



knowledge without boundaries

EIFL-PLIP

Improving lives and livelihoods through innovative public library services

Library's 3D printing project inspires young 'makers' Rijeka City Library, Croatia

IMPACT CASE STUDY

The library's pioneering 3D Printing Incubator for Children and Youth -

- Transformed the library into Rijeka's premier 'maker space' for children and young adults.
- Stimulated young people's creativity and gave them the confidence to use digital tools to bring their ideas to life.
- Made headlines in Croatia's leading newspaper when librarians teamed up with medical doctors and engineers to 3D print the prototype of an artificial limb for a patient with severe leg injuries.
- Sparked a trend, inspiring at least three more organizations to buy 3D printers and start designing and printing.
- Attracted new partners - including the University of Rijeka, whose lecturers and students volunteered to teach and mentor the library's young learners.
- Changed public perceptions that the library just offers books. The library is now recognized as a leader in creativity and technology education.



What will come out? A young learner waits at the 3D printer for her model to emerge.

"It is extremely important to give young people the opportunity to grow using new and sophisticated technology, and to prepare them for the digital future. The library is an important, innovative influence in our community. I express my full support for the 3D printing service at Rijeka City Library."

- Vojko Obersnel, Mayor of Rijeka

Rijeka was once one of Croatia's most productive industrial centres, but over the past 25 years, factories have closed and the economy has shifted to imports. Librarians were concerned that young people were being raised as consumers, and were losing the spirit of invention. Also, limited availability of technology at schools meant that children were not learning the digital skills needed to become 'makers' in the 21st century.

This situation prompted librarians to develop a 3D printing project for young people, which they launched with a small grant (up to US\$20,000) from the EIFL Public Library Innovation Programme (EIFL-PLIP). Librarians created a lively 'maker space' (community space where people gather to learn and work on creative projects) in the library, equipping it with 3D



printers, 3D design software, a 3D scanner and laptop computers to teach 3D printing, and Raspberry Pi mini-computers to teach young people to write computer programmes for computer games and other applications. In just over a year (2014/15), the library -

- Organized regular practical 3D skills and computer programming workshops, reaching over 100 children and young people. The children designed and printed toys, tools, plates and bowls, souvenirs, statues, 3D board games, Christmas decorations, and much more.
- Hosted 3D printing demonstrations, reaching 800 children and teachers from primary and secondary schools, and over 1,500 curious members of the general public, from all parts of Rijeka.
- Taught 10 librarians to use 3D technology to enable them to work with the children, and recruited and trained volunteers from University of Rijeka.
- Developed a web page - <http://gkr.hr/Lab>. - for young makers to share ideas and models, and to showcase their creativity in photographs and articles.
- Presented the project at over 10 international, national and local events, and joined in Europe Code Week 2015 (the European Union initiative aimed at promoting computer programming skills).
- By invitation, wrote monthly articles for Majstor, a national magazine for DIY (do-it-yourself) specialists; appeared in national and local TV and radio programmes, and featured in newspaper articles.

The future

With the support of volunteer teachers and mentors from their partner organizations, the library is continuing to offer 3D printing and computer coding workshops. The City of Rijeka's economic and cultural strategies include transforming the city's economic base by developing new industries, in particular, creative industries. Rijeka City Library's project inspired Sdroci Elementary School - the first in Croatia - to buy a 3D printer for pupils to use; a regional business development agency to install a 3D printer, and a group of technology enthusiasts to create another maker space equipped with 3D printers in Rijeka. Impressed by how the library has encouraged and boosted creativity, the Rijeka city administration are committed to supporting the library's project in future.

The EIFL-PLIP grant was awarded in May 2014. Eighteen months later, the library assessed the impact of the service. Information presented here is based on the library's impact assessment. For further information, contact Kristian Benic, Associate for Projects, Marketing and Public Relations at Rijeka City Library: kristian.benic@gkri.hr.

EIFL (Electronic Information for Libraries) works with libraries to enable access to knowledge in developing and transition economy countries in Africa, Asia Pacific, Europe and Latin America. The EIFL Public Library Innovation Programme (EIFL-PLIP) supports libraries to implement community development projects. The EIFL Public Library Innovation Programme is supported by a grant from the Bill and Melinda Gates Foundation.



Young 3D learners use the library's computers to design and print Christmas decorations.

"I didn't know what to expect because I've only read about 3D printers. The workshop was great. We did a lot of research and solved problems. Finally, I made a lot of models. I would like to see the programme extended, with even more complex projects."

- Toni Kukec, aged 10