

Deconstruct, Digest, EAT Pilot Study of a Tool for Evaluating Language Apps

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Abstract

Technological developments, the widespread general adoption of mobile device platforms (i.e. tablets, smart phones), together with increased pedagogical research on impact [12] have led English schools to respond to regional and national digital initiatives to incorporate mobile devices in teaching and learning across the curriculum. The perceived wide scale adoption of mobile devices has resulted in a proliferation in the production and promotion of educational mobile applications (apps) to support language teaching [13]. At present individual apps may be evaluated against a subjective Likert scale with which different evaluators indicate how they regard a particular app.

The Evaluate App Tool (EAT) was designed and developed by the researchers to provide an alternative tool to evaluate apps. EAT is a tool which fosters an objective educational evaluation of an app. An evaluator would utilize EAT to indicate stages of a learner's actual engagement with the app using a Revised Bloom's Taxonomy framework. This framework maps knowledge dimension components against cognitive process dimension components. The development of this framework is derived from the work of Karthwohl (2002) and Munzenmair and Rubin (2013). Bloom's seminal taxonomy [16] is an established tool used in teacher training in England. For example pre-service modern foreign language teachers generate learning objectives for learners they teach, ensuring that pre-service teachers move beyond mere reformulation of knowledge to the more demanding cognitive challenges of application and evaluation. For the purposes of this research, pre-service teachers will use Bloom's Taxonomy as brought into the digital age [14; 5] which includes creativity, thus enabling them to evaluate language apps using specific criteria. It is intended that information about language apps evaluated using EAT will be circulated.

The researchers acknowledge that the adoption of new technology in language teaching brings both new opportunities and new challenges in teaching and learning. Also, the researchers recognise that pre-service teachers may need to know how to do this well before seeing differences in teaching outcomes [11] and we may not be able to assume they have instant facility with technology [8; 10] and that some may need to acclimatise to the technology [15].

This tool was initially piloted with a focus group of pre-service secondary modern foreign languages teachers who were supplied with individual tablets for the duration of this study. Participants self-determined the educational language apps they evaluated with EAT. We present the first iteration of this tool, and show examples of its usage as a critical reflective tool for evaluating language apps. We will discuss issues that have arisen and describe our plans for the future.

1. Introduction

Technological developments, affordance of mobile devices and proliferation of apps (mobile applications) have resulted in large scale adoption of mobile tablets, especially iPads, within schools in the United Kingdom. There is emerging evidence to indicate that apps have a significant potential to support the learning process [1]. Action research has indicated the following positive effects of an institutional adoption iPads within a school [2]: improved student attainment, improved student behaviour, improvements in students' perception of learning. With regard to language learning, there are hundreds of apps on Apple's App Store, which may be rated using a subjective Likert-type scale accompanied by a qualitative comment. Trainee language teachers in England are required to "... know when and how to differentiate appropriately, using approaches which enable pupils to be taught effectively .." [3]. How can they effectively choose which language apps to use in the classroom?

2. Background

In order to assist trainee language teachers to effectively choose language apps, the researchers designed and developed EAT (Evaluating Apps Tool), an objective tool for evaluating the educational benefits of an app. This was to be piloted with the participants in a pilot study.

The researchers designed EAT based on the Revised Bloom's Taxonomy framework [4] as participants would be competent in utilising this framework for both lesson planning and effective questioning of the students they teach. Research indicated that this framework has been applied to

digital artefacts [5]. The current version of EAT is based on the work undertaken by Iowa State University [6] (see Figure 1).

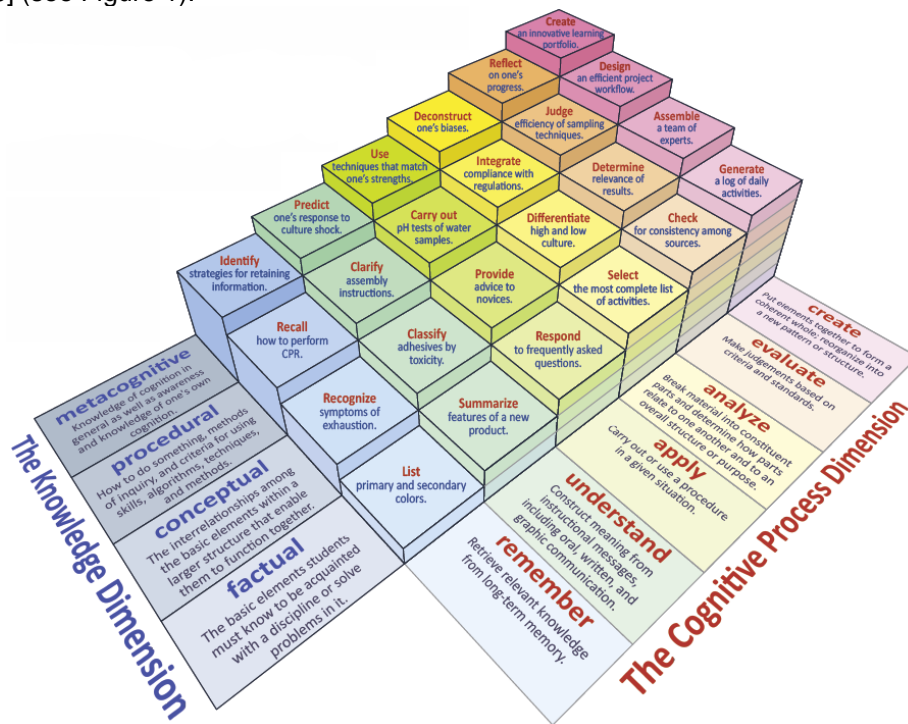


Figure 1: Taxonomy for learning teaching and assessing

This tool enables participants to deconstruct activities within a language app using both knowledge and cognitive process dimensions to identify digestible learning opportunities, and record their findings on the EAT grid (see Figure 2).

Evaluating App Tool (EAT)

		Revised Bloom's Taxonomy					
		Remember	Understand	Apply	Analyse	Evaluate	Create
Knowledge Dimension	Factual Knowledge						
	Conceptual Knowledge						
	Procedural Knowledge						
	Metacognitive Knowledge						

Figure 2: EAT Grid

A completed EAT grid which illustrates the process is shown in Figure 3.



Evaluating App Tool (EAT)

		Revised Bloom's Taxonomy					
		Remember	Understand	Apply	Analyse	Evaluate	Create
Knowledge Dimension	Factual Knowledge	✓	✓				
	Conceptual Knowledge	✓	✓				
	Procedural Knowledge						
	Metacognitive knowledge						

Figure 3: Completed EAT Grid

3. Pilot Study

Two groups of MFL trainee teachers were asked to take part in the pilot study to review the use of apps in the MFL classroom using the EAT grid. Students were in their second semester, so had had some classroom experience at this point and were reasonably confident classroom teachers. Their experiences were evaluated through two discussion groups; Group 1 (n.5) consisted of trainees on a school-based teacher training route and Group 2 (n.4) consisted of trainees on a traditional university-based route. Group 1 had no specific additional resources. Group 2 were provided with their own mini iPad on which to load apps to use in the classroom. They had a brief initial introduction session with the MFL course leader at the university with an opportunity to upload and use a storytelling app. Usage of iPads in school was followed up several weeks later and found to be limited, so a second session run by an e-learning technician was added where a second storytelling app and a digital recorder app were demonstrated. This intervention proved to be successful. At the end of the academic year both groups met separately to discuss their use of apps and the EAT grid. The discussion group transcripts were subject to content analysis and the following common themes emerged.

4. Findings

Both groups of trainee teachers recognised the novelty value of using apps in the classroom; it gave languages credibility and devices that were portable increased pupils' engagement. iPads were user-friendly and instantaneous communication had, they felt, great potential. Apps were recognised as being a cheap, fun way of getting students to learn vocabulary and cited apps such as Memrise, Duolingo as doing this relatively effectively. Trainee teachers perceived limitations in the apps themselves where they only used iPads in an instrumental rather creative or developmental fashion. 'A guessing game' might be fun but it would not promote deeper learning. Other limitations were linguistic; one of the native French speakers cited difficulties with literal translations which were not 'as a French native speaker would say them'. Group 1's trainee teachers questioned the quality of the translations software powering the database; often these could not cope with full sentence translations but offered word for word translations with a consequent the lack of authenticity.

Actual limitations were often technical: trainee teachers had limited grasp of the actual technology, they did not feel comfortable with it and required explicit and reiterated demonstrations. Group 2 found this particularly difficult: 'maybe because I've not really seen an amazing app yet but I don't really see what they do that other things don't already do. Other than they are quite handy.' This limited perspective was reinforced by their own technological limitations: 'I'm sure perhaps with someone who loves using technology, they would really put a load of effort into using it, so I'm sure it doesn't help that none of us are sort of techno-lovers'. Anxiety in Group 2 also manifested itself in concerns over behaviour management and general lack of confidence: 'it was just a bit overwhelming I suppose. It sounds ridiculous, because it's just an iPad, but I don't think we knew what to do with it.' Reliability continued to be a major concern; interface with other technologies in the school was often problematic and previous experiences with mainstream technology reinforced this perception: 'technology is something that you can't really trust'.

Group 1 were much more aware of the need to adapt the apps to their own pedagogical requirements and understood that the learning came from how the technology was used, rather than the technology itself. Whereas the traditional route trainee teachers (Group 2) were less able to look at adapting the technology and enabling the pupils to apply knowledge, they wanted 'specific examples of how we



could use it in the classroom' rather than have to process and assimilate it themselves. However both groups recognised that sometimes the intrinsic specification of the iPad was just as useful, both citing the use of the iPad for voice recording to promote speaking and listening practice.

In Group 2 one of the respondents found the concept of the EAT grid difficult but all other trainee teachers responded well to the grid, already being familiar with the concept of Bloom's Taxonomy. They readily ascribed the majority of language apps to factual knowledge boxes; there was one exception 'Puppetpals is like synthesis isn't it? Because they can create whatever they want, make it simple or more complex depending on what year they're in'. Conceptual knowledge tended to be achieved only if the teacher was actively planning for this, Group 1 also recognising that storyboarding apps could be used in more complex ways: 'they can manipulate it, they can edit it. Analyse as well.'

Looking to the future trainee teachers were interested in apps that were 'created by linguists' and which might reduce their planning workload or carry out error correction through voice recognition software. Individualised error correction provided by an app on an iPad was valued as it would 'lower [student] anxiety'. There was also a need for apps that were suited to the current MFL curriculum rather than to the needs of general vocabulary learning or 'essential phrases', although there were limitations if it were merely text book content reproduced in digital form. Group 1 were interested in developing higher order thinking via apps and Group 2 in developing specific skills such as listening.

With regard to the usage of the EAT grid, most trainee teachers could evaluate apps in terms of the revised Bloom's taxonomy on the grid, although prompts as to what constituted conceptual, procedural or metacognitive knowledge, particularly in an MFL context might have been helpful to them.

5. Conclusion

The findings from two discussion groups suggest that the EAT grid provides an accessible tool providing objective evaluation of the pedagogical value of an app. As the original Bloom's Taxonomy was familiar to students through their training course, they became proficient at deconstructing an app in terms of the revised Bloom's Taxonomy incorporated in the EAT grid. There were no significant differences in ability to use the EAT grid in the two groups, the additional support provided to group 2 may have raised confidence levels as this group tended to focus on instructional efficacy and the resource itself [7], rather than developing the cognitive dimension, where they would benefit from further support.

Both researchers had expected the trainee teachers to embrace both the opportunity and the concept of working with language apps in the classroom; however participants did not prove to be early adopters. Not all those in the digital natives generation [8; 9] are comfortable with that technology [11]. Indeed, the 'digital divide' [15] is still evident where trainee teachers are reluctant or unable to use apps creatively. Their lack of confidence was manifested in frustration with perceived technical shortcomings, as Kim *et al's* study [11] also showed with late adopters and we would concur with Kim *et al* on the importance of positive experiences for trainee teachers so that they are more likely to sustain their use of apps in the future. The digital diet can be hard to digest, however it is increasingly an integral part of students' lives and our trainee teachers have to find a way of making the food palatable for themselves and their students, providing a varied pedagogy for today's (and tomorrow's) language learners.

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