EDUCATION & TRAINING FOUNDATION

SHAPING SUCCESS ACTION RESEARCH PROJECTS

FINAL REPORT ON THE SHAPING SUCCESS AR PROJECT – A FLIPPED APPROACH TO ENGAGING, SUPPORTING AND BUILDING CONFIDENCE

The Sheffield College

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For further information regarding the Shaping Success Action Research programme and this project go to https://ccpathways.co.uk/practitioner-research/otla-7/.

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Final report - A flipped approach to engaging, supporting and building confidence

The Sheffield College

This project set out to investigate if a more nuanced approach to undertaking weekly electronic diagnostic assessments prior to attendance at a weekly GCSE Mathematics Resit class improved learner motivation, confidence, and their learning experience.

Summary

The aim of the project was to identify if the use of technology as a key aspect of the delivery was beneficial to the students and the tutors.

In response to the COVID-19 pandemic and to ensure our new and existing students were able to access high quality learning, the college made three early decisions, namely:

- All student facing virtual learning environments would be hosted on the Google Classroom platform.
- To go 'all in' GCSE to replace the previous Functional Skills/ GCSE mixed model for study programme students.
- Develop a virtual classroom that could be accessed by all GCSE students. This has been a primary delivery tool for the whole of the academic year.

The project had a focus on diagnostic assessment. We sought to determine if using a flipped learning approach, releasing several parts of the session prior to the face-to-face session, would have an impact on the learner experience, confidence or motivation.

The key driver was to work on areas for improvement in maths rather than repeat work students can already do. Feedback on this approach was largely positive with students engaging with the materials and approach.

Rationale

The Sheffield College is a large general FE college. We have a wide student base recruiting from a wide multicultural demographic and age range across the Sheffield City Region. Operating across multiple campuses, our cohort spans all types of provision.

The skills and knowledge required to be successful and attain a Grade 4 or above at GCSE maths are interlaced throughout Key Stages 3 and 4. Nevertheless, the majority of students who enrol at the college have not yet achieved a Grade 4 and the proportion who achieve a Grade 4 remains below the national average for post-16 resits.

The project initially set out to investigate if adapting delivery would improve the learners' self-belief, confidence, and resilience around approaching mathematics. The original project aims were adapted, responding to changes in the delivery model necessary to ensure staff and student safety during the waves in the COVID-19 pandemic.

To scale our ambition to the available time, we narrowed our scope to focus on diagnostic assessment to determine if changes to the delivery had an impact on the learner experience. We worked within the framework of a virtual classroom using a flipped learning approach, releasing several parts of the session prior to the face-to-face session in the expectation students will attempt them before attending the online meeting. We explored whether some simple changes to the diagnostic assessment had any notable impacts on the learner experience, confidence or motivation. We selected the weekly diagnostic assessment, as this was the component that we felt potentially gave the biggest return on investment for both staff and students. The key driver in the revision approach is to work on areas for improvement rather than repeat work students can already do.

The delivery model was based on a second iteration scheme of work, specifically targeted at a resit cohort, modelled on the 'Focused 15' developed by Grimsby Institute (ETF, 2020). The scheme addressed the 15 topics that account for 85% of the available marks at foundation level. Gaining mastery of just these 15 topics improves students' confidence and this is also reflected in improvements in high grade achievements. In an ideal world, we would have endeavoured to revise all of the learning objectives within the syllabus to build deeper maths competence. From a purely pragmatic stance, as time was limited, we needed to find an approach that built confidence, and hence exams success, within the already busy study programme.

Approach

An early cross-college decision was made to adopt Google Classroom as the delivery platform for all learner-facing delivery including the main vocational programme, tutorial, GCSE English Language and GCSE mathematics. Working on a single platform enabled effective upskilling to be undertaken efficiently by our central e-learning team. This also supported teachers new to the platform and created a lot of informal peer support as we were 'all in it together'.

We responded to this new delivery model with a whole team review of the sequencing efficacy of the existing scheme of work. A refreshed scheme of work was agreed that scheduled the topics in a progressive sequence, building on the skills required to improve mastery of the top 15 topics in an interleaved approach. Interleaving is the strategic revisiting of previously-learned topics as, for example, part of a quick starter activity to ensure students maintain and consolidate skills required to build mastery.

The virtual classroom was designed to have a common 5-step structure, this is detailed in Appendix 2 and explains how Hegarty Maths (https://hegartymaths.com), a self-access maths learning website, was incorporated into the learning.

Google Forms were used to produce weekly diagnostic and end-of-session mini exams because:

- They can be used to produce self-marking assessments.
- They provide immediate feedback on the topic.
- They provide 1-click hyperlinks links to the relevant topics in Hegarty Maths.

Due to the short length of the project, we elected to restrict the action research to concentrate our efforts on adapting one facet of the approach, we chose Step 2, the weekly topic-based diagnostic.

The approach was implemented and, as a baseline, learner voice was captured from a small cohort including both study programme learners and post-19 learners just before Christmas 2020 (see Appendix 3).

From the pilot group initial feedback suggested:

- The students were all familiar with the concept of independent learning although they all acknowledged that they would not describe themselves as independent learners.
- The sample group were all previously taught in a relatively traditional 'chalk and talk' style but they could see the value of a flipped learning approach.
- The use of learning technology and the weekly diagnostic was fairly well received, as was the use of Hegarty Maths.

Asked how receiving a low score in the diagnostic test motivated them, learners commented:

> *"Personally I think oh my god. But then when I join the meet. I think I can achieve this."*
>
> *"Yeah it does a lot - I know I can do it - why have I got 2 out of 10. I need someone to remind me."*
>
> *"Sometimes it affects motivation- I thought i knew this but I don't - then you follow the link. The mini exam you get is more correct so its motivating."*
>
> *"Sometimes I get it and it's a bit demotivating."*

The research team reflected on the feedback and, given the additional pressure of a third national lockdown, decided to focus on one small change; to adapt the weekly diagnostic assessment, introducing hinge questions (Cambridge Mathematics, 2020) early in the assessment that adapted the assessment in line with individual learner responses. The rationale behind this was a tutor's belief, partially supported by some learner voices, that the constant low scores would be a demotivator to some of the learners, especially those who were perhaps working at Grade 2 or lower.

Following this intervention, which was undertaken on a pilot cohort, student voice was used to harvest feedback around the impact and effectiveness of the change on learner confidence or response (Appendix 6).

Whilst students do not like a low mark, they are far more resilient than we perhaps imagine and can see beyond the simple score.

> *"If I get the low mark I am frustrated - reminds me all the things I have forgotten."*
>
> *"I think it's important to get things wrong early on so that you can work on it and get better at the things you are unsure about. Constructive criticism is really important for us all to improve. You would be happier to see a better score but if those questions are not challenging you is there any point?"*
>
> *"By doing things wrong you will learn how to do it right , it does affect my confidence but soon I practice and I get it right my confidence gets higher than it was."*
>
> *"I was partly confident in the beginning, but I am fully confident now. I did crap in my English and maths (at school)."*

Professional learning: Evidence of changes in teaching, learning and assessment practices

An important aspect of the research was the promotion of practitioner-led action research. Each faculty has an allocated half-day slot dedicated primarily to staff development. Individual staff training targets are, in the main, practitioner-led. When the project was initiated, it was planned to have a more limited initial reach, extending as the year progressed. However, the development of the pandemic meant that the wider roll-out was slower than had been planned. We still intend to use the knowledge acquired during the project to drive further improvement of the curriculum.

Buy-in from the faculty teaching team and the maths tutors from the vocational faculties has been largely very positive; staff were keen to adopt the use of Google Classroom. This was due to several reasons:

- Team ownership.
- The materials were prepared by the team for the team. This reduced the pressure of reviewing aspects of the syllabus at the same time as producing materials. We used a 'divide and conquer' approach to quickly producing quality resources.
- Being developed by teams, the materials were more consistent and were quality-assured.
- The vocational maths team were able to use materials prepared for them, allowing them to focus on understanding the syllabus.

All materials were populated on a central classroom that will be refreshed annually and cascaded. Teachers made copies for each class they teach, thus allowing for personalisation to meet the needs of the individual classes. Materials and links were added to the college's GCSE Maths Google site which links both internally and externally.

We implemented the 5-step process across all classes, which offered a structured approach to the delivery of a resit model.

There were some challenges:

- Digital access was a challenge for some of the learners where the household may only have one internet-enabled device.
- Our vocational tutors reported they found the 5 steps quite challenging to implement with groups that were predominately students with a GCSE entry grade of Grade 1 and 2. They tackled this by flipping some of the student directed activity back to a more teacher-led delivery.
- Completion of the pre-class steps was inconsistent across groups, with study programme learners less invested in the approach than post-19 learners.
- The initial intention of using the flipped approach to engage and support learners to build confidence was only partially successful, but the project was valuable in helping us refine our thinking and approach to ongoing improvement.

Future development:

- We will introduce flexibility with oversight to allow teachers to adapt how materials are used within the session, whilst maintaining the 5 step approach. This will be essential in our planning as further future Covid-19 waves may necessitate a need to quickly switch to partial or fully remote delivery.
- We will review the induction to ensure that the value around completion of diagnostic assessments is positively framed and regularly reinforced so that it becomes a habit. Whilst staff noted that the completion of the weekly diagnostic before class had proved to be a challenge, especially with study programme groups, the additional planning data it can reveal makes it a worthwhile investment for staff and students. We will therefore give tutors the flexibility to decide how and where they undertake the weekly diagnostic.
- We need to be mindful that flipped learning is still a new concept to many of our learners (and in some cases, staff). Change can cause anxiety; habits need to be formed. A positive sell and teacher enthusiasm and affirmation of the value of the approach are key success factors.

Evidence of improved collaboration and changes in organisational practices

The project realised a number of positives, including:

- The opportunity for staff across faculties to collaborate.
- 'Task and finish' groups were able to produce many quality resources very quickly (see Appendix 2).
- The vocational faculty maths staff were keen to contribute and they will be part of the groups that review and refresh the classroom materials.
- Some staff have also adapted extremely well to the use of technology as a part of their delivery. Attendance and weekly assessment completion data supports the observation that the students in these classes have enjoyed the sessions and participated more. The opposite has been observed in some cases, where tutors have tried to deliver in their usual approach in the pandemic world.
- We continue to share best practice across the team, in team and cross-college CPD sessions and teach meets. In our first meet, two of the maths tutors shared how they utilised Pear Deck as an add on to Google Slides and how they use this to make the Google Meets more interactive. (Some screen shots of this are detailed in Appendix 2.)

Evidence of improvement in learners' achievements, retention and progression

Interviews with learners and staff have been a rich data source. The challenge was to identify the 'diamonds' and 'golden threads'.

Initial learner voice (Appendix 3) suggested that:

- Many students understood the concept of independent learning and the value of undertaking the weekly diagnostic assessment.
- The motivated students were prepared to do more out of class but this was less apparent with the lower level learners.
- Analysing the marks from the diagnostic compared to the end of session 'mini exams' demonstrated that in the majority of learners had an improved grade. Where the marks did not improve greatly, students did comment that it had helped.

Learning from this project

The creation of a virtual classroom was a good return on the time invested. It provided useful data for the teacher and it enabled the students to continue their learning.

The use of an online weekly diagnostic provided useful information but this was limited by the students who did not undertake the work. There were a number of reasons given by learners as to why this was, some of these were logistical around available time and others were more attitudinal.

Staff observation as they administered the modified intervention (Appendix 4) identified that:

- Most learners did not notice a difference with the adapted diagnostic.
- Learners wanted parity in the number of questions.
- Some learners who were asked fewer questions wanted the chance to have a go at the more challenging questions.

Learner voice captured to assess the effectiveness of the introduction of a branched diagnostic (Appendix 6) revealed:

- Some learners did not notice any difference or felt it was no more helpful than the original diagnostic:

> *"I don't mind getting things wrong. This is what you need to come to terms with in life. I know I struggle. I underestimate what I will get. So I'm not disappointed.*
>
> *It's how you look at things. You have to try, you have to push."*
>
> *"Personally I did not find it good - I like the fact the answers referred to Hegarty. I prefer the other system. The new system - the feedback - they can't find many of the questions - gaps in the feedback" (with less questions less feedback?)*

- Some learners commented that they were frustrated with a low mark, others were less bothered. The student mindset around the topic appeared to have more bearing.

Whilst the continued use of a diagnostic activity has clear value, we will revisit how and when it is undertaken but we will continue to use it as it provides the learner and the teacher with valuable information about their starting point on a topic. When combined with an end-of-session mini exam using the same format, it can also provide a useful measure of distance travelled in a session.

The response to the 'mark' from the diagnostic varied due to a number of factors:

- How the diagnostic had been pitched to the class by the teacher.
- The learners' programme: Study Programme learners were less likely to complete this work before class.
- Some learners saw low scores as a bad thing, others as an opportunity: Student mindset had a significant influence.

The use of an adaptive or branched diagnostic was seen as more beneficial by study programme learners: Although some felt strongly that they should be allowed to try the more difficult questions, parity between them was important to them. The use of the weekly quantitative totals in pure isolation offered no benefit to the individual teacher but may impact on student motivation positively or negatively, depending how the diagnostic has been presented and sold to the students.

As a result of learning from this research, GCSE maths will continue to be timetabled to a 3-hour slot. However, in future we will need to give the faculties and tutors options to flex how the sessions are delivered. This will encourage teachers to build in time for small group interventions and one-to-one support, as we believe that flexibility supports creativity.

We will also encourage tutors to use the diagnostic feedback to inform session planning and use end-of-session mini tests to enable learners to monitor their own progress and set personal targets. The action research group discussed the fact that the way the rationale, purpose and the importance of the diagnostic is pitched has a big impact.

In future, we will improve the content and delivery of the induction, which is critical to start the new classes off. Renewed teacher buy-in and enthusiasm will be required to ensure that the diagnostics become part of the weekly routine for all parties. The positive benefits of the activity need to be clearly explained to the cohorts in the induction and also reinforced on a regular basis. Learning walks and learner voice will help to ensure that this is working and is being approached consistently across classes.

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Cambridge Mathematics (2020). *Crafting Questions*. [online] Available at: https://www.cambridgemaths.org/blogs/crafting-questions/ [Accessed: 21 May 2021].

ETF (2020). '*CfEM blog: the 'Focused 15' at Grimsby Institute*'. [online] Available at: https://www.et-foundation.co.uk/cfem/cfem-blog-the-focussed-15-at-grimsby-college/ [Accessed: 21 May 2021].

Appendix 1 – The project team

Project Role	Name	Job Role
Project Lead	Neil Carruthers	Head of Academy
Deputy Lead	Adam Clark	Curriculum Team Leader
Project team	Phil Wymer	Head of Student Experience
	Graham Wroe	Tutor
	Eleanor Garvie	Tutor
	Andrea Rason	Tutor
	Diana Ward	Tutor
Project Mentor	Lynne Taylerson (ccConsultancy)	
Research Group Lead	Gail Lydon (ccConsultancy)	

Appendix 2 – The 5-step delivery model

In order to provide a consistent approach and therefore ensure quality, the delivery model was created to give a common framework that would run in parallel to the approach taken in GCSE English Language. This was done so that learners were able to quickly understand and buy into the approach.

This was achieved by adopting a common virtual classroom, in our case, Google, ensuring that all staff had the necessary skills and confidence to work remotely. We provided all teachers with a Go Mobile kit which was a good quality laptop, screen, keyboard, mouse and case so that they could deliver high quality lessons from the college and from their home.

The key focus of our staff summer development was the upskilling all staff in the use of the Google Classroom suite with sessions running on how to use Google Docs, Sheets, Slides, Forms, Meet, Jamboard, Chat and a wide range of other compatible products including Equatio, Pear Deck, Whiteboard Fi and Maths Bot. All sessions were run multiple times and in addition were recorded so that all staff could revisit the materials.

'Task and finish groups' then revised and amended materials we had set up and we produced a master Google Classroom which was the pooled experience of the whole Academy and which was then subsequently shared. The Google Classroom was also supported by a Google site which has all the Google Classroom materials on it as well as a plethora of additional material.

In addition, the college also reinvested in Hegarty Maths as a central platform for the development of maths. This was set up with a common weekly 5 step approach to sessions.

Steps 1 to 4 were to be sent to students the week before the session so that they had the opportunity to work through the materials on their own before attending the week's on line workshop which was hosted in Google meet. It was anticipated that Step 1 to 4 would take most learners around 2 hours. Groups were then able to be divided into 45 minute groups which could be then be timetabled in 4 groups per class thus allowing students to have a better level of conversation and interaction with their tutor.

Step 1: Video introduction to the weekly topic

These were produced by the team using either a video or a narrated overlay to a presentation. The introduction explained the topics to be covered in the week, how this linked to the overall scheme of work and what skills were required to achieve the different grades. These were planned at around 3 to 5 minutes duration.

Step 2: Weekly diagnostic assessment

The diagnostic assessment is a key step in the approach. The diagnostics were planned to assess the skills required to be successful with the topic and each

question was written to address specific skills. Using Google Forms enabled us to provide automatic feedback produced for any learner response that did not match the "answer" given. We spent a considerable amount of time adding as any variations of the correct "answers" as we could identify. Where learners did not trigger the correct solution, the Google Form enabled us to provide some general feedback and to provide hyperlinks links which we linked to the appropriate videos on Hegarty Maths.

Hegarty Maths (www.hegartymaths.com) is a web-hosted interactive platform that utilises narrated videos and self-marking formative assessments. The platform has clear linkages between over 800 videos with quizzes that cover the full GCSE syllabus.

The expectation was that learners would attempt to work through the topics using the materials and online assessments focusing on the specific aspects that had been identified from the diagnostic.

Step 3: Starter activity

This was designed as an electronic starter to revisit some of the core skills such as rounding and estimation that did not justify a full week of study. These were a variety of activities such as links to Just Maths, quizzes and other interactive activities. We had much debate as to the position of this activity in the delivery order and many tutors supplemented these with additional starters in the Google Meet.

Step 4: Additional activity and materials to illustrate key learning points and stimulate discussion for a weekly Google Meet (Step 4A)

The purpose of these materials was to give students some directed materials to work through that would identify and expand on specific aspects of the topic being covered. The purpose of the activity was to allow students to consolidate some of the knowledge and learning from the Hegarty Maths clips and work through some activities to develop their skills on the weekly topic.

The tutors had the freedom here to add additional materials and activities to this stage and personalise it to meet the needs and interests of the cohort.

Step 4A: A virtual workshop hosted in Google Meet

The hope was that the 4 steps above would enable learners to revisit topics they had previously studied and come to the workshop with questions or concerns. It was also envisaged that the tutor could use the Google Meet to explore any persistent errors and misconceptions identified from an analysis of the diagnostic results for the group. This was another compelling reason why the materials were published in the classroom in advance.

As the replacement for face-to-face learning facilitation, it was hoped that tutors would work to make the workshop as lively and interactive as possible and utilise applications such as Google Slides, Pear Deck, Jamboard, Whiteboard Fi or Maths Bot to give the session some pace and variety.

Tutors had the freedom to set additional work. Hegarty Maths was available to all staff as an online self-marking platform. Tutors were encouraged to use this.

Over the period Sept 2020 to the start of May 2021, students answered 603,244 skills-based questions on the platform, a 40% increase compared to the same point last year. The number of correct responses has remained around 85% which we take as wholly positive given the disruption to learners' study and wider lives caused by the pandemic and the move to online learning.

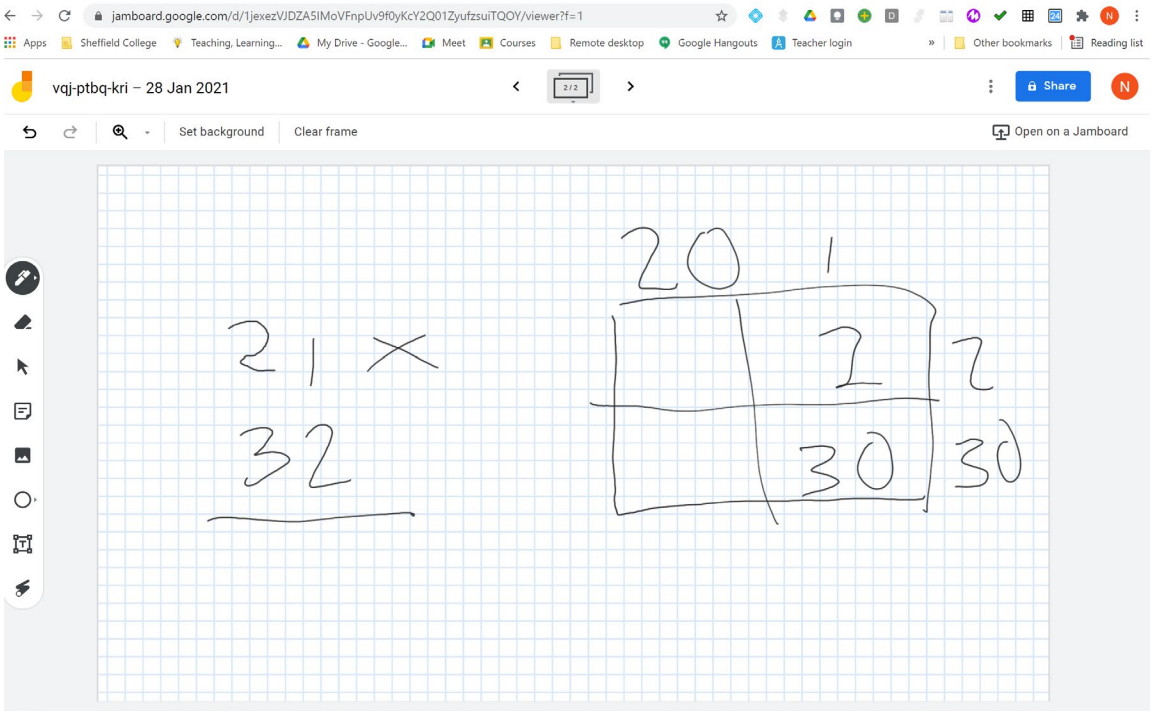
Step 5: An end-of-session mini exam

This was released to the students after they attended the Google Meet. Based on a separate Google Form, the intention of this stage was to enable learners to check their understanding of the topic from the score and feedback, give them an indication of distance travelled in the topic and also to suggest next steps and further signposting. The mini exam covered from Grade 1 through to stretch questions pitched at Grade 5.

Use of Technology

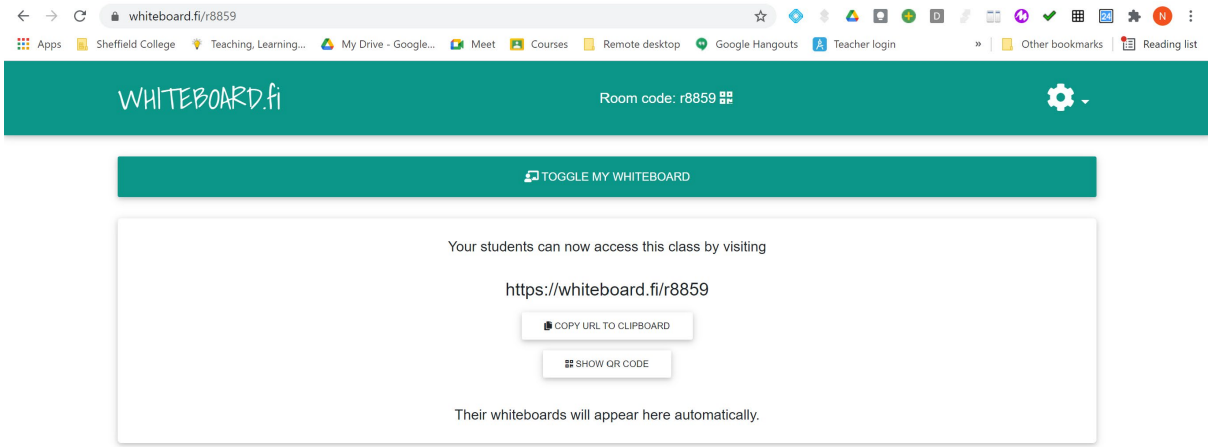
- Google Classroom was the primary learning environment.
- A master Google Classroom was set up and populated by all the task and finish groups.
- Extensive use was made of Google Forms as a self-marking activity that directed back to additional web links and links to external platforms such as Hegartymaths.com
- A number of ed-tech packages were used in the classroom, including:

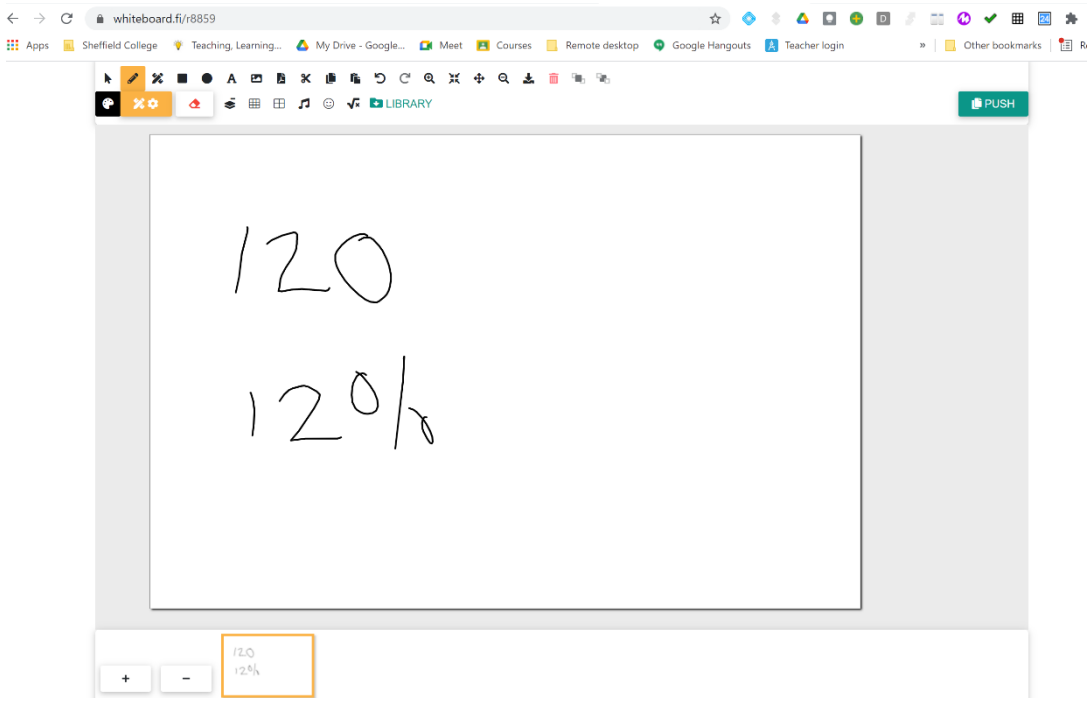
Google Jamboard (Https:/jamboard.google.com)



This is a free package as part of the Google for education platform.

Whiteboard FI





This was useful for teachers as each student works on their own board which the teacher can view all students boards on one screen en masse and share with individuals and groups. There is also a teacher option to push boards to individuals and groups.

The entry level package is free to users. Paid versions add additional functionality.

A demonstration on Whiteboard Fi can be seen on YouTube:

https://www.youtube.com/watch?v=_JtRxnVJdN0

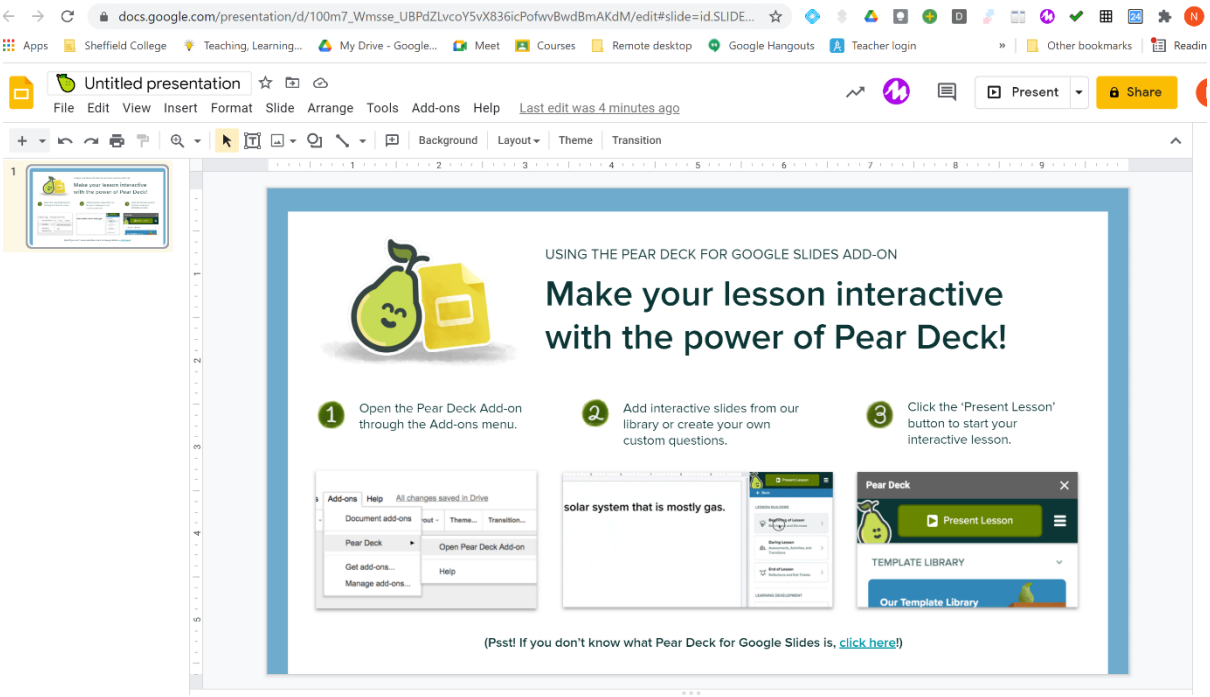
Pear Deck

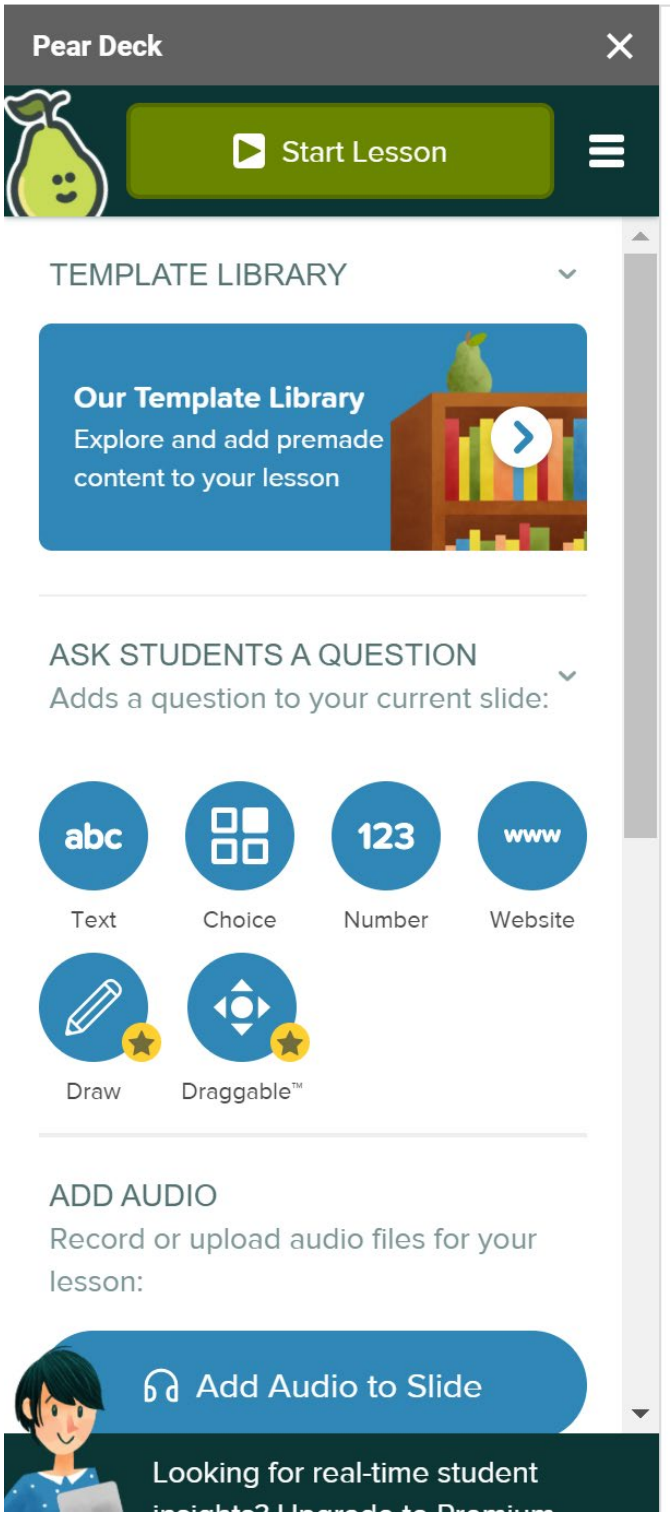
The Pear Deck app runs on top of the Google Slides as an overlay and adds additional activity to google slides. This is also a free entry level package and is similar in functionality to Nearpod, but staff have commented that it is quicker to adapt Google slides than to generate additional presentations.

The paid version has additional functionality and gives the teacher more feedback around individual performance.

Pear Deck Demo on YouTube:

https://www.youtube.com/watch?v=hG6qDUheKOU&t=104s




Pear Deck
Start Lesson
TEMPLATE LIBRARY
Our Template Library
Explore and add premade content to your lesson
ASK STUDENTS A QUESTION
Adds a question to your current slide:
abc
Text
Choice
123
Number
www
Website
Draw
Draggable™
ADD AUDIO
Record or upload audio files for your lesson:
Add Audio to Slide
Looking for real-time student

Appendix 3 – OTLA survey 1: initial learner voice before intervention

We wanted to gather learner voice in as objective a manner as possible. In order to ensure we collected some meaningful data, we asked our Head of Student Experience to undertake the interviews. We did this to try and eliminate any unconscious bias from either the learner or the interviewer. We also elected to interview learners on a one-to-one basis again to reduce any influence between the students and we did not share their feedback to them. As this was quite time consuming, we kept the number of learners low.

We pre-selected the questions to ensure that we had some structure and consistency to the process and which we hoped would give us some rich qualitative evidence.

Learners were selected from separate cohorts to ensure that we captured the views of study programme and adult learners of both genders. Four learners were selected from cohorts where the intervention was potentially going to be used.

The interviews were undertaken between October half term and December 2020 in order to give all of the learners time to settle into the new delivery model. This meant that they could get used to their teacher and the new materials and ensure they were confident in the use of the Google platform and the other technologies that we were using for delivery.

This was a revealing survey.

- Learners understood the concept of independent learning and all acknowledged that they would not describe themselves as independent learners
- They were all previously taught in a relatively traditional chalk and talk approach.
- The flipped learning approach was seen as a good way forward.
- The diagnostic was fairly well received, as was the use of Hegarty Maths.
- Feedback to learners was inconsistent.
- Mindset and approach was also seen as important.
- The 1:1 was greatly valued.

Past experience and approaches (School experience)

1. What is meant by an Independent learner?

Someone who is learning without support, able to find things online.

When you do your own work by yourself

Independently learning in your own time, revising in your own time, makesure you learn afterwards so you don't miss key things

You can do it by yourself- not need as much help

2. To what extent do you feel you were an independent learner? Maths specifically

I am quite independent to be honest. If I know I need to achieve I need support. I can get on with it.

When I came from school- I was eager, school was so stressful- more opportunities to study, more choice at college.

Last year not really- I used Heragrty- it's much more structured this year, We were a Dear in headlights. We missed 2 months of maths. Head of course could not find a teacher etc. Last year it was on Hegarty.

I was not an independent learner.

3. How was maths taught in your school? What did you feel about maths in school?

In school- more supportive in the sense- full on you don't get that support- you have to be independent- more work to do. Less going on in school- jobs etc at college.

In school it was just subjects and topics, in class, nothing online, homework on paper.

Traditional classroom- in class whiteboard no hegary etc. I never went away and revised.

In class- homework we had Hegarty but I don't use it. I didn't do my homework.

Maths at school- face to face in lessons I was good- I struggled in exams. I'm better with assignments. I didn't pass my maths. It's my third year. I'm not an exam person. I do like maths but I find it hard. I can see it's important. I like maths it's just not for me. I keep trying.

In school I was not good, it was very stressful. I did not do well.

In school I liked maths, but because some topics were hard. So I was a bit ignorant and got distracted- that was the mindset I was in. I now know I can. Negative view of it. Distracted and doesn't appreciate importance.

It was one of the better subjects- it feeld good to solve problems.

4. In school were you made aware of the skills you need to develop?

Skills- It was used. They were on to you. They were motivating. I don't recall

In school it was 'do it and learn it'- no skills explained.

Skills: not really.

They did but not in detail- a general arera

5. How did you revise in school?

Maths I used maths books- write out question. We had hegarty in school. I think hegarty. Colourful sticky notes

Bought a book for every subject- worked with friends sometimes.

Using BBC bitesize. Books. We had no Hegarty.

Go on computer- I liked youtube and did questions.

6. Imagine I know nothing. How would you describe the way maths is taught in college? (Flipped, Diagnostic, Group session, Google classroom/Hegarty/Diagnostic (do students understand the system)

It's different. Now it's online Thursday morning Before we join we are set a diagnostic, mini exam after an activity and starter on Google Classroom.

We do this before the workshop.

It is helpful and you can move the Hegarty forward etc.

Graham goes through assessment and helps me.

Paper in front of him. Asks if you feel confident.

See it and do it.

Google classroom

Hegarty

So you join a google classroom, teachers on there, each subject ratio etc. For each you get a starter then a diagnostic- get a mark- score to email. If you get questions wrong, link to Hegartymaths and you can revise them which is really good. Google meet with 10 the teacher goes through the answers- she set algebra- go over the topic- look at answers he class got wrong. You can do this way and that way. I always feel I get the help I need. Show different ways to do it. Really good teacher. I can message and she gets back to me. I feel supported. Last year not as much support. This year is so much better. More structured. Very clear Lesson 1 2 3 all works well.

We are online video calls, a bunch of slides. Puts us on website where we all answer questions together - goes over what we did wrong. Do a diagnostic, and we have a test after the lesson. We are split into 5. More personal as its not a massive class. It works because as you have less people. As an individual you can talk.

7. Does it make sense the way it is taught. Do you know why it is taught this way? Has this been explained to you? (Do students see why we do it this way?)

We only have maths once a week, you have other priorities, You have to manage your time. It makes sense. It shows where you need help, It works for me. Doag tells me what I need to do- go to Hegarty- drop in to meet. I joined at 10.30. Catch up before this. Go through and get help.

Yea, I think it's easy using Hegarty and Google Classroom. I want more face to face. One to one would be better. Instead of a machine.

Its well structured for people coming back to education. I think it all makes sense, there are 5 things in one lesson. Activity- diagnostic- mini exambuild up for exam. Teacher knows where to support- might set individual tasks as a group.

It makes sense the test tests what you have done in lessons. We do a test before and after. It all kind of works.

8. How do you feel that the diagnostic score affects your motivation?

Personally I think oh my god. But then when I join the met. I think I can achieve this.

Yea it does a lot- I know I can do it- why have I got 2 out of 10. I need someone to remind me- you want 1 to 1.

Sometimes it affects motivation- I thought i knew this but I dont- then you follow the link. The min exam you get is more correct so its motivating.

Sometimes I get and it's a bit demotivating.

9. What are your thoughts about Hegarty?

I didn't like it at first, It's helping me. I use the video. I do the quiz. Keep doing it.

I like Hagarty- It can be helpful. I need a teacher- I need further explanation- I'm always doubting. A teacher can change how they explain in response to you.

I like Hegarty, a good video. Goes through, but you need a teacher- Hegarty does it a certain way and the teacher might show you a way or explain it in a way that

helps individuals as she knows you and can listen to the way you explain your issue and how you want to have it explained.

I don't like Hegarty. Watch a video. I don't like it but I do it.

10. How do you find the workshop? (confidence, help, time? Held back being shy? Confidence online) Does the diagnostic prepare you for the workshop? What ICT do you use.

I don't mind. I don't like putting my camera on. I sometimes I will have it on. We all contribute. I think some people don't feel confident. I don't feel confident sometimes to put my camera on.

ACCESS TO ICT

I have my own laptop and WiFi

Can use the LRC if we need to.

I have not been in a small group for a while. I'm supposed- he has done different times with different people. It's been me and a couple of others. I'm waiting for my question- my motivation goes. Much better to have one. It's not crazy bad having a

small group. I see him every week- 30 minutes- 2 hours independent. Normal 9-9.30- now it's 10.30-11.00. I'd prefer normal.

I think it's really good to share and show my face and speak. Not an issue with me.We don't work with other students. We get individual tasks. We do independent learning before we start.

I don't like putting my camera. I don't want to be the first one to put my mike and camera on. I have never put my camera. I don't want to people to see my pjamas. It would be better for the teacher. I use my laptop, There is one person I dont know.

11. What kind of feedback have you received?

Based on diagnostic- verbal feedback.

He reviews, he leaves a comment.

Yes it's ok.

Given back positive feedback- I know where I have gone wrong. I need to be told a few times.

Email diagnostic, she goes thru on the board the questions on the board. If we ask she would help. One to one would be great- I am available on a certain day. It would be good to say that. Some people are shy- they would like this.

She explains it. Asks if you need more help. Sets hegarty for more help. I think she is doing 1 to 1. If you get question wrong she goes it.

12. Has this way of teaching helped you become a more independent learner? Explain this.

I have become more independent- I do miss being round my peers. We have ask the teacher. We don't go into 2's etc.

I am definitely a more independent learner.

Yea definitely. This year is so good, It's structured so well. Last year we got thrown into it- less time. Not well thought our it it had been like that we would have passed.

I'm getting there. The thing is there are too many distractions and kno one to tell you to get on with it. I'd rather be in college less distractions and more physical.

Awareness of your mindset and metacognition (the next step)

13. Do you know what mindset and metacognition mean? If no explain

Mindset

Cognition is to do with your brain and stuff.

Mindset is a fixed mindset and growth. I did activities in English and found it useful. I think they should definitely do this in maths.

Mindset is positive healthy mind- go ito it positive- I have a positive mindset this year Recognise your faiults Be more supportive More available.

MIndset is the way you think. Growth mindset open learning. We did this in school. We had an flexible learning day. It was a better that the normal stuff.

14. Do your teachers encourage you to develop this?

No not really

No Not really,

No- many first time since school.

No- they do in English 5 -10 mins at the start

15. Are there mindset activities to help you think about this in class? If no- Would this be helpful?

Yes that would be useful- at the start 5-10 minutes as some people not as confident, some people not as shy.

Yes it would be useful

Yes definitely it would be really helpful- many have no confidence. A studnet I know got no marks- saying don't is maybe not enough. I can do this.

I like doing it in English- you could do it in maths.

16. How could maths be better?

I don't mind coming in but my dad is vulnerable- online is on. A starter together we all do. Then we go do. We do not have each other- icebreaker and starter together.

I think what they are doing is all they can do. As long as I can get one to one if you ask it's fine.

More supportive- it's better this year a bit more 1 to 1. Maybe consider the Mindset

I recon more 1 to 1's. She'll get a better understanding of what we are struggling with.

Appendix 4 – Staff feedback captured after recorded interventions

Modified assessments have been undertaken by 8 groups.

Tutor observations were:

- The learners were happy to try more questions, even though there were no more marks, they felt it was fairer.
- Several of the groups were a bit disappointed that the modified diagnostic assessment stopped them answering all available questions (compared to the unmodified weekly diagnostic). They wanted the chance to have a go at all of the questions.
- It was noted that some of the learners were a little frustrated at not getting to do the later questions.

The action research group discussed whether the learner frustration was more significant among learners assessed to be operating at Grade 3 and among those learners in the 3 groups who felt they should “score more”.

We were surprised that some learners wanted to attempt more questions. Our supposition that they would prefer a branched assessment with fewer questions was not supported by the learner feedback. Learners felt they should all have the same number of questions; they clearly had a desire for parity.

The action research group had a long discussion around the design of the branching question. This design was specifically multiple-choice so it reduced the chances that a mathematical block was not the reason that stopped the student progressing.

AC noted he had reviewed and refined the later questions. It was agreed We still need to find a way of not showing the questions that had not been included, some learners commented on the fact that there appeared to be questions that they could not answer later was not as fair.

The action research group discussed that the way rationale, purpose and importance of the diagnostic is pitched has a big impact. The positive benefits of the activity need to be clearly explained to the cohorts in the induction and also reinforced on a regular basis.

Appendix 5 – Quantitative analysis of a sample intervention on a cohort

Week 20 Transformations					
Before Intervention			**After intervention**		
	Sample Size 28			Sample Size 18	
Mean	5/15	0.33	Mean	5/19	0.26
Median	5/15	0.33	Median	4/19	0.21
Mode	6/15	0.40	Mode	2/19,3/19,4,19	0.10,0.16,0.21

Week 23 Ratio & Proportion 3					
Before Intervention			**After intervention**		
	Sample size 4			Sample Size 38	
Mean	9/15	0.60	Mean	4/17	0.24
Median	7.5/15	0.50	Median	4/17	0.24
Mode	7/15	0.46	Mode	5/17	0.29

The use of any simple quantitative average is a very poor tool. It does not give valid or consistent results with a low sample size. It is also not possible to identify if normalising would demonstrate any significant improvement in usefulness.

Qualitative analysis of the results is more likely to yield useful data. The learners' response to the raw score is of more interest and this is more related to the individual student and their own perception of the meaning of the score. The value of the assessment was more related to the links created to further work required.

Conclusion

The use of the weekly totals in pure isolation offers no benefit to the individual teacher but impact on student motivation positively or negatively depending how the diagnostic has been presented and sold to the students.

Appendix 6 – Learner voice after intervention (OTLA survey 2 and 3)

We were conscious that whilst teachers had gathered some initial feedback immediately after the use of the branched assessments, which we have recorded, it would be useful to add a gap between the intervention and the second learner voice. Our rationale here was that this would mean that the learner feedback would not be an impulse and if the intervention had been very impactful, this might naturally arise from the interview.

Once again the interview was undertaken by our Head of Student Experience so that learners did not feel the need to demonstrate loyalty to their teacher, as is often seen in learner voice activity in observations of teaching and learning.

We undertook an initial survey Post Intervention (OTLA Survey 2- Qualitative feedback re-maths online May/2021) and reviewed the comments. The pilot survey asked a wider range of questions but we found it more difficult to pull out lessons learned.

Reflecting on this survey, there were some useful aspects that would be useful to explore in more detail.

We therefore asked a slightly larger sample of learners the questions. Specifically:

- Does it matter/affect your confidence if you get a lot of things wrong early on?
- Why do you think some people find doing the work before class difficult?
- As an adult/resit student how confident did you feel at the beginning of the course? What were your two main fears?
- Do you think students would prefer a diagnostic that gives them less wrong answers?
- Given the choice between a diagnostic with questions that got more difficult or one where it adapts to the level you are at which would you prefer?
- How do you feel about putting cameras on during online classes? Does it matter?

The responses to this are labelled as OTLA Survey 3 – Additional Qualitative Feedback.

OTLA survey 2: qualitative feedback re-maths online May/2021

These are the colours of below- May 2021 Survey

K- Access

BL- Access

TE- ESOL

Ri- Adult

Survey May 2021

We have tried to set the lesson up so you complete some work before you meet the teacher. Please be honest. How often do you do the work before the lesson?

K (Adult 29)- when it comes in- get it straight that's my strategy.

Sometimes- 80%

TE I almost do everyday (Adam)

Sometimes

How often have you talked 1 to 1 with your teacher?

K- once

Say- 1 to 1 lacks in maths

TE- 15/20

Every 2 weeks

The maths lesson starts with a short assessment. How many questions do you normally get correct in the Diagnostic Assessment?

K- build up to mini exam- hegarty task - rages from fractions 80% on average between

55-90

7

6/7 correct

4

How did you feel when completing the Diagnostic Assessments-if you get a low/high mark?

K- To be honest things like low scores don't get me down. It tells me where I want to go next - see where I've gone wrong.

Frustrating but there are links- these are ok- sometimes I use Corbett which i prefer- its a real person- shows you like a teacher- shows the hands. Hegart is just a voice.

If I get the low mark i am frustrated- reminds me all the things i have forgotten

I didn't notice a difference

This diagnostic was changed after Christmas. The questions were more focused, sometimes only giving five questions, or sometimes eleven. Was this helpful?

K- not really, it was no more helpful than the existing one. I don't mind getting things wrong. This is what you need to come to terms with in life. I know I struggle. I underestimate what I will get. So I'm not disappointed. Its how you look at things. You have to try, you have to push.

I preferred the old one. I had only one attempt.

Personally I did not find it good- I like the fact the answers referred to Hegarty. I prefer the other system. The new system- the feedback- they cant find many of the questions- gaps in the feedback

Im happy with the old one.

THE LESSON STRUCTURE

How useful did you find each part of the weekly lessons?

The questions were

Stage 1- The Introductory videos

K- never watched them. I watched one with Rashad. Week 15- this is boring.

Good- you know what you were learn- I used to rewind etc. They are right length. Really good.

It was helpful because it summarised. It introduced the topic. You can repeat to get better understanding.

Good- very informative, good length.

Stage 2 - The Diagnostic Assessment- does it make sense

Yea I do it's really helpful- in your own head where you need to improve.

I fully understand.

I can see the logic- it tests what you already know. Because it was right or wrong- the answers were limited.

Its makes sense

Stage 2 cont'd - How well did the Diagnostic help you find the right work on Hegarty Maths? Does it link well?

It does link. But Heagerty sends you in a different direction- a different method and it gets confusing. The teachers could prepare us for this. Confusion. 30% occurrence.

Very good link to Hegarty- links to the section in Hegarty. S

It does link well. Sometimes for some topics it was time consuming. If you want to work on one topic Hegarty is good, but it sometimes too long on one topic. So if revising- it drags you for a long time.

Very well- I knew what I need to do straight away

Stage 3 - A starter activity which interleaves some of the Top 15 skills- often a quiz. To have a go before the lesson

The starter activity is really useful- helps you touch on a subject- mixed variety of questions. We do a strater every lesson. Online whiteboard.

I like the quiz. Tests your skills. Puts fresh in mind.

It was very short, but i did not trust it because it was too easy and not like you would get in a exam- it was a warm up- i want something more challenging.

Quite tricky

Stage 4 - An exercise after diagnostic- activity or project that has been selected to allow students to investigate an aspect of the principal learning topic. Before the lesson- the week before- video/diag/starter/materials for you to ask questions.

Not sure about this

I often don't the3 activities. Activity/quiz- dont need this.

Some boring games and stuff. I focussed on diagnostic. I don't like them.

Pretty good- I knew what to ask.

Stage 5 - The workshop/class session with your tutor on Google Meet after materials before mini exam

Really intriguing- it's involving. Tough sometimes when we move on faster than I would like. I like online in the comfort of your own house. Even better with with a hangover.

Group activity- come together and do it- Elena is lovely when you get it wrong. We have a lot of interactivity even though we are online.

Really good- starter questions- brain ticking. Tutor screenshots then writes on and then saves the classroom. The way she does it is good.

Good but too short- need more time. Not enough time to ask questions.

Good- split into groups- you linked and learned from others. I liked this.

Stage 6 - The Mini Exam at the end of the week.

It is. Done diagnostic- done hegarty maths Genie- you then see how you are doing. You feel good about yourself. You were at 40% and now you're 80% . I did not need to get in a faff about this.

They were brilliant. I wish I had them last year. Keeps you on track. When I first started- I did crap. Throughout the year I did again. Good confidence.

That was good- challenging. They gave feedback.

I thought they were good- I got a better score after doing Hegarty.

Hegarty Maths- since the start of the course do you use Hegarty more or less?

Hegarty Maths- Do you think Hegarty Maths is a good online learning platform.

I tend to use it a bit. I have had a bad experience before . This year I use it a bit less to focus more on maths Genie. Step back. Use tech as less as possible for my poor eyes.

I do use it- about the same.

To be honest- I had real difficulties. It took me 2 months to understand. In the end I was

good. 950 skills- each can take you 30 minutes. I had to focus on weakness. When I understood I was fine. Some tuition about how to use- I may have missed because I can in November.

I use more- as the term went on used more. It's really good

Given the choice I would like

To study all online and stream in the lesson

To come in every other week and study online the other week

To come in to college every week

For maths… I'd probably go in one week out the next. You are comfortable. You get to feel pressure from other people. People can be cruel.

Come in to college every week- it's not the same. You can do it but it seems to take forever. Face to face is important because you can understand more clearly as the teacher can help you. Motivation- if you are just sitting at home- easy to get distracted.

I would prefer to come into college. This is because face to face. Ilts more memorable when I ask questions face to face. Online you don't have enough time- sometimes students talk to the teacher and you can't hear as its 1 to 1. I prefer a class where you can hear.

Come in every week- more distractions. Prefer in class.

In Google Meet sessions, do you...

Switch on your camera and your microphone

Switch on your microphone but not your camera

Switch on your camera but not your microphone

Rarely switch on either

IF NO CAMERA WHY? HOW MANY HAVE CAMERA ON.

Unless I'm interacting, I switch on the microphone. Most types, My camera has only been on twice. I think it's a personal preference. I don't mind but because it's optional I leave it off. It runs your battery flat. We have 11 in our group- only 4 people keep their camera on. It can be distracting. Camera is a better learning experience. I have not been in college. I went in for a mini assessment. No one has been in college except for exam.

Microphone on- the majority don't put cameras on. I talk and contribute but don't put a camera on. I think the teacher should ask people to interact at begging- camera on chat. I am happy to be asked.

I mute and unmute. I put my camera on all the time.

Both- not many put camera on. Not really matter. Social

Overall comments on lessons on anything that could be improved.

Relaxing, not as pressure, better at home. Feedback is the way forward.

Cameras/ interaction at least at being, mini test great, more 1 to 1. We do in a main course. I do email but a video call would be better. One a month or so review - see how you are doing. The teacher saying gives you confidence and motivation. Its noise to hear from a teacher you are on the right track.

Hegarty - more support to lead us through and how to improve. Sometimes you spend lots of time not effectively. However, if you don't get help, you can get lost. There are a lot of things to cover. Help manage your time effectively. Some topics are really important others not so much- teachers need to guide more.

Happy with the way it was

OTLA survey 3: additional qualitative feedback

Having reviewed the pilot survey above we looked to explore some topics that raised questions:

- Does it matter or affect your confidence if you get things wrong? The confident learners were less concerned. Study programme learners had more concern about getting it wrong

- Why do you think some people do not do the work before class? This arose for a number of reasons, confidence, time available and the successful creation of the habit to working before class.

- When we explored if a diagnostic that stepped up or down, the response was nearly equally split between those who thought it would help and those who thought a single diagnostic would be better.

S working towards L3 Health science

R Studying maths started on Pre- Access and dropped off.

M progressing to Pre- Access

SI Progressing to Pharmacy

Y Progressing to business

KI on Access to HE looking towards nursing

F Access studying maths

T Studying maths was on Pre Access but dropped off progression volunteer as Learning disabilities- volunteer advocate

Does it matter/affect your confidence if you get a lot of things wrong early on?

Yes, always.

If you don't know it you don't know it. Give us a statement scenario with multiple- you think and you learn the terminology. If you get it wrong you can get feedback and do again immediately. As an adult learner - I can take constructive criticism. Whereas when younger it would have knocked my confidence. I want to hear what I need to do better.

I went to college to meet people, to gain and share experiences as well as the qualification. We learn from each other. We are human beings we benefit from interaction. People raise your mood. Do groupwork.

Yes

It does not affect my confidence because I take it as a lesson to learn from my mistakes .

No it didn't affect my confidence. It has improved my confidence because it was the best lesson I had in college. In addition, it has really improved my english language

I think it's important to get things wrong early on so that you can work on it and get better at the things you are unsure about. Constructive criticism is really important for us all to improve. You would be happier to see a better score but if those questions are not challenging you is there any point.

By doing things wrong you will learn how to do it right, it does affect my confidence but soon I practice and I get it right my confidence gets higher than it was

I was partly confident in the beginning, but I am fully confident now. I dd crap in my English and maths

Why do you think some people find doing the work before class difficult?

Lack of confidence, especially not being in a classroom environment, no one to share ideas

Difficult Mental health support worker- busy. I like interaction with people- not very computer literate plus we learn from each other- not working online- especially in maths- the interaction is not as good. We find motivation from each other. I put my school hat on I'm going to learn at home, I'll do it.

Because some of the student like to study in classroom with teachers

I cannot judge all people because everyone has a different situation

I don't know about other people's opinions, but I can say because they get used to doing the classwork in the class.

It can be difficult for us as adults as we have other commitments such as children, running a home and work.

Never did it- time. Time and motivation. If it continues like this with online lessons I'm not going.

They might find it difficult because they feel scared and not secure it can be hard if you don't practice. You prefer other things than the work- lessons are different. I'm a care worker- I get tired- I work hard. I want my free time- either before or short.

When I first started I did it- then I got behind. 1.5 hours work. Maybe this is too much. It would be better to have a short task that we always do and more if we get time. Some people can't take too much at once. Some students don't do work before class because they may be busy. Also they may not understand the work and they are waiting to speak to a teacher to explain in further detail.

As an adult/resit student how confident did you feel at the beginning of the course? What were your two main fears?

I didn't feel confident at all, i felt like i was learning all over again, literally felt like it was all foreign! A lot of it slowly came back to me though, and I remembered a lot from school.

Biggest fear online. I was not aware of the majority online. I want to do OT. I need the grade to get on it. I put myself under pressure.

Do you think students would prefer a diagnostic that gives them less wrong answers? I noticed a change. As we were doing further on. I think the change, I can see why it happened- it did not make a difference. It depends on engagement and confidence.

As a student who speaks a different language and the English is my second language it makes me not much confident, but after a few weeks I start feeling confident.

As the English is not my first language I was struggling at the beginning .I am confident now especially when I start practicing after every class . I am thankful for Phil and all classes because I have learned alot from Phil and class works

At the beginning I used to have few challenges especially with writing because English isn't my first language but now I feel much better and more confident. The course and group were amazing and all thanks to you phill you've really helped me so much.

I felt apprehensive to begin with, my main worries were being behind everyone else in class with knowledge and work.

Fear of not being able to keep up with the work.

I found that when I was getting things wrong early on it was very irritating and I had to go over the work again. But it helped me to develop my work.

Do you think students would prefer a diagnostic that gives them less wrong answers?

Yes- being new and getting a bad mark knocks you.

I noticed a change. As we were doing further on. I think the change, I can see why it happened- it did not make a difference. It depends on engagement and confidence.

Certainly, this will give them the ability to overcome mistakes.

Yeah because it will help them to overcome their mistakes and it will improve their answers.

I personally don't feel like that would be beneficial to us as students because how can we learn where we need to improve if we don't know?.

depends because the question have also to be hard so our capacity be tested

Yes

Given the choice between a diagnostic with questions that got more difficult or one where it adapts to the level you are at which would you prefer?

Adapts

I'm ok with having lots wrong.

I think is give them the chance to choose their own diagnosis.

I prefer diagnostic that gives less wrong because that will improve me entirely.

I will prefer to choose the diagnostic with questions.

I would prefer to do the diagnostic where it will get more difficult so that I can see the level that I will need to work towards.

one where it adapts to the level you are at

I would prefer it to adapt.

Hegarty maths- good because on the videos it explains - I stop pause and rewind a 100x till it sticks in my brain. But some things it could not explain. How sometimes he explains it I can't understand from my perspective.

How do you feel about putting cameras on during online classes? Does it matter?

Yes it matters, I don't want to look bad.

I think it does. I think with confidence and technology- they might not have the confidence. I think it makes a difference as you tell by body language if camera on. Its not that bad with no camera. In English we have seen people in person- it has a big impact- if not met less likely to.

No problem with me to put the camera on. But I rather to study in college

I don't feel very comfortable and I don't think it does matter

No, I think it doesn't matter because some students feel less confident

I don't mind putting my camera on during online classes, it makes it more like face to face in the classroom when we can all see each other.

I preferred Hegarty maths to lesson because I can go back , I can pause, I can go back 100x over, whereas in class if I keep asking in class its stops the class.

It depends on how I feel

Not bothered. At first I put my camera on as I thought it was rude. But when other people didn't, I didn't. It should be a choice. I would prefer if people thought it was a sign of respect. I think it should be the rule. The teacher should lean on people but accept if they really don't want to.

Appendix 7 – Staff voice

A sample of the staff were asked to provide feedback on the flipped approach.

The staff understood the rationale and approach. Their improved confidence in the use of ed-tech meant we are able to work collaboratively and make rapid progress in order to have a classroom ready for the start of the academic year.

More emphasis needs to be placed on explaining the reasons for the session structure and this needs to be regularly reinforced to maintain student effort.

We need to review the way in which we utilise the diagnostic to ensure more learners make use of this, as this is absolutely critical to direct their revision.

The use of ed-tech alone does not guarantee engagement, there is no substitute for good teaching using a creative approach.

This summarises their responses:

Do you understand the rationale we used to design the Google Classroom to offer a flipped learning approach to GCSE maths?

- This was widely understood by all respondents.

Did the Cross College CPD on the use of Google and ed-tech improve your skills?

- The vast majority of staff found the CPD useful

What other training or support would help with your skills development around the delivery of flipped learning using Google Classroom?

- The key theme that emerged here was for regular opportunities to network and share ideas, approaches and issues.

After your induction, how well do you think the students understood the rationale we used to design the Google Classroom?

- This was almost equally spread amongst those that felt this had been achieved and not suggesting that we need to include this as a part of the induction, this supports the initial observations after the intervention.

What else should we have included in the induction to improve understanding?

- A number of topics emerged here but when combined, these can be addressed by spending time revisiting the course induction and activity.

Were the materials published in the classroom the week before planned delivery to allow students to complete the activities before class?

- The majority of staff send out the materials the week before the class, however, whilst most reported that students understood the reason why they needed to undertake the work before class, were able to access via the Google Classroom, not all of the students did so,
- Most tutors noted that 25 to 50% did the work before class.
- Adult learners were more engaged and invested in this approach, but more work is needed to let students know how useful this is as most of the staff note they use this for planning.

Staff have regular 1:1 meetings with students and the results from the diagnostics are one of the topics for discussions

- Staff noted that whilst some students were demoralised by the lower "scores" from the diagnostic, their desire for parity and having the same chance whatever level they are working about. These learners found the diagnostic less useful.

Hegarty Maths - since the start of the course do your learners use Hegarty more or less?

- Most staff value the Hegarty Maths platform
- Staff felt that the majority of students were making use the platform. Usage statistics support this.
- Most staff noted they are making use of Hegarty Maths to set additional work.

What sort of activities did you do to make the online workshop sessions interactive?

This question produced reference to a whole range of interactive activities and software that staff have been utilised in the workshop.

In the stronger sessions,

- Jamboard, Whiteboard Fi and Maths Bot were widely used to enable students to demonstrate working and methods.
- Pear Deck was used to add extra interactivity to the Google Slides app.
- Just Maths and Maths Bot were used to efficiently access a wide range of examples.
- Visualisers were used where available.

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THANK YOU

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