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FLEXIBILITY AND STRUCTURE: ONLINE ENGLISH TEACHERS' EXPERIENCES
ADAPTING MATERIALS ACROSS DIGITAL WHITEBOARD ENVIRONMENTS

MA thesis

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Abstract

Flexibility and Structure: Online English Teachers' Experiences Adapting Materials Across Digital Whiteboard Environments examines how two online English teachers in Thailand adapted traditional teaching materials within open and preset template digital whiteboards. This qualitative exploratory study investigates perceptions of flexibility, procedural support, ownership, autonomy, and alignment with individual teaching styles. Findings suggest that open whiteboard environments encouraged experimentation, flexibility, and personal investment, while preset templates reduced workload and provided procedural guidance. However, preset environments were also associated with stronger perceived institutional expectations and a reduced sense of control. The study highlights online materials adaptation as an iterative, negotiation-based process of pedagogical design.

Keywords: Online language teaching, digital whiteboards, materials adaptation, pedagogical templates, teacher autonomy, pedagogical design

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1. Introduction

The practice of distance learning has been around for longer than most might believe, with the first instance possibly being the use of educational film in public schools in New York circa 1910 (Barbour, M. K. 2021). Web-based instruction, on the other hand, was first used in 1993 (Clark *et al.*, 2003), and in the years since has grown into a practice that can be described as relatively ubiquitous. As the practice has evolved, so have digital pedagogical tools, to an extent that they are now embedded into nearly all facets of the practice itself. One such tool is the digital whiteboard (DWB), a feature of many conferencing platforms such as Zoom, Google Meet, and Microsoft Teams. Earlier iterations such as the interactive whiteboard (IWB) received a mixture of praise and criticism. They were praised for their capacity to enhance multi-modal learning in the classroom, and criticized due to the high-cost and overstating of their educational value, while falling short of their potential due to a general lack of information and communication technology literacy among both teachers and students (Slay *et al.*, 2008). Modern DWBs such as the one Zoom offers, are more widely accessible and used across a broader range of contexts, many of which are educational, with estimates of more than one hundred thousand schools in over twenty-five countries using the platform by late 2020 (Young, 2020).

In contexts where online English instruction is experiencing significant and continual growth, including Southeast Asian countries like Thailand and Vietnam, the role of digital pedagogical tools is one of increasing variety and importance. In Thailand, for example, online English lessons are offered through larger international providers such as British Council Thailand, or smaller locally specialized institutions such as Coaching English Online (Statista, *s.a.*). Larger institutions like British Council Thailand often provide curricula, materials, and pedagogical tools which have been developed by teams of experts and aligned with broader institutional standards (British Council, *s.a.*), while smaller providers such as Coaching English Online often operate under different conditions. In the case of these smaller providers, lessons are often delivered through conferencing platforms like Zoom, and institutional resources are more limited, requiring teachers to design, adapt, and modify teaching materials themselves to make them more suited for online instruction. The adapted materials often include lesson plans, textbooks, and student workbooks originally designed for co-located classrooms, and the environments into which these materials are adapted is often a combination of powerpoints, web-based game sites, and digital whiteboards.

While the practice of designing, adapting, and modifying materials is nothing new to teachers with Bouckaert (2019) noting that teachers have long done this to better suit local

needs, interests, and learner contexts since no textbook can meet every learner's needs. The digital environment in which this modern type of materials adaptation takes place adds something new to the conversation.

1.1 Research Problem

There is currently a substantial body of work that explores instructional design in digital spaces. The emphasis of much of this work is on learner outcomes (Olney & Piashkun, 2021) and seldom focuses on the experience of teachers who design and adapt materials themselves. This is particularly true regarding how teachers adapt traditional teaching materials (which will refer to lesson plans, textbooks, and student workbooks originally designed for co-located classrooms from here on out) for use in online instruction using tools available to them such as DWBs. And while existing literature on digital pedagogical design recognizes the growing need for teachers to take on the additional role of designers, with Do'schonov (2026) noting that the process, "requires the teacher not only to have digital competencies, but also to be able to work on the basis of design thinking, didactic modeling, and reflective methodology," less attention has been paid to the pedagogical decision-making involved in adapting traditional materials for use in online classes, and more narrowly, how facets like autonomy, anticipatory decision-making, and procedural support factor in to the adaptation process.

1.2 Aims and Research Questions

This small-scale exploratory study investigates how two online English teachers in Thailand described their experiences in adapting traditional materials across two differently structured DWB environments: an open DWB and a preset template DWB. In the open DWB condition, participants adapted a lesson plan originally designed for an hour-long, co-located class using a blank Zoom DWB, allowing them to organize the content and structure the lesson in their own way and according to their own preferences. In the preset template DWB condition, participants adapted the same lesson plan onto a DWB that contained a pedagogical template with predefined organizational elements intended to offer procedural support while still allowing space for modification and interpretation.

In the context of this study, the two DWB environments are not treated as variables for any sort of formal comparison, but rather as complimentary design contexts through which different aspects of teachers' materials adaptation process may become visible. The study focused on how teachers described their decision-making, perceived autonomy and

flexibility, and experienced the different levels of structural support in the adaptation process.

The study is guided by the following questions:

1. *How did participants describe their decision-making during the materials adaptation?*
2. *How did participants describe the differing levels of structural support across the two whiteboard environments?*
3. *In what ways did participants negotiate lesson objectives throughout the adaptation process?*
4. *How did the participants describe autonomy, ownership, and pedagogical flexibility during the adaptation process?*

By exploring these questions in this context, it is hoped that some insight can be gleaned that might benefit smaller language teaching institutions and provide insights into how to support teachers in their practice. More specifically, the study aims to contribute to a deeper understanding of how differing degrees of structure and flexibility may shape teachers' experiences with materials adaptation, pedagogical decision-making, and sense of agency within the adaptation process. In doing so, the insights may help to inform the design and possible implementation of digital teaching support systems that balance guidance with teacher autonomy.

2. Theoretical Overview

2.1 Digital Whiteboards and Materials Adaptation

The modern DWB has played a major role in expanding the communicative and organizational possibilities of language teaching. Within a singular environment, teachers are able to incorporate customized text, images, annotations, and embedded media in any which manner they see fit. In discussing an earlier iteration of the DWB, the IWB, Carey Jewitt described the space as a multi-modal hub which allows teachers to integrate multi-modal resources (Jewitt, 2008). Rather than functioning solely as presentation tools, DWBs require (or enable) teachers to make ongoing decisions about the organization, sequencing, and representation of the lesson content. In this sense, it is up to the teacher to determine how the activities will be structured, how interactions will take place, and, most pertinent to this study, how traditional teaching materials can be adapted for the purpose of online instruction. With this in mind, DWBs can be understood not only as tools for presentations or instruction, but as environments for pedagogical design. For the purpose of this study, Joost Lowyck's definition of pedagogical design as, "any systematic choice and use of procedures, methods, prescriptions, and devices in order to bring about effective, efficient, and productive learning"

(Lowyck, 2002), will be used. In the context of this study, pedagogical design will be treated as one aspect of the materials adaptation process, as teachers must make systematic decisions regarding the organization, sequencing, representation, and delivery of instructional content when transforming traditional lesson materials for use in online classroom environments.

2.2 Openness, Tinkering, and Pedagogical Flexibility

While existing literature may not directly examine the adaptation of language teaching materials across open and templated DWB environments, research on creativity, tinkering, pedagogical templates, and macro-scaffolding can help in providing a conceptual lens through which to explore how differing levels of structural guidance might shape teachers' experiences of the materials adaptation process described in this study.

The process of adapting traditional materials onto an open DWB environment with no predefined structure or recommended sequencing can, in a sense, be considered a creative process. Gauntlett (2011) suggests that the very act of making something, whether it be a piece of digital artwork, a poem, or a song, creates an iterative and reflective process for the creator. Similarly, when teachers begin adapting materials onto an open DWB, they may enter into a similar reflective and iterative space. In these instances, teachers are required to consider and negotiate with the lesson objectives while at the same time applying their own pedagogical understanding to the content selection and arrangement, in an effort to align it all with the needs of the student or students. Because the open DWB provides fewer structural boundaries, the adaptation process within this environment might be more iterative and reflective in nature, as there are no fixed starting and ending points. It is entirely up to the teacher how to begin and when to end the adaptation process.

In addition to the iterative and reflective nature of adapting traditional materials onto an open DWB, there is an element of tinkering at play. (Bordone (2011, 2017, 2018) as cited in Bordone *et al.*, 2024) frame the act of tinkering as, “making use of chance encounters in deliberation and the decision-making process,” adding that it is a way of working with contingency, or eventuality, under conditions marked by uncertainty. Because there is no mainstream or widely-adopted procedure for adapting traditional materials for online instruction, the act of decision-making under conditions of uncertainty is likely a common occurrence for language teachers who are put in the position to make these adaptations, specifically in contexts with no provided structural guidance. Furthermore, it's possible that in some cases, teachers navigate this contingency with both an experimental and anticipatory approach. For example, a grammar lesson plan designed for a co-located lesson might

instruct the teacher to have students open their workbooks to complete a particular exercise, despite the workbook itself not being provided. In this situation, the teacher is required to make a series of pedagogical and practical decisions as part of the adaptation process. They may need to locate supplementary materials online or create their own activities that still align with the lesson objectives, while factoring in things like potential student engagement. Beyond this, the teacher must also consider how the activity will function within the online classroom environment. Whereas in a co-located classroom a teacher may guide the exercise by writing on the board or moving between students, the online environment requires different forms of interaction, monitoring, and support. Bordone *et al.* (2024) go on to suggest that tinkering can be viewed as, “relying on chance events and amplifying their potential positive significance.” In the context of online materials adaptation, this may involve teachers experimenting with different organizational strategies, activities, or digital affordances in an effort to align lesson objectives with the realities and limitations of the online classroom environment. Whether these decisions are ultimately retained, revised, or discarded, the process itself highlights the extent to which materials adaptation in open digital spaces may involve ongoing negotiation, improvisation, reflective, and anticipatory (proflactive) pedagogical judgment under conditions of uncertainty and in an effort to amplify the potential positive significance in the remote classroom setting.

Building on this, the openness and flexibility of such environments may also introduce additional layers of uncertainty into the adaptation process. Without predefined structures, sequencing, or procedural guidance, teachers may experience a greater decision-making burden as they determine not only what content should be included, but also how that content should be organized, represented, and delivered within the digital space. In this sense, the open whiteboard environment may require teachers to engage more directly in processes of pedagogical negotiation and improvisational decision-making throughout the adaptation activity. On the topic of uncertainty in design, Tracy and Hutchinson (2016) argue that uncertainty is a defining quality of the design space and that designers’ personal attitudes toward uncertainty may influence the design process and outcomes. The authors reflect on this uncertainty in a positive light, suggesting that uncertainty within the design process leads to a stronger sense of connection between the designer and the final product, highlighting the iterative and interpretive nature of design. This may indicate that in environments, such as the open whiteboard, where teachers may face more uncertainty, the sense of personal connection and ownership over the final artifact may be heightened, in

addition to a sense that the materials are better aligned to the instructional and stylistic preferences of the teacher.

On the other hand, Bonnet and Glazier (2025) suggest that teachers can never be sure just how student understanding is changing and whether or not what they do in the classroom will have the desired effects on student learning. They point out that major struggles for teachers include choices about what to teach, their own understanding of the topic, and uncertainty about how their teaching might be improved. The authors discuss “uncertain support for instructional content,” describing scenarios in which teachers must choose which content to include or exclude in their lessons. Even in scenarios where explicit guidelines, instructional material, and support from other teachers are available, individual teachers still face a series of important and difficult decisions related to orientation, facts and rules, relationships among concepts, and whether or not to spend time on a specific topic. Bonnet and Glazier (2025) add that uncertainties about instruction are multiplied by teachers’ imperfect or partial understandings of the fields in which they teach. So whether this potential uncertainty is an asset or a hindrance might be entirely dependent on the teachers themselves.

Some further insight into the materials adaptation process in open versus structured whiteboard environments might be gleaned from the work of Cennamo *et al.* (1996) in how the researchers describe process-based versus procedure-based instructional design. When discussing what they term a “client-centered” design process, they emphasize reflexivity and note how the act of decision-making is a key aspect of knowledge building in the design process itself. In this particular case, reflexivity refers to an awareness of one’s own thinking, or metacognition. The authors go on to compare a learner’s experience with connecting understandings, beliefs, and values with new materials with how design teams design instruction with their own understandings, beliefs, and values, noting that the process involved a negotiation of shared beliefs that guided the development of the materials. They suggest that this process should be question driven as opposed to task driven, and should focus on asking good questions throughout the process as opposed to just following the steps. It is possible that the open whiteboard environment might encourage more of the reflexivity Cennamo *et al.* (1996) refer to here, whereas the preset template environment might be perceived as a “following the steps” type of process. In the open whiteboard environment, teachers may be more inclined to include or exclude material based on beliefs, views, and the degree to which they anticipate that the students will understand or react to the materials, allowing for a heightened sense of control over the lesson materials and a higher degree of confidence that the materials developed in this environment reflect their teaching styles and

preferences. In the structured whiteboard environment, the sequencing and guidelines have already been laid out for the teacher. While they are free to modify this in any way they deem necessary, there may be less perceived room for the inclusion of materials they feel reflect their own beliefs, views, and instructional preferences.

2.3 Scaffolding, Pedagogical Templates, and Procedural Support

One of the early decisions that needed to be made in this study related to the design and organization of the preset template DWB. To simply cobble together a template based on the way the researcher himself would have taught the lesson felt insufficient, to say the least. Because of the structural and pedagogical guidance the preset template DWB offers, it can be considered instructional scaffolding in the form of a digital pedagogical template. In light of this, the following section briefly discusses a malleable definition of scaffolding in addition to presenting the body of work on transdisciplinary pedagogical templates which was used to inform the design of the preset template whiteboard used in this study.

While scaffolding itself has a rich history which is rooted in Lev Vygotsky's work on sociocultural theory, Jerome Bruner built upon this idea further when exploring the role of the More Knowledgeable Other (MKO) in the context of tutoring and problem-solving (Wood *et al.*, 1976). Bruner describes scaffolding as a kind of process that allows a child to solve a problem or complete a task which would otherwise be beyond that of his or her capabilities. The very definition and role of scaffolding has evolved and branched out in many ways in the years since. While earlier work looked at scaffolding in a teacher-to-student context, more contemporary work, like Granott (2005), argues that allowing the concept of scaffolding to grow and change can be beneficial, as the concept of scaffolding itself best functions as a metaphor which is concrete, simple, and visual, providing familiarity and an intuitive understanding of its function. This malleable definition of scaffolding applies well in the case of the preset template DWB used in this particular study, as the scaffolding type is not traditional in the teacher-to-student application, but rather in an institution-to-teacher application.

In building on to the idea of this institution-to-teacher type of scaffolding, there is a notable distinction that Engin (2014) makes between the practices of micro-scaffolding and macro-scaffolding. Micro-scaffolding is seen as scaffolding that operates at the level of interaction through moment-to-moment prompts, cues, and questions. This is the type of scaffolding that can be seen in the classroom or, in the case of Marion Engin's study, teacher training sessions. This type of scaffold requires a synchronous environment and

human-to-human interaction. Macro-scaffolding, on the other hand, is a type of scaffolding that exists on an organizational and structural level. Examples of macro-scaffolding include curriculum planning, and sequencing and selection of tasks. The goal of macro-scaffolding is to align teachers with the expectations, roles, and conventions of the institutions in which they work. It could be argued that this type of macro-scaffolding serves another purpose, which is to address the uncertainty teachers face in their materials selection, development, and adaptation processes. The preset template whiteboard in this study functions as a form of macro-scaffolding, in the sense that it helps to guide teachers' decision-making, and provides a predefined sequencing of tasks that already adhere, with leniency, to the original lesson plan. The template acts, in a sense, as an institution-adjacent MKO, which might alleviate the uncertainty or decision-making burden that teachers experience in the process of materials adaptation.

As noted at the beginning of this subchapter, the design of the preset template whiteboard could not just be cobbled together by the researcher according to his own judgement of what was important for the lesson, but rather it needed a structure that was grounded in theory. There is an extensive body of work on pedagogical templates which includes, most relevant to this study, research on web-based transdisciplinary pedagogical templates (TPTs) conducted by Dobozy and Dalziel (2016). As the name suggests, these templates are a way of implementing learning designs across disciplinary boundaries. They offer "specific and ready-to-be-used" instruction-related information and content to aid in instructional design and decision-making for what is described as "time-poor educators". Dobozy and Dalziel (2016) distinguish between two different template designs, the first of which is a generic template design and the second being a local template design. Generic template designs are structured in a way that encourages educators to insert their own relevant, discipline-specific content into a generic pedagogical template. These templates contain generalized sections to help teachers organize the specific content they intend to teach in a logical sequence, containing prompts like "Write topic here" and "Upload supporting video here". The generalized nature of these templates embodies the transdisciplinary application. Local template designs, on the other hand, are often designed by a colleague within the same discipline and combine discipline-specific content with pedagogical decision-making, resulting in a ready-to-be-used learning design. These templates can be described as more specific and discipline-oriented, meaning that a local template design for a language learning class would be significantly different from that of a template for a math class. The researchers note that educators "seem uncomfortable populating an empty shell

designed by a learning design expert” (Dobozy & Dalziel, 2016), and that local template designs are a way to alleviate that discomfort, as partial, discipline-specific content is provided in these templates. The preset template whiteboard developed for this study borrows from this local design concept. The template includes pre-defined sequencing for the teachers to fill in with their own material, including sections for vocabulary, language focus (grammar), input and response (conversation practice), and create and share. Each section is accompanied by a “note to teacher” which briefly describes the purpose of the section along with suggestions. For example, “Note to teacher: use this design space to create a dialogue for students to practice sharing their thoughts on the media you have chosen. You may add images or animations as you see fit.” The design is intended to alleviate the potential decision-making burden for the teachers, while preserving their own autonomy when selecting specific content or material for the lesson.

2.4 Teacher Autonomy, Negotiation, and Teaching Style

On the subject of teacher autonomy, Huang (2005) does a good job of compiling a multitude of definitions and boiling them down into what the researcher describes as a catch-all definition: “teachers’ willingness, capacity and freedom to take control of their own teaching.” Huang connects “willingness” to the social-emotional dimension of autonomy, “capacity” to a technical-psychological dimension, and “freedom” to a critical-political dimension. While willingness, or the socio-emotional dimension, is not necessarily something the present study is taking into account, both teacher capacity and freedom, or perceived capacity and freedom, are of relevance. In addition to being an iterative process, the act of materials adaptation is one which requires ongoing negotiation on behalf of the teacher. Huang, J. (2005) characterizes the role of the teacher as one which requires negotiation about the syllabus, with learners and, interestingly enough, external authorities. In this case, this refers to both representatives of the educational institution and professionals from the discourse communities.

Breen and Littlejohn (2000) describe an interplay between three types of negotiation: personal negotiation, interactive negotiation, and procedural negotiation. Personal negotiation is described as primarily psychological, involving the act of discriminating, analysing, synthesizing, memorizing, and recalling. Interactive negotiation is described as being “overtly social” and occurs when people use language to indicate an understanding or lack thereof. Most relevant to this study perhaps is procedural negotiation, in which the primary goal is to uncover and share meaning. Among the key decisions involved in this process are

deciding who will work with whom, what resources they will work with, what the central subject matter is, and for what purposes. They go on to say that the teacher has to mediate between the requirements of the syllabus and the different learning agendas of the students in the class. In the case of the present study, the teacher is required to anticipate student agendas, proficiency levels, and areas of interest while still adhering to the learning objectives listed in the lesson plan. This ties into how Huang (2005) describes the role of a teacher as one which requires negotiation about the syllabus and external authorities. Furthermore, it might be argued that personal teaching style and preference also underlie these types of negotiation.

Fries (2012) notes that educators differ considerably when it comes to how they engineer their learning environments, teaching styles, and educational philosophies. While some teachers see themselves as transmitters of knowledge, in what can be described as a teacher-centered approach, others see their role through a more constructivist lens, helping their students make meaning through a learner-centered approach. (Conti & Kolody, 1998, as cited in Fries, 2012) describe teaching styles in particular as qualities and behaviors from the teacher which are consistent regardless of the curriculum content. In the context of this study, this becomes especially relevant because the materials adaptation process may reveal not only how teachers respond to structure, but also how their pedagogical preferences, teaching style, and sense of ownership become visible when they are asked to adapt the same lesson across differently structured environments.

The literature discussed in this theoretical overview suggests, broadly, that materials adaptation within digital whiteboard environments is more than just a technical process of transferring content from one medium to another, but rather a complex, interpretive, interactive, improvisational, and negotiation-based form of pedagogical design. Across both whiteboard environments, teachers may be required to negotiate lesson objectives, anticipated student engagement, organizational sequencing, institutional expectations, and their own style-related preferences in the adaptation process. Again, the open whiteboard appears to provide for flexibility, improvisation, reflective and prolective decision-making under conditions of uncertainty, while the preset template whiteboard introduces macro-scaffolding and procedural guidance intended to support the structuring and adaptation process. Both whiteboards may shape how teachers perceive their own autonomy, pedagogical control, and alignment with their teaching preferences in different ways. The concepts explored in this theoretical overview are intended to provide a theoretical foundation for examining how

teachers experience and navigate these differing design conditions during the process of online materials adaptation.

Taken together, the literature suggests that DWBs are not only instructional tools but also spaces for pedagogical design in which teachers must make ongoing decisions about sequencing, representation, and delivery. In open DWB environments, this adaptation process may involve reflection, tinkering, uncertainty, and improvisation, while in templated DWBs offer macro-scaffolding that has the potential to reduce decision-making burden and support organization. At the same time, these different levels of structural support may influence how teachers experience autonomy, ownership, and alignment with their own teaching styles. The following chapter outlines the methods used to investigate these experiences.

Chapter 3. Methods

3.1 Exploratory design

This study adopts a small-scale qualitative exploratory design to investigate how online English teachers described their experiences adapting traditional teaching materials across two DWB environments: an open DWB and a preset template DWB. The study takes on an interpretivist orientation, focusing on participants' retrospective accounts and reflections regarding their experiences of the materials adaptation process. Tisdell *et al.* (2025) notes that interpretivist research, "assumes that reality is socially constructed," and that in the process, researchers do not "find" knowledge as much as they construct it. Tisdell *et al.* (2025) add that phenomenology, a key aspect of qualitative research, helps to inform qualitative research, defining the term as the study of how people describe and experience things through their senses. In these cases, the authors argue that the researcher is the, "primary instrument for data collection," (Tisdell, *et al.*, 2025), and because the goal of the research is primarily understanding, the human instrument is crucial, because of the responsiveness and adaptability. As instruments, people are able to, "process information immediately, clarify and summarize material, check with respondents for accuracy of interpretation, and explore unusual or anticipated responses." (Tisdell, *et al.*, 2025).

The open and preset template DWBs in this study were treated as complimentary task environments intended to elicit different forms of engagement within the materials adaptation process. The purpose of this study was not to compare the environments experimentally or to determine which condition might be deemed more effective, but rather to explore how

participants described their experiences of adapting materials into the differently structured spaces.

3.2 Sample

The two participants in this study were recruited using convenience sampling, which Rahi (2017) describes as data collection from a population that is reachable to the researcher. Rahi notes that this sampling technique “allows the researcher to complete interviews or get responses cost-effectively; however, it may be criticized for selection bias because of the difference of the target population (Rahi, 2017). In the case of the present study, participants were recruited from the researcher's former workplace. Table 1 provides additional background of each participant.

Table 1. Background information on participant one (P1) and participant two (P2)

Participant	Online Teaching Experience	Teaching Platform	Experience with DWB Tools	Teaching Context
P1	2 years	Zoom, ClassIn	2 years	Kindergarten, primary, and adult learners
P2	5 years	Google Meet	None	Kindergarten through grade 3

As seen in table 1, both participants had a minimum of two years of online English teaching experience, and have experience teaching learners aged six to eight years old. Both participants also have prior experience using video conferencing platforms to deliver the online instruction. However, participants differed in their familiarity with Zoom, and the Zoom DWB. P1 reported frequent use of the DWB in their teaching practice, while P2 had no prior experience with the Zoom DWB prior to participating in the study.

3.3 Instruments

The primary instruments used in this study were a written task instruction document, two digital whiteboard task environments, a semi-structured interview protocol, and completed whiteboard artifacts. Together, these instruments were designed to explore how participants adapted lesson materials across differently structured DWB environments.

The written task instruction document included the lesson plan, task overview, adaptation instructions, links to the assigned Zoom whiteboards, and condition-specific guidance regarding the adaptation process. The lesson plan used in both conditions was

adapted from British Council teaching materials and focused on the topic of jobs and gender stereotypes for learners aged five to eight at the A1–A2 proficiency level. The documents instructed participants to adapt the lesson for synchronous online teaching while allowing freedom to create, modify, or source supporting materials as needed. The instruction documents also served to standardize the task conditions across participants by ensuring that both participants received the same lesson objectives, pedagogical expectations, and procedural instructions. In the preset template condition, the document additionally explained the purpose and structure of the predefined whiteboard frames and accompanying prompts. Copies of the instruction documents and lesson materials are included in Appendix A.

The study utilized two DWBs as task instruments. The first consisted of a blank Zoom whiteboard with no predefined organizational structure. The second consisted of a researcher-designed preset pedagogical template containing predefined lesson sections and organizational prompts intended to provide procedural guidance during the adaptation process. The template design was informed by literature on pedagogical templates and macro-scaffolding discussed in the theoretical overview. The preset template has been included in Appendix B.

A semi-structured interview protocol was developed to elicit participants' retrospective accounts of their adaptation processes. The interview questions focused on themes related to instructional decision-making, procedural support, workload, autonomy, ownership, and alignment with teaching preferences across the two whiteboard environments. The semi-structured format was selected because it allowed participants to describe their experiences in detail while still maintaining thematic consistency across interviews. The full interview protocol is included in Appendix C.

Completed whiteboard artifacts from both task conditions were collected as supplementary materials. These artifacts provided visual examples of organizational choices, sequencing decisions, activity structuring, and content modification during the adaptation process. Screenshots of the completed whiteboards are included in Appendix D.

Because the study adopts an exploratory qualitative design, validity and reliability were approached primarily through procedural consistency and transparency rather than statistical measurement. Both participants completed the same lesson adaptation tasks under the same conditions and participated in interviews guided by the same semi-structured protocol. The use of multiple forms of data, including interviews and completed whiteboard artifacts, also supported limited triangulation across participant accounts and observable task outcomes.

3.4 Data Collection

The primary source of data in this study consisted of semi-structured retrospective interviews conducted following completion of both lesson adaptation tasks. The interviews were conducted individually through Zoom and focused on participants' descriptions of their experiences adapting lesson materials across the two digital whiteboard environments.

The interviews were audio recorded and transcribed using the Zoom Notes feature before being reviewed alongside the recordings to improve transcription accuracy. A semi-structured format was selected in order to balance consistency across interviews with flexibility for participants to elaborate on their experiences and reflections in greater detail. The interview questions encouraged participants to describe their organizational choices, perceptions of flexibility and structure, workload, anticipatory instructional thinking, and feelings of autonomy and ownership during the adaptation process. In addition to this, completed whiteboard artifacts were collected for analysis, as will be explained in the data analysis subchapter.

3.5 Procedure

An initial Zoom meeting was conducted with both participants at the onset of the study. During this session, participants were informed about the purpose of the study, the voluntary nature of participation, and the overall task procedure. Participants were then provided with the written task instruction documents, the lesson plan materials, and links to the assigned Zoom whiteboards. Instructions explained that participants were expected to adapt the lesson materials for synchronous online teaching using two different whiteboard environments while maintaining the lesson objectives outlined in the provided materials. Participants were informed that they were free to create, modify, reorganize, or source additional supporting materials as they deemed appropriate for the lesson.

Participants completed two adaptation tasks asynchronously outside direct researcher observation. In the first condition, participants adapted the lesson using a blank Zoom whiteboard with no predefined structure. In the second condition, participants adapted the same lesson using a preset pedagogical template containing predefined lesson sections and organizational prompts. The order of the tasks was fixed for both participants, with the open DWB condition completed first followed by the preset template condition. This sequencing decision was made to ensure that participants first engaged with the lesson adaptation process without predefined structural guidance before encountering the scaffolded template condition.

Participants completed both tasks independently within the agreed one-week timeframe. No specific time limit was imposed for task completion.

Following completion of both adaptation tasks, individual semi-structured interviews were conducted through Zoom.

3.6 Data Analysis

The interview transcripts were analyzed using thematic analysis, an approach which Braun and Clarke (2006) describe as a method for identifying, analysing, and reporting patterns which minimally organizes themes and describes data sets in rich detail. The transcripts were read multiple times in order to identify recurring patterns and themes across participant responses. Initial coding focused on descriptions related to flexibility, procedural support, workload, autonomy, ownership, and anticipatory instructional decision-making. Codes were then grouped into broader thematic categories which informed the organization of the findings chapter. The responses were compiled into four tables based on theme. These tables can be found in Appendix E.

Completed whiteboard artifacts from both task conditions were also reviewed during analysis. These artifacts were used to support interpretation of participants' retrospective accounts by providing visual examples of organizational sequencing, activity structuring, and content modification within the two whiteboard environments. The artifacts were not analyzed independently, but rather used to contextualize and illustrate themes emerging from the interview data in addition to informing some of the questioning during the interviews.

3.7 Ethical Considerations

Prior to participation, both participants were informed about the purpose of the study, the nature of the adaptation tasks, and the use of retrospective interviews as the primary source of data collection. Participants were also informed that participation in the study was entirely voluntary and that they could withdraw from the study at any point prior to data analysis without consequence. Informed consent was obtained from both participants before the study began and can be found in both the transcript and the audio recordings and will be shared upon request.

To protect participant anonymity, pseudonyms are used throughout the transcripts, while P1 and P2 are used to refer to them throughout this paper. Identifying details related to participants and their workplace have been minimized where possible. Although participants

were recruited from the researcher's former workplace, participation was voluntary and no professional obligations or incentives were involved in recruitment or participation.

Interview recordings, transcripts, completed whiteboard artifacts, and edit histories were stored digitally on a password-protected Google drive accessible only to the researcher. The collected data were used solely for the purposes of this study and were not shared outside the research process

4. Findings (Results)

The following chapter presents the findings from the semi-structured interview in tandem with the supporting DWB artifacts connected at the conclusion of this study. The findings have been organized according to the four recurring themes identified in the thematic analysis: flexibility and openness, procedural support and workload, anticipatory instructional design, and ownership and autonomy. Minor edits were made to the interview excerpts to remove speech fillers while preserving participants' intended meaning. Reference images from the completed whiteboards are included where relevant to contextualize participants' descriptions of their adaptation processes.

4.1 Flexibility and Openness

Both participants described the open DWB environment as offering a greater sense of flexibility and control over the adaptation process. Participants frequently referenced their ability to organize the lesson content according to their own preferences, sequence the activities freely, and modify the lesson structure as they worked through the task. Participant 1 (P1) described the open DWB as allowing them to "map my lesson how I want" and explained that the environment made it easier to establish the "rhythm" of the lesson. The participant also noted that the lack of structure allowed them to move between sections more freely during the adaptation process. participant 2 (P2) described the difference between the DWB environments as "night and day," expressing that the open whiteboard allowed for greater freedom when connecting ideas and selecting media to insert. P2 added that the open DWB format felt more compatible with their own teaching style and "lesson flow".

In contrast, both participants described the preset template DWB as more structured and constrained. P1 stated that they tended to remain, "within the confines of the template" and described a heightened awareness of perceived institutional expectations saying, "Sometimes in a job, you don't want to step on any toes, so imagining this template is from a

company, they probably want me to do it this way.” Similarly, P2 reported uncertainty regarding what the organization “wanted” from the lesson and added that the template sometimes interrupted the flow of their decisions.

Figure 1 shows an example of P1’s organizational approach in the open whiteboard condition. The participant arranged lesson elements using a quadrant-like layout with larger text and spacing between sections.

Figure 1. P1’s Open DWB Organization

Everyone can do any job!



 He is a _____  He is a _____  He is a _____  He is a _____  She is a _____  She is a _____ What does a _____ do? Is it fun? Link to game: https://www.hazards.de.com/game1246	Man Woman Boy Girl Doctor → Firefighter → Nurse → Pilot → Can a woman be a firefighter? Can a man be a nurse? Everyone can do any job!
 This is Mia. Mia is a pilot. She flies a plane. Some people say: "Not Girls can't be pilots." But Mia says: "Yes, I can!" She is a GREAT pilot!  This is Ben. Ben is a nurse. He helps sick people. Some people say: "Not Boys can't be nurses." But Ben says: "Yes, I can!" He is a KIND nurse!  This is Sam. Sam is a police officer. She helps people. Some people say: "Not Girls can't be police." But Sam says: "Yes, I can!" She is STRONG! What is her job? Is she a good pilot? Can girls be pilots? What is his job? Is he kind? Can boys be nurses? What is her job? Is she strong? Can girls be police?	CREATIVE TASK: My future job. Draw yourself at your future job! ME I want to be a _____ I can _____

As shown in Figure 1, the participant organized lesson materials spatially, in a quadrant-like manner, across the whiteboard rather than following a linear, or left-to-right sequence.

4.2 Procedural Support and Workload

Both participants described the open DWB as requiring greater organizational effort during the early stages of the adaptation task. In particular, participants discussed the effort involved in sequencing activities, organizing content and establishing the lesson structure without any predefined guidance. P1 explained that the open whiteboard required more planning and

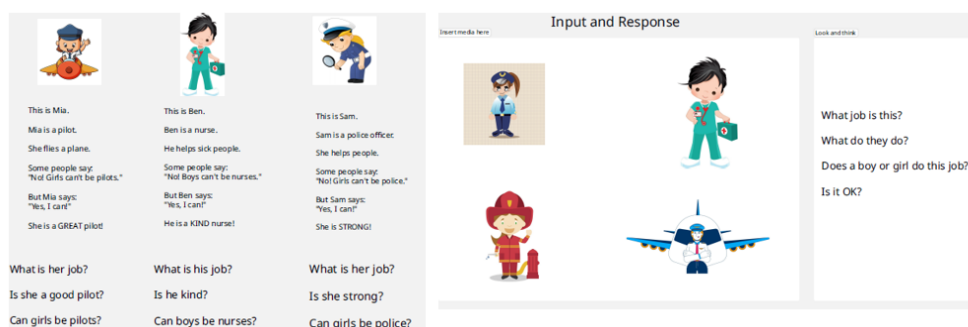
organization initially, particularly when determining how activities should be sequenced and scaffolded for young learners. The participant stated that the process became easier once an overall structure had been established, comparing the experience to organizing an essay. P2 described the open DWB task as “insurmountable” initially, and reported uncertainty about where to begin the adaptation process. The participant explained that the workload decreased once the first layer of organization had been established, but noted that the structure and sequencing remained the most laborious parts of the task.

Both participants described the preset template DWB as reducing organizational workload. P1 stated that the template made it easier to determine when the task was “finished” because the predefined sections created a clearer sense of completion. P2 noted that the template required “a lot less thinking” regarding the lesson structure and layout. At the same time, both participants described the preset template DWB environment as less engaging on a personal level. P2 stated that although the template simplified the process, the work felt “less exciting” and more procedural in nature.

4.3 Anticipatory Decision-Making

Both participants described making ongoing instructional decisions during the adaptation process based on assumptions about student understanding, engagement, and participation. These decisions included choices that were mostly related to sequencing, scaffolding, visual organization, and activity design. P1 emphasized the importance of sequencing vocabulary activities before sentence production tasks and discussed decisions related to font size, spacing, and visual clarity for young learners. The participant explained that, in their own experience, young learners often become overwhelmed by excessive visual information, and therefore attempted to reduce visual clutter within the whiteboard design. P1 also added supplementary material related to gender and occupations, as they felt it was significant for the lesson. (figure 2).

Figure 2. P1's Inclusion of Gender Roles



As shown in figure 2, P1 made the choice to include gender roles as a focus in both speaking activities. This was an objective mentioned in the lesson plan that was not suggested in the preset template environment.

P2 described approaching the lesson with a strong focus on student engagement and relationship building, explaining that, in their mind, this would be the first lesson they have with the hypothetical students, and that the first online lesson should prioritize participation, build rapport, and provide overall comfort rather than only focusing on lesson content and learning objectives. In light of this, P2 made the decision to simplify the grammar content from the original lesson plan (*figure 3*) to make it more accessible to a young audience stating, “The conflicting ideas made me feel it was too complicated for the kids,” and added a feeling of dread that the students would not understand the materials.

Figure 3. P2's Modification of the Grammar Focus (preset DWB on the left side and open DWB on the right)

Language Focus

Matching table

1. A ____ works in a hospital.

2. A ____ helps people by stopping fires.

3. I think a ____ can be a girl.

A: Firefighter
B: Police officer
C: Doctor

What is her occupation?
She is a Teacher.

What is his occupation?
He is a Doctor.

What is his occupation?
He is a Police Officer.

What is his occupation?
He is a Pilot.

What is his occupation?
He is a Chef.

What is his occupation?
He is a Firefighter.

As shown in figure 3, P2 modified the grammar activity to focus on the vocabulary in relation to the present tense “to be” rather than the gap-fill structure included within the preset template.

Participants also discussed uncertainty regarding how students might respond to the adapted materials. P1 suggested that the preset template DWB might appear more familiar to students because of its structured layout, noting, “The student is probably used to that kind of aesthetic organization in school.”

4.4 Ownership and Autonomy

Both participants described differences in personal investment and emotional engagement across the two DWB conditions. P1 explained that the primary distinction between the two

environments involved organization and preparation rather than having any noticeable affect on the teaching style itself, saying their, “teaching style comes in between the lines of the material.” P1 also stated that the materials created in both environments would likely be reused in future teaching practice.

P2 described the open whiteboard as more enjoyable and emotionally engaging, emphasizing the opportunity to revise and improve the lesson over time. The participant associated the open environment with a stronger sense of personal investment in the adapted materials.

Although P2 stated that materials created within the preset template could still be reused, the participant also described the environment as less exciting and more difficult to feel “passionate” about. Despite this, both participants continued to describe the adapted template materials as personally meaningful and usable within their own teaching contexts.

Across both interviews, participants frequently connected their experiences of ownership and autonomy to the degree of freedom they felt during the adaptation process, particularly regarding lesson organization, sequencing, and the inclusion of supplementary materials.

Chapter 5. Discussion

The semi-structured interviews generated sufficient data to address all four initial research questions of this study, with particularly strong insights relating to Research Questions One, Three, and Four. In addition, the interviews revealed an unanticipated dynamic: participants’ perceptions of institutional expectations. This theme emerged as a significant factor and will be explored further in the following sections.

5.1 Negotiation, Flexibility and Structure

The findings of this study suggest that the participants experienced the two DWB environments as involving different forms of negotiation between flexibility and structure during the materials adaptation process. Across both interviews, the open DWB was regularly associated with greater flexibility in lesson organization, sequencing, and modification, while the preset template DWB was associated with stronger procedural guidance and perceived adherence to organizational expectations.

Participants did not describe either environment as entirely positive or negative. While the open DWB was associated with greater creative freedom and personal investment, participants also described it as requiring more effort and perceived sense of responsibility

for the content during the early stages of the task. The preset template, on the other hand, reduced the organizational workload and simplified the process of sequencing, but participants described moments where the template interrupted the lesson flow in addition to constraining and confining adaptation choices.

These findings suggest that flexibility and structure may be understood as interconnected conditions that shaped teachers' adaptation processes in distinct yet overlapping ways. Throughout the adaptation process, participants appeared to continuously negotiate between freedom and guidance, balancing personal pedagogical preferences with organizational structures, anticipated student needs, and perceived expectations embedded within the task environment. Rather than functioning as opposing forces, flexibility and structure appeared to operate relationally, influencing how participants approached instructional decision-making and material adaptation.

Additionally, the open DWB environment appeared to be more conducive to what Cennamo *et al.* (1996) describe as “question-driven design,” whereby the final product evolves through ongoing reflection, interpretation, and the construction of anticipated or shared meaning. In this environment, participants appeared more likely to engage critically with the pedagogical intentions underlying their design choices. In contrast, the preset template condition appeared to encourage a more procedural approach to adaptation, in which participants focused more heavily on following and working within the predefined structure provided by the template.

The findings also indicate that the presence or absence of structure influenced not only how participants organized materials, but also how they experienced the adaptation process emotionally and cognitively. The open whiteboard often encouraged experimentation, revision, and iterative organization, whereas the template environment appeared to encourage more procedural task-completion-oriented behavior. Rather than suggesting that one environment is inherently preferable, the findings point toward differing forms of pedagogical engagement emerging under differently structured design conditions.

5.2 Templates, Structure, and Perceived Institutional Expectations

One of the more significant findings of this study concerns the way participants appeared to interpret the preset template as both a source of procedural support and a signal of institutional expectations. Although the template was designed primarily to provide

organizational guidance and reduce decision-making burden, participants frequently discussed the template in ways that extended beyond practical support alone. Both participants described moments where the predefined structure shaped assumptions about how the lesson “should” be organized or what content the institution expected them to prioritize. In this sense, the template functioned not only as a scaffold for lesson organization, but also as a symbolic indicator of preferred instructional practice. Participants occasionally described hesitating to deviate from the template structure because doing so felt like “stepping on toes” or departing from implied expectations embedded within the design itself.

This finding extends the discussion of macro-scaffolding presented in the theoretical overview. While the template appeared to reduce workload and simplify organizational decisions, it also seemed to influence how participants perceived instructional legitimacy and institutional alignment during the adaptation process. The structure of the template may therefore shape not only procedural decisions, but also teachers’ interpretations of acceptable pedagogical practice within a given organizational context. This is supported by Dobozy and Dalziel (2016), as they note that educators who use the transdisciplinary pedagogical templates which they discuss in their study, often comment on how the exploration of the template designs often help them with understanding the underlying pedagogical assumptions of the template, and that even if the teacher doesn’t use the pedagogical template, they often retain the ‘essence’ of the idea.

At the same time, participants did not completely surrender autonomy within the template environment. Both participants continued to modify content, reinterpret sections, and adapt materials according to their own instructional judgments. This suggests that teachers may continue negotiating personal pedagogical preferences even within more highly structured digital environments. Rather than eliminating agency, the template appeared to redistribute where and how that agency was exercised during the adaptation process.

Cennamo et al. (1996) outline two implications for the design process that are particularly relevant to these findings. The first is the need to “embrace the complexity of the design process,” suggesting that attempts to overly simplify design may limit the richness and adaptability of the final product. Across both conditions, participants appeared willing to engage with the complexity of lesson design; however, participants in the preset template condition tended to approach the process with greater caution and a stronger orientation toward the perceived expectations embedded within the template structure. While the template reduced uncertainty and supported organizational decision-making, it may also have

constrained participants' willingness to experiment more freely with alternative instructional approaches.

The second implication proposed by Cennamo et al. is the importance of “nurturing reflexivity in the design process,” whereby designers critically examine their own assumptions, decisions, and pedagogical intentions throughout development. The findings suggest that the open DWB environment encouraged a greater degree of this reflexive engagement, as participants were required to make more explicit decisions regarding lesson structure, pedagogical alignment, student proficiency, and learner interests. In contrast, reflexive decision-making appeared less pronounced within the preset template condition, where the predefined structure implicitly guided participants toward particular organizational and pedagogical choices. Rather than requiring participants to construct these assumptions independently, the template itself appeared to communicate an underlying pedagogical logic that participants often adopted or worked within during the adaptation process.

On an interesting aside, this connects with what Lorenzi and White (2019) say on the subject of liminality, “Creativity can survive even in times of standardisation, but it is more likely to be confined to interstitial zones.” In this regard, creativity and creative acts emerge as teachers navigate through the adaptation process, crossing over what might be described as a liminal zone that bridges traditional materials with digital classroom environments.

5.3 Materials Adaptation as Interpretive Work

The findings also suggest that materials adaptation within DWB environments involves more than the technical transfer of lesson content from one medium to another. Across both conditions, participants described making ongoing interpretive decisions related to sequencing, student engagement, visual organization, pacing, and student proficiency level. Participants frequently anticipated how students might respond to activities, whether materials would be visually overwhelming, and how interaction might unfold during synchronous online instruction. These forms of anticipatory thinking often appeared alongside moments of uncertainty, particularly when participants lacked clear guidance regarding how existing lesson materials should function within the online environment.

The findings align with the way Gauntlett (2011) describes design work as iterative, improvisational, and negotiation-based. Participants repeatedly adjusted lesson flow, reorganized activities, reconsidered instructional priorities, and modified materials based on assumptions about student participation and lesson coherence. In this sense, adaptation

appeared to function as a continuous interpretive process shaped by both pedagogical judgment and situational uncertainty.

5.4 Implications for Online Language Teaching

Although the study is exploratory and limited in scope, the findings suggest several implications for online language teaching and digital materials adaptation practices.

First, the findings indicate that differing levels of structural guidance within digital teaching environments may shape how teachers experience the process of adapting lesson materials for online instruction. More open environments may support flexibility, experimentation, and personal investment, while more structured environments may reduce organizational workload and provide procedural clarity and perceived alignment with institutional standards while reducing potential pedagogical uncertainty related to content type and sequencing.

Second, the findings suggest that pedagogical templates may function most effectively when they balance guidance with opportunities for modification and reinterpretation. Participants appeared more receptive to structure when they still perceived room for personal adaptation and instructional decision-making.

Finally, the study highlights the extent to which online materials adaptation involves forms of pedagogical labor that may remain relatively invisible within discussions of online teaching. Sequencing activities, reorganizing content, anticipating student responses, and adapting co-located materials for digital interaction all required ongoing interpretive work from participants. Greater recognition of these processes may be useful when designing institutional materials, templates, or support systems for online language teachers.

Because the study involved only two participants in an exploratory setting, these implications should be interpreted loosely. The findings are intended to contribute exploratory insight rather than making any broad claims regarding online teaching practice more generally.

5.5 Limitations

Because the study involved only two participants, the small sample size in addition to the convenience sampling used to select the participants limits the findings of this study beyond its own immediate research context.

The adaptation tasks were also completed within an exploratory task environment rather than authentic classroom teaching situations. Participants therefore described

anticipated teaching practices rather than responding to real-time student interaction during instruction. Furthermore, because both participants completed the whiteboard conditions in the same fixed order, the findings may have been influenced by task-order or practice effects.

Future research could build upon this study by involving larger participant samples across a wider range of teaching contexts and levels of digital experience. Studies using counterbalanced task designs may also help reduce potential order effects during adaptation activities. In addition, observational or screen-recorded research conducted during live materials adaptation processes could provide greater insight into moment-to-moment instructional decision-making than retrospective interviews alone.

Longitudinal research may also be valuable for examining how teachers' relationships with digital templates, scaffolding systems, and online adaptation practices evolve over time as familiarity with digital environments increases.

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Author's Declaration

I hereby declare that I have written this thesis independently and that all contributions of other authors and supporters have been referenced. The thesis has been written in accordance with the requirements for graduation theses of the Institute of Education of the University of Tartu and is in compliance with good academic practices.

Signature

A handwritten signature in black ink, appearing to read "Ender Byr".

Date:

24/05/2026

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Appendices

Appendix A.

The written task instruction document that was distributed to both participants which includes the lesson plan, task overview, adaptation instructions, links to the assigned Zoom whiteboards, and condition-specific guidance regarding the adaptation process.

Condition A: Open Whiteboard
Task Overview You are asked to design instructional materials for the British Council lesson plan <i>We Can All Do These Jobs</i>, originally intended for in-person classrooms. Your goal is to adapt this lesson for a synchronous online environment using the Zoom Whiteboard. The lesson aims to: 1. Help learners learn and revise vocabulary related to jobs 2. Explore gender stereotypes in occupations 3. Encourage creative self-expression about future careers 4. Practice speaking and describing jobs
Using the open whiteboard - You will begin with a completely blank Zoom whiteboard. - There are no pre-set frames, placeholders, or prompts. You are free to create your own layout, sequence, and structure for the lesson materials. - Your task is to design, compile, and organize the content and interactions yourself.
Design Guidelines (Suggested not mandatory) Material selection and creation: - Choose or create visuals, videos, or other media to support each lesson phase. - Consider how each input will engage learners and support the learning objectives. Task design and organization: - Decide independently how to structure the lesson phases (lean-in, language focus, input and response, etc). - Create spaces for learner responses, discussions, or class sharing. - Determine the format for each activity. Creative task: - Include a creative activity that allows learners to reflect on or represent their ideas about future jobs. Choose any format you think is appropriate (drawing, speaking, writing, role-play, digital creation, etc).
Important note: There is no single “correct” design. Your choices, strategies, and creative decisions are part of the study. Use your own judgement to align materials with the lesson aims.

See lesson plan on the next page

Appendix A.

We can all do these jobs	
Aims All learners will: ● learn and revise language related to jobs ● engage with teacher-selected or teacher-created content about gender and jobs ● use creative skills to represent themselves in a future job ● practise speaking skills by describing a job they would like to do	
Age group and level 5–8 years, A1–A2 Time 60 minutes	
Materials To be selected or created by the teacher ● Visual materials representing different jobs (e.g. drawings, photos, slides, short video clips, live sketches, or other media) ● Optional audio or video input related to jobs and gender roles ● Paper and colouring materials (or digital equivalents, depending on platform) Note for teachers: You are free to create, adapt, or source any materials you feel are appropriate for achieving the lesson aims. You may use external resources (e.g. images, videos, online tools, AI-generated content) or design materials from scratch. Link to your open whiteboard: https://zoom.us/jb/doc/G6z63H-5Swarj8mF_8AsCw	

Appendix A.**Introduction**

This lesson aims to raise learners' awareness of work-related gender stereotypes and to emphasise that anyone can have any occupation they wish. Rather than working from a fixed set of materials, teachers design or select their own input to support learners in exploring different jobs and reflecting on who can do them. The lesson ends with a personalised creative task in which learners imagine themselves in a future job.

Lead-in

- Introduce several jobs using teacher-selected or teacher-created visual or contextual prompts (e.g. images, drawings, short descriptions, gestures, or role-play).
- For each job introduced, encourage learners to identify the job and practise key vocabulary.
- Ask follow-up questions to elicit related language.

Teachers decide:

- Which jobs to include
- How many examples to present
- What language to prioritise
- How to model or elicit responses

Language focus

- Present short statements, captions, or descriptions related to the jobs introduced (teacher-created or selected).
- Ask learners to engage with these statements in a way appropriate to their level (e.g. matching, choosing, discussing, or responding orally).
- Invite learners to reflect on who they think does these jobs, encouraging explanation rather than correctness.

Teachers design:

Appendix A.

• The language focus task • The format (oral, written, pair work, whole class) • Any guided prompts or questions used to support discussion
Input and response activity • Introduce a teacher-selected or teacher-created input (e.g. short video clip, audio recording, story, sequence of images, or live storytelling) that relates to jobs and challenges or reflects assumptions about who does them. • Ask learners to observe, listen, or watch with a simple purpose (e.g. noticing details, remembering ideas, or identifying jobs). • Provide time for learners to share what they noticed with a partner or group. • Replay or revisit the input as needed, pausing to support comprehension and discussion. Teachers determine: • The nature and length of the input • The focus of learners' attention • The questions or prompts used to guide observation and reflection
Creative Task • Use the designated frame to design a personalised creative task for learners. • You decide the activity format (drawing, speaking, writing, role-play, digital creation, etc.).
Extension • Play a job-guessing or miming game using jobs generated during the lesson. • Learners take turns representing a job while others guess.

Appendix B.

The preset template whiteboard with predefined lesson sections and organizational prompts intended to provide procedural guidance during the adaptation process.

Vocabulary section:

The whiteboard template is titled "Vocabulary" at the top center. It features a grid of eight job boxes arranged in two rows of four. Each job box is labeled "job 1" through "job 8". To the right of the job boxes is a large box labeled "Key words (Voc...)". Below the job boxes is a large box labeled "Prompt Box".

Note to teacher: You are free to select any eight professions you see fit for this lesson.

Note to teacher: This is where you can add questions to prompt students. E.g. Who can do this job?

Appendix B.

Grammar Section:

Language Focus

Matching table

Note to teacher: Some sentence stems have been provided. You may complete these using any of the vocabulary you see fit. You are also welcome to add additional exercises.

A ____ works in...

A ____ helps people by...

I think a ____ can be...

Appendix B.

Input and Response Section:

The whiteboard template is designed for the 'Input and Response' section and is set against a light gray background with a faint grid of 'x' marks. It features three primary interactive areas, each with a title box and a large white space for content.

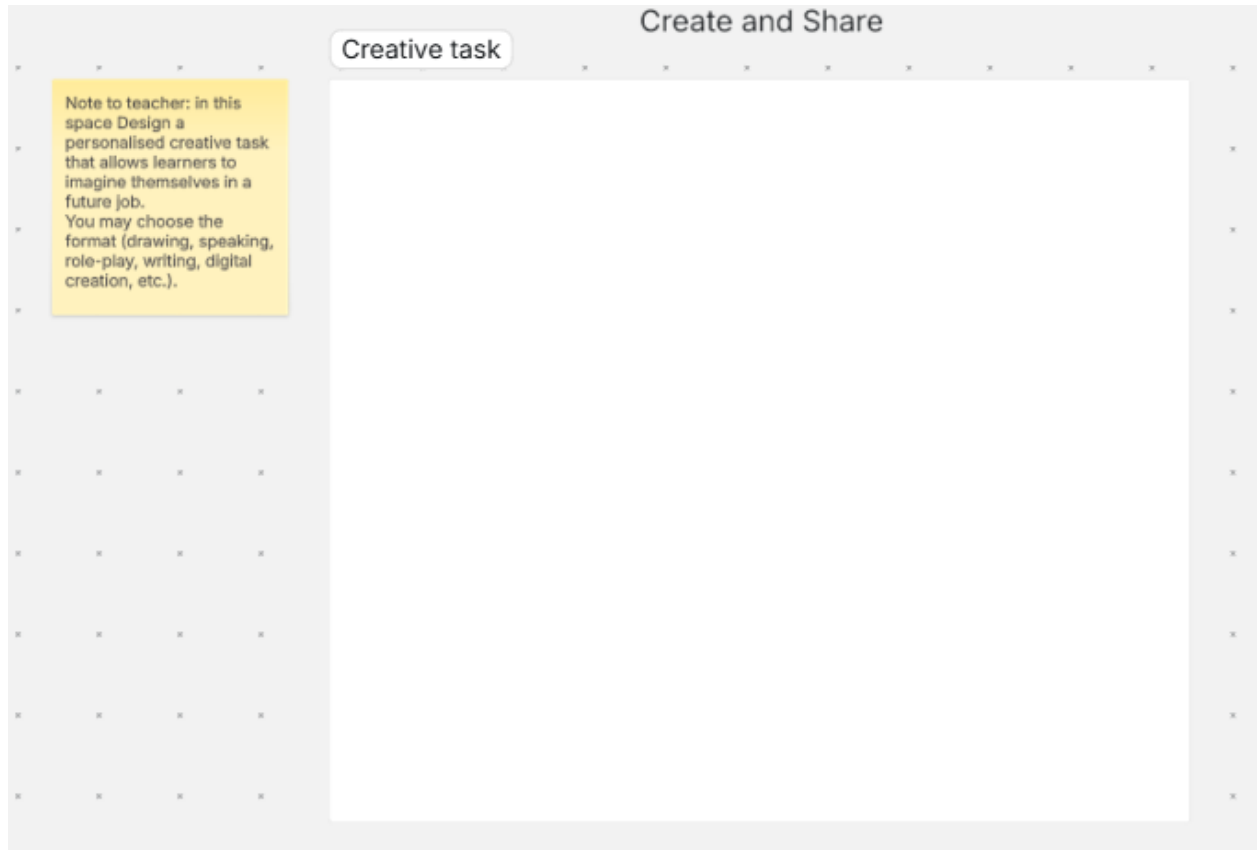
- Top Center:** A title box labeled 'Input and Response' is positioned above a large white rectangular area.
- Top Right:** A title box labeled 'Look and think' is positioned above a large white rectangular area.
- Bottom Center:** A title box labeled 'Partner Speech' is positioned above a large white rectangular area. This area contains two speech bubble outlines, one on the left and one on the right, intended for student dialogue.

On the left and right sides of the whiteboard, there are yellow boxes containing 'Note to teacher' instructions:

- Left Note:** 'Note to teacher: You may use this box to insert any bit of media you see relevant to this lesson. E.g. Video, audio, comic strip.'
- Right Note:** 'Note to teacher: You may use this space to ask guided questions about the media'
- Bottom Left Note:** 'Note to teacher: use this space to create a dialogue for students to practice sharing their ideas about the media above. you may add images or animations as you see fit.'

Appendix B.

Create and Share Section:



Appendix C.

The semi-structured interview protocol, which was developed to elicit participants' retrospective accounts of their adaptation processes. The interview questions focused on themes related to instructional decision-making, procedural support, workload, autonomy, ownership, and alignment with teaching preferences across the two whiteboard environments.

1. Background and Context

- Could you briefly describe your background as an online English teacher (age range, years of experience, previous teaching experience)?
- What age group(s) do you currently teach?
- How frequently do you adapt or modify teaching materials for your online lessons?

2. Familiarity with Digital Whiteboard Tools

- How familiar are you with using the Zoom digital whiteboard in your teaching?
- Can you describe how you typically use the digital whiteboard during your lessons?

3. General Materials Design Practice

- Could you walk me through how you usually prepare or design materials for your online lessons?
- What typically guides your decisions when adapting or creating materials?

4. Instructional Decision-Making

- How did you decide what content, examples, or activities to include or exclude when adapting the lesson materials?
- At what points did you decide to adapt existing materials versus creating new elements, and what influenced those decisions?
- Did either whiteboard format influence how you made those decisions? If so, how?

5. Ownership, Agency, and Teaching Identity

- What are your main goals as an online English teacher?

Appendix C.

- How do those goals align with the expectations or goals of your institution (if applicable)?
- To what extent do you feel you have flexibility or room to explore different approaches when designing or adapting materials in your teaching?
- How did your sense of control over the lesson design differ between the open whiteboard and the preset template?
- To what extent did each format allow you to express your own teaching style or preferences?

6. Alignment with Learning Objectives

- How clear were the learning objectives for the lesson while you were adapting the materials in each condition?
- Did either format help you stay more focused on the learning objectives? If so, in what way?
- How confident do you feel that the materials you produced would support students in achieving the intended learning outcomes? Did this differ between the two conditions?

7. Perceived Task Workload

- How would you describe the overall workload involved in adapting the materials in each condition?
- Which aspects of the task required the most mental effort (e.g., planning, structuring, content selection, use of tools)?
- Did either condition feel more time-consuming or faster to complete? Why do you think that was?

8. Willingness to Reuse / Future Use

- How likely are you to reuse or further adapt the materials you created in each condition in your future teaching?
- What factors influenced your decision to reuse or not reuse them?

Appendix D.

P1's completed open whiteboard in which the participant organized lesson materials spatially across the whiteboard rather than following a linear, or left-to-right sequence.

Everyone can do any job!

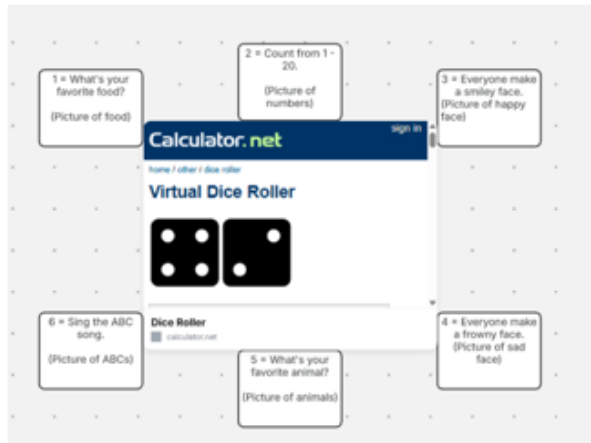


 He is a _____.  She is a _____.  He is a _____.  He is a _____.  She is a _____.  She is a _____. What does a _____ do? Is it fun? Link to game: https://www.bambopie.com/games/1246/	Man Woman Boy Girl Doctor → Firefighter → Nurse → Pilot → Can a woman be a firefighter? Can a man be a nurse? Everyone can do any job!
 This is Mia. Mia is a pilot. She flies a plane. Some people say: "No! Girls can't be pilots." But Mia says: "Yes, I can!" She is a GREAT pilot!  This is Ben. Ben is a nurse. He helps sick people. Some people say: "No! Boys can't be nurses." But Ben says: "Yes, I can!" He is a KIND nurse!  This is Sam. Sam is a police officer. She helps people. Some people say: "No! Girls can't be police." But Sam says: "Yes, I can!" She is STRONG! What is her job? Is she a good pilot? Can girls be pilots? What is his job? Is he kind? Can boys be nurses? What is her job? Is she strong? Can girls be police?	CREATIVE TASK: My future job. Draw yourself at your future job! ME I want to be a _____ I can _____

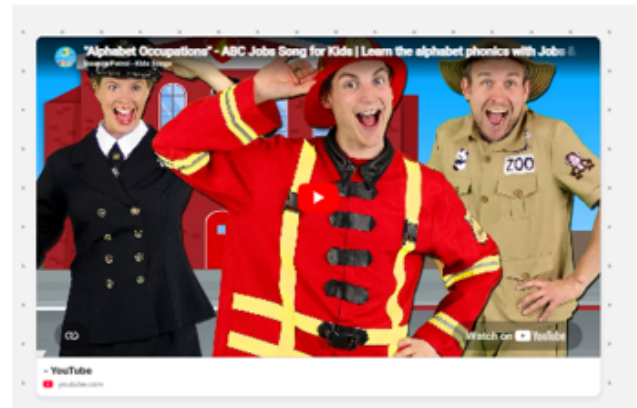
Appendix D.

P2's completed open whiteboard which showed the choice to complete it in layers rather than in one spatial setting.

Layer 1



Layer 2



Layer 3

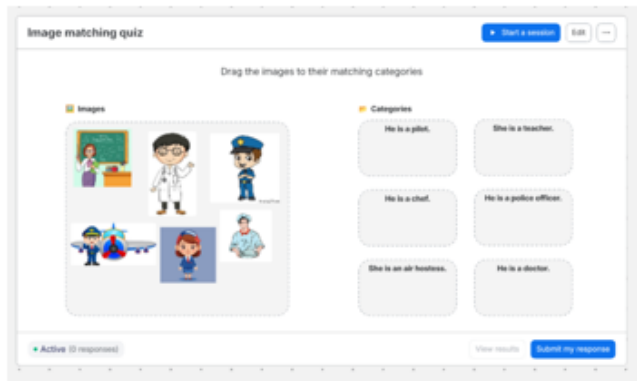


Layer 4

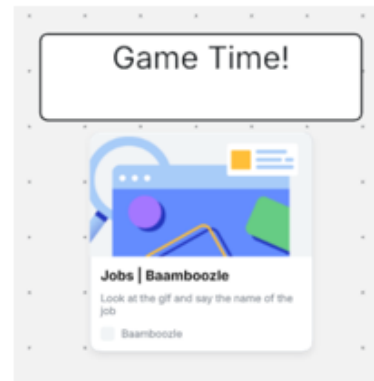


Appendix D.

Layer 5



Layer 6



Appendix E.

The tables show how the transcript from the semi-structured interviews were organized into categories after the initial coding.

Openness, Flexibility, and Control

Participant	Open Whiteboard	Preset Template Whiteboard
Participant 1 (P1)	<i>When asked how each environment affected the participant's sense of control over the lesson design:</i> I feel more in control when it's just an open whiteboard. From an aesthetic design perspective. It felt nice to map my lesson how I wanted to, how I know it would probably go when I actually teach the student. At least for the rhythm of my lesson.	<i>When asked how each environment affected the participant's sense of control over the lesson design:</i> With the preset template, I felt less of a need to add any more than what was proposed. I just felt like it was a psychological thing, if there's a preset template, I just want to stay within the confines of the template for the most part. Sometimes in a job, you don't want to step on any toes, so imagining this template is from a company, they probably want me to do it this way.
Participant 2 (P2)	<i>When asked how each environment affected the participant's sense of control over the lesson design:</i> I would say it was like night and day. With the open whiteboard I was able to put in my own activities and get a better flow with the things that I would want to do in the class. I'm able to connect the ideas and flow the ideas more easily. I was able to do everything I wanted to do.	<i>When asked how each environment affected the participant's sense of control over the lesson design:</i> The problem with the preset whiteboard was that it was a bit conflicting in the sense that it made me ask, "What exactly does my institution want me to teach them?" It disrupts my train of thought and makes it harder for me to feel free with my decisions and how I want to teach. The preset whiteboard made me question, again, what does the institution want me to teach? What things are important to them? It made me question that and, in a way, doubt myself.

Procedural Support and Workload.

Participant	Open Whiteboard	Preset Template Whiteboard
(P1)	<i>On whether either whiteboard environment helped the participant to stay focused on the learning objectives:</i> The open whiteboard for sure. I'm a control freak. <i>On the time it took to complete the adaptation task:</i>	<i>On whether either whiteboard environment helped the participant to stay focused on the learning objectives:</i> Again, it's a psychological thing. Don't put me in a box. But the preset template depends on the organization and what company I'm working for.

	This took longer time-wise, but I have to say it's a little easier mentally. <i>When asked about which aspect of the task required the most effort:</i> Sequencing it properly, so it's a proper scaffold was probably the hardest but once you get it down in your head how you want it to go, it's almost like writing an essay. You think of your thesis, and your three points and that's the hardest part. The body paragraphs are always easy. <i>When asked why the open whiteboard took longer to complete than the preset whiteboard:</i> When I was doing my own thing, I'm thinking more like "Can I add something else?" It felt like almost more of a responsibility.	<i>When asked why the open whiteboard took longer to complete than the preset whiteboard:</i> I feel like if I satisfied what I perceived needed to be in the box, then my job was done and I could move on to the next one.
(P2)	<i>On whether either whiteboard environment helped the participant to stay focused on the learning objectives:</i> The open one made it easier to focus. I felt I was free to do whatever. <i>When asked to describe the workload involved in adapting materials for the environment:</i> When you open up a blank page, it feels like this is an insurmountable task, like I'm going to be climbing mountains. But then as you get your first few pictures and your grammar ideas, all of a sudden the flow comes in. The very first layer that I made was probably the longest one, time-wise. Immediately after that, I'm getting ideas of the second, third, fourth, and so on. The workload seems quite large at first, but as you're doing it, the gap closes very quickly. <i>When asked about which aspect of the task required the most effort:</i> I would say the structuring. Figuring out what comes first, second, third and so on. Figuring out what path I was going to take to teach the lesson.	<i>On whether either whiteboard environment helped the participant to stay focused on the learning objectives:</i> I would prefer that if the institution is going to give me a template, they just go ahead and give me the whole lesson from start to finish. That way I can get a better understanding of what they want me to do. If it's open-ended, I don't have all of the control over it I want. I don't have control over the things I think are important. <i>When asked to describe the workload involved in adapting materials for the environment:</i> With the preset whiteboard, the workload is much lower but a lot less enjoyable. At least for me. <i>When asked about which aspect of the task required the most effort:</i> The structuring was much easier for the preset whiteboard. There's a lot less thinking involved. The preset is definitely a lot shorter time-wise, but like I said, the enjoyableness or even the passion of it isn't here. It's a lot harder to be excited about your own lesson.

Anticipatory Instructional Decision-Making

Participant	Open Whiteboard	Preset Template Whiteboard
(P1)	<i>On whiteboard sequencing and structure:</i> If we want to scaffold, you're not going to start with sentences unless you're modeling it as part of a warm-up. You've got to start with vocabulary or do an example. It's for the student's benefit. For conversations, I don't want to put too many lines on the screen and make the font too small. The font has to be big enough and with enough space between the lines. Especially for younger students (<i>figure 1.</i>).	<i>On whiteboard sequencing and structure:</i> I don't know how the student would look at each one. That might impact their learning. If I had to guess, it might be very student dependent. The template might be easier for the student rather than just free-drawing across the board. The student is probably used to a certain aesthetic organization in school. The template design may offer them that.
(P2)	<i>On whiteboard sequencing and structure:</i> The assumption for me is I don't know these students yet. So, the goal of the first lesson isn't to teach them about new jobs as much as it is to gain their trust. I want them to be engaged from the first minute. <i>On the decision to include or exclude materials from the lesson plan:</i> There was nothing in the template about gender differences. It was in the lesson plan. That's something I felt I needed to add. (<i>See figure 3</i>)	<i>On whiteboard sequencing and structure:</i> The preset whiteboard was different. It was harder to adapt the materials with this assumption in mind. (In reference to the assumption that the teacher does not know the students). My biggest worry is engagement for the younger crowd. I want to spice it up in the middle to get their attention back on track. <i>On the decision to include or exclude materials from the lesson plan:</i> There were a few grammar related things on the preset whiteboard that I would have never thought to teach students in this age group (<i>See figure 2.</i>). The conflicting ideas made me feel like maybe it was too complicated for the kids. I get that feeling of dread, like I'm going to show this material to the kids and none of them are going to understand.

Perceived Ownership and Autonomy

Participant	Open Whiteboard	Preset Template Whiteboard
(P1)	<i>When asked whether either template allowed the participant to express their own teaching style:</i> The big difference is the organization and the prep that goes into it. But as far as how I teach, neither one would affect it because I just go with it in the class. The teaching style comes in between the lines of the material. <i>When asked how likely the participant was to reuse the material from both conditions:</i> I would reuse both. (no additional reasons were provided)	
Participant 2 (P2)	<i>When asked how likely the participant was to reuse the material from both conditions:</i> Yeah, I would reuse it. I would adapt it. I'd do the lesson again, figure out what worked and what didn't	The preset is definitely a lot shorter time-wise, but like I said, the enjoyableness or even the passion of it isn't here. It's a lot harder to be excited about your own lesson.

	work.	<i>When asked how likely the participant was to reuse the material from both conditions:</i> Yeah, I would reuse it. If I'm putting anything in there, it's like a resume. You know, when you have the templates for your own resume. That's my lesson. If I'm filling in the blanks and putting in all the pictures, that is my lesson. So, I am reusing it as well.
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