support on trainings and students competition by donor community - Junior Achievement program (USAID) and UPSHIFT program (UNICEF), NGO and business sector (NCDIEL, Macedonia2025, Banks, etc.)
- **Very strong support** by **FITD** - financially supports all activities related to development of innovative thinking and entrepreneurial mindset among youth (domestic and international competitions, student fairs, trainings, etc.)

<b>Study year</b>	<b>IX grade primary school (13 – 14 years old)</b>	<b>I Secondary School (14 – 15 years old)</b>	<b>II Secondary School (15 – 16 years old)</b>	<b>III Secondary School (16 – 17 years old)</b>	<b>IV Secondary School (17 – 18 years old)</b>
<b>Title course</b>	<i><b>Innovation</b></i>	<i><b>Innovation and Entrepreneurship</b></i>	<i><b>Innovation and Entrepreneurship</b></i>	<i><b>Innovation and Entrepreneurship</b></i>	<i><b>Business and Entrepreneurship</b></i>
	<b>Being Entrepreneurial</b>	<b>Entrepreneurial Community Experience</b>	<b>Entrepreneurial Business Experience</b>	<b>Entrepreneurial Management Experience</b>	<b>Entrepreneurial Leadership Experience</b>
<b>Year aim</b>	This year students will design an event that showcases the economic opportunities that they have discovered in Macedonia and beyond.	This year students will develop a social / community action project – to solve a problem discovered in the community	This year the student’s will develop a business project that connects with global economic opportunities that they have discovered.	This year students will develop and apply their entrepreneurial management skills – to develop a business idea over the year.	This year students will apply all of their prior learning to develop a company
<b><i>Innovation &amp; Creativity theme</i></b>	Who am I, and who is an entrepreneur?	Innovation & Creativity – the base of the entrepreneurial process	Innovation & Creativity – Ideas and business opportunities	Innovation & Creativity – managing the innovation and creativity process	Innovation & Creativity – making the entrepreneurial process work
<b><i>Context theme</i></b>	What’s out there?	Context & Environment – Social Entrepreneurship	Context & Environment – Global business opportunities	Context & Environment – Founder’s dilemmas	Context & Environment – Customer development
<b><i>Business understanding theme</i></b>	How do we create value?	Introducing business modeling	Business modeling & the Start Up process	Developing & testing the business model	Running & adapting the business model
<b><i>Finance theme</i></b>	How does money, buying and selling work?	Managing finance & resources in a social economy	Managing finance & resources in a market economy	Managing finance & resources in a business	Sourcing finance & organizing resources in a business
<b><i>Communication theme</i></b>	What I have learned and where could it take me?	Business Communication – Engagement and involvement	Business Communication – Marketing, sales & customer relationships	Business Communication – developments & promotion	Creating and implementing a business communication strategy

# How to “use” diaspora to support entrepreneurship education?

- Support of diaspora to **business plan competition** of secondary students: members of Jury, Award money, mentorship, support to continue studying on international level (last 6 years)
- **Direct scholarship and mentorship** for students in secondary schools and universities
- Better utilisation of Erasmus + programs **to link our students, researchers, teachers and start-up companies** with international companies where people from North Macedonia work or are owners (<https://www.erasmus-entrepreneurs.eu/>, <https://intervetwb.net/>, <https://www.macedonia2025.com/executive-study-tour/>, etc.)
- To establish “diaspora fund” for financing projects that will support entrepreneurship education

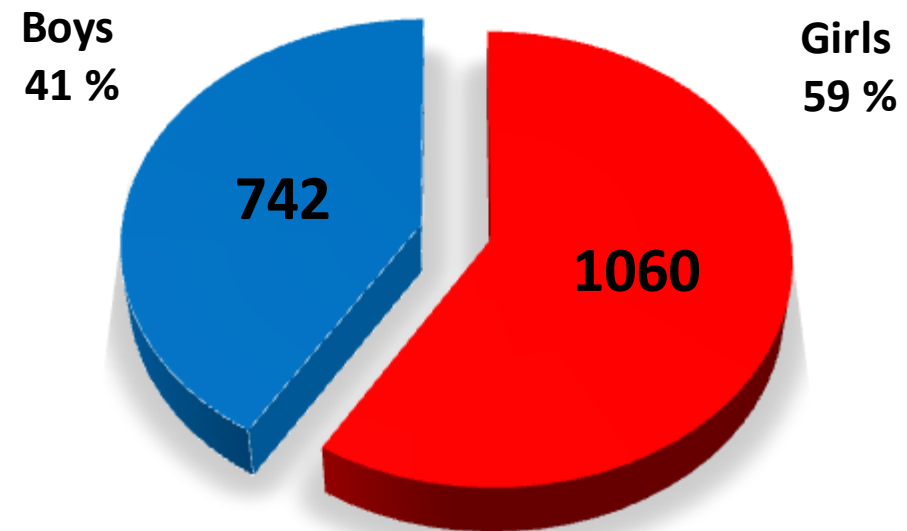
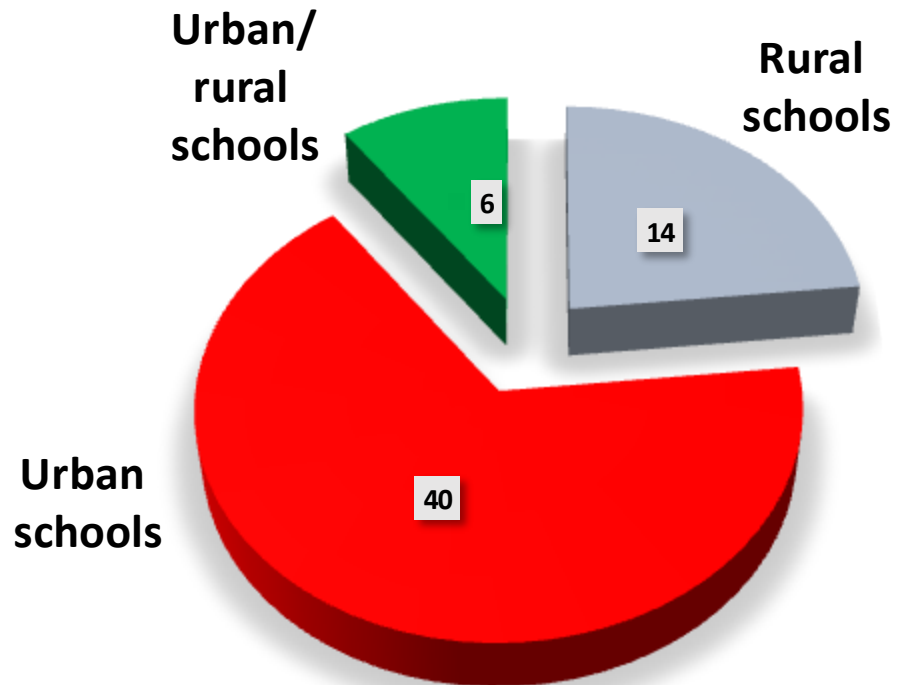


# Entrepreneurship education in primary school

- In 2014 - different topics of entrepreneurship were introduced in the curricula of Mathematics, Chemistry, Biology, Physics, Art and Informatics
- Teachers passed several trainings on new topics
- Still there is a need to support teachers with more trainings in this area
- In April – June 2020 for a first time **the level of entrepreneurship competences among 9<sup>th</sup> grade students was measured** (1802 students ~ 8% of total population of students leaving primary education).
- EU based competence model – **EntreComp** (15 competences) was used. This is a pilot testing within the project <https://entrecompedu.eu/>
- The preliminary results are presented for the first time here – on the Balkan Forum

# Entrepreneurship competences in primary school – June 2020

- 1802 students in 9<sup>th</sup> grade primary schools (13/14 years) that were involved on the course Innovation (total population is 19 600 students)
- 55 teachers from 60 schools in 23 municipalities



# Entrepreneurship competences in primary school – June 2020

## Entrepreneurial Competences - Students self-assessment

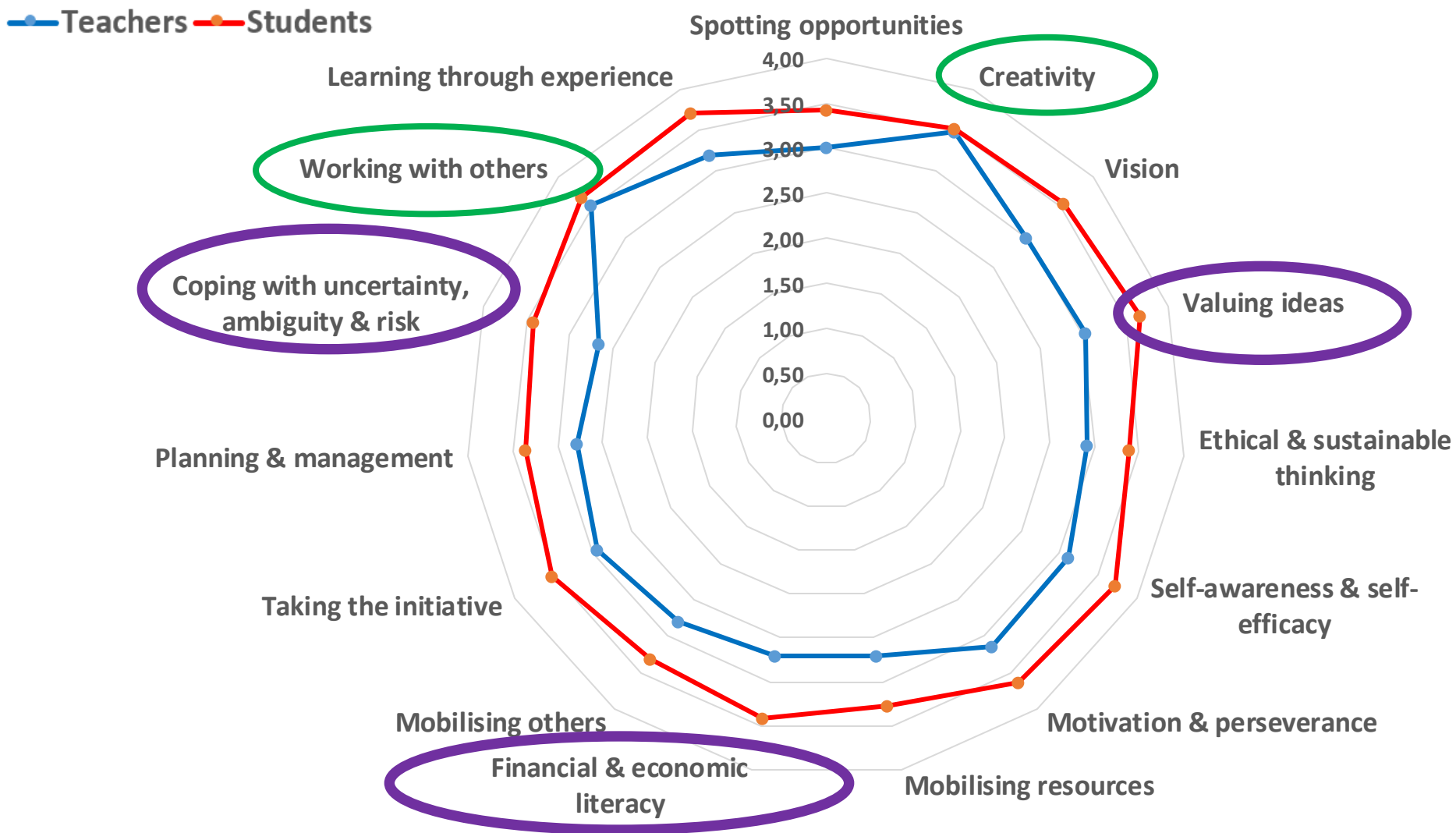


# Entrepreneurship competences in primary school – June 2020

## Entrepreneurial Competences - teachers assessment



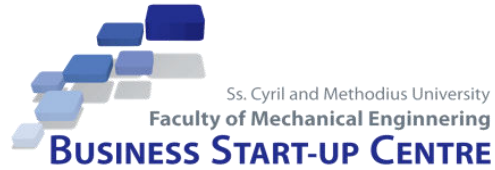
# Entrepreneurship competences teachers vs. students assessment – June 2020



# Entrepreneurship competences in primary school – June 2020

## Lessons learned

- Teachers need **higher support** from school principles, state education authorities and business community in order to implement right entrepreneurial pedagogy (guest lecturers, company visits, etc.) in the schools
- More **teachers' training is needed**
- Measuring level of the students entrepreneurial competences at the end of primary school should become **obligatory activity** every year
- This is in line with the EU recommendations towards increasing the entrepreneurial attitudes among youth!



Ss. Cyril and Methodius University

Faculty of Mechanical Engineering

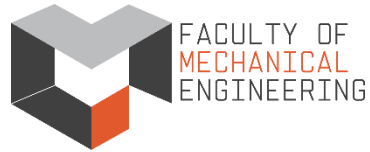
**BUSINESS START-UP CENTRE**



National Center for Development of  
Innovation and Entrepreneurial Learning



**БИРО ЗА РАЗВОЈ НА  
ОБРАЗОВАНИЕТО**



FACULTY OF  
**MECHANICAL  
ENGINEERING**

# Thank you very much for your attention

**Prof. d-r Radmil Polenakovik**

**&**

**Liljana Polenakovik MSc**

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