

TITLE: THE IMPACT OF CONTEXTUALISING FUNCTIONAL SKILLS MATHS IN EARLY YEARS

Learner and Provider Case Studies



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CONTENTS

INTRODUCTION	2
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LEARNER CASE STUDIES	2
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Learner 1	2
Learner 2	4
Learner 3	5
Learner 4	7

PROVIDER CASE STUDIES	8
------------------------------	----------

Provider 1	8
Provider 2	10
Provider 3	12

INTRODUCTION

This document contains qualitative feedback in the form of case studies from learners and providers that took part in the Apprenticeship Workforce Development Project: The Impact of Contextualising Functional Skills Maths in Early Years by NCFE in partnership with the Greater Manchester Learning Provider Network.

At the end of the project, participants were provided with a short survey to capture their experience of the project and to gain feedback on contextualisation in teaching, learning and assessment.

Learners were asked about their motivations for participating in the project, what they thought of contextualised learning and assessment and their confidence with Functional Skills maths following completion of the project.

Providers were asked about their experience of creating resources using artificial intelligence (AI) and how they found using them for teaching and learning purposes. All 3 providers reported that they would continue to use AI to support their delivery of Functional Skills maths. They were also asked to feedback on the success of contextualisation for teaching and assessment during the project and its impact on learner's experience.

Learner Case Studies

This section includes the questions and responses from 4 learners that took part in the project.

Learner 1

Thank you for participating in our project. We're keen to gather your feedback on your involvement in the project and would like to ask the following questions:

1. Why did you want to participate in this project?

The project is a fantastic opportunity to be involved in change on a national level. Often you find that assessments such as these are not relevant to the service you work in and therefore can cause a huge amount of stress for people who need to take them as they are often taken by people who have long left education. A change to make assessments contextualised is long overdue, so participating in this programme is exciting and I am hopeful it will bring a positive change.

2. The questions within the assessments were designed to find out whether you found it easier to answer maths questions that were relevant to your job or real life, known as contextualised questions, than those that were not relevant. Did you find it easier to answer questions that were relevant to your job?

Yes

a) If yes, why?

I did find it easier to answer questions relevant to my job as it created less anxiety and confusion. Often the scenarios that are given can be hard to grasp. When you are able to relate something to your own life it enables you to have a better understanding of the question, as you can visualise it. Using questions that are relevant also allows that skill to stay embedded as it is applicable to you.

b) If no, why not?

n/a

3. You have also participated in contextualised maths learning during this project. Have you found that the maths lessons involving contextualised learning easier than previous maths lessons?

Yes

a) If yes, why?

Same reason as above.

b) If no, why not?

n/a

4. Have you found the contextualised learning more relevant to your job role?

Yes

a) If yes, why?

Looking at finances and budgeting is something we have to do daily in our job role and so contextualised learning such as this translates to everyday skills that we use.

b) If no, why not?

n/a

5. How has participating in the project helped...

a) develop your understanding of maths?

The project has strengthened my understanding of maths as I am able to retain more because it is relevant to me, whereas previously I could easily forget skills as they were not embedded. Using contextualised content creates a link to that skill or learning.

b) prepare you for assessment?

It has helped me feel more confident, calmer and less anxious to sit assessments as I can focus on the skill rather than struggling with trying to understand the question or scenario posed.

Learner 2

Thank you for participating in our project. We're keen to gather your feedback on your involvement in the project and would like to ask the following questions:

1. Why did you want to participate in this project?

I wanted to gain more experience with maths and have a better understanding of how to answer the questions.

2. The questions within the assessments were designed to find out whether you found it easier to answer maths questions that were relevant to your job or real life, known as contextualised questions, than those that were not relevant. Did you find it easier to answer questions that were relevant to your job?

I did find it easier yes

a) If yes, why?

Having done the other assessments, I found it hard and very confusing on how to answer those types of questions on the assessment.

b) If no, why not?

3. You have also participated in contextualised maths learning during this project. Have you found that the maths lessons involving contextualised learning easier than previous maths lessons?

i found them useful and i learnt more and understood more knowledge

a) If yes, why?

b) If no, why not?

4. Have you found the contextualised learning more relevant to your job role?

yes

a) If yes, why?

The questions related to my job role and i had a more understanding on how to answer them

b) If no, why not?

5. How has participating in the project helped...

Gained more extra knowledge on maths

a) develop your understanding of maths?

yes a little bit

b) prepare you for assessment?

yes

Learner 3

Thank you for participating in our project. We're keen to gather your feedback on your involvement in the project and would like to ask the following questions:

1. Why did you want to participate in this project?

I was eager to participate because math is a fascinating subject with so many applications. I enjoy tackling mathematical problems and exploring concepts, and being involved in a project like this allows me to help solve problems, explain concepts, and support the learning process. Plus, math projects often involve creative problem-solving and critical thinking, which I find really engaging!

2. The questions within the assessments were designed to find out whether you found it easier to answer maths questions that were relevant to your job or real life, known as contextualised questions, than those that were not relevant. Did you find it easier to answer questions that were relevant to your job?

a) If yes, why?

I found it easier to answer contextualized questions related to my job. When math problems are framed within the context of residential care work, they become more relevant and practical. For example, calculating medication dosages, managing schedules, or budgeting for supplies are all real-world tasks I deal with. These contextualized questions allow me to apply mathematical concepts directly to my daily responsibilities, making them more intuitive and meaningful. It helps me see the direct impact of the math on my work, which can simplify problem-solving and enhance understanding.

b) If no, why not?

3. You have also participated in contextualised maths learning during this project. Have you found that the maths lessons involving contextualised learning easier than previous maths lessons?

a) If yes, why?

Yes, I found that contextualized math lessons were easier. When math lessons are tied to real-life scenarios or job-related situations, the problems feel more relevant and practical. This relevance makes it easier to understand and apply mathematical concepts because I can see how they fit into real-world tasks I deal with daily. For instance, if the lesson involves budgeting for supplies or scheduling shifts, it directly relates to my job as a residential care worker. This connection helps me grasp the material more quickly and see its immediate value, making the learning process smoother and more engaging.

b) If no, why not?

4. Have you found the contextualised learning more relevant to your job role?

a) If yes, why?

Yes, I've found contextualized learning more relevant to my job role. The scenarios and problems presented in the lessons are directly related to tasks I perform as a residential care worker, such as managing schedules, calculating medication dosages, or budgeting for supplies. This direct connection makes the math feel more applicable and useful in my everyday work. It helps me see how the mathematical concepts I'm learning can be applied to solve real-world problems, which enhances my understanding and makes the learning experience more practical and valuable.

b) If no, why not?

5. How has participating in the project helped...

a) develop your understanding of maths?

Participating in the project has helped develop my understanding of math by providing practical, real-world contexts in which to apply mathematical concepts. Working through contextualized problems has clarified how abstract concepts can be used in everyday situations, making them more tangible and easier to grasp. The project has also exposed me to new methods and problem-solving strategies, enhancing my overall comprehension and ability to apply math in various scenarios relevant to my job.

b) prepare you for assessment?

The project has prepared me for assessment by allowing me to practice math problems in a format similar to what I might encounter in an actual test. Engaging with contextualized questions has improved my ability to think critically and apply mathematical knowledge under realistic conditions. This experience has helped build my confidence and familiarity with different types of problems, making me better equipped to tackle assessments with a clear understanding of how to approach and solve questions effectively.

Learner 4

Thank you for participating in our project. We're keen to gather your feedback on your involvement in the project and would like to ask the following questions:

1. Why did you want to participate in this project?

To work on my understanding of maths

2. The questions within the assessments were designed to find out whether you found it easier to answer maths questions that were relevant to your job or real life, known as contextualised questions, than those that were not relevant. Did you find it easier to answer questions that were relevant to your job?

Yes

a) If yes, why?

I found them relatable to my work

b) If no, why not?

x

3. You have also participated in contextualised maths learning during this project. Have you found that the maths lessons involving contextualised learning easier than previous maths lessons?

a) If yes, why?

Because I had more of an understanding, and it was relatable.

b) If no, why not?

4. Have you found the contextualised learning more relevant to your job role?

a) If yes, why?

Because I can link it to scenarios that have happened during work that may be useful.

b) If no, why not?

5. How has participating in the project helped...

a) develop your understanding of maths?

It helped me to learn new skills with relevant questions to my job role

b) prepare you for assessment?

I am now going for my functional skills exam and passed my mock

Provider Case Studies

This section includes the questions and responses from 3 providers that took part in the project.

Provider 1

Thank you for participating in the project. We're keen to gather your feedback and views on the assessments and the use of AI and would like to ask the following questions:

1. Why did you want to participate in this project?

Apprentices in Health and Social Care often struggle with traditional academic subjects but are motivated by a passion to improve and build on their knowledge, skills and behaviours in a work-based learning environment. We were interested to see what impact contextualisation made to the learner journey and if there was better engagement with Functional Skills. We had already started to contextualise our materials prior to project start.

2. From a teacher/tutor perspective do you think that the contextualised questions were easier to answer than the non-contextualised questions?

I am unsure if the questions were easier to answer but contextualised questions are more relevant to chosen apprenticeship. They help apprentice and employer better understand why apprentices should develop their skills in English and maths which is a real barrier in our sector.

3. Did your learners perform better or worse than you expected on the...

a) Baseline Assessment – why do you think they performed as they did?

Learners selected had varying skill levels across the topics, some that have been receiving support to achieve the maths level 2 still struggled and one had explained she still had issues with the contextualised topics.

b) Final Assessment - why do you think they performed as they did?

Had completed some further GLH through resources issued to them to work on the specific areas, also the use of the YouTube resources. Which did see limited improvement, but I feel more time would have benefited through more GLH and time for structured learning.

4. How did the use of AI support the development of contextualised teaching resources for your maths lessons?

Not fully, we have just started to use the AI support with some Chat GPT questions, prior to the introduction of the Teachermatic licence. We still need to get to grips with this side of it and how to make best use of this with the team. We found you need to be very precise in the words used to generate the types of questions we require. We did like the use of Teachermatic as our recorded YouTube teaching sessions could be used to create questions/worksheets for

learners, but again time consuming to get it to generate the write type of resource.

5. Will you continue to use AI platforms to support your delivery of maths after the project?

Yes

a) If yes, why?

Would need more time to finesse them to meet our requirements for our level of learners. Would like to see if these can be more tailored to suit the needs of the learner to their workplace roles. Think the licence will help with this.

b) If no, why not?

6. With respect to your delivery of contextualised maths in lessons....

a) How did your learners respond to these lessons as opposed to previous maths lessons?

Better engagement. Learners also appeared more motivated as involved in a project.

b) How did the lessons prepare them for the project final assessment?

Apprentices were more engaged with learning. Better attendance than a non-contextualised session. Apprentices were eager to complete the contextualised questions.

7. How has project participation impacted on each learner overall functional skills maths learning?

Apprentices embraced Maths and were able to understand why the development of these skills are important to their life skills, especially in their sector. How the development of those skills links into the workplace and into their general lives.

Provider 2

Thank you for participating in the project. We're keen to gather your feedback and views on the assessments and the use of AI and would like to ask the following questions:

1. Why did you want to participate in this project?

Maths is a major barrier for learners in achieving their apprenticeship and one of the key factors for early years apprentices not entering EPA and completing apprenticeship impacting on QAR data

Through exploring a contextualised approach, we were interested in finding out if learners would be able to develop their confidence in maths if the questions were more relatable to their job role thus increasing confidence, first time pass rates

2. From a teacher/tutor perspective do you think that the contextualised questions were easier to answer than the non-contextualised questions?

Having spoken to the tutors involved in the project, they found that the contextualised questions were, in the main, easier to answer as they were more relatable, learners were able to picture some of the scenarios which helped them to understand what was expected of them.

3. Did your learners perform better or worse than you expected on the...

a) Baseline Assessment – why do you think they performed as they did?

The results of this assessment were as expected, the learners had not looked at contextualised examples in the past and those who had already commented that they struggle with maths found the assessment difficult.

b) Final Assessment - why do you think they performed as they did?

Worse, based on some of the comments from tutors around the benefits of contextualised sessions we thought that there would have been big improvements in the final results. This may have been due to the short amount of time for the project, had this run over several months then results may have been better. Understanding the questions, even those that were contextualised, may also have been an issue.

4. How did the use of AI support the development of contextualised teaching resources for your maths lessons?

Using AI gave us ideas around how to contextualise the different topics and prepare tasks for the learners to complete that they were able to relate to.

5. Will you continue to use AI platforms to support your delivery of maths after the project?

Yes, we have been exploring the Teachermatic platform and found this useful for all aspects of the apprenticeship.

a) If yes, why?

Using AI helps to save time as there can be some good ideas suggested which can then be tweaked to support the sessions. Teachermatic in particular allows for differentiation to support learners with differing needs.

b) If no, why not?

6. With respect to your delivery of contextualised maths in lessons....

a) How did your learners respond to these lessons as opposed to previous maths lessons?

learners responded positively, commenting on how, by being able to visualise the scenarios, this gave them more confidence in completing the tasks set.

b) How did the lessons prepare them for the project final assessment?

As there were still non-contextualised questions, learners did still struggle to answer these. There were also some that learners felt they still couldn't relate to the scenarios. Again, this may have been down to the length of the project, more time spent over a period of months would, we feel, have better prepared them.

7. How has project participation impacted on each learner overall functional skills maths learning?

With regards to the delivery, this has had a positive impact on the learners, one commenting on how the contextualised resources helped them to develop their confidence in maths, an initial barrier being that they were unable to understand the context of the questions. Having that understanding then enabled them to work through the questions, supported by their tutor who commented that it was really important to consider the well-being of the learners and how this can only benefit from increased confidence by removing the maths anxiety

Provider 3

Thank you for participating in the project. We're keen to gather your feedback and views on the assessments and the use of AI and would like to ask the following questions:

1. Why did you want to participate in this project?

[Provider 3] was eager to participate in the AWD EY research project because of the significant importance it holds in showcasing the value of contextualised resources and assessment papers for maths in apprenticeships. By integrating real-world applications and job-related scenarios into the learning process, apprentices have experienced a more meaningful and engaging approach to maths. This relevance to everyday life and their specific job roles has not only improved their learning experience but has also driven increased engagement and enthusiasm for the subject. The project's quantifiable research results demonstrate a clear, positive impact on apprentices' progress, providing compelling evidence that can be shared with key external stakeholders to emphasise the benefits and success of this approach in shaping the future of maths education in apprenticeships.

2. From a teacher/tutor perspective do you think that the contextualised questions were easier to answer than the non-contextualised questions?

The tutors expressed a clear preference for contextualised questions over non-contextualised ones because they found them to be more relatable and engaging for apprentices. These resources could be tailored to the apprentices' specific settings, making the learning experience more relevant and applicable to their everyday roles.

3. Did your learners perform better or worse than you expected on the...

a) Baseline Assessment – why do you think they performed as they did?

The apprentices performed worse in the baseline assessments as they struggled to extract the 'English' from the questions, which made understanding the tasks more difficult. Additionally, the assessment lacked 'easier' questions to help them settle in, feeling more like a formal exam rather than an initial, supportive assessment.

b) Final Assessment - why do you think they performed as they did?

The apprentices performed better in their final assessments due to the additional context provided in the question language, which allowed them to relate the content to their own experiences. This made them more confident and positive about both maths and the exam process, leading to improved outcomes.

4. How did the use of AI support the development of contextualised teaching resources for your maths lessons?

We utilised AI to generate resources, which provided a variety of methods for

solving problems. These alternative approaches were particularly useful, offering apprentices different perspectives on how to work through mathematical challenges and enhancing their overall understanding.

5. Will you continue to use AI platforms to support your delivery of maths after the project?

a) If yes, why?

We plan to continue using AI for maths resources and have already incorporated it into our Functional Skills strategic plan. While the AI occasionally provided incorrect answers, it consistently offered valuable examples and ideas, helping tutors introduce new perspectives and increase the complexity of tasks to challenge apprentices effectively.

b) If no, why not?

N/A

6. With respect to your delivery of contextualised maths in lessons....

a) How did your learners respond to these lessons as opposed to previous maths lessons?

Learners responded positively to the contextualised teaching and resources, finding them more relatable and engaging. The intense delivery model, driven by the project's tight timescales, also contributed to their increased focus and motivation, resulting in a more positive attitude towards their learning experience.

b) How did the lessons prepare them for the project final assessment?

The contextualised teaching and resources effectively prepared learners for the final assessment by presenting a simplified and more relatable approach. This made the material easier to understand and apply, boosting their confidence and performance in the exams.

7. How has project participation impacted on each learner overall functional skills maths learning?

Participation in the project has been highly beneficial from a learner's perspective, with six out of the nine participants now ready to sit their actual exams ahead of the original schedule. This accelerated progress reflects the effectiveness of the tailored approach and the learners' increased confidence in their skills.

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