



Case Study 2: Khalid, Rutland Middle School

There are two sections in this case study:

- A. The Case Study
- B. Deconstructing this case study

Section A. The Case Study

Khalid has been an assistant head teacher of a small middle school for the last 6 years, the last 3 of which has seen a gradual introduction of iPads.

Background

The school now has around 100 devices, which can be used on a lesson by lesson basis across the whole school, booked out as a teacher decides, or given to one whole year group, for students to use to support their studies as they decide.

Khalid is undecided which way to go. If he gives them to one year group, then this will disadvantage the other year groups, but equally, the iPads might give students greater agency over their learning if they have iPads throughout their studies. Talking to other staff at the school, some of them prefer the year group option and other teachers think that they should decide when the students use iPads and for only for defined purposes as directed by the teachers. With such a mix of views, Khalid finally decides that the only way to find out which is better for the student experience, is to trial both options.

Pedagogical Focus

All students in Year 9 take at least one if not two Modern Foreign Languages (MFL) and over one lunchtime, in conversation with Simone, the head of MFL, he finds out that many of the MFL teachers have been booking out iPads for use in a variety of language lessons to cover specific activities.

Simone and Khalid decide they will trial both iPad deployment options with the Year 9 students all of whom are either taking Spanish, French or German. Khalid splits the students up into Team Orange and Team Purple. There are 6 different classes across the MFL subjects, 2 Spanish, 2 French and 2 German. Khalid and Simone decide that Team Orange will consist of one set each, for the three languages. This group of students are each given iPads to use in whatever way they chose for the next 2 months.

As well as using iPads for their language lessons, the students are told that they can take the iPads to their other lessons and use them as they like, including for homework and any other self study activities. Team Purple consists of the other three sets and are not given iPads. They are told that they might be able to use iPads, but only if their MFL teachers book



them out for specific lessons or tasks. Teachers of other subjects can also book out iPads for their Year 9 classes so some students in Team Purple might get them outside of their language lessons as well - but really this is completely up to the teachers.

Research Question

The overarching question that Khalid was trying to answer was around how best to use iPads for student learning. Attempting to pin it down to one question, it looked like this:

Is it more effective to employ iPads as a 1:1 or as a classroom set?

However, having thought about this some more, he began to wonder what he meant by effective and realized that he was thinking about how students take some control for their own learning, focusing on their own specific learning needs or put another way, the personalisation of the learning experience.

Data Collection

To find out what student opinions regarding the use of iPad were before the two month trial period started, Khalid decided to ask all the students in Year 9 to complete a short survey. As he was involving students, Khalid needed ethical approval from their parents, so he sent them an informed consent letter and a permissions slip. Once collected in, the students filled out the online survey. He also got the teachers to fill in a slightly different version of that survey.

The trial period then began and lasted for two months, Team Orange students could use the iPads whenever and however they liked to support their learning. Team Purple only got to use iPads when class teachers booked them out and directed the students in certain activities. After the two months were up, Khalid then created another survey and sent this to all the teachers, specifically asking them to focus their answers in relation to the Year 9 group.

He also set up a series of focus groups with all the Year 9 students to get their feedback on the use of iPads over the previous two months. Enlisting the help of Simone, he divided the students into groups of seven and over a period of three weeks they managed to run all the focus groups - lasting for about twenty minutes each. Simone ran about a third of them with Khalid doing the majority. They also enlisted the help of Dave, a teaching assistant who sat at the back of the group and audio recorded the conversations using the app Sound Notes, which enabled him to add notes to the sound recording as the focus groups were progressing.

Khalid chose Dave to help as he did not want to distract the students by writing notes himself as he asked them questions. After the discussions, Khalid and Simone wrote down their own reflections and at the end of the day, they met with Dave and compared their notes.



Unfortunately, Dave only made about half of the focus group meetings so both Simone and Khalid had to run the recordings themselves for the rest.

Data Analysis

The first pre-trial surveys mainly collected information that could be counted, known as quantitative data and allowed Khalid to easily plot the results in a spreadsheet and produce some simple pie charts and bar charts.

Rather than leaving it until after the two month trial period was over, Khalid decided to analyze the data straight away to see if any initial conclusions could be drawn. He started by comparing the two surveys to see where teachers and students differed in their opinions. This opened up new ideas and questions, some of which he decided to explore further in the focus groups.

The post-trial survey given to teachers was similar in that it mainly collected quantitative data and again, Khalid was able to produce some simple pie charts and bar charts. The focus groups with students were based around a broad set of open-ended questions and yielded responses known as qualitative data. Khalid was amazed at how much data he had collected in these focus groups.

Using the app Atlas.Ti, he imported the text based notes that he and Simone had made and then imported all the audio files. Then, one by one, Khalid had the time consuming task of going through all the qualitative data and tagging / coding comments, phrases and key points in the margin. Using the comparison functions in Atlas.Ti he was then able to start building up a picture from the data by making links and forming categories.

From these categories, themes began to emerge and combining these themes with the bar charts he was able to make some sense of what was happening with iPad use in the two separate groups - Team Purple and Team Orange.

Making Claims

Khalid's next job was to try and articulate these findings in some way so he could report them back to others.

He found that the easiest way to do this was to write a report under headings, which included:

- Introduction to the study
- Personalization of Learning
- Student Agency
- Customization
- Teaching Strategies
- Scaffolding Students
- Teacher Confidence



Conclusion

Once the report was written he shared it with Simone and Dave to see if either of them had any further comments or reflections that he should add.

He then gave it to the Head Teacher and together they put time aside to review the implications for the deployment of iPads. Lastly, he shared the report with the students, their parents and the teachers who had taken part in the research.

Section B. Deconstructing this case study

Background

This study seeks to find out how best to use iPads in school. There are limited numbers of iPads, so should they be given out to a whole year group or should they be used in a pool, with the teacher able to book them out as and when they want students to undertake certain activities. With limited resources, many schools will find themselves in a similar quandary to this and research can help to better inform how iPads are managed on a whole school basis.

Pedagogical Focus

The study is concerned with the personalization of the learning experience for the students. In other words, how best can iPads be customized to the needs of individual students allowing them more choice and agency in their learning?

Research has shown that one of the unique affordances of mobile devices in education is personalisation which can be construed as both 'agency' and 'customisation'.

Research Question

The broad question that Khalid was seeking to answer was:
Is it more effective to employ iPads as a 1:1 or as a classroom set?

There are some potential pitfalls in this question as it stands. For example, what constitutes 'effective' and 'effective for whom'? Both of these questions are complex and require some deeper thinking, which Khalid then did.

For him, 'effective' was linked to the idea of personalisation. Normally, this would result in some sub-research questions (SRQs) which then help the person conducting the research or evaluation to focus more specifically on the topic under investigation. So for Khalid, he could have asked:

How can iPad use increase student agency in our current Year 9?

How can learning be more customised for students within our current Year 9?



In both of these questions, there is an intervention (the iPad), a measure (student agency and student customisation) and a context (Year 9) which are commonly identified as key elements of good research questions. Moreover, both questions would have helped Khalid to answer his overall research question around how to employ iPads effectively. Because his research design separates out two different teams - Team Orange and Team Purple - who are using iPads differently, he is able to compare the responses in relation to the two sub research questions.

Data Collection

Khalid decides on a research design that has entry and exit surveys as well as focus groups, collecting data from both teachers and students.

Using a combination of data collection tools, Khalid is also able to triangulate his findings - in other words, view the same data through different lenses to see if he consistently gets the same responses.

Khalid also asks Simone and Dave to help with data collection. He may have done this due to time constraints but actually this can be viewed as good practice. Using other people in the data collection and analysis processes can help to guard against any potential bias that one person alone might have. However, it can also mean that there is a lack of consistency in the way data is collected, if the open-ended question script is not followed properly.

Khalid tried to guard against this by making sure Simone had the same script as him. He also decided to record the focus groups to make sure that all answers were properly collected. Recording people speaking is not as easy as it might seem. For example people often talk over each other, making it hard to hear what is being said on the recording. If people have their back to the microphone, not everything is always picked up clearly by the recording device. And sometimes, people are put off or are too shy to speak or worry about who might listen to the recording later on.

Data Analysis

Data was analysed in several different ways during this piece of research. For the quantitative data, Khalid was able to import the data to a spreadsheet and use the basic charting features to create a mixture of pie charts and bar charts.

However, the more difficult and time consuming task was analysing the qualitative data. People often underestimate the time it takes to analyse data - particularly qualitative data. Khalid himself was completely amazed at how much data comes from a one twenty minute focus group and he had twenty-two different focus groups.

However it helped him considerably that these were recorded. It meant that he could import them straight into the app Atlas.Ti along with any written notes written by him or Simone after each focus group. More importantly however, because Atlas.Ti supports multimedia it



meant that he did not have to transcribe each recording - a process which takes vast amounts of time.

Because the process of transcription can take so long, some people ask secretaries or assistants to do this job. However it can be argued that it is better for the researchers themselves to do this job as it allows them to start immersing themselves in the data and the more familiar you are with the data, the easier it is to start coding and making links.

Khalid then followed what is a fairly standard approach to data analysis, the process of coding, making links, forming categories and developing themes:

<https://www.youtube.com/watch?v=DRL4PF2u9XA>

Making Claims

Once Khalid had analysed the data and key themes had emerged, he then needed to make his findings accessible to a variety of different audiences. Firstly, he wanted to share his preliminary findings with Simone and Dave as they had both been involved in the study. He wanted to see if anything had surprised them, based on their own understanding of what they'd seen and heard. If they had, he would have needed to revisit the data and check why he had come to the conclusions he had made.

Next, he needed to share these findings with the head teacher who, depending on what Khalid found out, might have wanted to make a case with the governors for investing in more iPads and funding professional development sessions with staff.

Lastly, he wanted to share his findings with the students and teachers who had taken part in the research as they undoubtedly wanted to know what he had found out. There can be conflicting tensions which prevent a researcher sharing the findings with audiences outside of the immediate line manager and this can relate to both the reason the research or evaluation was carried out in the first place, or due to the implications that stem from the results. For example, it might be that there is overwhelming evidence to suggest that all students have their own iPad, but funding might not be available to make this happen.

Conclusion

Khalid had set out to answer a single research question:

Is it more effective to employ iPads as a 1:1 or as a classroom set?

In trying to answer this, he collected a large amount of data using various different methods. So it could be easy to think that the results would be accurate and to some extent, they probably are. However there are some limitations. In other words, it is difficult to make any sweeping statements or general recommendations from this one study.

Why? Well, for example, this research was only carried out with one year group and the way they use iPads might be different to other year groups.



It might be that errors occurred as the data was not collected consistently. For example, Dave was only able to assist with recording and taking notes for about half of the focus groups. This might have affected the way students responded, as Dave sat behind the students out of their line of sight so they could easily forget he was recording once the focus group started. However in the rest of the focus groups, either Simone or Khalid had to operate the voice recorder and it might have been more obvious throughout the focus groups that students were being recorded. The two different researchers - Simone and Khalid - who collected data in the focus groups may have led the discussions down different roads depending on what students said and this may also have affected the results.

So it is worth thinking about your own research and being mindful of what you really can be certain of and how strongly you can use the results of your research to make generalised statements of truth.