

Article

Using Chakowa's Digitally Enhanced Learning Model to Adapt Face-to-face EAP Materials for Online Teaching and Learning

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Abstract

The unexpected descent of Covid-19 has driven many countries into lockdown. Universities have been forced to shut down physical spaces, which has left many teachers with the daunting task of transitioning their courses to the online environment. This article describes an EAP teacher's process of applying Chakowa's (2016) Digitally Enhanced Learning (DEL) model to adapt face-to-face EAP materials for online teaching and learning. First, it concisely reviews the DEL before illustrating how the model was applied, along with personal reflections on procedural steps and technological choices. After that, empirical data is introduced, which supports that the DEL can be a useful tool for adapting classroom teaching materials for online learning. The article concludes with recommendations on how other teachers can apply the DEL.

Keywords

Digitally Enhanced Learning (DEL), English for Academic Purposes (EAP), English language teaching material adaptation, online language learning, Covid-19 social distancing

1 Introduction

On March 16th, 2020, one of the authors (Wilson) was an on-campus English for Academic Purposes (EAP) teacher at The University of Newcastle, delivering four hours of face-to-face lessons per day. Although the course had online components and promoted digital literacy, the application of technology by teachers and students was always in the form of blended-learning with a lot of classroom support. By March 23rd, however, Covid-19 social distancing laws had come into place, the campus was off-limits, and all staff and students were told to not to leave home unless absolutely necessary. Consequently,

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Wilson and his students were faced with the challenge of completing the EAP course entirely online.

This sudden transition to an online workplace was in no way unique to The University of Newcastle – it was prevalent at universities and language centres globally – and the first question was one of “how to survive?” rather than “how to thrive?”. The initial challenges were having good internet connection, becoming familiar with essential video-conferencing technology such as Zoom, making sure students felt connected (and actually were connected), and trying to judge participation, interaction and understanding in the face of transmission delays and blank video screens. Immediately following these initial ‘survival’ challenges, however, came the challenge that course materials, which were tried and tested in the classroom, were often not successful online. This led to the primary research question of this article: how can we best adapt face-to-face teaching materials for the online environment?

Prior to Covid-19, research shows that language teachers often lacked confidence in applying information and communications technology (ICT) in their lessons (Germain-Rutherford & Ernest, 2015; Stickler & Hampel, 2015). A survey study in Europe discovers that teachers had concerns about having the technical ability to use new tools as well as understanding the methods and reasons for integrating technology in language teaching (Germain-Rutherford & Ernest, 2015). Stickler and Hampel (2015) remark that although digital technologies offer vast new resources for language teaching, tutors often lack the skills to select and adapt available resources to build coherent and usable learning spaces for their students. With Covid-19 social distancing in place, these issues have become extremely important in a very unique way. This article will offer an approach to help language teachers evaluate, adapt or create materials for online delivery in a way that accounts for their own abilities, their pedagogy, and their students’ needs.

After much deliberation on the design of online language lessons and the need for an approach that can be applied rapidly and easily by individual practitioners, this article chose to use Chakowa’s (2016) Digitally Enhanced Learning (DEL) model to provide a top-down theoretical framework to guide our approach. A secondary aim of this article is therefore to provide empirical data on the application of Chakowa’s (2016) DEL model in an Australian tertiary EAP context.

In the next section, the DEL model is described and reviewed. Following this is an example of how the model may be used to adapt face-to-face teaching materials for the online environment. The final section details student feedback and teacher observations on the revised lesson design.

2 The DEL Model

This section briefly describes the components, structure, and intended use of the DEL model shown in Figure 1. The model was first developed by Chakowa (2016) in the context of a beginner French language course at Monash University. Its purpose was to examine how to enhance the course takers’ independent learning. The model is a hybrid of four different frameworks:

- Burden and Atkinson’s (2008a) Digital Artefacts for Learner Engagement (DiAL-e),
- Mishra and Koehler’s (2006) Technological Pedagogical Content Knowledge (TPCK),
- Puentedura’s (2006) Substitution, Augmentation, Modification, Redefinition (SAMR), and,
- Churches’ (2018) reinterpretation of Bloom’s Taxonomy, which he calls Bloom’s Revised Digital Taxonomy (BRDT).

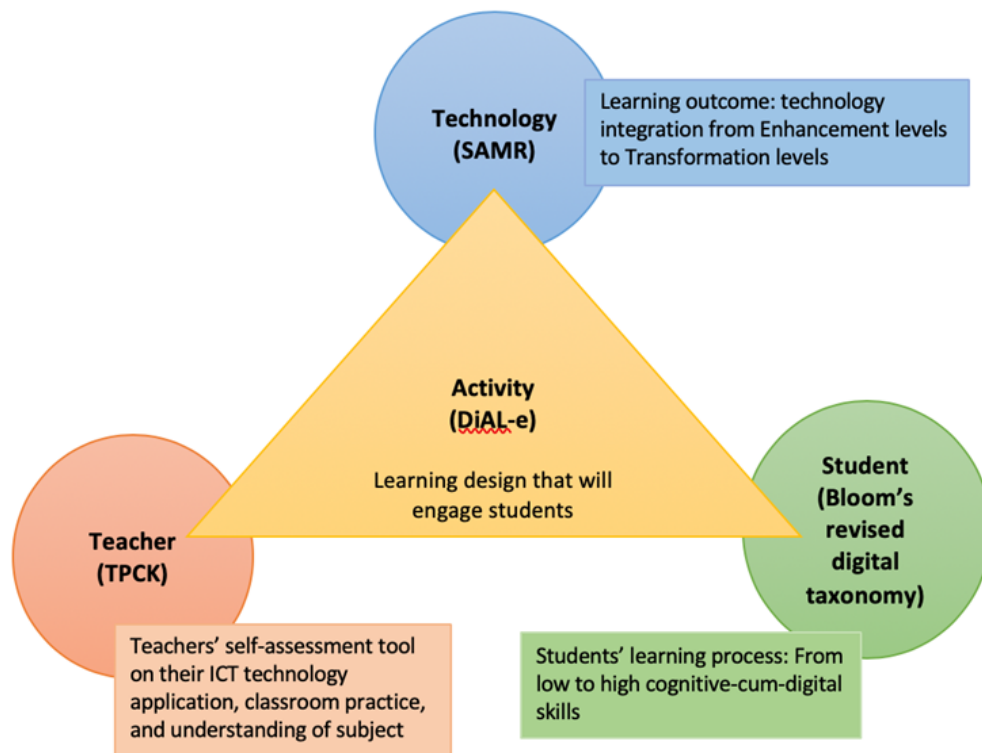


Figure 1. The Digitally Enhanced Learning (DEL) model. Adapted from (Chakowa, 2020, p. 38)

Each of these four frameworks is responsible for evaluating a component of an online activity and its application. The DiAL-e framework consists of ten activity design principles which connect learning activities with pedagogic values. The TPCK is a seven-component model which is designed to help teachers assess the technological, pedagogical, as well as content knowledge and skills required for the successful implementations of learning activities. The SAMR measures the impact of technology integration on student learning. Lastly, BRDT, by extending Bloom's (1956) original six-level hierarchy of critical thinking with digital learning-related cognitive processes, provides a benchmark for considering to what degree an activity engages students' thinking skills. Overall, the DEL's combination of the four frameworks enables educators to examine an activity's pedagogy, the teacher's role and capabilities, the learning aims and outcomes, and most essentially, how all of these are affected and enhanced by the application of technology, all within a single model (shown in Figure 1).

The DEL model comprises a central triangle representing the DiAL-e (Burden & Atkinson, 2008a), which focuses on learning design. A circle on each corner holds one of the three remaining frameworks. These circles signify the other main contributors to achieving the goal of a meaningful activity: the teacher, the students and the technology. The teacher's role is evaluated on their technological, pedagogical and content knowledge based on Mishra and Koehler's (2006) TPCK model. The student's learning process is evaluated with reference to Bloom's Revised Digital Taxonomy (Churches, 2008), and the value of the technology integration in online learning activities is assessed using Puentedura's (2006) SAMR (see further details of each of the model in the next section). The equal size of the three circles represents the idea that these core elements are equally important. Chakowa purposefully places the teacher and students on the bottom of the triangle to emphasise their parallel relationship and stress the role of teachers as facilitators and promoters of collaborative learning among students, even in the online classroom. The frameworks will now be described in more detail.

2.1 DiAL-e: Online task design

The DiAL-e is based on research incorporating recommendations from 80 TESOL academics and provides design principles which ensure that a lesson is engaging for students (Burden & Atkinson, 2008b). The framework itself offers ten broad types of learning design for online activities/tasks which are summarised according to Chakowa (2020):

1. Stimulation tasks, which engage students' attention, (e.g. using Quizlet flashcards to reinforce vocabulary learning);
2. Narration tasks, which require students to tell a story and construct meaning, (e.g. using VoiceThread to construct and share narratives on dream and childhood);
3. Collaboration tasks, which involve group work and group knowledge creation, (e.g. using Blackboard online forum/discussion board to brainstorm and share language learning difficulties);
4. Conceptualization tasks, which require learners to combine ideas to make meaning, (e.g. using Glogster to create an interactive poster for promoting authorship);
5. Inquiry tasks, which lead to Problem-Based Learning (e.g. using VoiceThread to facilitate peer feedback);
6. Authoring tasks, which help students learn by creating a product (e.g. using StoryBird to publish narratives or written work in a digital book format);
7. Empathy tasks, which require learners to take on the perspective of another person (e.g. using Voki to create avatars as different characters to perform in role-play scenarios);
8. Research tasks, which require locating and sharing resources, (e.g. using a wiki to share useful learning resources such as websites or videos for language learning);
9. Representation tasks, which address different cultural views of the world, (e.g. using YouTube to share and comment on authentic multimedia resources such as television shows or movies that demonstrates the 'real world' application of the target language); and,
10. Figurative tasks, which involve using visuals to present ideas, (e.g. using Padlet to curate visuals and artwork as a way to build higher-level language expressions and criticality of abstract or metaphoric ideas).

These learning designs are not mutually exclusive, but can be viewed as a checklist for an engaging lesson. Teachers can adapt one or several of the designs depending on their needs, but it is recommended that the teacher uses a maximum of three in one activity or the activity will become too complex (Burden & Atkinson, 2008b). It is key to note that almost all learning activities will already incorporate one or more of these designs, so the DiAL-e is about awareness of lesson type and variation between activities to keep students stimulated as much as it is about adaptation to online learning. Whichever designs are chosen, however, will frame the integration of the other three frameworks during the planning stage of online activities. In other words, the DiAL-e guides the pedagogy, the learning aims, and the tools to be adapted into the overall online learning. The framework overall can assist teachers to identify the potentials advantages/disadvantages of the design and implementation of engaging activities that can challenge and promote learning in a meaningful and constructive way.

2.2 SAMR: Evaluation of the application of technology

The SAMR, which stands for Substitution, Augmentation, Modification, and Redefinition, illustrates four-levels of how an activity can be adapted using technology. Substitution and augmentation come under the category of enhancement where a technology is introduced to replace an originally non-technological activity. For example, Puentedura (2006) suggests replacing handwriting with a word processor as a form of substitution. Augmentation is a step up from substitution as technology is used to provide a functional improvement, for instance, introducing functions like cut and paste or spellchecking provided in a word processor. Meanwhile, modification and redefinition come under the category of transformation because the use of technology has significantly changed and improved the activity. This means a significant activity redesign (modification), such as integrating a PowerPoint into a spoken presentation, or the creation of new activities previously inconceivable without the technology (redefinition), such as having students create and share video journals. Chakowa (2020) perceives that the SAMR integrates critical thinking with technology in activities to achieve the highest learning outcome possible. However, teachers should not always aim for the highest level (redefinition) in each activity but rather be aware of how technology is playing a role in shaping their activities and what the possibilities are.

2.3 TPCK: Teacher self-evaluation of content, pedagogical and technological knowledge

TPCK, an acronym of Technology, Pedagogy, Content and Knowledge (Mishra & Koehler, 2006), theorises teachers' three core knowledge areas as subject content, pedagogy and technology. It is based on Gudmundsdottir and Shulman's (1987) PCK framework, with the addition of technology. The TPCK is frequently applied in North American pre-service teacher training programmes (Chai, Koh, & Tasi, 2013). As documented in Chai's et al.'s (2013) review of studies on the TPCK, 55 empirical studies using varied and complex research methods conclude that the framework can positively enhance teachers' ICT integration ability. Abbitt's (2011) review of the TPCK within the context of pre-service teacher preparation also comments that the framework provides adequate flexibility for teachers to observe their knowledge and the role of technology in their teaching.

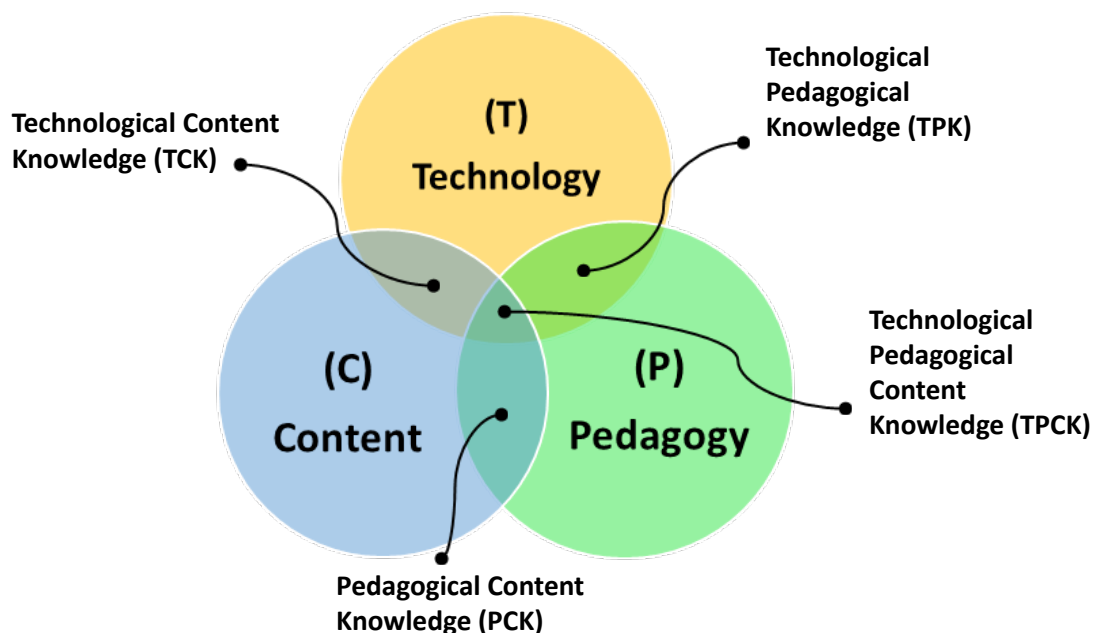


Figure 2. The Technological Pedagogical Content Knowledge (TPCK) model.

Adapted from Mishra & Koehler (2006, p. 1025).

In the TPCK, the three types of knowledge are marked with C (content), P (pedagogy), and T (technology) in three separate circles in a Venn diagram as shown in Figure 2. In the case of English language teaching, content refers to knowledge of the English language (e.g., syntax, grammar), pedagogy means methods of teaching (e.g., communicative approach, task-based language teaching); and technology implies both hardware (e.g. digital whiteboard, computer) and software (e.g., Glogster, Zoom) forms (Mishra & Koehler, 2006). The connectedness of the circles emphasises that whereas technology used to be seen as separate from content and pedagogy, it is now essential and intertwined. The framework offers teachers a way to self-assess their ICT technology application, classroom practice, and understanding of the subject content in general. This is done by examining the kinds of new knowledge that will be required before teachers attempt to deploy new technology into their existing activities. As show in Figure 2, there are three types of new knowledge that can occur in the three intersections between two of the three elements. The top intersection between Pedagogical Knowledge and Content Knowledge calls for Pedagogical Content Knowledge (PCK). The right intersection between Technological Knowledge and Pedagogical Knowledge stands for Technological Pedagogical Knowledge (TPK). The left intersection between Technological Knowledge and Content Knowledge refers to Technological Content Knowledge (TCK). These three knowledge perimeters essentially guide teachers to follow the process to:

- choose technology that fits their abilities and matches their pedagogy (TPK). In other words, understanding their technological competence and how the functionality of a technology matches or enhances lesson design;
- decide the teaching method that suits the subject content or lesson/task outcome (PCK). This means to align learning activity design with the course curriculum/syllabus in order to provide the most optimal and appropriate learning opportunities for students; and,
- predict how technology will affect content delivery (TCK). For example, when teaching an EAP class about APA referencing, a teacher would need to know how to use hanging indents, how to italicise, etc. in the chosen software rather than just know the format of an APA reference.

Finally, teachers can examine all of their potential and limitations, which is TPCK in the mid-intersection of the Venn diagram in Figure 2.

2.4 Bloom's revised digital taxonomy: Learning outcomes evaluation

Bloom's taxonomy (1956) is a hierarchical model of cognition. The original Bloom's Taxonomy is a classification of the three main goals of a student's learning process, namely, Cognitive (knowledge-based), Affective (attitudinal-based), and Psychomotor (skills-based) (Forehand, 2010). It identifies six main categories (Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation) in the cognitive domain. The categories of knowledge, comprehension, application, analysis, synthesis, and evaluation are ordered from the simplest and most concrete to the most complex, critical and abstract with the idea that they must be achieved in sequence (Anderson & Krathwohl, 2001). Anderson and Krathwohl (2001) modify and re-envision the cognitive categories of Bloom's taxonomy under six key terms accompanied by the relevant cognitive skills. The six key terms and their associated cognitive skills are presented in the second and third columns (yellow and blue in the online version) respectively as shown in Figure 3: (i) remembering (e.g. recognising, listing), (ii) understanding (e.g. summarising, explaining), (iii) applying (e.g. executing, implementing), (iv) analysing (e.g. comparing, organising), (v) evaluating (e.g. checking, critiquing), and (vi) creating (e.g. planning, producing). Even though they are arranged in a similar hierarchy from the least to most complex, this version is less rigid than Bloom's original version because the categories can overlap.

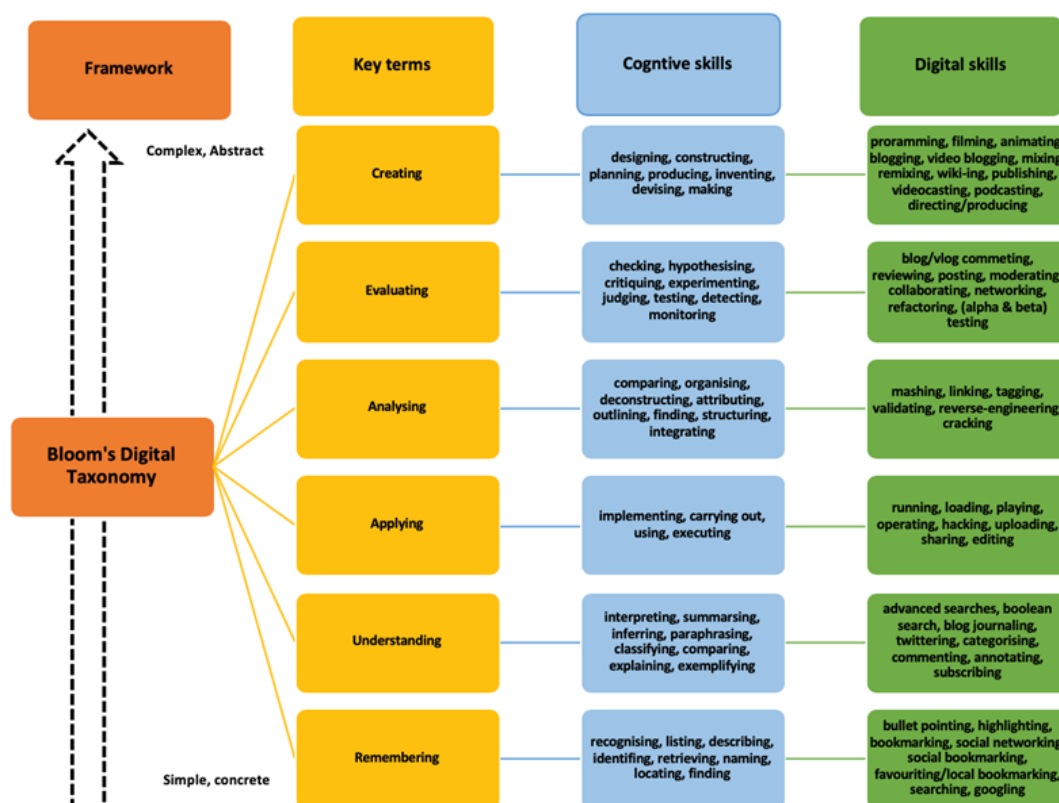


Figure 3. Bloom's revised digital taxonomy. Adapted from Churches (2008, p.3).

Churches (2008, 2010) adds digital skills to the modified taxonomy to create Bloom's revised digital taxonomy (BRDT). The digital skills, which are presented in the third and final column (green in the online version) in Figure 3, are attached to each level of the cognitive hierarchy. It encompasses a bundle of memorizing, synthesizing, logical, and creative skills, and teachers can choose and combine various levels of thinking skills that suit the curriculum needs and learners' abilities in conjunction with the ICT available to them.

The goal of BRDT and previous versions of the taxonomy is to allow learning to be structured in a way that builds from lower level cognitive skills to higher ordered thought processes. This goal is strongly incorporated into all good TESOL curriculum and syllabus and therefore needs to be considered in activity design. The addition of the technological skills in BRDT is a recognition that the ability to use technology is an essential part of cognitive ability in the modern world.

By combining the four models described above, the DEL model provides a holistic framework for designing, adapting and assessing online language teaching activities. The next section illustrates how we applied the DEL model to our own lesson.

3 Evaluating and Adapting a Face-to-face EAP Lesson for Online

This section illustrates Wilson's evaluation and adaptation of an EAP lesson using the DEL model for the purpose of delivering the materials online during Covid-19 social distancing restrictions. It is important to note that evaluation is just as important as adaptation in order for the teacher to approach the lesson confidently. The lesson in question is a case study on time management from a 10-week English Language Intensive Courses for Overseas Students (ELICOS) EAP course for students wishing to enter business, IT or accounting degrees at the University of Newcastle. The course aims to raise students'

language proficiency from an IELTS 5.5 to an IELTS 6, and includes topics like referencing, formal presentations, business-focused vocabulary and time management. Class sizes vary from four to eighteen students, and the vast majority of the students are international students from China.

The lesson applies a flipped classroom approach that assigns homework prior to the class focusing on reading comprehension and online research followed by group discussion and a semi-formal group presentation in class. This approach is designed to incorporate communicative language teaching (CLT) as a way to develop learners' communication skills, which is reported to yield positive students' feedback and test results (e.g., Lee & Wallace, 2017). It also aims to teach students about time management, which is widely recognised as an essential academic skill (Douglas, Bore & Munro, 2016). The lesson was originally adapted from material in *Essential Academic Skills* by Turner, Krenus, Ireland and Pointon (2011) and comprises three parts: (i) the flipped classroom instructions, (ii) the classroom instructions, and (iii) the case study text, which are presented in Figures 4.1 to 4.3. Similar to most Australian universities, the primary technology used to replace face-to-face classroom time is Zoom video-conferencing, so this adaptation is based on that requirement.

Flipped Classroom Instructions

1. Read the short case study on the following page.
2. Draw a timeline of the events.
3. Now examine the problem – a lack of time management. Select all the information related to Margaret's lack of time management as described in the case study.
Then answer the questions below:
 - a. What are the possible causes of her poor time management?
 - b. What are the effects of her poor time management?
4. Research time management tips online (watch a video).

Figure 4.1 Flipped classroom instructions.

Adapted from Turner, Krenus, Ireland and Pointon (2011, p. 174).

Classroom Instructions

1. Compare your timelines.
2. Compare your analysis on Margaret's lack of time management.
Does your group agree?
 - a. What are the possible causes of her poor time management?
 - b. What are the effects of her poor time management?
3. Compare your notes from the time management videos you watched online.
4. What advice would you give Margaret?
5. Choose the three best pieces of advice for Margaret
6. Report your recommendations to the class.

Figure 4.2 Classroom instructions. Adapted from Turner, Krenus, Ireland and Pointon (2011, p. 175).

Case Study Text

Margaret raced into her tutor's office. 'Sorry I'm late', she said breathlessly. 'I had to stay longer at my job. They needed me because another staff member rang in sick.'

'How can I help?' said Lesley, glancing at the pile of essays on her desk. 'But first, just to let you know, we now only have five minutes before my next student appointment.'

Margaret placed her bag on the floor and pulled out her essay. 'Lesley, I wanted to know why I did so poorly. I only got 5 out of 20. Usually, at high school, I did well in my classes.'

Lesley glanced over the essay. 'Well, you have only read two sources. You have only written 1000 words. It was meant to be well researched and 1500 words in length.'

Margaret thought of how tired she'd been after writing her assignment. Her friend Pam had helped when she'd heard that the essay had to be written in one day. She'd given her copies of the two sources and even made dinner. That made doing the essay possible. Still she had to work non-stop. She'd read the sources quickly, skimming and scanning for relevant information. Then she'd stayed up all night writing the assignment and finished just in time for her tutorial at 8.30 a.m. on Monday morning.

'But I thought I wrote well,' groaned Margaret.

'Yes, your language is quite good. In fact, just looking at how you have expressed yourself, I'd say you were quite a clever student, but it looks like you did not spend enough time on the essay,' suggested Lesley. 'Sorry Margaret, my next student is here now. I'll see you next week in the tutorial. We can talk about this again.'

Margaret stood up and left, almost too tired to care.

Figure 4.3 Case study text. Adapted from Turner, Krenus, Ireland and Pointon (2011, p. 317-318).

3.1 Applying the DiAL-e and SAMR

Wilson chose to begin with the DiAL-e and SAMR framework in order to evaluate the type of task design and technology integration they situate before further decisions on modifying the original materials were made. The first flipped task activity (see Figure 4.1, Q.2) originally requires the students to create an event timeline from Margaret's case study (see Figure 4.3). The content focus is on reading comprehension, time markers (e.g., Monday, before), cohesive devices (e.g., but, when), and different aspects of past tense (e.g., wrote, had written).

Using the terminology of the DiAL-e framework (Burden & Atkinson, 2008a), creating a timeline is a (re-)narration task as the students would reconstruct the story chronologically. In order to implement the task online, he decided to change the task to also be figurative by making the timeline as a graphical product, and authoring by having students to share this product online with their peers before class.

To facilitate producing and sharing a timeline online, Wilson then considered two software choices: StoryBird and Padlet. His initial software selection was based on other teachers' recommendations and trial-and-error application in previous lessons. Eventually, he chose to use Padlet because it has a more

adult and professional appearance, which is more suitable for an EAP class. Although using this software involved committing class time to familiarise the students with Padlet, his plan was to use this software throughout the online EAP course. Thus, the time investment was justified. Using the terminology of the SAMR (Puentedura, 2006), Padlet enhanced and augmented the activity because it allowed students to create a professional graphical timeline and share it online, rather than making notes on paper, which cannot then be shared online. It also enabled students to interact with, add to and rearrange each other's timelines. Figure 5 is one student's Padlet timeline.

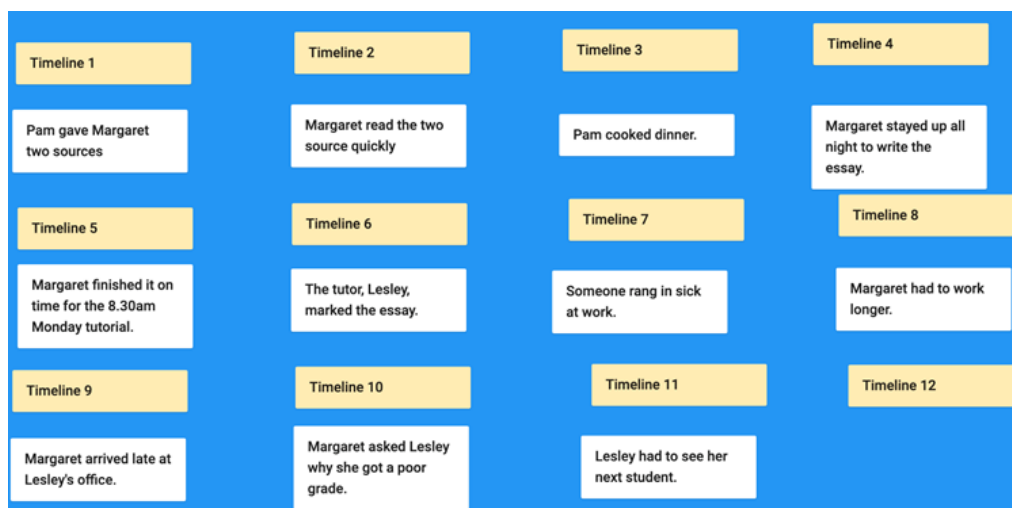


Figure 5. An example of student's Padlet timeline.

The second flipped task activity (see Figure 4.1, Q.3) requires students to examine the possible causes and effect of poor time-management based on Margaret's case study (see Figure 4.3). The task contains two types of learning design according to the DIAL-e framework, which are empathy (i.e., putting oneself in other's shoes) and inquiry (i.e. problem-based/solving). Wilson found these to be appropriate for the students' interests and the course aims. The adaptation connected to this task comes from the fact that the classroom environment in which the students would hold their follow-up group discussions (see Figure 4.2, Q2) is now an online Zoom breakout room rather than a physical space. Zoom was used as a substitution based on the SAMR model because the task was unchanged except for the fact that it was online. The use of Zoom for classroom time was a university requirement like it is in many other Australian universities.

The final flipped task activity (see Figure 4.1, Q4) is to research time management tips online and to present a summary of them in a later in-class discussion. This blended-learning task is already online, but Wilson's experience suggested that students are not always motivated to perform research tasks unless they are graded. In order to increase the students' motivation for this activity, prior to the lesson, he required the students to present a link to their resource and a brief written summary on the university learning management system (LMS) class discussion board. Referring to the SAMR framework, this is an augmentation of the activity. Furthermore, by asking the students to publish their resources on the LMS, he also added an element of authoring (based on the DiAL-e framework) as a way to enhance the learners' ownership and autonomy.

Classroom activities 1-3 (see Figure 4.2, Q.1-3) involve students in group discussions comparing their timelines, their analysis of Margaret's time-management problems, and the results of their time management tips research. Like all class-time since Covid-19 restrictions, this was done using Zoom video conferencing which acts as a substitution for the physical classroom at an enhancement level (SAMR). Zoom video conferencing allows the teacher and students to see and hear each other online, to share screens and videos, and to break away into smaller groups for certain activities. Under the DiAL-e

framework, these three classroom activities involved collaboration, but experience suggests that students are less collaborative and communicative in online discussion using video conferencing software than in a physical classroom. This is especially the case when students are in Zoom breakout rooms where the teacher is not present and students are often reluctant to turn on their cameras. In an intermediate class, Loomai avatar software has been a fun and funny way to address this issue because it allows students to create cartoon characters to appear as during video-conferencing, but Wilson ultimately decided that “Loomies” are not appropriate for an EAP lesson where the students are more professionally-minded, so he continued to rely on monitoring the Zoom breakout rooms to ensure students were active in group discussions.

The final three classroom activities (see Figure 4.2, Q.4-6) in the lesson require collaboration, empathy and authoring (DiAL-e) as students choose the best advice for Margaret and create a semi-formal group presentation to give to the rest of the class. The best motivation for students to engage in these activities fully is to emphasise their authoring (DiAL-e) requirement. The first time he taught this lesson online, Wilson directed students to create a PowerPoint collaboratively, sharing it on OneDrive and embedding their spoken presentation audio into the file. This PowerPoint presentation was then played for the class by the teacher the following day. However, due to his own limitations (addressed in the TPCK section below), Wilson changed the activity to use Glogster, which is a cloud-based platform designed to create multimedia posters with pictures, videos and audio embedded. This allows the use of voice recording and provides the motivation of authoring (DiAL-e), which enhances the presentation quality significantly because it enables and encourages students to record, listen to, and re-record themselves numerous times. This often improves presentation, grammar, and content as the students can edit their product many times until they are satisfied with it. Under the SAMR framework, this is a clear example of transformation at the level of redefinition. A student time-management presentation created using Glogster is presented in Figure 6. As well as evidencing their research, which involved listening, notetaking and content selection, creating and giving this presentation involved writing, speaking and summarising information.

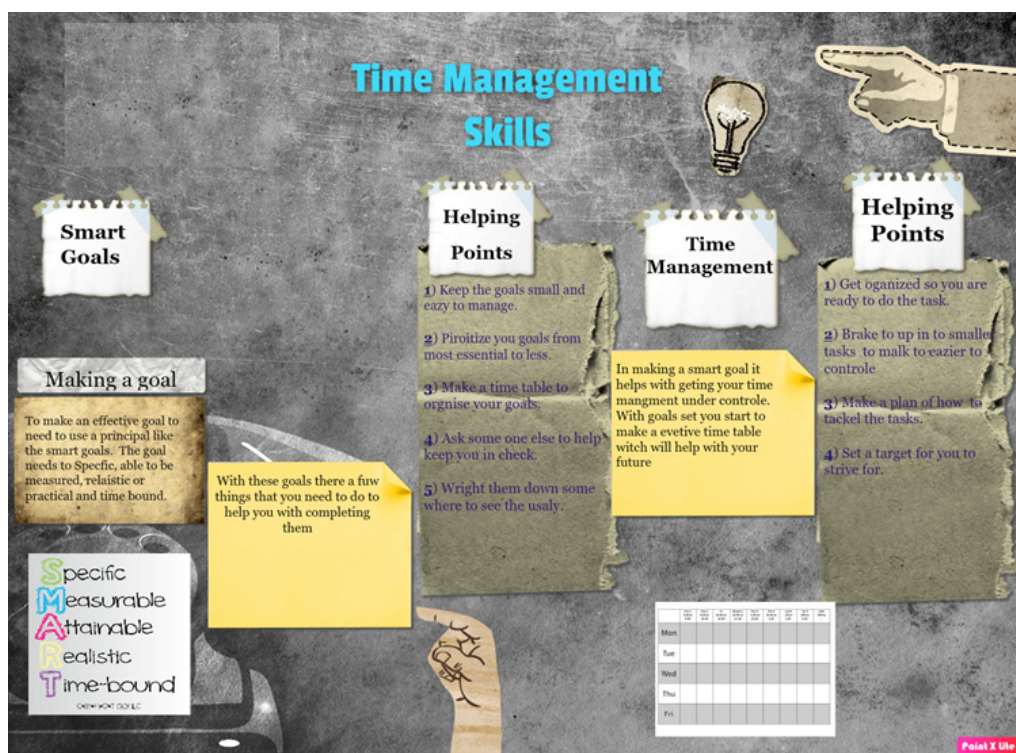


Figure 6. An example of students' time-management presentation using Glogster.

3.2 Applying BRDT and the TPCK

BRDT and the TPCK are applied to evaluate a lesson's suitability for the students and the teacher. Because the focus of this paper is on adapting classroom material to work online, Wilson's primary focus is on the technological aspects of both models. Using the TPCK model, he considers his own ability to use the technology required for the lesson and decided that:

- He is confident using Zoom due to several professional development sessions; however, he is unable to construct a communicative learning environment that matches the communicative language teaching (CLT) pedagogy embedded in the flipped classroom approach to the same extent as in a physical classroom. To address this, we compromise in some key areas such as not having students pair-check answers.
- He is not confident in teaching students how to embed audio files into PowerPoint for their final presentation, and he should not ask students to do something that he cannot teach them confidently. Although it would have been possible to increase his technological knowledge and keep the existing activity design, he believes that if something is difficult for him, it may be too difficult for the students. After considering several alternatives, he decides to use Glogster, as illustrated in Figure. 6, because of its ease of use and excellent multimedia functionality.

Considerations such as these are how the TPCK should be applied to teachers' knowledge on content, pedagogy and technology in order to make sure they are capable of teaching a lesson in its current form.

BRDT shows Wilson if a lesson is suitable for his students and learning aims. As the original lesson is clearly designed with Bloom's Taxonomy in mind, there is little to adapt here. This, however, is an example of how the DEL should be applied selectively and as an evaluation tool. Not everything needs to be adapted to work online. Using BRDT to assess the lesson activities, Wilson can see that the three flipped activities integrate understanding by reordering information, applying, and then analysing the cause and effect of Margaret's poor time-management. The classroom activities then incorporate evaluating when student groups decide which time management tips are best and creating a collaborative presentation. These middle to high order thinking skills meet or slightly exceed, in a scaffolded manner, the students' critical competency, and they match the EAP course aims. Focusing on the digital skills added by Churches (2008), the technology used in the lesson incorporates elements of searching, sharing, commenting, blogging/journaling, linking, publishing, animating and producing, which are all within the same middle to high order thinking skills according to BRDT.

4 Student Feedback on the DEL Adaptations

We collected feedback from a small class of six EAP students specifically on the use of Padlet and Glogster. Although previous studies on Padlet (Rashid, Yunus & Wahi, 2019) and Glogster (Awada & Faour, 2018) rely on quantitative Likert-scale surveys supplemented by interviews, our small sample size meant that we only used interview data. Similar to the 87 university ESL students in Malaysia surveyed by Rashid, Yunus and Wahi (2019), our students report that Padlet was motivating, fun to use, and encouraged student collaboration. Also, similar to Awada and Faour (2018), who reveal that 18 ESL teachers at The American University of Beirut perceived Glogster to have a positive effect on students' learning, we received generally positive feedback on Glogster. Specifically, one of the students remarks that Glogster was "much easier to do than PowerPoint". Despite this positive aspect, the main feedback related to Glogster is that it was too much to introduce two types of new technology into one lesson, and that because Padlet was used for an earlier activity, the students did not engage fully with Glogster. We also realised that both software programmes have similar functionality. In hindsight, it would have been better to have done both activities using only one software programme.

5 Conclusion and Recommendations

Under social distancing restrictions due to Covid-19, students and teachers have had to adapt to the online classroom immediately. We assigned ourselves the task of adapting face-to-face teaching materials for the online environment, and we decided that Chakowa's (2016) Digitally Enhanced Learning (DEL) model could provide a holistic framework for designing, adapting and assessing online language teaching activities. Based on our experience with the DEL model, we have three recommendations on its application.

5.1 Application sequence of the four models

As suggested by Chakowa (2020), all planning and evaluation begins with the DiAL-e framework as it frames the detail of the other three main components: technology integration (SAMR), teacher's technological, pedagogical and content knowledge and capability (TPCK), and student's learning outcomes and thinking processes (Bloom's Revised Digital Taxonomy). Wilson's experience demonstrates that following the DiAL-e with the SAMR then the TPCK and BRDT is effective. However, it is clear to him that a large degree of flexibility is required and involved in using the model because all four frameworks are interconnected and interwoven, and the planning processes are reiterative. This means that the original learning design set by DiAL-e can be changed according to the 'real' situation of technology, teacher, and students.

5.2 How much new technology to incorporate

Although Chakowa (2016) suggests that online tasks should always implement technology in a transformative way if possible, there is nothing wrong with using technology merely to substitute and augment an offline task. This is especially true when lessons must be online. Not everything can be improved by the addition of newer technology, and learning how to use new technology is time consuming for teachers and students. Although digital literacy is embedded in most EAP curriculums, it should facilitate rather than replace the more traditional learning aims. Nevertheless, the technologies referred to in this article offer additional pedagogical tools and functions that are not limited by the physical classroom, which enables redesigning and creating new learning tasks, and the more these technologies are understood by teachers, the more value they can add to a lesson.

5.3 Application of BRDT digital skills

BRDT informs the cognitive and digital difficulty level of each activity intended in the lesson. Thus, each activity can be adjusted to fit the critical/technological abilities of the class. Wilson, however, found that even though students may be applying higher order thinking skills (such as creating), they were not necessarily ready for the digital skills that aligned to those categories (such as programming), and also some of the digital skills listed were outside of the remit of an EAP course. Churches (2008) digital skills suggestions should be considered carefully to decide if they are appropriate for your students and course aims.

In conclusion, the DEL model can be complex at first glance as it consists of four different yet interrelated frameworks. However, once it is understood its application is quick, easy and practical. This article strongly recommends it as an approach to adapting face-to-face teaching materials for the online environment.

References

- Abbitt, J. T. (2011). Measuring technological pedagogical content knowledge in preservice teacher education: A review of current methods and instruments. *Journal of Research on Technology in Education*, 43(4), 281-300.
- Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Addison Wesley Longman.
- Awada, G. M., & Faour, K. H. (2018). Effect of Glogster and cooperative learning differentiated instruction on teachers' perceptions. *Teaching English with Technology*, 18(2), 93-114.
- Burden, K., & Atkinson, S. (2008a). Beyond content: Developing transferable learning designs with digital video archives. *Proceedings ED-MEDIA Vienna*.
- Burden, K., & Atkinson, S. (2008b). Evaluating pedagogical affordances of media sharing Web 2.0 technologies: A case study. *Proceedings Ascilite Melbourne*, 121-125.
- Bloom, B. S. (1956). Taxonomy of educational objectives. Vol. 1: Cognitive domain. New York: McKay.
- Chai, C. S., Koh, J. H. L., & Tsai, C. C. (2013). A review of technological pedagogical content knowledge. *Journal of Educational Technology & Society*, 16(2), 31-51.
- Chakowa, J. (2016). Implementing and evaluating an online learning environment to enhance second language learning at the beginner level. *PhD thesis*. Monash University.
- Chakowa, J. (2020). Development of a holistic model to design and analyse online activities. *Ubiquitous Learning: An International Journal*, 13(1), 38-43.
- Churches, A. (2008). Bloom's taxonomy blooms digitally. *Tech & Learning*, 1, 1-6.
- Douglas, H. E., Bore, M., & Munro, D. (2016). Coping with university education: The relationships of time management behaviour and work engagement with the five factor model aspects. *Learning and Individual Differences*, 45, 268-274.
- Forehand, M. (2010). Bloom's taxonomy. *Emerging Perspectives on Learning, Teaching, and Technology*, 41(4), 47-56.
- Germain-Rutherford, A., & Ernest, P. (2015). European language teachers and ICT: Experiences, expectations and training needs. In R. Hampel & U. Stickler (Eds.), *Developing Online Language Teaching: Research-based Pedagogies and Reflective Practices* (pp. 12-27). Palgrave Macmillan.
- Gudmundsdottir, S., & Shulman, L. (1987). Pedagogical content knowledge in social studies. *Scandinavian Journal of Educational Research*, 31(2), 59-70.
- Lee, G., & Wallace, A. (2018). Flipped learning in the English as a foreign language classroom: Outcomes and perceptions. *Tesol Quarterly*, 52(1), 62-84.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017-1054.
- Puentedura, R. R. (2013). SAMR: Getting to transformation. Retrieved May 15, 2020, from <http://www.hippasus.com/rpweblog/archives/2013/04/16/SAMRGettingToTransformation.pdf>
- Rashid, A. A., Yunus, M. M., & Wahi, W. (2019). Using Padlet for collaborative writing among ESL learners. *Creative Education*, 10(3), 610-620.
- Stickler, U., & Hampel, R. (2015) Transforming teaching: New skills for online language learning spaces. In R. Hampel & U. Stickler (Eds.), *Developing Online Language Teaching: Research-based Pedagogies and Reflective Practice* (pp. 63-77). Palgrave Macmillan.
- Turner, K., Krenus, B., Ireland, L., & Pointon, L. (2011). *Essential academic skills (2nd ed.)*. Oxford University Press.

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