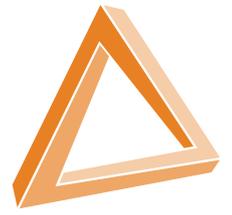


Evidence-Based EdTech Diagnostic



EDUCATE Programme: **Research Materials**

EDTECH
COMPANIES

Observations

To find out how you can benefit from examining your EdTech through a 'research and evidence mindset', contact our Accelerator Team at hello@educateventures.com

- Observation is one of the most used qualitative research methods. Contrary to what the name might indicate, observation is about more than just "looking" at a situation
- Observation allows researchers to gather data in real-time, as situation unfolds, rather than relying on second-hand accounts of an occurrence. When observing, researchers are still "looking" at the action, but they are looking and noting systematically, recording evidence as it occurs, in ways that will help them identify patterns or relationships during data analysis



Why Use Observation For Your EdTech Research?

- Observations allow researchers to gather data that could be very useful in understanding the conditions under which your products are used, as well as identifying actions or interactions that lead to user success or failure
- When researchers observe a situation, they are able to record data on:
 1. The physical setting or environment in which the activity is occurring
 2. The people who are in this setting, the roles they play and how they organise themselves
 3. The interactions that take place as the action unfolds, whether they are formal, informal, verbal or non-verbal
 4. Any formal programme that is already in place in the setting, such as the curriculum being used, the teaching style, resources that are available, etc.

Types of Observation

Structured Observation

- Structured observation is organised around a “schedule” of key behaviours or interactions that help address the research questions. An observation schedule is prepared in advance; categories or topics listed on the schedule are discreet and do not overlap. These topics may come from the relevant research literature or from the expectations of the researcher, based on his or her past experience.
- In a structured observation, the observer codes what they see at regular intervals (i.e., every five seconds) by noting on the schedule when they have observed the behaviours or interactions. This allows numeric data to be generated from the observation

Unstructured Observation

- Unstructured observation is not as regimented. The researcher simply observes a situation and takes notes on what he or she sees. The researcher may have some thoughts or expectations based on the research literature, prior experience, or particular needs in the data collection for the study. While a detailed schedule does not exist, the researcher may have compiled a list of general categories of

things to look for during the observation

Shadow Studies

- Shadow studies involve the researcher following a subject to observe their actions and learn from their behaviours. The subject may or may not know they are part of the research; for example, researchers can observe activity in a crowded, public location
- This kind of observation provides a level of authenticity to the data as the researchers are able to blend into a group and attract very little attention to themselves. Conversely, the researcher might be observing and recording the behaviours of a user as they engage with the product

Participant Observation

- Participant observation involves researchers participating in the activities of a group to the extent that they become part of the group’s culture and may even be considered a legitimate member of the group. They are then able to collect data on what they have observed as a part of the group. However, the intense participation required by participant observation can distract the researcher from his or her research tasks or from recording observations



Expert Tips

1. Observations require preparation – make sure you have the tools for documenting what you see. A good documentation tool would include a place for recording behaviours, surroundings, and the observer’s interpretations and thoughts
2. Keep an open mind. Even if you are observing the use of something you have created yourself, accept that users might have different uses or interpretations of your product. Try to understand what it is they are doing and under what circumstances
3. In some cases, observations can be followed by interviews in which you can ask the participants about things that you have witnessed

Stages of Preparing for Systematic Observation

1. Develop rubric
2. Train observers to understand rubric in same way
3. Plan use and placement of recording device
4. Consider ethical issues
5. Pilot observation
6. Compare observer results
7. Edit rubric and review with observers
8. Conduct observation

Category	Behaviour	12:03	12:06	12:09	12:12	12:15
Teacher roles	Lecturing					
	Interactive					
	Direction					
	Facilitate/Coach					
	Model					
	Moderate discussion					

Example rubric:
student engagement
observation checklist

Scale	Statement	Never	2	Sometimes	4	Always
		1		3		5
E*	1. Pays attention in class					
E	2. Works well with other children					
I	3. Attempts to do his/her work thoroughly and well, rather than just trying to get by					
D	4. Acts restless, is unable to sit still					
I	5. Participates actively in discussions					
E	6. Completes assigned seatwork					
D	7. Needs to be reprimanded					
D	8. Annoys or interferes with peers’ work					
E	9. Is persistent when confronted with difficult problems					
N	10. Doesn’t seem to know what is going on in class					
N	11. Is withdrawn, uncommunicative					
E	12. Approaches new assignments with sincere effort					
I	13. Asks questions to get more information					
D	14. Talks with classmates too much					
N	15. Doesn’t take independent initiative, must be helped to get started and kept going on work					
E	16. Tries to finish assignments even when they are difficult					
I	17. Raises his/her hand to answer a question or volunteer information					
E	18. Gets discouraged and stops trying when encounter an obstacle in schoolwork; is easily frustrated					

Notes: E = Effort; I = Initiative; D = Disruptive behavior; N = Inattentive behavior.



Evidence in EdTech

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- Evidence of the **impact** of EdTech on teaching and learning is often at the forefront of **demands**, particularly from those who dictate the **funding** available to pay for technology within education. As has been shown in numerous **meta-level investigations**, (see for instance Cox et al., 2003), evaluation of the impact is a **challenge**. This is magnified when evaluating **emerging innovative technologies**
- **Pedagogical change** is at the core of these technologies, both because their design evolves over **time**, but also, arguably, their *raison d'être* is to **transform the learners' experience** (Cukurova & Luckin, 2018)
- The increased challenge is at least partially due to the **unwritten expectation** that, in traditional impact evaluations, evidence regarding the impact of an intervention is considered as a **shield against change**. The generation of **scientifically robust evidence** can be used by stakeholders, such as policymakers, for an educational intervention's **standardisation** and **scaling**

- **Change** is the essence of emerging technologies, though. Three years after an original report reviewing emerging technology innovations in education (Luckin et al., 2012), there was evidence that only **39 of the 150 innovations** (26%) were still in active use. Therefore, in the context of emerging technologies, more **value** is to be found in the careful consideration of different **types** and **sources** of evidence that are appropriate to the **current state of the technology** as well as in the use of **robust research methods** to generate **new evidence**
- This requires an **evidence-informed decision-making process** for the **design and use of EdTech**, rather than only considering evidence as the **outcome of the evaluation**
- Taking into account the peculiarities of the **local context**, the accumulated experience and judgment of **educators**, and the perspectives and values of **users**, and combining these three with the fourth source, **the best available research evidence**, can provide a more productive way forward in the attempt to bring evidence into **educational practice**

- Excerpt from '[Evidence & the Golden Triangle of EdTech, \(EDUCATE, 2021\)](#)' by Professors Cukurova, Luckin, Clark-Wilson

Who can help me?

We are specialists in educational research and evidence-based technological development for schools and education and training businesses

The EDUCATE Programme promotes **excellence** in the EdTech community by providing **training** and **mentoring** to support and promote the use of **evidence-informed EdTech**. Our research-focussed programme, based on the **Golden Triangle**, bridges the gaps between **EdTech designers** and **developers, researchers in education and EdTech**, and **users**, to ensure that EdTech products live up to their **promises**.

To find out how you can benefit from examining your school or business through a 'research and evidence mindset', and focussing on '**what works**', contact the **Accelerator Team** at EDUCATE Ventures Research today:

hello@educateventures.com

Thanks for reading!

- The EDUCATE Ventures Research Team
Summer 2022

