

**CAREERTECH**  
**CHALLENGE** →

# CareerTech Challenge

## Case Studies

**L&W** LEARNING AND  
WORK INSTITUTE

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## ABOUT CAREERTECH CHALLENGE

The [CareerTech Challenge](#) launched by Nesta and Nesta Challenges in partnership with the Department for Education in October 2019, aimed to support the development of new solutions to help people find rewarding future careers. The programme was designed to support adults who were most at risk of rapid labour market change. From a wider cohort of 31 innovators, the CareerTech Challenge awarded 11 innovators between £145,000 and £250,000 to design and deliver innovative tech solutions that can build career adaptability skills and / or motivation to learn for people who are most vulnerable to workforce changes.

## Case Studies

These case studies present detailed findings from three of the CareerTech Challenge innovators. They explore how the design and delivery of evaluations were undertaken, the direct experience of learners, the findings across process and outcome evaluations and key learning from capacity building support delivered by Learning and Work Institute (L&W). For the full evaluation report please see [What works for adult online learning: An evaluation of the CareerTech Challenge](#).

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# Citizen Literacy CIC

User-centred  
evaluation



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## Citizen Literacy CIC

Citizen Literacy CIC, an independent social enterprise spinout from the City of Glasgow College, worked with its partners: ccConsultancy Ltd; ReachWill Ltd; Micro-phonics Ltd; Scottish TUC Union Learn; That Reading Thing.

Through funding from the CareerTech Challenge, Citizen Literacy built 'Citizen Literacy Taster' - **a freely accessible app that supports adults who are beginner readers and writers to develop their basic and digital literacy skills.** The project also aims to contribute valuable knowledge and understanding regarding how an appropriate use of technology can help adult beginner readers and writers to develop their literacy skills.

### Evaluation findings and lessons learned

The evaluation identified a range of positive outcomes for learners, who reported that a phonics-based solution that is adult-centric increased their engagement with the tool and motivation to learn. Engagement with the app also supported learners to widen their physical movements and interactions. Learners who previously felt their daily lives and activities were restricted by their literacy skills reported

catching the bus, going into a shop and engaging in text-based tasks at work.

The evaluation has enabled Citizen Literacy to understand the factors that influence learner outcomes. This knowledge will continue to inform and shape product development and contribute to generating knowledge and learning in the sector. It has also served to spotlight the needs of adult literacy learners and the need to explore what works for this cohort further. The team intends to disseminate their evaluation findings more widely in the sector via blogs and articles.

The experience has shown the Citizen Literacy team the value of taking a collaborative approach to evaluation. Bringing the design, literacy and evaluation team together on a regular basis provided opportunities for both teams to feed into learning iteratively, which shaped the development of the project overall. They intend to continue this practice going forward.

Citizen Literacy will continue to embed a range of aspects of the evaluation process into their work. For example, the Theory of Change process supported them to improve their understanding of the aims of their project and to map the relationship between the activities and the outcomes that they hope to see as a result.

## Learner case study: Stephanie

Before engaging with the app, Stephanie felt restricted within her everyday activities because of her limited literacy skills. For example, navigating public transport timetables and dealing with complaints at work. Stephanie said not being able to read and write made her feel trapped:

***“When you can't read and write you feel always small in a box and you put yourself in the box forevermore...it's very difficult to come out and climb out and say 'ok I'm gonna do this'”***

Stephanie was keen to improve her literacy skills and talked about the many benefits it could bring – namely being able to interact with her grandchildren:

***“I want to sit down... with a book reading to my grandkids, that would be beautiful that would”***

However, she had tried many times to improve her literacy skills and given up because of challenges faced such as the amount of paperwork involved in a college course. Therefore, she was keen to try the Citizen Literacy app as it offered a fresh approach to literacy learning.



As she previously hadn't found any phonics resources tailored to her age group, Stephanie really appreciated the adult-centric nature of the app - from its grown-up content to the choice of voices and activities.

***“I went on YouTube and I saw a video cos it was like for kids... there's nothing for adults...so it sang the words out...but this app it's like for grownups so it's much more better...it's refreshing”***

She also enjoyed the use of voice within the app that clearly provided instructions as it meant there was less written text to engage with. She found that being able to access the app at any time in bite-sized chunks and revisit content and re-attempt activities supported her motivation to engage and persist with the app, as well as improving her literacy knowledge:

***“I feel more knowledgeable, I feel that, because I'm learning every week, I can turn the app on and I can start doing it...it helps you cos we only go to college once a week so the app when you got into it you've got it there every day”***

***“I've got a lot better on that app by using it. I can make mistakes on it”***

Stephanie also feels that her confidence around literacy learning has grown since using the app, she attributes this to the positive feedback that the app provides:

***“I think my confidence has increased and I know if I need to ask for help I can ask for help in work”***

Another important outcome is Stephanie’s new-found independence – she feels good about not having to rely on people to support her with literacy-based tasks and feels confident enough to engage in tasks by herself:

***“[I’m] not having to rely on people as much...not having to rely on colleagues as much...reading I will give it a go”***

### Evaluation approach

Citizen Literacy undertook a process and impact evaluation. The key aims of the evaluation were:

- Understand which elements of the app worked effectively

- Assess the effectiveness of the tool in developing beginner readers and writers’ attitudes, behaviours and skills as outlined in the theory of change

The Theory of Change (see Figure 1 on page 09) developed as part of Citizen Literacy’s evaluation is based on adult beginner readers’ and writers’ need for an adult-centric phonics app to support their confidence and motivation to engage in learning and skills development. It recognises community learning and development stakeholders and networks as key to facilitating user engagement with the app.

The key consideration for the evaluation was the learner group. The Citizen Literacy team therefore needed to give careful consideration to their choice of evaluation methods given the known literacy challenges and complex needs of adult beginner readers and writers. The team therefore decided to take a **user-centred approach to evaluation**.

Table 1 summarises the methods used in the evaluation.

Undertaking qualitative research with learners was the key challenge of the evaluation. The Citizen Literacy team developed a series of innovative approaches to maximising evaluation engagement. These included:

**Table 1: Citizen Literacy CIC evaluation methods**

#### Process evaluation

In-depth semi structured interviews with 8 learners, teachers and advocates.

Questionnaires (which included capturing learner demographic information) with 6 learners and 19 teachers and advocates

Recordings of project team discussions throughout the project.

#### Outcome evaluation

In-depth semi structured interviews with 8 learners, teachers and advocates.

Questionnaires (which included capturing learner demographic information) with 6 learners and 19 teachers and advocates.

Analysis of management information from 986 learners across three different versions of the app. Data included engagement with the app (measured by number of installs and length of time using it per session and overall)

- **Videos and webcasts** that provided spoken information about the project and evaluation and how to get involved in an accessible format to learners with low literacy levels.

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- **A dedicated single point of contact** who was available on email with a Citizen Literacy address for tutors and advocates to get in touch about the evaluation to arrange interviews. This helped to build trust and provided a bridge between the project team and the tutors/advocates.
  - **Taking a person-centred, flexible approach to fieldwork** to ensure learners felt comfortable discussing highly personal and stigmatized issues. For example, not recording interviews when participants didn't feel comfortable, or flexing the interview questions based on learner circumstances. This was especially important for this cohort of learners who tend to face multiple barriers.
  - **Triangulating qualitative evidence to build a detailed picture of learner experience** by including a greater focus on the tutor and advocate perspective to overcome the challenges of engaging learners.

Alongside these approaches, the evaluation process highlighted that human support – via advocates and tutors – is paramount in the engagement of low level literacy learners in evaluation.

### Capacity building support

Overall, the Citizen Literacy team identified a range of enabling factors that supported them to develop a high-quality evaluation:

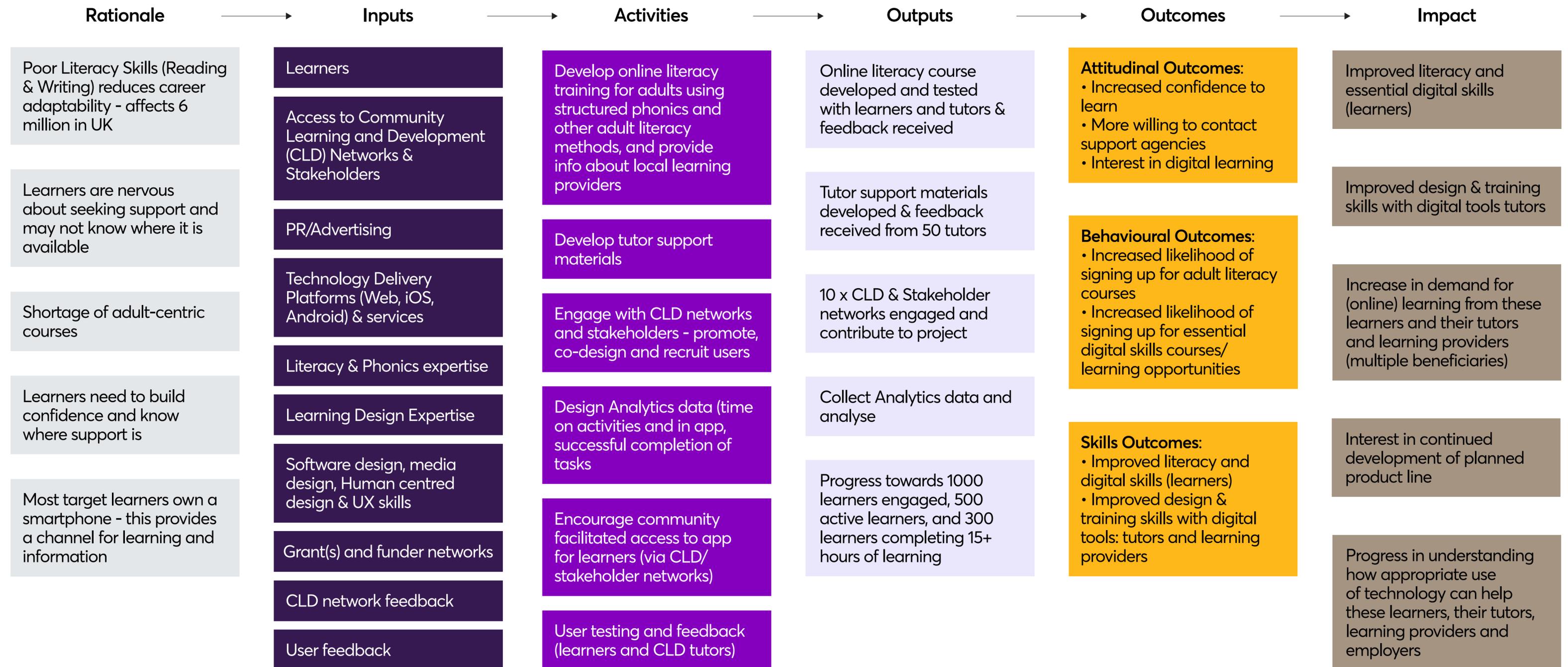
- Developing a Theory of Change – the team felt that this brought structure to the evaluation and provided a framework through which to clearly develop links between the activities they were designing and the outcomes they wanted to achieve. They intend to embed this practice into future projects. The introductory webinar which covered this process, coupled with the written guidance in the Evaluation Toolkit, enabled them to successfully develop their Theory of Change.
- Accessing bespoke and contextualised support – the team found it beneficial to work with an Evaluation Manager who had a background and interest in adult literacy as it enabled more in-depth and creative focus on the evaluation itself. They found the intermediary role that the Evaluation Manager played helpful in supporting their decisions around alternative approaches to evaluation in order to best meet the needs of their learners - for example, advocating not capturing learner demographic information.

- Having regular catch ups – the team felt that this improved accountability and provided structure to their evaluation process.

***“The formality of the capacity building support for example the theory of change was really helpful because they made us stop in our tracks and say what exactly did we think this action was going to create? I found that a great learning curve – the structure that was brought to the evaluation process”***

**CITIZEN LITERACY PROJECT TEAM MEMBER**

Figure 1: Citizen Literacy Theory of Change



# Game Academy

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Using evaluation  
to evidence the  
transferable skills  
of gamers

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## Game Academy

Started in 2019, Game Academy is a new tech venture set on using the power of video games to improve the skills of the workforce of tomorrow. Through funding from the CareerTech Challenge, Game Academy has developed and launched a new online platform for gamers to acquire and transfer employability skills to develop their careers and gain work.

Game Academy aimed to draw on expertise, networks and knowledge within the video game community to support gamers to develop employability skills, align their strengths and talents to work opportunities, consider alternative career routes and be motivated to seek employment, further study or a change in career.

A key feature of the platform is an **embedded diagnostic assessment of learners' motivation and core skills, based on their gaming profile and preferences**. Learners are given a series of motivational 'challenges' and self-discovery 'quests' that link back to the diagnostic assessment. Challenges and quests are focused on 21st century skills, such as decision-making, creativity, goal-setting and introspection, and help users to understand what they are good at and to identify potential future career options.

Other key aspects of the platform include:

- A community forum with a 700-strong community of gamers
- A series of streams on Twitch, the live streaming service
- Talks from senior industry professionals in technology, the creative industries and Armed Forces, who are also gamers and act as professional role models
- A database of jobs and education opportunities
- A series of 'Expansion Packs', that offer employability support featuring personalised career advice supported by a team of professional careers advisors

### Evaluation findings and lessons learned

The evaluation identified a number of positive outcomes for learners, who reported that the blend of semi-automated and semi-live experiences increased their skills, confidence and motivation to seek employment, further study or progress within their careers. Learners also found the sense of gaming camaraderie within the community forum and learning within a community of shared gaming interest to be important in supporting confidence and encouraging their skills development. Learners also

responded positively to the focus on individual learning throughout the challenges and game quests, and found the diagnostic assessments useful in understanding the types of skills they had developed and their value for the labour market.

The CareerTech Challenge has given Game Academy the opportunity to gain further experience of conducting evaluations and they will continue to measure social and emotional outcomes. In particular, they now know that it is possible to measure softer outcomes (such as motivation or confidence), the benefits of doing so and how to do it. They can see the benefits of an iterative and structured 'test and learn' approach, which enables developers to understand aspects of a programme or product that need improving. The experience has also shown Game Academy the importance of investing time in evaluation in order to generate robust and useful results.

Game Academy intends to embed various aspects of the evaluation process into their work. They have continued to use (simplified versions of) the research tools, in order to generate further insights as the programme develops. They emphasise the importance of consistency, and that continuing to use the same tools will enable robust future comparisons. The evaluation has enabled Game Academy to understand the factors that influence learner outcomes, and this knowledge will continue to be

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used in course development. They will also continue to use their theory of change, and are intending to examine the inputs identified in it, to complement the current focus on outputs and outcomes. Finally, Game Academy is already referring to the evaluation and findings when they talk to investors, partners and stakeholders; they consider this to be a real benefit, and will continue to use it in the future.

***“Now we use it when we speak to investors, to partners ... they are surprised how clear we are on what we measure, how we measure it etc.”***

**GAME ACADEMY PROJECT LEAD**

## **Learner case study: Tom**

Tom is in his 40s and lives in Yorkshire. He works as an administrative assistant but was furloughed

at the beginning of the first lockdown. Tom enjoys playing a variety of games, such as Minecraft, Open World, Exploration and story-based games. Tom was studying for a Level 2 qualification at college and is looking for another job. Although he has talked to careers advisors at college, he has not found them to be particularly helpful.

He found Game Academy on Google as he was searching for some materials for his studies. After joining the programme platform, he found that the material was easy to understand and use, with ‘no technical terms’ and ‘exactly what I need after doing 3 to 5 hours of college work.’ Tom has found the programme to be very enjoyable, and considers the main value of it to be the information on different jobs that he could apply for, and realising that there was a demand for his expertise. He has also valued the lines of support and network, whose users share his love of gaming. It opened opportunities to talk about work, his feelings and future goals with other gamers in the same situation.

After participating in the programme, Tom has enrolled on a number of courses. It has also given him the confidence to search for a wider range of jobs, based on the conversations with other learners on the platform.



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***“After joining Game Academy, I enrolled into learning. I’ve taken a few courses on LinkedIn Learning. Also I learned how to edit videos. Proper transition between cuts and effects. Learning self-taught, YouTube, online courses. After [participating]... I obtained my BTEC Level 2 in Business Administration. I also liked to learn how to utilise gaming to build upon the drivers and skills that the quests mention.”***

### Evaluation journey

Prior to this project, Game Academy’s project lead had some previous experience of qualitative and quantitative research and of the evaluation of start-up companies. However, without the support and funding available through the CareerTech Challenge, Game Academy would not have conducted a comprehensive evaluation of the platform.

The theory of change developed as part of Game Academy’s evaluation of the platform (see Figure 2 on page 15) is based on gamers’ familiarity with the functions and experience of gaming platforms. **It considers the online platform as a key mediator for change, leading to a range of improvements in attitudes, behaviours and skills.** In the longer term, it identifies the successful transition of learners into suitable jobs and an increased alignment of gaming and skills development as potential impacts.

The key aims of the evaluation were to:

- Assess the effectiveness of learning, by playing video games to develop learners’ confidence and employability skills through a multi-modal online platform.

- Understand which elements of Game Academy’s online platform worked effectively.

Table 2 summarises the methods used in the evaluation.

***“Without Nesta’s support and funding we wouldn’t have done such a comprehensive evaluation... I was happy that there was an opportunity, there was a need but also that there was a space for it.”***

**GAME ACADEMY PROJECT LEAD**

## Capacity building support

Game Academy found the capacity building support provided by the CareerTech Challenge to be of substantial benefit in facilitating their evaluation. The role of the evaluation manager was considered to be particularly useful, by providing a specific individual who knew the details of the project and evaluation and could give support as required. The Evaluation Toolkit was also considered to be a valuable resource, as it enabled Game Academy to pick and choose identified outcomes measures rather than being expected to identify and research these themselves.

***“The Evaluation Toolkit worked very well because we had a set of tools ready and we could just pick the existing ones, so we didn’t need to do all this research ourselves.”***

GAME ACADEMY PROJECT LEAD

Table 2: Game Academy evaluation methods

### Process evaluation

15 semi-structured learner interviews conducted during product development (May and October) and after launch of the platform (January).

Development of 3 learner case studies

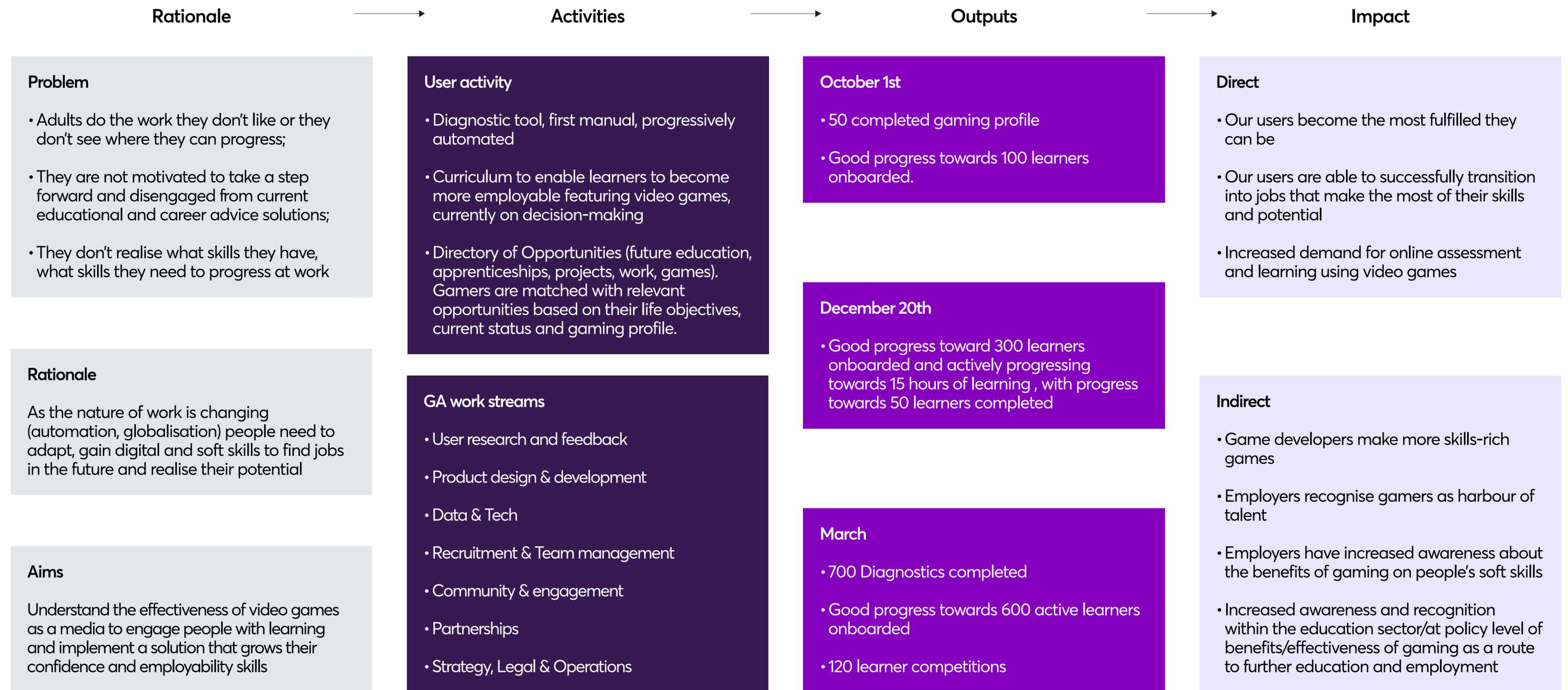
### Outcome evaluation

Pre and post surveys completed by 30 learners. Questions included demographics, job characteristics and outcomes measures from the toolkit.

Analysis of management information from 608 learners across five project phases. Data included sign up and completion rate and website analytics.



Figure 2: Game Academy Theory of Change



# CENTURY

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Harnessing data  
for evaluation

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## CENTURY

CENTURY, a digital technology company, pivoted an existing (schools based) model of learning towards adults as part of the CareerTech Challenge. CENTURY combines artificial intelligence with the latest research in learning science and neuroscience. Learners are provided with a personalised path containing micro-lessons known as 'nuggets', which contain learning materials and assessment questions. The recommended path continuously adapts for each learner based on their learning experience, and is designed to stretch, challenge and support memory retention.

Through funding from the CareerTech Challenge, a number of additional innovative features were added to the platform to address the particular needs of eligible learners, including:

- A self-sign-up mechanism for individual learners to access the platform without provider referral.
- Automatic email notifications to motivate learners by providing engagement and re-engagement prompts.
- An additional learner analytics dashboard with usage and learning score data.

- A completion tracker widget and downloadable certificate on course completion.
- Badges awarded to learners when they complete a certain amount of nuggets and a weekly streak tracking widget.

### Evaluation findings and lessons learned

On average, eligible learners completed more of the course than the average for non-eligible learners. Learners were found to have developed their English and maths skills and had substantially improved performance scores. Members of the eligible cohort were found to learn throughout the day, indicating the need for a platform with flexible access.

CENTURY found the evaluation to be a rewarding process. It provided an opportunity to examine the platform and their user data in much more detail than is normally possible, and to conduct new types of research such as user testing. Overall, CENTURY were not surprised by most of the results, which have reinforced their existing assumptions and hypotheses.

CENTURY considers evaluation and evidence to be highly important when working with partners or stakeholders in the education sector. Assessing the

***“I think we all found the process to be rewarding on a personal level ... you don't often get the chance to stop and take stock of things in that level of detail and set aside time to do that level of analysis.”***

### CENTURY PROJECT LEAD

impact of interventions or approaches can be difficult given the complex mix of factors involved, and this evaluation has given them the opportunity to identify how specific features of their platform can achieve impacts. They intend to continue using research techniques such as user testing in their future work. The in-depth cohort analysis was considered particularly valuable in providing insights for different types and groups of users, and CENTURY are intending to continue to do this type of analysis going forwards.



## Learner case study: Amy

Amy is in her 30s with two young children. She works as a part-time waitress in a café but would like to retrain as a nurse. Amy struggled at school and is currently studying for a Level 2 Functional Skills qualification in maths at her local further education college. Through an existing partnership, CENTURY approached the college to recruit learners for their CareerTech Challenge project. Amy's tutor referred her to the tool, suggesting that it might help her to develop her maths skills. Amy had previously participated in digital learning, and was confident in accessing CENTURY.

Amy used CENTURY for a total of 17 hours over two months, completing 50 learning nuggets. Although she successfully completed most of the nuggets on her first attempt, she found several to be particularly difficult. Amy was able to repeat these nuggets, and did so until she was sure she had understood the material.

Amy liked being able to choose when she could access the tool, enabling her to fit learning around her work, childcare and other studies. She also enjoyed using the dashboard view, which enabled her to reflect on the progress of her learning.

## Evaluation approach

CENTURY has in-house research and data science teams who are experienced in producing evaluations for a range of projects and audiences. They collect a large amount of data on the use of the tool as standard, and regularly track activities and engagements within the platform. However, they have less experience of using surveys to measure the outcomes of interventions or of conducting qualitative research, and do not usually analyse or report on data to the depth required for this evaluation.

As part of their evaluation, CENTURY developed a theory of change (see Figure 3 on page 20). This aligns the skills needs and access requirements of eligible learners with the key features – both new and old – of the CENTURY tool. The theory of change also identifies potential long-term impacts such as increased achievement of functional skills qualifications and improved employment progression.

The key aims of the evaluation were to:

- Assess the effectiveness of user-recruitment and partnership development activities

- Understand the appropriateness and effectiveness of the tool's English and maths content for eligible learners
- Assess the effectiveness of the tool in developing learners' attitudes, behaviours and skills as outlined in the theory of change.

Table 3 summarises the methods used in the evaluation.

### Cohort analysis

CENTURY had a particular focus on the in-depth analysis of user data as part of their evaluation. This included comparisons of different groups of learners, such as by age cohort or by level of platform activity. It was felt that the evaluation gave them both a need and an opportunity to do more complex analysis than they would normally do. One of the main benefits of this approach is to identify what works and what doesn't work for different groups of learners. CENTURY considered this to be particularly important when delivering a free platform to a large number of users from varied backgrounds with very different levels of engagement. It also enabled a more rigorous testing of the project hypotheses and assumptions, allowing them to look at these through different angles and for different groups.

**Table 3: CENTURY evaluation methods**

#### Process evaluation

User testing was conducted throughout the project to identify how the platform could be improved and test new features. In total, 140 individuals took part in user testing, including 14 eligible users of the platform.

A survey of 44 existing (non-eligible) CENTURY learners was conducted to gather feedback on the appropriateness of course content, link to real-world application, accessibility and engagement.

#### Outcome evaluation

Pre and post surveys completed by 70 and 68 learners respectively. Questions included demographics, job characteristics, outcomes measures from the toolkit and assessments of the tool.

Analysis of management information from 515 eligible active learners, including a range of usage and completion data and performance scores. Where possible, scores were compared to CENTURY learners who were not members of the eligible cohort. Data on interaction with platform features was used as a proxy for learning behaviour. Marketing and recruitment data were also analysed.

***“From our perspective it was helpful because we have such a breadth of learner on the platform ... to compare behaviours and things like that, primarily looking for differences obviously, because there are plenty ... By breaking things down a little more, and just comparing you are able to verify that what you're saying makes sense in a way that's quite difficult to do if ... your data is just sort of one mass.”***

**CENTURY PROJECT LEAD**

Figure 3: CENTURY Theory of Change

