



Digital Fabrication

County Kildare LEADER Partnership

is a Local Development Company and Implementing Partner for LEADER, Ireland's Rural Development Programme 2014 -2020. The programme promotes social inclusion, poverty reduction and economic development in rural areas. LEADER is a community-led approach to local development. The LEADER Programme has been supporting communities and business in Co. Kildare for almost 20 years. LEADER is supported through the European Agricultural Fund for Rural Development. The Department of Rural and Community Development is the programme manager for LEADER. Decisions are made at a local level by Kildare Local Community Development Committee.



Introduction to Digital Fabrication participants with Colm Ward of TechCreate and Helen Mulholland, CKLP Rural Development Officer

Consultation Findings

Service providers working with young unemployed people have reported complex support needs more effectively addressed through early and long-term interventions rather than a training course. These needs include mental health, housing, family, justice, drugs and alcohol misuse.

Some agencies are interested in utilising LEADER funding resources to conduct local research and analysis to support their service plans. CKLP will initiate a rural youth research steering group commencing in 2018.

Skill Nets training resources are available to farming families and Macra members in rural areas. The "Opt In" training portal has been developed to promote training opportunities in rural areas.

Kildare West Wicklow Education and Training Board and Local Employers developed extensive suite of needs driven training for young unemployed people. Targeted Solas courses are being delivered e.g. Warehousing Operatives in collaboration with County Kildare LEADER Partnership. New Local Training Initiatives have been developed e.g. Retail Sales.

A new support worker was appointed by County Kildare LEADER Partnership in 2017 to work with young people not in employment education or training (NEETs).

Live register figures for under 25s have returned to pre-recession levels. During the recession youth unemployment in Kildare and peaked in 2010, dropping year on year to a ten year low in 2017. (CSO, comparison of live register month 10 for Newbridge local office in each year 2007 – 2017).



Coasters

Rural Youth

Kildare Local Development Strategy outlines a Strategic Action for Rural Youth Training for Empowerment & Employment. This action is to deliver responsive needs driven training linked to local employment opportunities. It is to be delivered via a multi-agency response in areas of high youth unemployment for people aged 18-25. Digital Fabrication touches many themes including innovation, social inclusion, craft and entrepreneurship.

Innovation

LEADER has a role in piloting new production methods to enhance the competitiveness of Small and Medium Enterprises. The Local Action Group can act as a platform for social innovations for hard to reach communities. Innovation does not necessarily relate to high-level technological development, but can include making new technology more accessible.

Social Inclusion

People may be excluded and marginalised from participating in activities that are considered the norm for others in society because of inadequate income and resources. In rural areas, in particular, the low density of population, high levels of out-migration and distance from urban centres, can often result in fewer employment options and lower levels of service provision than in urban areas. In rural areas, people's experience of exclusion is often compounded by physical isolation.

Opportunities

In a changing economic and social context, CKLP focused on local assets to keep pace with global trends including STEAM (Science Technology Engineering Arts and Maths) learning for future workplaces. The growth of the Maker Movement seen regionally through the growth of Dublin Maker and FabLab Ireland network provide opportunities for local entrepreneurship in food, craft and technology, and social inclusion. Local conditions informing the pilot programme include:

- Analysis of youth unemployment data for Co. Kildare
- Findings from the stakeholder consultation
- TechCreate, a FabLab recently established in the rural town of Clane
- Popularity of coeder dojos in Co. Kildare
- Needs of LEADER craft enterprise applicants under 2017 call
- Kildare Local Enterprise Office promotion of youth entrepreneurship
- Kildare Library & Arts service developing STEAM learning for children and Creative Ireland Kildare strategy
- Review of training currently on offer through SICAP, KEWTB, Opt In and Skill Nets.
- Recruitment channels through CKLP services e.g. SICAP, Tus, LEADER enterprise and community applicants, community and adult education

Activity

On 30th November 2017 County Kildare LEADER Partnership and TechCreate ran an introduction to Digital Fabrication workshop. A second date was added on 7th December 2017. The event was innovative as the first community supported FabLab event for adults in the County. Previously, training had been with children through schools or private groups and commercial work commissioned. The programme was designed to be inclusive and accessible for all levels and abilities. Recruitment was through CKLP programmes such as SICAP, Tus, LEADER, community based organisations and a targeted Facebook advertisement. Demand outweighed the maximum capacity and a second date was added.

What is a FabLab?

A FabLab is a digital fabrication space which is opened to public access. It is a place to play, to create, to learn, to mentor and to invent. FabLabs, created by MIT are fabrication innovation centres for STEAM education, training and business idea prototyping. Participants explore the entire engineering and product design process through real world experiences by engaging with tools that enable them to go from concept to drawing, models to prototype, and redesign to final product whilst developing their practical and critical thinking skills.

Impact

The workshop challenged participants to learn new skills and involved problem solving, working methodically to a create finished result, figuring out what went wrong and considering what the technology can be used for.

Craft entrepreneurs and designers developed their design skills, learned how to expand their product range as well as personalising, engraving and branding products. It was also a networking opportunity and opened up the possibility of locally outsourcing engraving or cutting work.

Feedback

"My first reaction was that the tutor was very young, but he really knew what he was talking about"

"If I happened to be in a factory, the machinery is run off a laptop. I could be the one managing that. Also, the 3D printing could be used in animal care for prosthetics. This is an area I have an interest in and its good to have an awareness, even if I'm not the one making it. At least if someone was explaining it (3D modelling of animal prosthetics) to me, I wouldn't be standing there with a blank look, because I've seen it."

"I really enjoyed it. I had seen some 3D printing and modelling used in gaming and animation."

"The day was very informative. It gave a good introduction into 3D design, printing and cutting. It was a comfortable environment and we did not mind asking questions."

Learning

The pilot stage was run as a Rural Youth animation event. However, this workshop is suited to all adult age and does not need to be streamlined by prior learning or experience at introductory stage. It could be further developed for upskilling or keep pace with the use of technology in trades without having to return to education, particularly for self-employed tradespeople.

In a rural area of low population would be beneficial to open to all age groups e.g. men's sheds to promote hobbyists and as a hub for social enterprise incubation.



For those with a disability, the workshop formed part of their occupational therapy, practicing control of the mouse, applying learning to design and create an object and learning in a non-clinical environment.

For other learners the workshop helped to inform their career choices for further learning or re-ignite dormant computer skills following redundancy or dropping out of college.

The training was delivered in diverse groups of ages, nationalities, employment status, education and ability. The delivery style was informal with participants learning at their own pace through demonstrations, trial and error and learning from each other.

Challenges

The largest piece of equipment, the laser cutter is not portable and therefore the location, capacity and accessibility were limited. To re-create this event in other locations the design work could be carried out and files sent to the lab for the final cutting stage. The 3D printer is portable, but the process is slower, and models may not be complete at the end of one day.

The challenges of the target group for the rural youth action are the age cohort, as this is the age cohort with the lowest density in rural areas, and have a high level of need for ancillary supports to engage or remain in training. It would be permitted under the LEADER operating rules to include young people aged 15-35 years.



The FabLab model is an opportunity to engage gaming enthusiasts in computer based training with practical social and technical skills.

Based on the content and learning curve of the workshop, a small tutor participant ratio is recommended. Each workshop had a maximum of 6 participants which worked well.

Although the setup costs for software and equipment are not prohibitive, scaling up to run a standalone programme on a long-term basis would require continuous funding for facilitators with appropriate skill, knowledge and experience, and support for facilitators to continue their own learning through networking and upskilling to keep abreast of rapid changes in technology.

Conclusion

CKLP is committed to championing innovative training opportunities for rural youth and working with local partner organisations to develop new initiatives. The programme is currently assessing expressions of interest for youth and community projects. As a strategic action, an interagency Rural Youth Research steering group has been convened to scope out further actions and a budget amount assigned. The experience of the digital fabrication workshops will help to inform this work and communicate the cutting edge opportunities that exist locally.