From Clicks to Connections: Applying Activity Theory to Multimodal Materials Design for GTA Development

Dr Paula Villegas

Role: Lecturer in TESOL and International Education, International Education and Lifelong Learning Institute, University of St Andrews

Email: pvv1@st-andrews.ac.uk

Dr Paula Villegas is a Lecturer in TESOL and International Education at the University of St Andrews. Her research explores flipped learning, motivation, and academic literacies, with a strong focus on inclusive and third-space pedagogies. She has published on materials design and flipped learning. She leads innovative provision for postgraduate researchers, including the warmly received Publish your Article! Series of workshops. Paula is also an Assistant Editor for the *Journal of Learning Development in Higher Education*.

Abstract

Graduate Teaching Assistants (GTAs) often occupy a liminal space in higher education, tasked with delivering high-quality teaching while receiving limited formal training or pedagogical development. This uneven provision, often shaped by departmental discretion, intersects with the pressures GTAs face to progress in their research, develop their teaching practice, and manage time and wellbeing. In response to this gap, I designed a series of multimodal units, delivered asynchronously, to offer more accessible, flexible, and supportive professional learning opportunities. These units drew on the best principles of online learning (Nilson & Goodson, 2018) and were underpinned by a commitment to personalisation, accessibility, and community-building. To evaluate the impact and limitations of this intervention, I draw upon Carabantes' (2024) Activity Theory framework to critically analyse and design contextually relevant materials, moving beyond static curricular prescriptions toward dynamic, need-responsive pedagogies. In this reflection, I critically examine the contradictions and affordances, ranging from institutional constraints (limited training, time, and recognition) to the mediating tools employed (e.g., Rise, ChatGPT-generated visuals, Padlet). I argue that Activity Theory not only makes visible the tensions in GTA learning contexts but also supported design choices that enhanced engagement and agency through personalisation, accessibility, and community-oriented tasks. This reflection situates material development as a deeply relational and political act, one that demands awareness of power, equity, and evolving identities in higher education. By focusing on multimodal learning design as a third-space intervention (Whitchurch, 2008), I suggest that GTAs' professional learning can be enriched when self-study material design is treated not as an afterthought, but as a central, theory-informed element of pedagogical practice. I conclude with implications for the professionalisation of postgraduate teachers and a call to reimagine materials development training within GTA programmes.

Keywords: Activity Theory; Multimodal Learning Design; Graduate Teaching Assistants (GTAs); Third-Space Pedagogy; Professional Development in Higher Education.

Navigating the Liminal Space

Graduate Teaching Assistants (GTAs) inhabit a liminal space within Higher Education (HE) institutions as they are doctoral candidates, regulated by students' policies, and educators, regulated by staffs' policies. The dual nature of this reality positions GTAs as simultaneously delivering and receiving educational provision. This complexity is broadly situated within an uneven landscape where HE institutions provide different levels of initial teacher training and support. These differences can also occur across Schools within HE institutions, as is the case at St Andrews. In my home university, GTAs are expected to complete 6 hours of mandatory essential training distributed among 4 sessions organised and overseen by the Educational Development Division, part of the International Education and Lifelong Learning Institute (IELLI). This training includes two sessions, Introduction to Teaching at St Andrews, and Assessment and Misconduct at St Andrews, which can be taken synchronously online or face to face. These sessions are centrally designed and offer minimal space for differentiation or personalisation due to the generic nature of the provision and the institutional constraints it entails. Thus, reflecting tensions between a standardised provision which meets institutional requirements and individual learners' needs and preferences.

The essential training also includes a session designed and delivered by students' services which occurs either online synchronously or face to face, and a session on diversity at work delivered asynchronously. The departments are then expected to observe GTAs for developmental purposes and provide further training, more specific to the discipline they will be teaching. While both Introduction to Teaching, and Assessment and Misconduct offer learners a clear overview of what is expected of them using effective teacher-training techniques such as looped input (Woodward, 2003), there is scope for further support and training of GTAs. Crucially, this support is situated within the third space (Whitchurch, 2008) a hybrid domain that blurs the traditional boundaries between academic and professional roles. Specifically, in this case while this provision is overseen by the head of Educational Development, a role situated within teacher development, both Introduction to Teaching, and Assessment and Misconduct are delivered by a Lecturer in TESOL and International Education. Thus, our provision harnesses the expertise of both educational developers and academics to deliver an essential and meaningful provision for GTAs.

As highlighted, further support for GTAs has been identified as an area for further development. Following conversations across the university to address this exciting area of prospective provision two additional workshops were offered in the academic year 2023/2024. The first one, effective lecturing (Appendix I), aimed to prepare GTAs to step into delivering lectures, a beneficial skill in terms of future career development. The second one, linked directly to my area of research, explored effective ways of introducing technology in the classroom (Appendix II). Despite the sessions being well attended, one of the key priorities was making the training accessible. As explained, GTAs are balancing multiple responsibilities which may make engaging with continuous professional development more challenging due to conflicting priorities. To facilitate engagement with CPD and providing a meaningful,

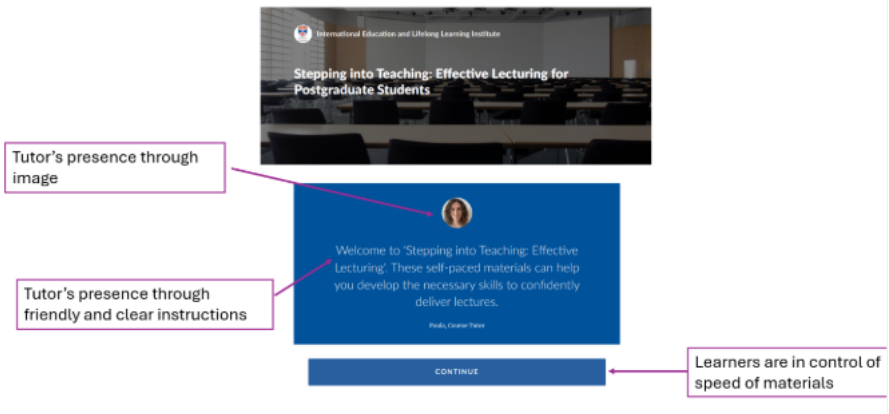
flexible, and supportive professional learning opportunity; these workshops were translated into online self-study asynchronous units. These units drew on the best principles of online learning (Nilson & Goodson, 2018) and were underpinned by a commitment to personalisation, accessibility, and community-building.

In this paper, I analyse those resources through the lens of Carabante's (2024) Activity Theory framework providing a blueprint for similar practitioners to design contextually relevant materials, moving beyond static curricular prescriptions toward dynamic, need-responsive pedagogies. I start by discussing the role that GTAs play in our institution, followed by the rationale underpinning the design of the multimodal units. Drawing from Carabate's (2024) activity theory framework I analyse the units to conclude by advocating for materials design as relational artefacts. This critical reflection would be of interest to learning developers and teacher trainers aiming to develop their own suite of online materials to support GTAs development.

The Intervention: Designing for Flexibility and Belonging

The workshops were originally designed with student-centred principles in mind and closely aligned with course aims, thus, the shift to an online learning (OL) environment required careful adaptation to preserve their pedagogical foundation. The commercial platform *Articulate Rise 360* was chosen as the most suitable tool for this transition, given its proven effectiveness for delivering self-paced OL tasks. This approach aimed not only to translate existing content, but to harness the affordances of OL to enhance the GTAs experience. Firstly, *Articulate Rise 360* scroll-based structure enables logical progression while supporting bite-sized engagement. This was particularly effective for introducing complex concepts with clear scaffolding. By presenting the information in bite-size chunks, cognitive overload is avoided while aligning with the principle of learner control (Nilson & Goodson, 2018). This positions the GTAs in control of the amount and speed of material they engage with at any given time (Figure 1).

Figure 1. This figure shows the beginning of effective lecturing online materials



This mode of presenting the information makes it possible for GTAs to engage with the specific sections of the resources they are interested in or even do so around their schedules. The delivery of asynchronous materials not only reduces scheduling barriers but can also support learner autonomy. However, this approach may reduce the sense of community as learners are engaging with materials at their own pace, individually in their own spaces. This can also create a further distance between the lecturer and the GTAs as they are not simultaneously sharing the learning space. To address this, a conscious effort was made to make the lecturer the guiding voice throughout the units (Figure 1). The language used is clear, friendly and free of unnecessary jargon to help GTAs engage with the materials effectively. To facilitate the community building aspect of learning and foster interaction with the lecturer and the other GTAs, Padlet boards were also included. Through Padlet, GTAs could share their reflections, questions and advice to each other. Thus, encouraging the GTAs to see themselves not only as learners, but as part of a developing community, where their contributions are visible and valued.

It has been highlighted how looped input (Woodward, 2003), is a key element of the essential training which is warmly received by the learners. A participant commented in the form evaluation of the 2023/2024 introduction to teaching training "We didn't just hear about methods; we experienced them, creating 'Aha!' moments - so clever and engaging!" To bring this positive impact into the online environment, the multimodal selection of the input was carefully aligned with Nilson & Goodson's (2018) and Mayer's (2008) principles, which, in turn, were used to present best practices when including technology in the classroom (Figure 2). Therefore, these principles informed the design of the multimodal units which included a wide range of media such as interactive activities, drag and drop, audiovisual content and textual input in a scaffolded and coherent manner. Thus, providing the GTAs with the key information to develop their teaching toolkit in an engaging and accessible manner while modelling best practices.

Figure 2. This figure shows lopped input in the OL environment.

Analysing the Intervention: Activity Theory in Action

Activity Theory sees human activities as purposeful and object-oriented resulting from interactions among people, materials and their socio-cultural practices (Carabantes, 2024). In line with Activity Theory, Carabantes (2024) argues that materials should reflect the sociocultural realities of teachers' working environments and align with reflective teaching practices. This perspective positions teachers as materials developers who are "responsive to their socially situated teaching context" (Carabantes, 2024, p. 157), with the ability to evaluate, select, and adapt resources for their sessions. Although developed with language teachers in mind, this model can be extended to GTA training, where it helps to identify and analyse the complex educational realities of both trainers and, to some extent, trainees. In doing so, it enables interrogation of their roles within a form of peripheral provision that ultimately filters back into the core of the university. Carabantes' (2024) framework allows for a systematic analysis of the resources (Appendix I and Appendix II) while uncovering affordances and challenges underpinning their design. Drawing directly from Carabantes' (2024) model, figure 3 shows both multimodal units as activity systems.

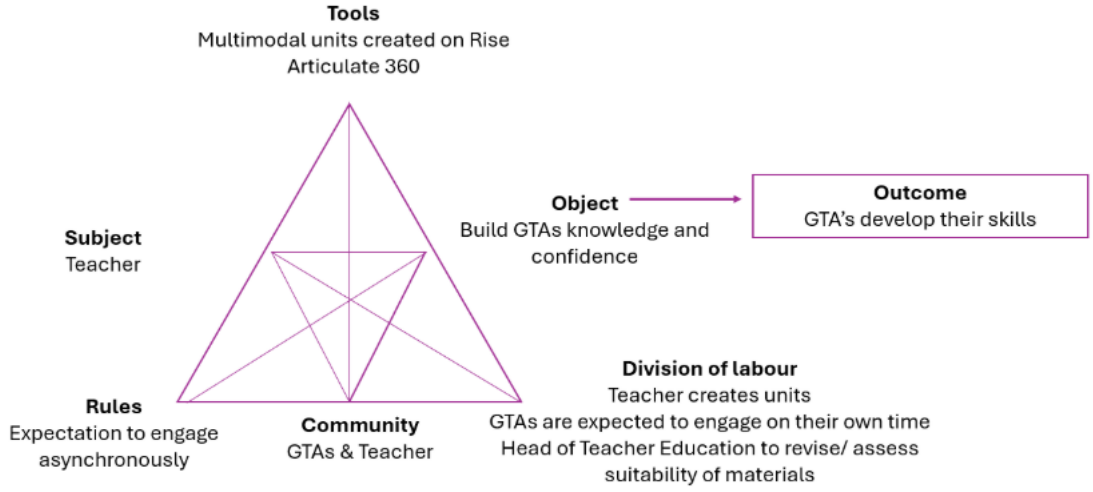


Figure 3. Multimodal resources as activity systems following Carabantes' (2024) model

Thus, following Carabantes' (2024) analytical model and guiding questions, the analysis of the resources can be seen in table 1.

Table 1. Analysis of the multimodal units following Carabantes' (2024) framework

Carabantes' Framework (2024)	Effective Lecturing	Using Technology Effectively
Subject	Tutor designs the unit with the pedagogical assumption that lectures can be interactive, reflective, and theoretically informed rather than transmissive.	Tutor acts as both designer and facilitator, drawing on pedagogical expertise and a commitment to integrating technology critically.
Tools	The unit employs Padlet, Rise-based interactivities, and slide decks (physical tools), alongside psychological tools such as Rosenshine's principles of instruction, levels of processing, and models of lecturer stance (King & Kirk, 2022).	The unit utilises digital platforms (Wordwall, videos, Moodle) as physical tools, and draws on Mayer's (2008) principles of cognitive load and Nilson & Goodson's (2018) models of effective online pedagogy as psychological tools
Rules	Learners are expected to engage with these materials asynchronously. When delivering their own lectures, they are expected to foster reflective engagement before, during, and after lectures. Expectations include integrating theory with practice and aligning delivery with learning outcomes.	Learners are expected to engage with these materials asynchronously. When developing their own OL content, they are expected to follow accessibility guidelines and prioritise simplicity to avoid cognitive overload. The institutional emphasis on digital competence underpins these rules.
Community	The immediate users are GTAs preparing to lecture, with peers functioning as a collaborative learning community. Stakeholders include teacher's supervisors and the institution requiring effective GTA training.	The immediate users are GTAs preparing to include technology in their sessions, with peers functioning as a collaborative learning community. Stakeholders include teacher's supervisors and the institution requiring effective GTA training.
Division of Labour	The tutor curates and structures the unit; learners assume responsibility for self-testing and reflective application.	The tutor curates and structures the unit; learners assume responsibility for self-testing and reflective application.
Object (Motive)	To foster confidence and competence in lecture delivery, moving beyond	The central aim is to build learners' confidence in selecting and deploying

	transmission towards inclusive, evidence-informed teaching.	technology underpinned by strong pedagogical principles.
Outcome	GTAs acquire practical strategies for structuring lectures, engaging audiences, and applying theoretical principles to teaching practice.	An interactive module that raises critical awareness of technology enhanced learning, equipping GTAs to evaluate digital tools against strong pedagogical principles.
Contradictions	• Primary: Learners' potential prior assumptions (lectures as passive delivery) clash with the course's emphasis on interactivity. • Secondary: Tension between traditional institutional lecture norms and the interactive approaches encouraged here. • Tertiary: The introduction of flipped/active learning conflicts with dominant models of transmittal lecturing mode. • Quaternary: Potential misalignments between training (dialogic lecturing) and departmental cultures where GTAs are constrained by senior staff expectations.	• Primary: Technology is framed as both enabler and risk factor, producing learner ambivalence. • Secondary: Societal drive for edtech innovation vs. learners' need for different modes to enhance their learning experience. • Tertiary: Emerging pedagogies of critical digital literacy vs. entrenched habits of "tech-for-tech's-sake." • Quaternary: Divergence between this unit and disciplinary practices where tech uptake may remain uneven.

As can be seen in Table 1, Carabantes' (2024) Activity Theory framework can be productively extended beyond language education to the design and analysis of GTA development resources. By analysing Effective Lecturing and Using Technology Effectively through the lens of the activity system, I was able to identify both affordances and systemic contradictions that shape GTAs' learning. Rather than treating such contradictions as weaknesses, Activity Theory foregrounds them as productive tensions that can potentially drive innovation. This is particularly clear in tensions arising between transmissive lecture traditions and dialogic practices, or between the promise of educational technology and the risk of cognitive overload.

Crucially, this analysis positions materials not as neutral carriers of information but as relational artefacts embedded within the sociocultural realities of HE. Designing GTA training through this lens highlights how peripheral provision, often marginalised

or standardised, can in fact serve as a lever for cultural change within the institution. By modelling multimodal, theory-informed, and reflective practices, these units not only equip GTAs with practical strategies but also invite a rethinking of how universities conceptualise and support early-career teaching.

As highlighted, the reality of GTAs entails balancing multiple responsibilities. They are in the process of developing their researcher's toolkit by completing their doctorates while developing their teacher's toolkit by being GTAs. This duality is not only clear in the policies that constrains their students and staff identities but also in the demands on their time that developing both toolkits requires of them. A flexible learning space that harnesses the power of online learning while fostering a sense of community and modelling the reality of the contradictions within teaching and learning seems an effective way to address the need of further training while acknowledging the complex realities of GTAs. By embracing contradictions as catalysts for change, it is possible to move GTA provision from the periphery to the heart of institutional practice, reimagining it as a space where equity, belonging, and pedagogical innovation intersect.

Concluding Thoughts

Engaging with Carabantes' (2024) framework sharpened my own practice as a materials designer. It forced me to see contradictions as productive tensions that reveal the politics of higher education. Specifically, recognising GTAs' liminality made visible how institutional provision often reproduces inequities by treating their CPD as peripheral with limited opportunities for GTAs to explore how to continue developing their teaching toolkit in a way that acknowledges their complex realities and the expertise they already have. For me, designing multimodal units underpinned by Activity Theory was not just a pedagogical task but also an act of advocacy, a way of recognising how GTA development deserves the same theoretical grounding and institutional commitment as other forms of staff training. This critical reflection has also shown the importance of recognising GTAs as a professional learning community shaping institutional narratives that define what, and who, counts in teaching and how targeted interventions can foster the success of the next generation of teachers.

Ethical Claim

This paper is my reflection as a practitioner therefore not ethical approval is required. I designed the materials presented by myself and the framework used for analysis has been reference in line with good academic practice. Please note that there is an anonymised anecdotal comment collected as part of the evaluation of the service feedback, in line with UTRECT guidelines not ethical approval is needed as this was not part of a research project. Please note that learners who complete the evaluation of the service feedback do so anonymously and consent to have their quotes included in research and promotional materials.

Bibliography

Carabantes, L. (2024) Context matters: a sociocultural framework for materials development. ELT *Journal*, 79(2), pp. 156–166. https://doi.org/10.1093/elt/ccae047

Kirk, S. and King, J. (2022) 'EAP teacher observation: Developing criteria and identifying the forms of pedagogic practice they afford', *Journal of English for Academic Purposes*, 59, 101139. https://doi.org/10.1016/j.jeap.2022.101139

Mayer, R.E. (2008) Applying the science of learning: evidence-based principles for the design of multimedia instruction, *American Psychologist*, 63(8), pp. 760–769. https://doi.org/10.1037/0003-066X.63.8.760

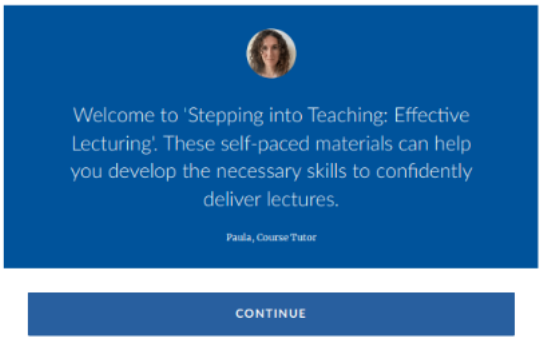
Nilson, L.B. and Goodson, L.A. (2018) *Online teaching at its best: merging instructional design with teaching and learning research*. 2nd edn. San Francisco: Jossey-Bass.

Rosenshine, B. (2012). Principles of instruction: Research-based strategies that all teachers should know. *American Educator*, 36(1), 12–19.

Whitchurch, C. (2008). Shifting Identities and Blurring Boundaries: The Emergence of Third Space Professionals in UK Higher Education. *Higher Education Quarterly 62*(4): 377-396. https://doi.org/10.1111/j.1468-2273.2008.00387.x

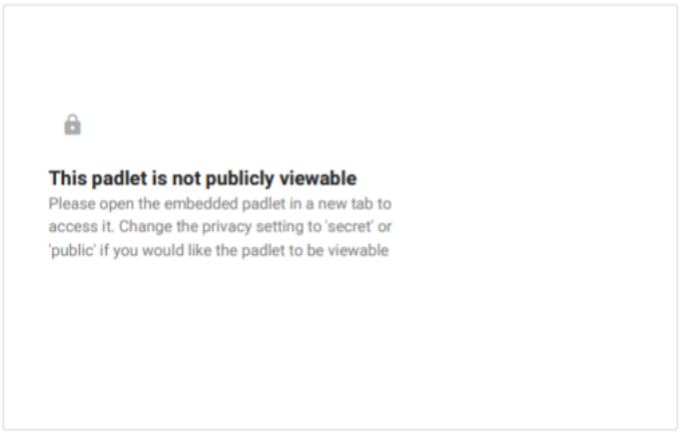
Woodward, T. (2003). Loop input. ELT Journal, 57(3), 301–304. https://doi.org/10.1093/elt/57.3.301

Appendix I Stepping into Teaching: Effective Lecturing for Postgraduate Students



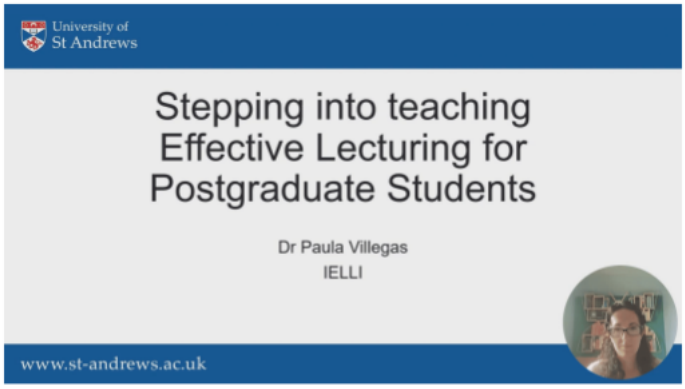
Before we start...

Let's take a bit of time to reflect on lectures and their purpose; share your ideas on the Padlet below. Please note you will need to be logged in through your university link to access and contribute to this Padlet.



Effective Lecturing - Part 1

This is the first part of the session. You can follow the video and download the slides.



PPT **Stepping into teaching Effective Lecturing for Postgraduates PART 1.pptx**
10.2 MB

Spicing up a lecture?

Read the strategies below. Do they facilitate learning? Why? Once you are ready, flip the cards to compare your ideas with ours.

Telling a personal anecdote loosely related to the topic	*Potentially useful*, but only if clearly linked to the learning outcomes. Otherwise, it may distract or feel irrelevant. Personal stories can humanise the content and build rapport (*K3*, *V1*), but they must serve a pedagogical purpose.
Presenting 10 slides with detailed bullet points and no images	*Less effective*. Dense text can overwhelm learners and reduce engagement (*K2*). A more visual and minimal slide design supports cognitive processing and retention (*K3*).

Including a one-minute pause halfway through for students to jot down questions	*Highly effective*. Pauses promote active learning and reflection, helping students process and retain information (*A2*, *K2*). It also encourages inclusive participation (*V2*).
Giving a brief quiz using an interactive platform like Mentimeter or Qualtricks.	*Very effective*. Interactive quizzes boost engagement, provide instant feedback, and support formative assessment (*A3*, *K4*). They also offer low-stakes opportunities for students to check understanding (*V3*).

Reading key textbook definitions aloud without discussion	*Limited impact*. While it may reinforce key points, reading without elaboration or application tends to be passive and disengaging (*K2*). It's more effective to discuss or apply definitions in context (*A1*, *K3*).

CONTINUE

Effective Lecturing - Part 2

Read the following statements and decide whether you think each is *True* or *False*. Don't worry if you're not sure—your thoughts will help you reflect on your current assumptions. You will learn more about these ideas in part 2 of the lecture.

Lectures are just as effective as discussions for developing behavioural skills.

- ○ True

- ○ False

SUBMIT

Most people can hold around 7 pieces of information in their short-term memory.

- ○ True
- ○ False

SUBMIT

A distinctive or unusual item is more likely to be remembered.

- ○ True
- ○ False

SUBMIT

Students learn best when they are given large amounts of material at once.

- ○ True
- ○ False

SUBMIT

Flipped learning just means recording your lecture for students to watch.

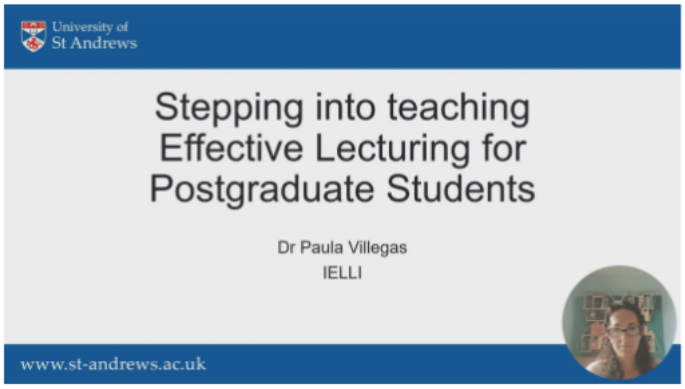
- ○ True
- ○ False

SUBMIT

CONTINUE

Effective Lecturing - Part 2

This is the second part of the session. You can follow the video and download the slides.



PPT **Stepping into teaching Effective Lecturing for Postgraduates - PART 2.pptx**
13.6 MB

Let's revise!

Match each teaching technique to the corresponding learning principle.

Match each teaching technique to the corresponding learning principle.

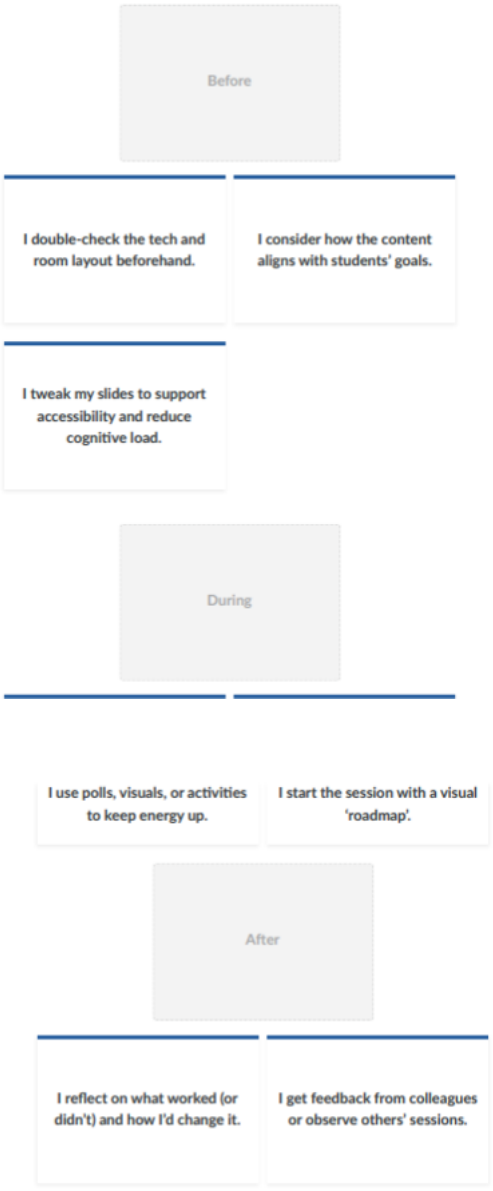
Presenting material in small steps with practice after each	Cognitive load reduction (Rosenshine)
Including a 1-minute "muddiest point" reflection	Levels of processing (Craik & Lockhart)
Grouping vocabulary by category	Distinctiveness effect (Von Restorff)
Using "banana suit" in a word list	Chunking (Miller)
Asking students to explain concepts in their own words	Metacognitive feedback / formative assessment

SUBMIT

CONTINUE

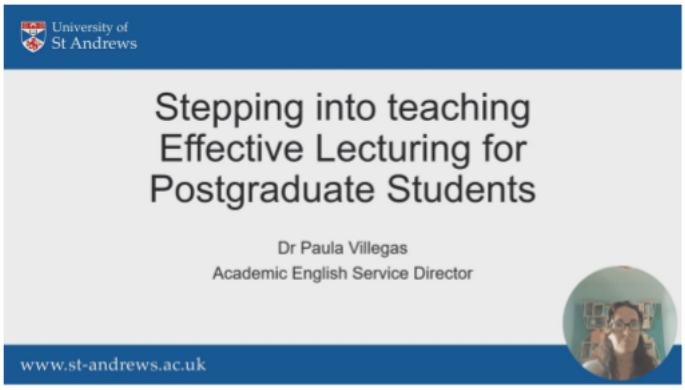
Effective Lecturing - Part 3

Think about a session you've taught (or supported). Which of the following do you *already* do at each stage—**Before**, **During**, and **After** the session? Drag each statement into the correct category.



Effective Lecturing - Part 3

This is the third part of the session. You can follow the video and download the slides.



PPT **Stepping into teaching Effective Lecturing for Postgraduates PART 3.pptx**
14.5 MB

Let's revise

Match each lecturer's description to the metaphor it best fits. There's no one "right" way to teach, but recognising our teaching stance can help us adapt!

Match each lecturer description to the metaphor it best fits.

You deliver a highly structured lecture with minimal interaction but lots of carefully curated content.	Sage on the Stage
You design breakout tasks, guide students through group problem-solving, and mainly intervene when needed.	Guide on the Side
You ask provocative questions, troubleshoot with students in real-time, and don't mind when things get messy.	Meddler in the Middle

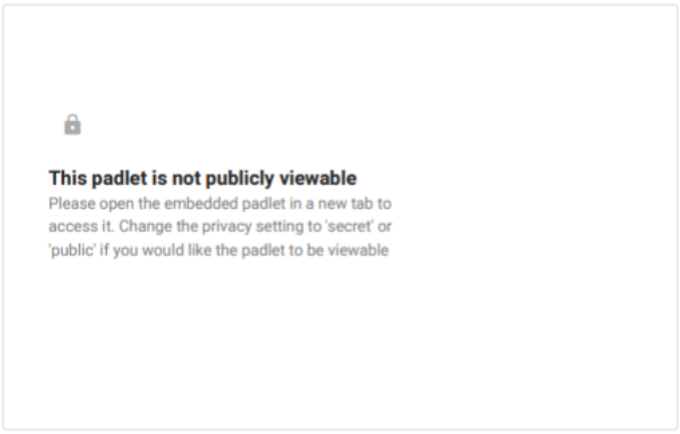
SUBMIT

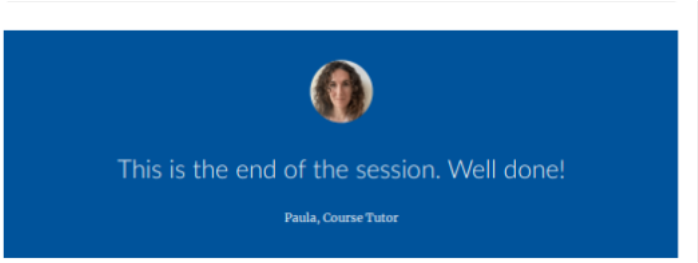
CONTINUE

Wrapping up and moving forward!

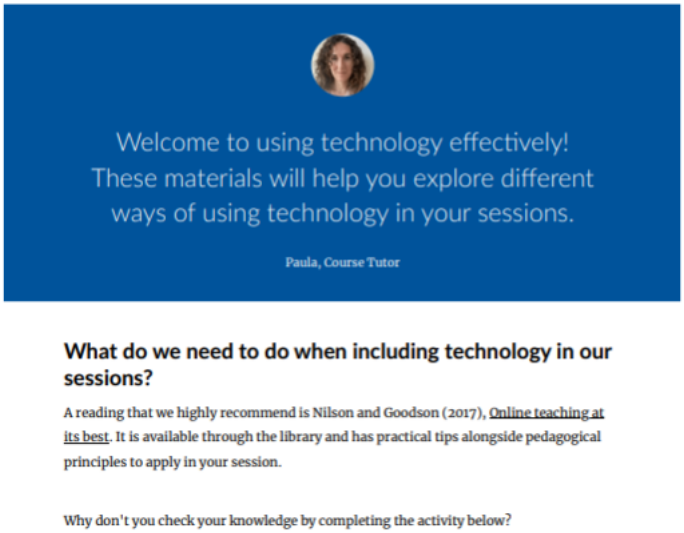
You've explored the principles of effective lecturing—from planning and delivery to learning theory and reflective practice. Now, it's time to gather what you're taking forward.

Choose two of the prompts below and jot down your thoughts. You're welcome to share your reflections on Padlet to start building our collective teaching toolkit.





Appendix II Using Technology Effectively



Don't worry about getting them all right! Once you have engaged with the materials, you will have a much better idea!

Technology in the classroom

This video will help you develop your understanding of technology in education.

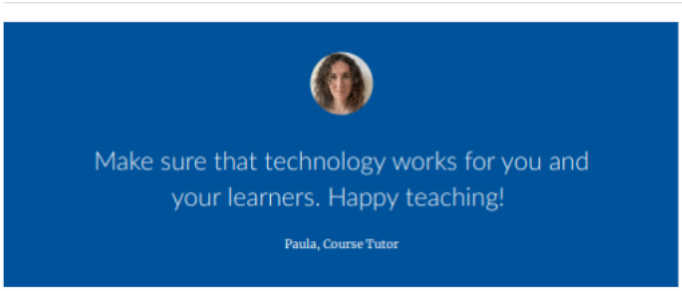
Too much of a good thing?

One of the key best things about technology can also be one of the main issues! Technology allows us to use multimodal channels to present and check information, but can it get too complex for our learners? Mayer (2008) proposes the following five evidence-based and theoretically grounded principles for reducing extraneous processing. Why don't you try to link the principle with the definition?

The Five Evidence-Based and Theoretically Grounded Principles for Reducing Extraneous Processing, as They Appear in Mayer (2008, p. 763)

Redundancy	Reduces extraneous materials.
Coherence	Highlights essential material.
Signalling	Avoids duplication (for instance not adding on-screen text to a narrated animation).
Spatial Contiguity	Presents printed words next to the corresponding graphics.
Temporal contiguity	Corresponding animation and narration are presented simultaneously.

SUBMIT


Make sure that technology works for you and your learners. Happy teaching!
Paula, Course Tutor