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Distance travelled: supporting women returning to STEM careers

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Distance travelled: supporting women returning to STEM careers

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Between 2005 and 2011 the Open University ran an online course to support women scientists, engineers and technologists which took place in the UK and Ireland and has included nearly 1000 participants. The course was aimed at those returning to all fields of Science, Engineering and Technology (SET). The background to the initiative was the UK government publication 'Maximising Returns' (People Science & Policy 2003) which raised concerns about the large numbers of women with high level qualifications in STEM subjects who did not return to the sector after a career break. This resulted in the funding of a specific UK wide programme to address this issue which was promoted as the RETURN campaign under the auspices of the UKRC founded in 2004. From 2008 support for returners by the UKRC became subsumed under the more generic title 'Services for Women'. Central to the overall strategy to 'maximise returns' was the development of an on-line distance learning course run by the UK Open University (OU).

The term women returners may need to be revisited to reflect more accurately the changing patterns of women's employment over time and within different cultural contexts. Rather than assuming a single lengthy period away from paid employment which characterised women's career breaks in the past, interventions to support 'returners' need to reflect the diversity and changing situations of women over the life course, and should provide flexible strategies that take into account the range of experience at different stages (Herman & Webster, 2010). Nevertheless there are common characteristics that women who have taken time out of paid work often encounter, which have a gendered dimension linked to wider cultural expectations and norms about women's roles in the domestic sphere as well as in the workplace

The context: women STEM graduates are leaving

Return to Science Engineering and Technology

We carried out 23 in-depth interviews examining factors leading to reported outcomes which were analysed using an employability framework (McQuaid and Lindsey 2005). Usual explanations of employment and unemployment focus solely on either supply-side or demand-side factors. This analysis uses a more holistic framework that includes individual factors, personal circumstances and external factors

A postal survey was sent to 165 women who had taken the Return to SET course in 2005/6. They were all graduates in STEM subjects who were looking to return after a career break and had given their permission to be part of a longitudinal follow up study and to be contacted from time to time. There were 91 responses (55% response rate). Of these 63% were in employment or self-employed, and only 5 unemployed.

After a 10 year career break to look after her two children Rajni has now returned to a lab-based science career

"I have recently accepted a job working as a software engineer. The [course] was a crucial part in my journey towards getting started in commercial work again. It was so important in building up my confidence and helping me make key decisions about my own skills set and the opportunities available to me locally. ..I would recommend it highly."

The course improved my confidence … and got me in touch with other women in the same situation. It was great to know that I wasn't alone. I managed to build a good network out of it, and most importantly for me, it helped me put together a successful job application."

Individual	Personal	External
Employability skills and attributes eg qualifications, achievements, competencies, work experience	Caring responsibilities	Labour market
Job seeking skills	Family work culture	Recruitment practices
Demographic – age, gender, health and disability	Access to resources • transport, • financial capital, • social capital	Enabling factors - support agencies/ intermediaries

Practical Tools and Support for Employability

- CV development
- Career Planning
- Goal Setting
- Interview skills
- Mentoring
- Networking

The design of the course made use of the OU's extensive expertise in distance learning and what were (in 2005) relatively new and innovative learning technologies. The 10 week module was developed so that it could be studied entirely online. This was a deliberate choice so that it could fit around other commitments such as childcare and be accessible to individuals who would not otherwise be able to attend a regular course due to their geographical isolation. Participants collaborated together in an online learning environment where a number of structured activities have enabled them to share experiences and get support from others, encompassing issues such as work life balance. The course starts with a process of reflection on previous work and life experiences using an innovative e-portfolio system. Current trends in their own industry sector are then identified with the help of visiting experts who answer questions in an online forum. The assessed element of the course has included creating an up to date CV and an action plan to identify short term and longer term steps leading to a return to work.

Funding from the EU Equal programme enabled additional support activities to supplement the online programme. These included tutorial groups and networking events in local areas for which childcare and travel costs were available (the course itself was free of charge). In addition large scale marketing for the course in the national press resulted in enrolments from even the most remote areas of the UK. The UKRC also provided a range of other services as part of the RETURN campaign. After 2008, a revised version of the course became 'mainstreamed' into the Open University's curriculum. Fees for many but not all the participants were subsidised by bursaries from the UKRC. The UKRC also provided a range of support interventions such as peer mentoring circles, one to one advice sessions and CPD workshops which were organised and delivered by UKRC staff in regional and national hubs but were not exclusive to course participants.

Innovative learning technologies to enhance social presence: Tutorial in Second Life

Where next? The project team have developed an animated 'racetrack' tool to support students with employability. The team have been in discussion with the Centre for Inclusion and Curriculum and the Careers Advisory Service about possible ways to use this animated racecourse to support university strategic plans and help meet targets for student engagement with employability issues.

"The project has been innovative in many respects - in delivery, in scope and in partnership"*.

The first key area of innovation has been in the use of innovative learning technologies to enhance social presence and networking between participants such as e-portfolios, online forums, virtual world environments and latterly collaborative wikis.

Secondly, the course has been unique in being large scale but with local presence. Participants have come from all over the UK and Ireland. During the initial 3 years additional funding enabled local groups to meet face to face at the start and end of the course and attend networking and other events in their areas. Local activities continued to be provided from 2008 to 2011 by the UKRC regional hubs and national centres.

This national partnership is the third area of innovation worth noting, creating an integrated approach capable of responding to changing environments and resource constraints.
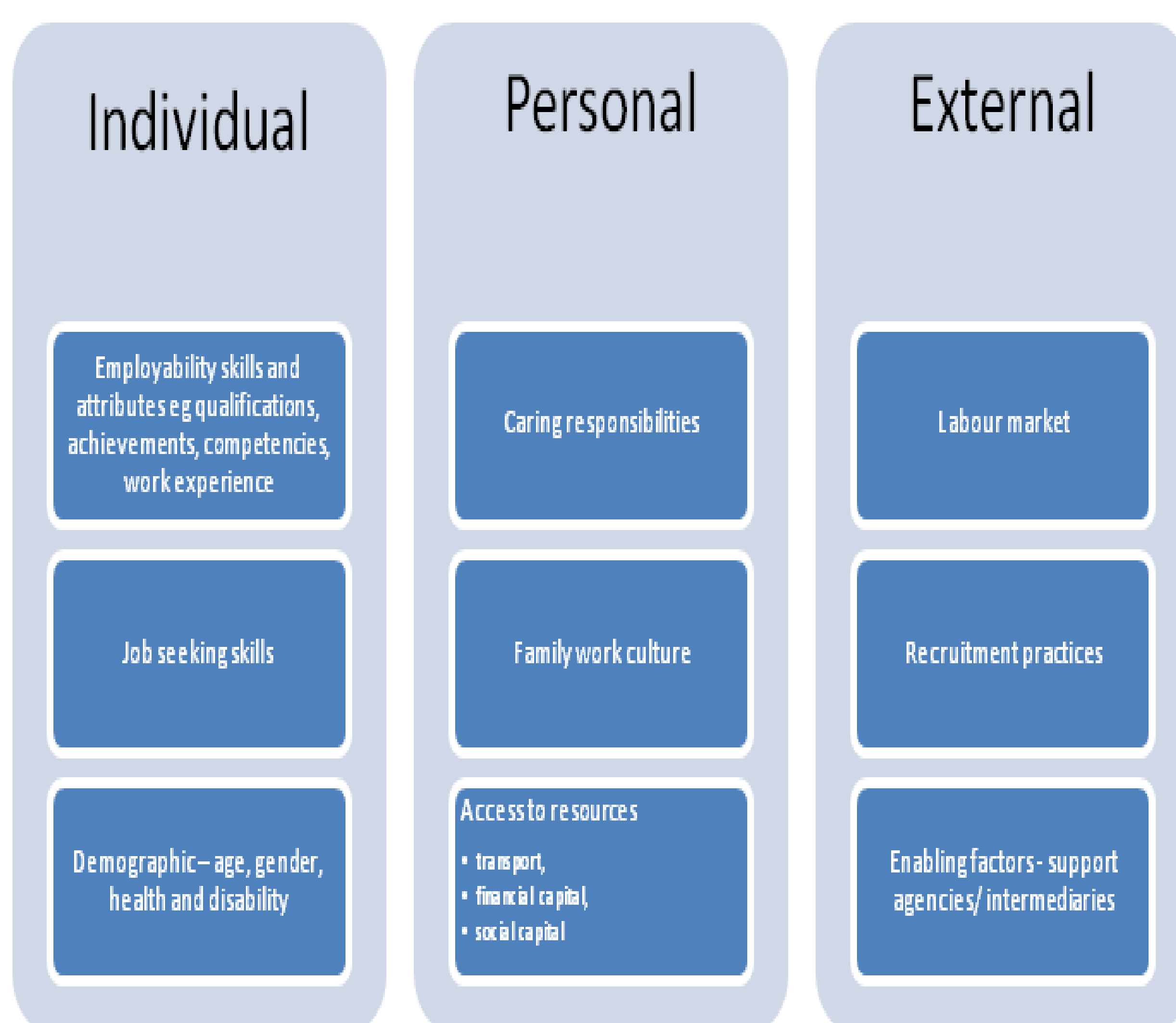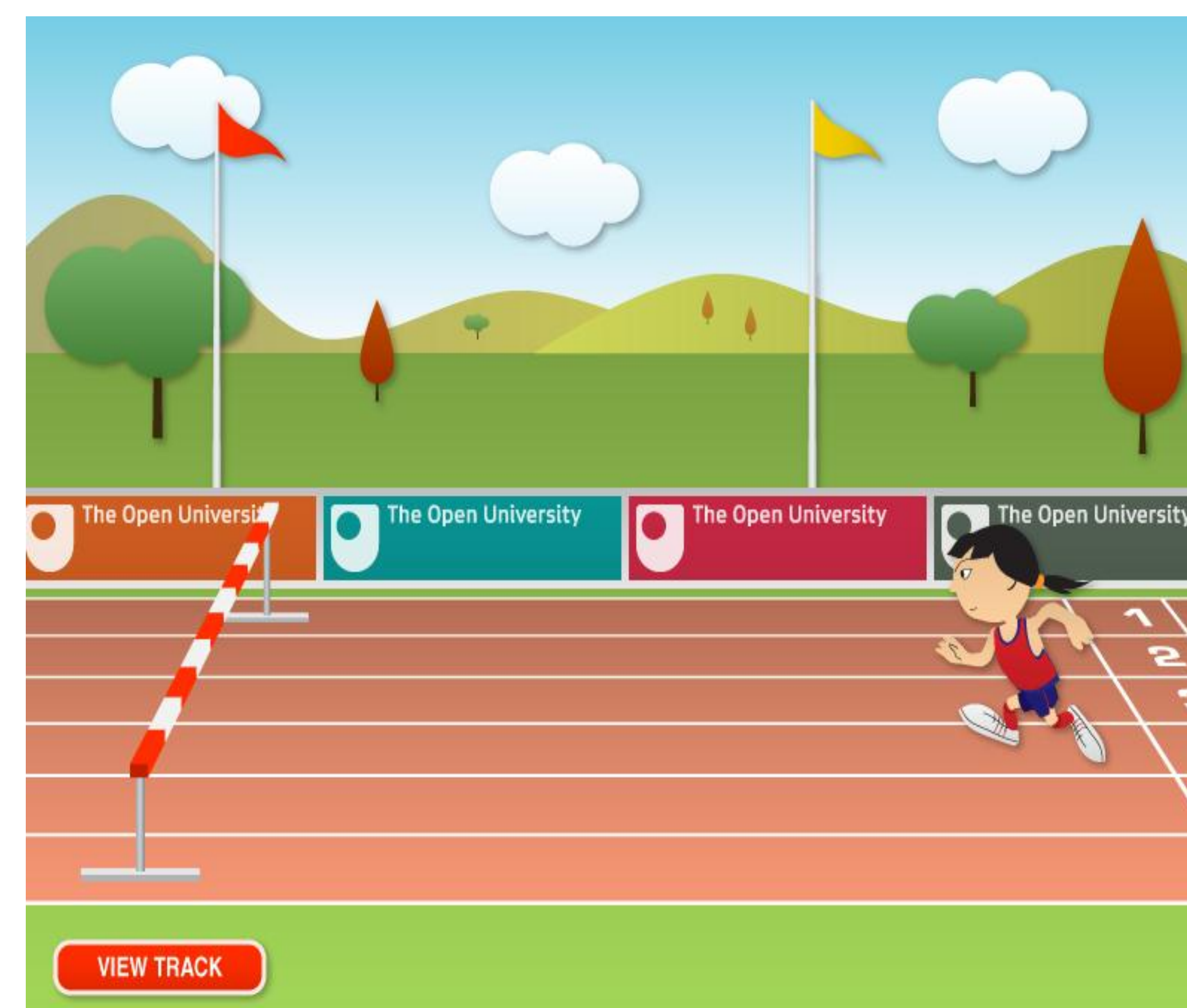
* Herman, C. (2011) After a Career break: Supporting Women Returning to ICT. International Journal of Gender Science and Technology 3(2)

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