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**Evaluating AI tools for lesson planning with an emphasis on English Language
Teaching (ELT)**

Αξιολογώντας AI εργαλεία για σχεδίαση μαθημάτων με έμφαση στη
διδασκαλία της Αγγλικής

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DECLARATION OF AUTHENTICITY

ATTESTATION OF THESIS DERIVATION

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I declare responsibly that this Master's Thesis has been authored by me personally and has not been submitted or evaluated as part of any other postgraduate or undergraduate degree, in Greece or abroad.

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To my parents

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Abstract

Artificial Intelligence (AI) seems to have the potential to transform education at large and English Language Teaching (ELT) in particular, as more and more studies highlight its affordances for students and teachers. Its multiple applications in developing the four skills (reading, writing, listening and speaking), in motivating students and aiding educators in orchestrating their lessons, render studies around the value of AI for education welcome and necessary.

The aim of this thesis was to evaluate the usefulness of some popular generative AI tools in the design of lesson plans for the ELT classroom and to offer ELT educators some useful tips towards maximizing the tools' effectiveness in this process.

To accomplish this aim, a teaching scenario prompt was created and used to generate lesson plans from the AI tools MagicSchool.ai, Learnt.ai and ChatGPT. The quality of the generated lesson plans was evaluated using a rubric. The choice of the rubric's elements, i.e. the evaluation criteria, draw from learning design, lesson planning and pedagogical frameworks so that regardless of the tool being evaluated, the evaluation can every time be centered on the generated output presenting all of the essential parts of a quality lesson plan that can be utilized in the ELT educator's teaching practice for both personal and official use.

The findings suggest that AI tools are valuable educators' companions, which can act as tireless educational advisors and support teachers by answering questions on pedagogical issues, forming lesson objectives, suggesting engaging activities and providing educational resources. The findings also indicate that most of the tools' limitations namely only offering more advanced affordances under a subscription plan, losing their focus after being asked a number of follow-up questions, potentially generating incorrect or biased information and posing privacy threats can be overcome by an informed teacher.

Therefore, the need for teacher training on the use of AI tools is highlighted along with the need for more studies on the ever-developing affordances of AI tools for lesson planning.

Key words: artificial intelligence, lesson planning, ELT, ChatGPT, education

Περίληψη

Η τεχνητή νοημοσύνη φαίνεται να έχει την δυνατότητα να μεταμορφώσει την εκπαίδευση γενικότερα, αλλά και την Διδασκαλία της Αγγλικής γλώσσας ειδικότερα, αφού όλο και περισσότερες έρευνες καταδεικνύουν τις δυνατότητες που προσφέρει σε μαθητές και εκπαιδευτικούς. Οι πολλαπλές της εφαρμογές στην ανάπτυξη των τεσσάρων δεξιοτήτων (ανάγνωση, γραφή, ακρόαση και ομιλία), την κινητοποίηση των μαθητών και την αρωγή των εκπαιδευτικών στην ενορχήστρωση των μαθημάτων τους, καθιστούν τις μελέτες γύρω από την αξία της τεχνητής νοημοσύνης για την εκπαίδευση ευπρόσδεκτες και αναγκαίες.

Η παρούσα διπλωματική εργασία εστιάζει στην εφαρμογή των εργαλείων τεχνητής νοημοσύνης στην δημιουργία σχεδίων μαθημάτων (lesson planning) για την διδασκαλία της Αγγλικής γλώσσας. Το σχέδιο μαθήματος, του οποίου η αξία πολλές φορές παραγνωρίζεται άδικα, αποτελεί την βάση του μαθήματος. Κατά τον σχεδιασμό του ο εκπαιδευτικός μπαίνει στην διαδικασία να προγραμματίσει ποιες δραστηριότητες θα χρησιμοποιήσει για την επίτευξη των μαθησιακών στόχων, πόσο χρόνο θα αφιερώσει σε κάθε μία από αυτές και πώς θα αξιολογηθούν οι μαθητές. Ακόμα, μπαίνει στην διαδικασία να αναλογιστεί πώς θα μεγιστοποιήσει την εμπλοκή του κάθε μαθητή και πώς θα κάνει την μαθησιακή διαδικασία περισσότερο ευχάριστη, ενώ ακόμα αφιερώνει χρόνο για να προβλέψει ενδεχόμενα προβλήματα που μπορεί να προκύψουν και να σκεφτεί εκ των προτέρων τρόπους να τα αποτρέψει και να τα αντιμετωπίσει. Επομένως, γίνεται αντιληπτό το γεγονός ότι αφενός η δημιουργία σχεδίων μαθημάτων αποτελεί μία χρονοβόρα αλλά και αναγκαία διαδικασία για την αποτελεσματική και απρόσκοπτη διδασκαλία του μαθήματος. Αφετέρου, τα εργαλεία τεχνητής νοημοσύνης αναδεικνύονται σε πιθανούς συμμάχους των εκπαιδευτικών και διευκολυντές στην διαδικασία δημιουργίας των σχεδίων μαθημάτων, αφού η χρήση τους δύναται όχι μόνο να μειώσει θεαματικά τον χρόνο που απαιτείται για τον σχεδιασμό τους αλλά και να προσφέρει στον εκπαιδευτικό πρωτότυπες και καινοτόμες ιδέες αλλά και λύσεις σε θέματα παιδαγωγικής.

Σκοπός λοιπόν αυτής της διπλωματικής εργασίας ήταν η αξιολόγηση της χρησιμότητας ορισμένων γνωστών εργαλείων γενετικής τεχνητής νοημοσύνης, στον σχεδιασμό σχεδίων μαθημάτων για την τάξη των Αγγλικών, καθώς και η παροχή χρήσιμων

συμβουλών στους εκπαιδευτικούς της Αγγλικής γλώσσας για την μεγιστοποίηση της αποτελεσματικότητας των εργαλείων αυτών.

Για την κατάκτηση αυτού του σκοπού δημιουργήθηκε ένα υπόδειγμα διδακτικού σεναρίου, το οποίο χρησιμοποιήθηκε για την παραγωγή σχεδίων μαθημάτων από τα εργαλεία τεχνητής νοημοσύνης MagicSchool.ai, Learnt.ai και ChatGPT. Το διδακτικό σενάριο περιελάμβανε το σχολικό μάθημα, το θέμα του μαθήματος, τον διδακτικό σκοπό, την οδηγία ότι οι μαθησιακοί στόχοι πρέπει να έχουν σχεδιαστεί ακολουθώντας την ταξινόμια του Bloom, το επίπεδο της επάρκειας των μαθητών στην Αγγλική γλώσσα, τον αριθμό των μαθητών, την τάξη και την ηλικία τους, την διάρκεια του μαθήματος και την θεωρία και την στρατηγική μάθησης. Ο λόγος που όλες αυτές οι πληροφορίες δόθηκαν εξαρχής στα εργαλεία είναι ότι ένα σχέδιο μαθήματος για να είναι χρήσιμο στον εκπαιδευτικό δεν αρκεί να είναι σχεδιασμένο για κάποια μέση τάξη Αγγλικών αλλά πρέπει να είναι προσαρμοσμένο στις ανάγκες και τα ιδιαίτερα χαρακτηριστικά των μαθητών του. Επομένως έπρεπε να εξεταστεί αν και κατά πόσο τα εργαλεία αυτά έχουν την δυνατότητα να επεξεργάζονται όλα τα προαπαιτούμενα που τους έχουν δοθεί στο διδακτικό σενάριο για να παράγουν ένα εξατομικευμένο σχέδιο μαθήματος που μπορεί να χρησιμοποιηθεί άμεσα από τον εκπαιδευτικό χωρίς να χρειαστεί εκείνος να προβεί σε πολλές μορφοποιήσεις.

Η ποιότητα των παραγόμενων σχεδίων μαθημάτων αξιολογήθηκε με την χρήση ρουμπρίκας αξιολόγησης. Για την επιλογή των στοιχείων της ρουμπρίκας, δηλαδή των κριτηρίων αξιολόγησης, αξιοποιήθηκαν θεωρητικά πλαίσια σχεδιασμού μάθησης, σχεδιασμού μαθημάτων και παιδαγωγικής ώστε ανεξάρτητα από το εργαλείο που αξιολογείται, η αξιολόγηση να μπορεί να εστιάζει κάθε φορά στο κατά πόσο το παραγόμενο προϊόν παρουσιάζει όλα τα απαραίτητα μέρη ενός ποιοτικού σχεδίου μαθήματος το οποίο μπορεί να αξιοποιηθεί στην διδακτική πρακτική του εκπαιδευτικού της Αγγλικής γλώσσας, τόσο για προσωπική όσο και για επίσημη, διοικητική χρήση.

Συγκεκριμένα, τα παραγόμενα σχέδια μαθημάτων αξιολογήθηκαν ως προς την ύπαρξη και την ποιότητα των παραγόμενων μαθησιακών στόχων, των προαπαιτούμενων σε σχέση με την προϋπάρχουσα γνώση των μαθητών, των μαθησιακών περιβαλλόντων, των υλικών, των δραστηριοτήτων, των ρόλων του μαθητή και του δασκάλου και των τύπων αλληλεπίδρασης, του καταμερισμού του χρόνου, της αξιολόγησης, των εργασιών

για το σπίτι, των πόρων και της χρήσης των ψηφιακών μέσων. Τα σχέδια μαθημάτων αξιολογήθηκαν επίσης ως προς την επιτυχημένη εφαρμογή της αρχής της εποικοδομητικής ευθυγράμμισης (constructive alignment) των μαθησιακών στόχων, των δραστηριοτήτων και της αξιολόγησης, την εμπλοκή των μαθητών στην μαθησιακή διαδικασία και την μεταξύ τους συνεργασία, την πρόβλεψη για την διαφοροποίηση του μαθήματος, την εισαγωγή εκπαιδευτικών καινοτομιών και τέλος τον αριθμό των απαραίτητων μορφοποιήσεων που θεωρούνται αναγκαίες για την χρήση του σχεδίου μαθήματος.

Τα αποτελέσματα αναδεικνύουν τα εργαλεία τεχνητής νοημοσύνης ως πολύτιμους βοηθούς των εκπαιδευτικών, οι οποίοι μπορούν να λειτουργούν ως ακούραστοι εκπαιδευτικοί σύμβουλοι και να βοηθούν τους εκπαιδευτικούς, απαντώντας ερωτήσεις πάνω σε θέματα παιδαγωγικής, διατυπώνοντας εκπαιδευτικούς στόχους, προτείνοντας δραστηριότητες που εμπλέκουν τους μαθητές και παρέχοντας εκπαιδευτικούς πόρους. Τα αποτελέσματα υποδεικνύουν ακόμα, ότι οι περισσότεροι από τους περιορισμούς των εργαλείων, πιο συγκεκριμένα, η προσφορά των περισσότερων εξελιγμένων δυνατοτήτων μόνο έπειτα από την πληρωμή της συνδρομής, η απώλεια της εστίασης των εργαλείων μετά από την προσπάθεια απάντησης ενός αριθμού συμπληρωματικών ερωτήσεων, η πιθανή παραγωγή λανθασμένων ή προκατειλημμένων πληροφοριών και η σύσταση απειλής για την ιδιωτικότητα των μαθητών, μπορούν να ξεπεραστούν από έναν καταρτισμένο δάσκαλο.

Συνεπώς, υπογραμμίζεται η ανάγκη για κατάρτιση των εκπαιδευτικών στην χρήση των εργαλείων τεχνητής νοημοσύνης ώστε να μπορούν να τα χρησιμοποιούν αποτελεσματικά, να προστατεύουν τους εαυτούς τους και του μαθητές τους από τους πιθανούς κινδύνους που ελλοχεύουν από την χρήση τους και να είναι σε θέση να εκπαιδεύσουν οι ίδιοι με την σειρά τους τους μαθητές τους στην σωστή χρήση των εργαλείων αυτών. Τέλος, η παρούσα μελέτη αξιολόγησε μόνο τρία εργαλεία. Εφόσον όμως ο τομέας των εργαλείων της τεχνητής νοημοσύνης που έχουν εφαρμογή στην εκπαίδευση γενικότερα και στον σχεδιασμό σχεδίων μαθημάτων ειδικότερα, συνεχώς εμπλουτίζεται με νέα εργαλεία, επισημαίνεται ακόμα, η ανάγκη για περισσότερες μελέτες πάνω στις συνεχώς εξελισσόμενες δυνατότητες των εργαλείων αυτών.

Λέξεις κλειδιά: τεχνητή νοημοσύνη, σχέδιο μαθήματος, διδασκαλία Αγγλικής γλώσσας, ChatGPT, εκπαίδευση

Abbreviations

AI: Artificial Intelligence

ELT: English Language Teaching

CEFR: Common European Framework of Reference for Languages

Chapter 1 – Introduction

1.1 The use of Artificial Intelligence (AI) tools for lesson planning in the ELT classroom

As AI seems to be the new buzzword in education, more and more language learning practitioners are looking into ways to incorporate it in their professional activities. Undoubtedly, AI, falling under the Intelligent Computer Assisted Language Learning (ICALL) field of study, can have multiple applications in foreign language education which can help teachers and students improve their teaching and learning respectively (Pokrivcakova, 2019). A lot of studies have already shown why the adoption of this new technological development in the discipline of English Language Teaching (ELT) should be viewed favorably. Indicatively, Crompton et al. (2024) have identified six areas of AI's applications in ELT, namely speaking, writing, reading, pedagogy and students' self-regulation. Similarly, Hapsari and Wu (2022) have pointed out AI chatbots' potential to ease EFL students' anxiety, increase their enjoyment and develop their critical thinking skills in speaking.

With regard to AI's teacher-facing applications, AI tools have demonstrated their capability to be established as valuable teaching assistants (Adiguzel et al., 2023). Educators often find themselves struggling to live up to the expectations of their roles. Evidently, besides the time they spend actively teaching in the classroom, they have to support students and communicate with their parents, correct assignments and tests, design lesson plans, find or create resources to supplement the main textbook used, differentiate their teaching and cater it to their students' profiles, complete administrative tasks, organize field trips, celebrations and other school events, stay up to date with current pedagogical trends and work towards their professional development. The use of AI can dramatically decrease the time educators devote to most of the tasks mentioned above.

More specifically, lesson planning in particular, can be quite laborious, since lesson plans, as the backbone of the lesson, present its organization and reflect the pedagogical framework that pervades it. Educators can use generative AI tools, to get ready-made lesson plans with objectives, activities and resources that have been designed according to their specifications, standards and students' needs (Van Den Berg & Du Plessis, 2023). They can

also interact with AI chatbots which, as tireless, experienced colleagues can critically reflect on the integrity of their work and provide them with insights into pedagogical issues.

Regarding the leading AI tool in particular, ChatGPT, Farrokhnia et al. (2023) highlight its capability to reduce teachers' workload and in terms of lesson planning, point out its role in supporting beginning teachers who may lack classroom experience. Indeed, AI tools can be valuable companions for both teachers in-training, as lesson planning is usually taught in ELT undergraduate programmes and newly graduated teachers who are usually faced with a great number of queries around pedagogy, often lack guidance in their place of employment and feel like a burden when they have to consult their senior colleagues.

Another positive development which has arisen as the by-product of the use of AI in lesson plan design is the emergence of a worldwide community of teachers who are willing to exchange ideas and resources. As a general rule, teachers traditionally used to feel hesitant about sharing their resources with their colleagues, as they felt that they were giving away their intellectual property. Now, since they cannot claim the AI generated content as their own, educators have been more open to sharing their lesson plans and their tips and tricks on effectively generating content with a community of colleagues.

As a result, when it comes to lesson planning and materials development, AI has fostered collaboration among teachers and democratized education. Teachers around the world who have access to a computer and internet connection, can have access to the same heap of tools, available for free, which they can use to generate lesson plans and resources and to aid them by answering any queries around pedagogical issues.

However, AI is no panacea. The value of AI generated products largely depends on the value of the prompt fed into the tool. Furthermore, educators do need to inspect the output for inaccuracies and emergent favoritism and be aware of copyright issues that may arise. More specifically, with regard to ChatGPT, while Hong (2023) recognises its capability to support teachers in lesson planning, also poses the question whether such support is actually ethical, since the tool recycles pre-existing content.

Thus, teacher training on the ethical and effective use of such tools is considered to be paramount (Barrett & Pack, 2023; Cukurova et al., 2024). As Chiu (2023) has pointed out, pre-service teachers should receive training on AI's applications in education by their educational institutions and in-service teachers should also receive relevant training by the

education bureau. Lastly, educators should not fail to recognize that since AI has pervaded not only education but a lot more professional areas too, AI literacy is important in order for them to be in a position to prepare students to effectively be integrated in the workforce.

The significance of educators' AI literacy can be identified in the number of emerging guidelines and frameworks which have already been produced or are currently being developed. Some of these are 'Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators' issued by the European Commission: Directorate-General for Education, Youth, Sport and Culture (2022), 'Artificial intelligence and the future of teaching and learning: insights and recommendations' issued by the U.S. Department of Education (2023) and 'Guidance for generative AI in education and research' issued by UNESCO, Miao, and Holmes (2023). Another example is UNESCO, Miao, and Shiohira's (2024) 'AI competency framework for students' and UNESCO, Miao, and Cukurova's (2024) 'AI competency framework for teachers' which have just been launched this month (UNESCO, 2024). These guidelines and frameworks aim to guide and support educators in the ethical and effective implementation of AI in education.

1.2 Scope of the study

The aim of this study is to evaluate the effectiveness of AI tools in designing comprehensive lesson plans for the development of students' reading, writing, listening and speaking skills in the ELT classroom and to offer ELT teachers some useful tips on how to maximize the quality of AI generated output. For this purpose, a teaching scenario prompt was created and fed into three popular AI tools: MagicSchool.ai, Learnt.ai and ChatGPT. The generated output was evaluated using an evaluation rubric. The evaluation criteria of the rubric were built upon learning design, lesson planning and pedagogical theoretical frameworks in order for the evaluation to focus on commonly agreed prerequisites of a quality lesson plan.

Chiu et al. (2023) have pointed out the fact that a great number of teachers lack knowledge of AI's applications in education. Baytak (2024) recognises the fact that there has been a shortage of studies on chatbot generated lesson plans. Indeed, although AI tools can be an asset in a teacher's arsenal, training on their effective use is needed. An inexperienced in the use of AI teacher, could easily be discouraged when using AI tools and failing to generate

the desired output. This incident is quite common, since AI only simulates human intelligence and as a result, communication can easily break. Moreover, a lot of active teachers are not digital natives and view AI with trepidation. Therefore, it can be easily understood that, since educators who are generally comfortable with using technology often view hesitantly the integration of AI-powered tools in their teaching practice, the ones not already accustomed to the use of technology will surely find it impossible without formal teacher training. Thus, the value of this study lies not only in its attempt to offer an analysis of AI generated lesson plans and highlight the benefits of AI use in lesson planning but also in its attempt to provide teachers who would like to incorporate them in their professional activity with some practical advice.

1.3 Structure of the study

The study provides an evaluation of generative AI tools towards their effectiveness in the design of comprehensive lesson plans for the development of students' reading, writing, listening and speaking skills in the ELT classroom. It is organized in four chapters.

The first chapter consists of the Introduction. In the introduction, the research area is presented, along with the scope and the structure of the study.

The second chapter describes the Theoretical Framework. The context of the teaching of English is defined and the use of the term ELT justified. In addition, the value of lesson planning is explained. A brief summary of only certain AI tools out of the plethora of the available ones which can be used for lesson planning is also offered.

In the third chapter, an evaluation of the AI tools MagicSchool.ai, Learnt.ai and ChatGPT in generating complete lesson plans for the ELT classroom is attempted. The aim of the evaluation is explained along with the process of the evaluation. More specifically, in the process of the evaluation, the evaluation criteria are set along with the rationale underlying their selection. Furthermore, the teaching scenario prompt which the tools were provided with is also described. Lastly, the attempt to generate utilizable lesson plans for the ELT classroom is described and the affordances of the aforementioned AI tools in the process of lesson plan generation are studied and presented.

The fourth chapter is the Conclusion. In the Conclusion, the findings of the evaluation, i.e. the tools' advantages and shortcomings in the process of generating ELT lesson plans are discussed and certain observations which emerged as a function of the evaluation are offered to the tools' users as tips on maximizing their effectiveness. Finally, a critical overview of the study is presented along with its limitations and some implications for future research.

Chapter 2 - Theoretical Framework

2.1 English Language Teaching (ELT)

A lot of terms have been used to define various contexts of English language teaching. One of these is ESL, which according to Cambridge Dictionary (n.d.-c) stands for “English as a Second Language: the teaching of English to speakers of other languages who live in a country where English is an official or important language”. Another commonly used term is EFL, which again according to Cambridge Dictionary (n.d.-a) stands for “English as a Foreign Language: the teaching of English to students whose first language is not English”.

However, according to Kostoulas (2013), this dichotomy seems to be rather dated. In the Greek context, where this study was conducted, English is not an official language and Greek students do not study English in order to better assimilate to the community. English is taught in classrooms as part of formal schooling by teachers who are mostly Greek native speakers. As a result, one could assume that EFL would better describe the situation. Nevertheless, Greek society deems English language learning imperative and students formally start to get exposed to the language in kindergarten. Furthermore, in our globalized world students constantly encounter the lingua franca outside the classroom and consume it through western cultural products. One realizes then that the term ESL wouldn't be utterly inappropriate either when used to describe the Greek reality of English language teaching. It is also probably safe to assume that this terminology dilemma is valid in other countries and contexts, too.

Consequently, acknowledging these terminology issues, the broader term ELT, which according to Cambridge Dictionary (n.d.-b) stands for “English Language Teaching: the teaching of English to speakers of other languages” is used for the purposes of this study.

2.2 The value of lesson planning

Petty (2009) notes about lesson planning, “To fail to plan is to plan to fail” (p.442). Similarly, Iqbal et al. (2021) stress the importance of lesson planning by drawing a parallel between a teacher who lacks the ability to create a quality lesson plan, in the classroom and “a sailor on a boat without a rudder” (para. 2). Truly, although lesson planning is sometimes viewed as a purposeless administrative task, it holds significant value not only for the teacher but for all of the stakeholders in education.

Despite the time they have to devote on creating them, lesson plans can aid teachers in multiple ways. A lesson plan is the outline of the teaching process. It includes all of the necessary information an educator needs to know in order to teach the lesson: theoretical framework (learning theory, model, strategies and standards), topic, prerequisites in terms of students’ background knowledge, learning environments, learning objectives, materials, students’ profiles, activities, student and teacher roles and types of interaction, timing, procedures, assessment, and homework. It may also contain notes on extra material for early finishers, special accommodations, expected difficulties and possible solutions. Therefore, the lesson plan helps the teacher have a clear idea of how to best utilize the teaching hour and overcome any mishaps that may arise throughout it.

In addition, Farhang et al. (2023) state that lesson planning allows teachers to employ their creativity in the activities of the lesson. Undoubtedly, the fact that teachers devote time to ponder on the lesson and predict the students’ reaction to it, urges them to work towards ameliorating it to increase the chances of its favorable reception.

Moreover, Snow (2006) highlights the beneficial effect of the overall structure a lesson plan offers to a teacher’s confidence. This sense of security that the lesson plan provides is indeed an important aspect of lesson planning for every teacher and especially the novice. Students can easily sense when a teacher has been disoriented and when this happens, they

can also easily exploit the chance they are given to disrupt the flow of the lesson and cause unrest. As a result, having a lesson plan as a guide helps the teacher stay organized and confident.

Furthermore, lesson plans are hardly ever a waste of teachers' time since they can be archived and reused and in this way they can serve as a record of what has been taught throughout the year. In this case, the archived lesson plans can also help the teacher reflect on the effectiveness of previous lessons taught and guide them through their revision to the delivery of more engaging and effective lessons in the future.

What's more, in the case of the teacher's absence, the students do not have to miss their lesson or engage in meaningless activities in class in order to be kept occupied while the teacher is absent, as the lesson plan can guide the substitute teacher on what has been learnt, what is to be learnt next and how it is to be taught. The students then can also benefit from a smooth-running teaching process.

Kyriacou (2009) also highlights the importance of planning for the coordination of the different professionals that collaborate with the teacher in the teaching process such as teaching assistants. Lastly, even though a good lesson plan does not equal a good lesson, lesson plans can provide teacher supervisors with a formal proof of the quality of the lessons being taught.

It becomes apparent then, for all of those reasons mentioned above that lesson planning benefits teachers, students and educational administrators and therefore educators should be supported in this process.

2.3 AI tools for lesson planning

There is a plethora of available AI tools in teachers' disposal that can be used for lesson planning. These tools can be split into three categories: lesson plan generators or generative AI tools with a distinct lesson plan generator feature, generative language models that have not been exclusively designed for lesson planning but can be used for this purpose and generative tools that can be used to design lesson plan resources. Some indicative examples

of tools that fall under each category are provided, however the list of tools mentioned below is far from being exhaustive.

In the first category of lesson plan generators or generative AI tools with a distinct lesson plan generator feature LessonPlans.ai, MagicSchool.ai and Learnt.ai can be included. LessonPlans.ai is a lesson plan generator for K-12 level students. The teacher has to fill in a prompt with the grade level, subject, lesson title and lesson description. Based on the information given, the tool generates a lesson plan with objectives, outcomes, materials, warm-up, direct instruction, guided practice, independent practice, closure and assessment, which the teacher can later edit. Furthermore, LessonPlans.ai fosters collaboration among teachers as through its “Community” section, it gives educators the ability to search by input, grade level or subject, browse and download lesson plans created by their colleagues. However, the tool is not offered free of charge.

MagicSchool.ai is a generative AI platform for educators. Besides its lesson plan feature, it includes over 60 other tools like an AI-resistant assignment suggestions generator, an exemplar and non-exemplar assignment responses generator and a student work feedback tool. The platform offers a chatbot feature, Raina, which has been trained on the best practices for educators, abides by the U.S Federal Law FERPA (Family Educational Rights and Privacy Act, 1974) and answers only questions pertaining to education. The lesson plan feature and the chatbot can be used free of charge, however, in this case the teacher is not able to edit the generated lesson by adding any custom prompts to it or by using the chat box found directly under the lesson plan. Kočková et al. (2024) have included MagicSchool.ai in the list of AI tools for teaching and have recognised its use in lesson plan generation.

Learnt.ai is another generative AI platform for educators comprised of over 75 tools. The user can either select the “faster” model, which is offered free of charge, or the “better” model, which is more advanced and it is offered under a paying plan. Learnt.ai offers a first and a second generation lesson plan builder. Apart from these, some other useful tools are AI Vision which turns images into educational resources and generators for learning objectives, case studies, educational games and assessment rubrics. There are different pricing options offered but the first generation lesson plan builder is available in the free plan for unlimited use, along with other 14 tools. The Professional plan offers access to “AI

sidekicks”, one of which is the Lesson Planner Assistant chatbot that aids teachers in the process of creating engaging lesson plans, suitable for the needs of their class.

In the second category of generative language models that have not been exclusively designed for lesson planning but can be used for this purpose, we can include ChatGPT, Perplexity and Gemini.

As Atlas (2023) explains, “ChatGPT (Generative Pre-trained Transformer) is a powerful, cutting-edge language model developed by OpenAI that uses artificial intelligence to generate text that is similar to human writing” (p.2). Even though the more advanced GPT – 4 model is offered in the paying plan, GPT- 3.5 model can be used free of charge. As mentioned above, although ChatGPT is not exclusively a lesson plan generator, a lot of studies have already proved its affordances in this respect. Zhai (2022) highlighted ChatGPT’s capability to produce personalized lesson plans. Karaman and Göksu (2024) showed that ChatGPT can generate lesson plans which are deemed as effective as the ones designed by teachers. Similarly, Koraishi (2023) showed that ChatGPT can be used to generate lesson plans for the ELT classroom as well as resources such as quizzes, worksheets and texts with the desired target vocabulary, on the desired topic and CEFR level along with comprehension questions on them. What’s more, Trust et al. (2023) also mention ChatGPT’s potential utilization towards designing plans for substitute teachers.

Perplexity is an AI search engine. It operates like a research companion and claims to offer answers obtained from reliable sources. Its free version uses OpenAI’s GPT – 3.5 model. Perplexity can be used free of charge for a limited number of generations per day. Gemini is an AI model developed by Google DeepMind. It can be used free of charge but for a limited number of requests per day. Baytak (2024) has found that Gemini can produce effective lesson plans that can be used in the classroom. Perplexity and Gemini operate in a similar fashion. The teacher provides the tool with a prompt containing all of the necessary requirements and the tool generates a lesson plan based on these. The teacher can then ask the tool follow up questions in order to edit the lesson plan by supplementing it or correcting any possible mistakes.

In the third category of AI tools that can be used to generate lesson plan resources we can include Diffit and Roshi. Diffit is an AI tool which provides teachers with differentiated resources. The teacher can choose the standard (as set by US states), reading level and

language and provide the tool with a topic, a URL of an article or YouTube video, a text or even upload a PDF and the tool will provide an adapted reading passage with its summary, a list of the definitions of key vocabulary found in the text and questions on it along with their answers. The teacher can adjust the length of the text, edit the output and export it in different formats. Some features, like standard alignment for example, have been restricted in the free plan. Apart from these features Diffit can be used to generate unlimited resources free of charge.

Roshi is an AI tool which provides teachers with resources for their lesson. The teacher provides the tool with a link to an article or YouTube video and based on it, the tool generates a vocabulary list and activities. There is a free plan but it only offers five lessons per month, limited text and video input up to 300 words and 5 sections in each lesson.

As it has been stated at the beginning of this section, there is a lengthy list of available AI tools that could be utilized for lesson planning, which is constantly being enriched with new and improved tools. As a result, the aim of this section is not to offer a detailed list of all of the tools at teachers' disposal but rather to familiarize the reader with certain examples of tools and urge them to further research them and their uses for lesson planning.

Chapter 3 - Evaluation of AI tools for lesson planning in ELT

3.1 The aim of the evaluation

The aim of the evaluation is to explore the affordances and limitations of certain popular AI tools in the process of lesson planning and to offer as a result of this evaluation, some useful advice on generating effective lesson plans that can be used in the ELT classroom with the fewest modifications possible. For this purpose, a lesson plan evaluation rubric and a teaching scenario prompt were created. The prompt was fed into the generative AI tools MagicSchool.ai, Learnt.ai and ChatGPT. The output was tweaked through follow-up questions to the AI chatbot. The generated lesson plans were evaluated using the rubric and useful tips towards the most effective use of the tools were provided.

The evaluation is primarily targeted at pre-service and in-service ELT educators, as it aspires to provide them with useful tips on how to maximize the efficacy of AI tools in lesson planning. However, the evaluation could be useful for more practitioners. The tools used are not specifically designed for English language teaching, while they also offer translation of the generated output. This means that other foreign language teachers and educators at large could also benefit from incorporating these AI tools in their practice. Finally, educational advisors or heads of educational institutions who would like to improve teachers' efficiency could also be interested in such an evaluation.

3.2 Evaluation process

3.2.1 Evaluation criteria

Rob Koper and Bill Olivier's Learning Design specification as elaborated in Koper and Olivier (2004) is employed for the delineation of the lesson plan's evaluation criteria. This framework has been chosen for a number of reasons. Firstly, it offers standardization, as it describes in a comprehensive way, all of the elements of the learning design, the teaching and learning process and the resources which make up a unit of learning, providing teachers with structured guidelines for the design of lesson plans. Secondly, it takes interoperability into account, enabling the learning designs to be shared and reused by different institutions and platforms and promoting in this way collaboration among educators. Thirdly, it allows for the personalization of the learning design through the regard for adaptive learning paths which cater for students' different learning pace and needs. More specifically, eight takeaway points have been identified in Koper's Learning Design specification which can be applied to lesson planning.

The first regards the design of clear and measurable learning objectives. The second refers to the establishment of prerequisites, the background knowledge students need to have in order to engage with the lesson. The third point refers to activities, divided into learning and support activities. Then the roles of the people involved in the learning process, the learners and the staff are to be determined. Furthermore, the environments where the activities take place have to be decided upon, along with the learning objects, i.e. the resources. Another

point is the establishment of conditions, which refer to certain rules that pervade the lesson and are used in order to create personalised learning paths for students. Finally, there is provision for assessment.

Drawing from these key points, a lesson plan evaluation rubric was created. The rubric serves as a reference point that guides the evaluation, so that regardless of the AI tool used to generate the lesson plan, the fundamental criterion remains the same, the creation of a high-quality lesson plan that could be incorporated in teachers' daily practice. The list of generated lesson plans' evaluation criteria includes objectives, prerequisites, activities, student and teacher roles along with the type of interaction e.g. teacher-student or student-student, the learning environment, materials and resources, and assessment. Lastly, the provision for personalised learning paths expressed through the notion of conditions gave rise to the criterion of differentiation, which evaluates the lesson plans' ability to cater for different student needs.

Besides Koper and Olivier's Learning Design specification, there are some other theoretical frameworks that have been taken into account for the formation of the generated lesson plans' evaluation criteria.

Similar ideas which validate the criteria chosen above can be found in Jensen (2001) who describes the essential parts of a lesson plan:

When creating a lesson, a teacher must consider the background of the students, the objectives of the lesson, the skills to be taught, the activities, the materials and texts, the time constraints, and the connections to previous and future lessons. (p.404)

Moreover, Petty (2009) also reminds us to take students' individual needs such as lost classes or learning difficulties into consideration, too, when designing our lesson plan. Furthermore, another important criterion that a quality lesson plan needs to satisfy is the adoption of the framework of constructive alignment as theorized by John Biggs. According to Biggs (1996), in order to facilitate learning, teachers should establish clear objectives, provide students with student-centered activities which help them achieve the objectives set and lastly provide students with authentic assessment tasks where they can demonstrate the degree to which they have mastered these objectives.

Furthermore, since the world of education has tried hard through the emergence and consolidation of Computer Assisted Language Learning (CALL) and the adoption of new theoretical frameworks, to steer clear of the traditional teacher fronted instruction, it would be worth testing the tools' capabilities to utilize digital media and implement pedagogical innovations such as gamification or personalized learning.

What's more, student engagement is considered necessary in order for the students to reap the benefits of the teaching and learning process. Student collaboration is also deemed imperative as it constitutes one of the 21st century skills students need to master (Geisinger, 2016).

Lastly, an indication of the generated lesson plans' quality is the number of modifications the teacher would need to proceed to do in order to be able to use the lesson plan in their teaching practice.

Consequently, adopting the lesson plan requirements above, the provision and quality of allocated time, homework, constructive alignment, student engagement and collaboration, digital media use, pedagogical novelty and modifications needed are added to the list of evaluation criteria described above.

The evaluation rubric which is presented below evaluates the generated output according to the criteria mentioned above and deems the lesson plans' different components as 'ideal' when the generated output has fully satisfied the evaluation criteria requirements, 'satisfactory' when there are some shortcomings identified but the output still manages to meet the expectations, 'improvement needed' when considerable deficiencies have been identified and 'not applicable/ missing' when the elements that would satisfy the criterion cannot be identified at all. Some of the elements only need to be present in the generated output in order to satisfy the criteria, such as the prerequisites in terms of students' background knowledge. However, for some other elements the evaluation criteria are more specific.

To elaborate, objectives, for example, are deemed ideal if they work towards achieving the aim, have been phrased using Bloom's measurable action verbs and have been matched with one of the categories from Bloom's taxonomy (Bloom et al., 1956), e.g. 'understanding' or 'applying'. The activities should not only be appropriate for students' profile, but also exhibit their alignment with the standards set and the theoretical framework chosen. This

means that ideally, the activities should be appropriate for students of a specific age with a specific level of proficiency in English as described in the Common European Framework of Reference for Languages (CEFR) (Council of Europe, 2020), follow the learning strategy and apply the principles dictated by the learning theory chosen. The assessment section should provide activities for both formative and summative assessment. The resources should be described in detail, matched with the corresponding activities and designed where that is possible, since all of the tools studied have the capability to generate some of the sources they have recommended. Digital media should not only be implemented, as simply replacing traditional sources with digital ones would not really enhance students' learning experience. As a result, digital media should be implemented in a way that increases students' engagement, participation and enjoyment of the learning process. The detailed description of the criteria can be found in the evaluation rubric below.

Table 1 Lesson plan Evaluation Rubric

LESSON PLAN EVALUATION RUBRIC				
	Ideal	Satisfactory	Improvement needed	Not applicable/ Missing
OBJECTIVES	The objectives work towards achieving the aim. They are well-written, using Bloom's measurable action verbs and they have been matched with a category from the taxonomy.	The objectives work towards achieving the aim. They use Bloom's measurable action verbs but they have not been matched correctly with a category from the taxonomy.	The objectives mostly work towards achieving the aim; however Bloom's taxonomy has not been utilized in their formation.	The objectives are missing.
PREREQUISITES	The prerequisites in terms of students' background	Some prerequisites in terms of students' background	The prerequisites in terms of students' background	The prerequisites are missing.

	knowledge are provided in a separate paragraph.	knowledge can be found throughout the lesson plan but they are not offered in a separate paragraph.	knowledge are vaguely mentioned.	
ENVIRONMENT	The learning environment is specified for every activity.	The learning environment is specified for certain activities.	The learning environment is specified once at the beginning of the lesson plan.	The learning environment is not specified.
MATERIALS	The materials are listed in detail in a separate section of the lesson plan and they have been matched with the activities they correspond to.	The materials have been listed in a separate section of the lesson plan but they have not been matched with the activities they correspond to.	Some materials are mentioned throughout the lesson plan but they have not been provided in a separate section.	There is no mention of materials throughout the lesson plan.
ACTIVITIES	The activities are appropriate for the students' profile and aligned with the theoretical framework and standards set for the lesson plan.	The activities in their majority are appropriate for the students' profile and most of them have been aligned with the theoretical framework and standards set for the	Only certain activities are appropriate for the students' profile and/or have been aligned with some parts of the theoretical framework and standards set for the lesson plan.	The activities are not appropriate for the students' profile and/or they have not been aligned with any parts of the theoretical framework and the standards set for the lesson

		lesson plan.		plan.
STUDENT/ TEACHER ROLES AND TYPES OF INTERACTION	Student and teacher roles are explicitly described in detail for every activity along with the type of interaction (e.g. teacher – student or student-student).	Student and teacher roles and the type of interaction (e.g. teacher – student or student-student) are indirectly described in the procedure of every activity.	Either student and teacher roles or the type of interaction (e.g. teacher – student or student-student) are vaguely mentioned in every activity.	There is no mention of student and teacher roles.
TIME ALLOCATION	All of the activities have been timed. The lesson plan respects the time limit and has been divided into two 45 minute teaching hours.	All of the activities have been timed. The lesson plan respects the time limit but it has not been divided into two 45 minute teaching hours.	Most of the activities have been timed. However, the lesson plan does not respect the time limit and it has not been divided into two 45 minute teaching hours.	The time allocation is missing.
ASSESSMENT	There is provision for both formative and summative assessment in a separate assessment section of the lesson plan.	There is provision for either formative or summative assessment in a separate assessment section of the lesson plan.	The notion of formative assessment is vaguely mentioned in the lesson plan but not in a separate assessment section.	The assessment is missing.
HOMEWORK	An appropriate homework activity has been	An appropriate homework activity has been	An inappropriate homework activity has been provided	Homework is missing.

	provided for each teaching hour in a separate section of the lesson plan.	provided for both teaching hours in a separate section of the lesson plan.	for each or both teaching hours in a separate section of the lesson plan.	
RESOURCES	A detailed list of resources matched with the activities they correspond to has been provided. Some of the resources such as worksheets have also been designed.	A detailed list of resources matched with the activities they correspond to has been provided. However, the tool has not designed any resources such as worksheets.	Some resources have been provided, but they have not been matched with the activities they correspond to and no resources such as worksheets have been designed by the tool.	The resources are missing.
CONSTRUCTIVE ALIGNMENT	There is a clear connection between all of the learning objectives, the activities and the assessment.	There is a clear connection between most of the learning objectives, the activities and the assessment.	There is minimal connection between the learning objectives, the activities and the assessment.	There is no connection between the learning objectives, the activities and the assessment.
STUDENT ENGAGEMENT	The students are actively engaged in the activities throughout the whole lesson plan.	The students are actively engaged in most of the activities of the lesson plan.	Student engagement in activities of the lesson plan is minimal.	Students are passive viewers of most of the teaching process and have not been actively engaged in the activities of

				the lesson plan.
STUDENT COLLABORATION	The lesson plan employs various forms of student collaboration (e.g. group projects, pair work) in all of the activities.	The lesson plan employs various forms of student collaboration (e.g. group projects, pair work) for most of the activities.	The lesson plan employs minimal student collaboration.	The lesson plan does not employ any form of student collaboration.
DIFFERENTIATION	There is a separate differentiation section with concrete advice on how to make the lesson accessible to and engaging for every student.	There is a separate differentiation section with rather vague advice on how to make the lesson accessible to and engaging for more students.	There is some advice on making the lesson more accessible to and engaging for some students but it has not been presented in a separate section as differentiation.	There is no provision for differentiation.
DIGITAL MEDIA USE	A variety of digital media have been employed and used in a way that transforms students' learning experience.	A variety of digital media which substitute traditional teaching tools have been employed.	A couple of digital media such as a computer and a projector are used by the teacher for the presentation of new content.	Digital media have not been employed.
PEDAGOGICAL NOVELTY	The lesson plan has successfully adopted a number of	The lesson plan has successfully adopted a couple of	The lesson plan exhibits an unsuccessful attempt to	The lesson plan has not adopted any pedagogical

	pedagogical novelties that transform students' learning experience.	pedagogical novelties that transform students' learning experience.	implement a couple of pedagogical novelties.	novelty.
MODIFICATION NEEDED	The lesson plan does not need any modifications.	The lesson plan needs one or two modifications.	The lesson plan needs more than two modifications.	The lesson plan needs so many modifications that cannot be used.

3.2.2 Teaching scenario

A teaching scenario prompt was created and used to generate lesson plans from the AI tools MagicSchool.ai, Learnt.ai and ChatGPT. The design and utilization of the teaching scenario serves two purposes: to acknowledge teachers' starting point when designing a lesson plan and to keep the process of evaluation as objective as possible.

More specifically, when designing a lesson plan, teachers already have an idea of the lesson they would like to teach. First, they teach specific classes with specific student profiles for specific teaching hours each week. Then, the institution they work for or the teachers themselves have decided on a learning theory and learning strategies that should be reflected on the lesson. Teachers also know the aim and objectives of the lesson which are usually aligned with certain standards and learning outcomes. A teacher then, expects from the AI tool to be able to use the requirements they have provided it with, to generate a lesson plan tailored to their class's needs, in order for it to be useful and applicable to their teaching practice and in order for them to actually save time in lesson planning by avoiding modifications. Baytak (2024) has also found that the more detailed the prompt the tool has been provided with, the more well-structured the output.

Furthermore, by keeping the input variable consistent by providing the tools with the same teaching scenario, the evaluation obtains a more objective character. Thus, bearing teachers' starting point in the lesson planning process and objectivity concerns in mind, a teaching scenario prompt was designed.

The teaching scenario includes the subject, which is English as a Foreign Language (EFL). The topic chosen, which is also included in the teaching scenario, is ‘endangered animals’ as similar topics around the protection of the environment and the conservation of wild animals can usually be found in English language coursebooks and syllabi. A general aim, the development of students’ reading, writing, listening and speaking skills is also included in the teaching scenario. This general aim is also part of every ELT curriculum and it does not limit the tools but rather allows them the room to exhibit their capabilities in terms of activity implementation. The objectives have not been specified, as their generation is one of the criteria that the AI tools will be evaluated on. However, the tools have been given the hint that the objectives have to follow Benjamin Bloom’s Taxonomy. Bloom’s Taxonomy is utilized as a means to make the objectives and the outcomes they correspond to comprehensive and communicable (Bloom et al., 1956). The prompt also includes the class size (18 students), students’ age (12 years old), grade (6th) and the level of competence in English that Greek public school students are expected to have reached at this age, i.e. A2. This level has been defined by the Common European Framework of Reference for Languages (CEFR), a policy instrument developed by the Council of Europe, which is used in ELT in Greece and the European Union at large to describe the levels of language competency (Council of Europe, 2020). The prompt also includes the duration of the lesson, which has been set at two teaching hours lasting 45 minutes each, as this is the average time teaching hours last in Greek primary schools.

Last but not least, the prompt provides the chosen learning theory, Constructivism, as theorized by Jean Piaget and the learning strategy, Think-Pair-Share, as developed by Frank Lyman. The learning theory of Constructivism was chosen because it is well-established and significant in the world of education (Mvududu & Thiel-Burgess, 2012). Even though it dates back to Jean Piaget’s theory, its principles still reflect current pedagogical trends. That is because in constructivism the nucleus of the teaching and learning process is the student and teachers become, as Hoover (1996) phrased it, “guides on the side” (para. 5). Some other examples of relevant constructivist principles include teachers’ understanding of students’ disparate levels of cognitive maturity, the emphasis on students’ active participation in the learning process in order for them to construct their own knowledge and the provision for social interaction (Schunk, 2012). In the Think-Pair-Share learning strategy, first the teacher poses a question and gives students some time to think, then the students

discuss in pairs and in the end they share the outcomes of their discussion with the rest of the class (Lyman, 1981). The learning strategy Think-Pair-Share was chosen because it develops students’ higher order thinking, problem-solving and communication skills (Lightner & Tomaswick, 2017) which are some of the vital 21st century skills education should allow students to develop and increases student participation and confidence (Sampsel, 2013). The strategy aligns with the constructivist principles and it is also easy to identify whether it has been used or not.

The teaching scenario prompt has been provided in the table below.

Table 2 Teaching scenario prompt

Teaching Scenario Prompt	Subject: English as a Foreign Language (EFL)
	Topic: Endangered animals
	Aim: Students practice their reading, writing, listening and speaking skills
	Objectives: They follow Bloom’s Taxonomy
	English level: A2 (according to the CEFR)
	Class size: 18 students
	Grade: 6 th
	Students’ Age: 12
	Duration: 2 teaching hours (45 minutes each)
	Learning Theory: Constructivism (Piaget)
Learning Strategy: Think – Pair – Share (Lyman)	

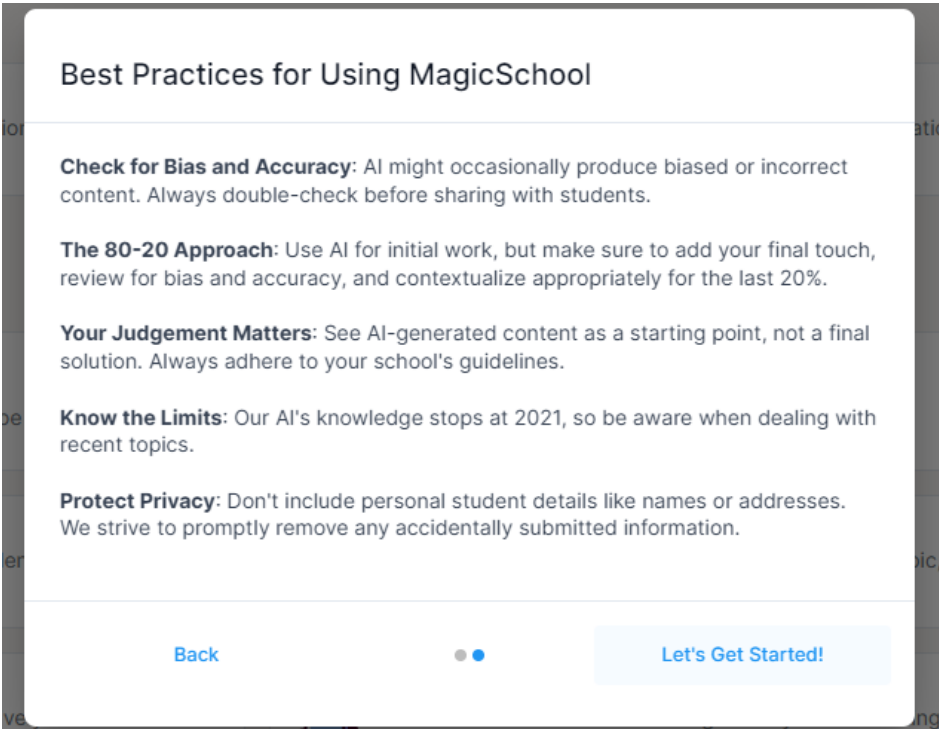
3.3 Studying the affordances of AI tools for lesson planning

3.3.1 MagicSchool.ai

MagicSchool.ai belongs to the category of AI platforms with a distinct lesson plan generator tool. Immediately after signing up, MagicSchool.ai informs us about the best practices we

should follow when using the tool, thus implicitly informing us about its limitations that we should bear in mind. According to the tool, the teacher should use the generated material as a draft which they have to check for potential false or biased information and align with their school guidelines. The teacher is also informed that the tool's latest content update was in 2021, so its knowledge may not be up to date with certain recent topics. The last thing the tool informs the user about is potential privacy issues which should be avoided by the teacher's diligent omission of students' personal details.

Figure 1 MagicSchool's best practices of use



The lesson plan generator's opening page is the prompt the tool itself urges the user to complete with information about the grade level, topic, standard or objective, additional criteria and standards set to align to. The prompt was completed with the requirements set in the teaching scenario.

Figure 2 MagicSchool's filled in initial prompt

[Clear Inputs](#) [★ Exemplar](#) [Hide Prompt](#)

Lesson Plan

Generate a lesson plan for a topic or objective you're teaching.

Grade level:
6th grade

Topic, Standard, or Objective:
Topic: Endangered animals
Subject: English as a Foreign Language (EFL)
Aim: Students practice their reading, writing, listening and speaking skills

Additional Criteria:
English level: A2 (according to the CEFR)
Class size: 18 students
Students' Age: 12
Duration: 2 teaching hours (45 minutes each)

Standards Set to Align to:
The lesson plan follows the standards of CEFR, Bloom's Taxonomy, Constructivism Learning Theory(Piaget), Think - Pair - Share Learning Strategy (Lyman)

Generate

The tool generated a lesson plan organized in paragraphs under the headings: objective, assessment, key points, opening, introduction to new material, guided practice, independent practice, closing, extension activity, homework and standards addressed. The lesson plan is provided below.

Figure 3 MagicSchool generated lesson plan

Exploring Endangered Animals

Objective:

Students will be able to identify and describe endangered animals, practice their reading, writing, listening, and speaking skills in English, and develop an awareness of the importance of wildlife conservation.

Assessment:

Students will create a presentation describing an endangered animal of their choice, including information on its habitat, threats, and conservation efforts. They will present their findings to the class, demonstrating their reading, writing, listening, and speaking skills.

Key Points:

- Understanding what endangered animals are
- Identifying different endangered species
- Describing the threats they face
- Exploring conservation efforts to protect endangered animals

Opening:

- Show pictures of various endangered animals and ask students if they recognize any of them.
- Discuss why it's important to protect endangered animals and why they are at risk of extinction.

Introduction to New Material:

- Define what endangered animals are and provide examples.
- Discuss the main reasons why animals become endangered.
- **Common Misconception:** Some students may think that all animals in zoos are endangered.

Guided Practice:

- Show videos or read short passages about specific endangered animals.
- Ask questions to check for understanding, starting with simple recall questions and progressing to more complex analysis questions.
- Monitor student responses and provide feedback as they work on identifying key information.

Independent Practice:

- In pairs, students will research and create a presentation on an endangered animal of their choice.
- They will include information on the animal's habitat, threats it faces, and conservation efforts being made to protect it.
- Students will present their findings to the class, practicing their speaking and listening skills.

Closing:

- Have a class discussion summarizing the main points learned about endangered animals.
- Ask students to reflect on what actions they can take to help protect endangered species.

Extension Activity:

Students who finish early can create posters advocating for the protection of endangered animals. They can include facts, pictures, and ways people can contribute to conservation efforts.

Homework:

For homework, students can write a short paragraph about why it's important to protect endangered animals and what individuals can do to help.

Standards Addressed:

- CEFR Level A2: Listening, Speaking, Reading, Writing
- Bloom's Taxonomy: Understanding, Applying, Analyzing
- Constructivism Learning Theory (Piaget): Students construct their own understanding of endangered animals through research and presentations
- Think-Pair-Share Learning Strategy (Lyman): Students engage in collaborative learning by working in pairs and sharing their findings with the class

Copy Export Read Aloud More

Share

At first glance, the tool has provided a complete lesson plan which can be readily used. Furthermore, the lesson plan seems to follow Barak Rosenshine's Principles of Instruction

(Rosenshine, 2012). Rosenshine's first principle of reviewing previous learning is reflected on the "Opening" where the teacher is asked to activate students' background knowledge on endangered animals. The second principle of presenting small units of new material and offering assistance in their practice is reflected on the Introduction to new material where the teacher takes time to introduce the new knowledge and encourages its practice through examples. The third principle of asking questions as well as the fifth principle of guiding student practice is found under "Guided practice", where the teacher is explicitly encouraged to ask the students questions and give them feedback on them. The ninth principle of requiring and monitoring independent practice is reflected on the "Independent Practice" section of the lesson plan where students are asked to work in pairs without the teacher's direct guidance.

A closer look reveals that under the "Objective" section, there is a long objective which has not been clearly matched with a category from Bloom. The section "Key points" seems to describe more objectives, which use Bloom's measurable action verbs but again have not been matched with any of the categories we find in the taxonomy. However, in the "Standards Addressed" section three categories from the taxonomy (Understanding, Applying, Analyzing) are mentioned which correspond to the action verbs we find in the key points. As a result, it seems that the standard which has been set, the design of objectives which follow Bloom's taxonomy, has been taken into account but could have been phrased better so that the connection of the objectives with Bloom's categories would be more explicit. Furthermore, in the "Objective" section, the development of students' four skills is mentioned, but this is not the case in the "Key points" section where the focus seems to be on content, learning about endangered animals, rather than on skills development. So, the generation of the objectives would be deemed satisfactory according to the evaluation rubric, as Bloom's taxonomy has been utilised but their phrasing could have been clearer. The prerequisites in terms of students' background knowledge are missing, along with the learning environment where the activities are to take place.

Regarding the materials, improvement is needed as while some materials are mentioned throughout the text, they haven't been provided in a separate section of the lesson plan. The activities are appropriate for the students' age and level of language proficiency, they have been aligned with the aim and objectives set and address all four skills. The constructivist learning theory seems to be reflected on the activities since, as explained in

the “Standards Addressed” section, through the research and presentation activities, students are enabled to form their personal understanding. Traces of constructivism can also be found in the “Opening” section where the teacher tries to activate students’ background knowledge by showing them pictures of endangered animals and asking them whether they recognise any of them. In the same section we read how the rest of the standards namely, the CEFR framework and the Think – Pair – Share learning strategy, have been adopted. However, there is no justification of how the CEFR has been implemented, just a mere mention of it and the activities do not seem to follow the learning strategy, even though there are activities where students have to collaborate in pairs and share their work with the class. As a result, this is another part of the lesson plan that needs improvement in order for the activities to be fully aligned with the theoretical framework and the standards set. Furthermore, the teacher and student roles and the type of interaction are satisfactory as they are indirectly described in the procedure of each activity.

The time allocation has not been noted. However, it seems possible for the activities to be covered in the time limit set. The assessment and homework can be deemed satisfactory according to the rubric, as an assessment activity which covers the key points of the lesson has been provided along with an activity for homework, contrary though to the resources, which have not been provided.

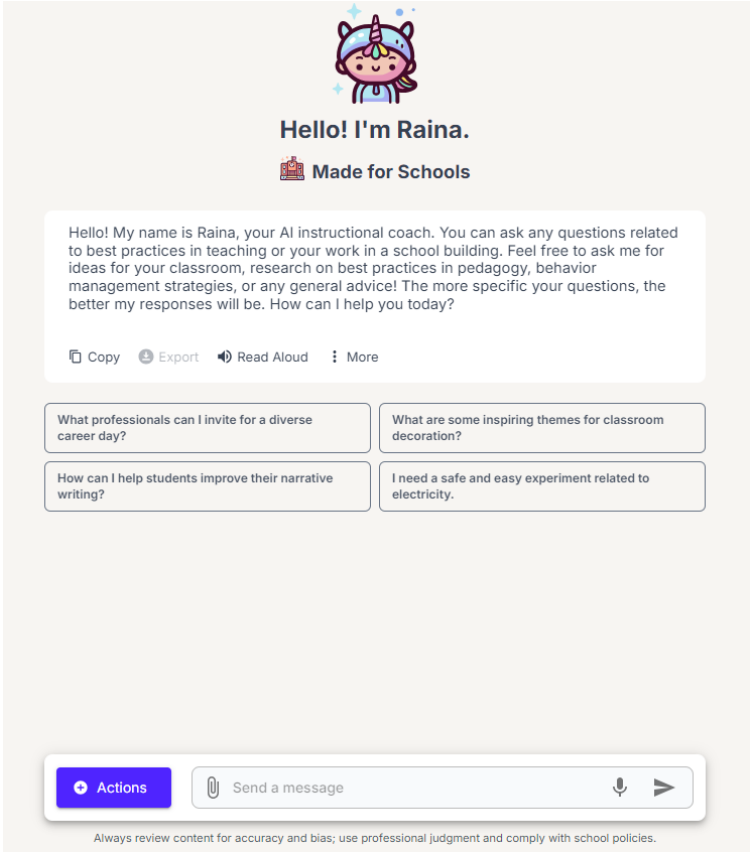
Constructive alignment has been achieved as there is a clear connection between the objectives, the activities and the assessment. Improvement is needed regarding student engagement and collaboration as students only seem to be actively engaged in the only activity they are instructed to work in pairs. During the rest of the lesson a lot of discussion is employed which can be both engaging and collaborative but it greatly depends on the way the teacher organizes it. It is easy for a lot of students, especially the more introverted ones who are hesitant about exposing their opinions to the whole class, to disengage from the discussion and therefore, more activities which employ pair work and group work would be needed.

As far as differentiation is concerned, there are not any paragraphs dedicated to it, besides the paragraph suggesting an activity for early finishers, so improvement is needed in this section of the lesson plan, too. There is a lack of pedagogical novelty and minimal to zero use of digital media, as only the reference to a video could imply their implementation.

All in all, while the lesson plan could be used as is by a teacher in a hurry, it needs more than a couple of modifications. The most obvious would be a clearer description of the objectives so that they are matched with Bloom's categories, allocation of time and the explicit implementation of the learning strategy, while the implementation of digital media and pedagogical novelties, the addition of more engaging and collaborative activities and the provision for resources, prerequisites, learning environments and a separate differentiation section would also be appreciated.

Unfortunately, the initial basic free lesson plan cannot be altered. The teacher has to opt for the paying version in order to have access to the chat below the lesson plan and the available actions in the toolbox, through which you can add questions, adjust the length, generate resources and create your own custom prompt. However, a way in which the user who has chosen the free plan can bypass the subscription and still be able to modify the lesson plan is by asking Raina, the AI chatbot, some follow-up questions towards the improvement of the lesson plan. The difference is that the user of the free plan should copy the lesson plan from the generator and paste it in Raina's chat box along with their request.

Figure 4 MagicSchool's chat - bot Raina



Opting for Magic School Plus and having taken these points for improvement into consideration, the tool was asked through the chat box, a number of follow-up questions in order to refine the lesson plan. Even though all of these questions may not be necessary for a quality lesson plan, they allow us, in the context of this study, to better understand the affordances and limitations of the tool. Thus, some of the questions which are presented on the table below, focus on theoretical matters, i.e. aligning the lesson plan with the standards set, whereas some are more practical regarding for example materials and timing provision. The tool also suggested certain questions towards the improvement of the lesson plan, while another option was to choose one of the actions from the tool bar. For example, by pressing “Custom” and “Resources” the user can prompt the tool to provide the necessary resources for the lesson plan.

Table 3 MagicSchool follow-up questions

Follow-up questions

Can you clearly match the objectives with the categories proposed in Bloom's Taxonomy?

Can you redesign the activities by applying the Constructivist learning theory and the "Think-Pair-Share" learning strategy?

Could you provide additional guidance on how to effectively implement the Think-Pair-Share strategy during the lesson? (prompt proposed by the tool)

Can you explain how the lesson plan follows the standards set by CEFR?

Is constructive alignment achieved in this lesson plan?

Can you add more digital media in order to make the lesson more engaging for students?

For the output above, give me suggestions to differentiate it for students with dyslexia. (prompt generated through the buttons "Actions" > "Custom" > "Differentiate")

Can you provide the materials needed for this lesson plan in a separate paragraph?

Can you time the activities so that they can be done in two, 45 minute teaching hours?

Can you provide the prerequisites for this lesson plan?

Can you provide the teacher and student roles and the types of interaction for every activity in this lesson plan?

Can you provide the learning environment for each activity in this lesson plan ?

In the lesson above, build me all the worksheets and resources in detail (prompt generated through the buttons "Custom" and "Resources")

Can you create the "Worksheet 1" proposed above?

Can you write a text of 150 words on endangered animals for students of an A2 level of English?

Can you give me the link to a video about specific endangered animals?

Can you provide a list of recommended YouTube channels or websites that have high-quality videos about endangered species? (prompt proposed by the tool)

Can you incorporate all of the adjustments you made after my questions into one lesson plan?

The tool gave accurate responses and was able to match the objectives with the categories from Bloom's taxonomy. It was also able to provide the materials in a separate paragraph and align the lesson plan with the theoretical framework by implementing the Think-Pair-Share learning strategy and offering guidance on the process of its effective implementation. It also managed to explain how the CEFR had been taken into account and why constructive alignment had been achieved.

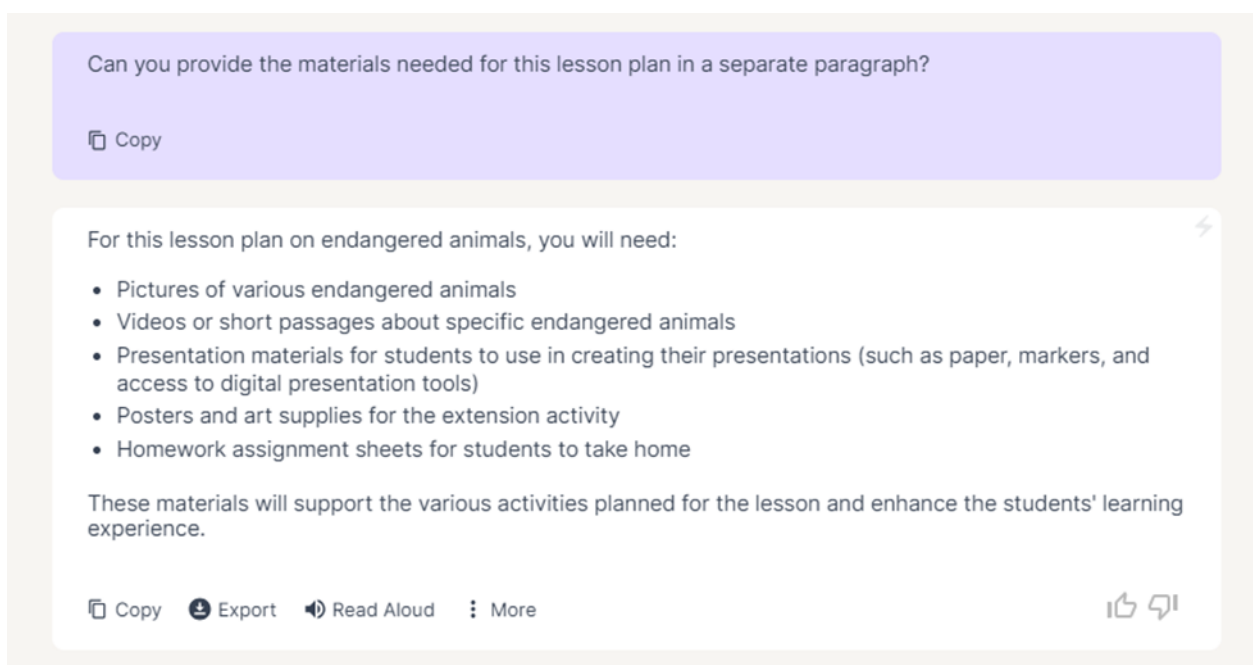
Furthermore, MagicSchool timed the lesson plan and split it in two teaching hours. It also provided the prerequisites, the teacher and student roles and types of interaction, as well as the learning environments for each activity. It was even able to provide resources for the lesson plan. More specifically, it was able to suggest worksheets, a presentation rubric, a homework assignment sheet and a presentation peer feedback form and build the worksheet suggested. Furthermore, it produced a reading text of a specific word limit tailored to the topic of the lesson plan and the students' English level and even though the tool does not have the capability to provide links to resources, it recommended the names of YouTube channels and websites whose content is appropriate for students and relevant to the topic of the lesson as well as the names of digital tools and platforms that can be incorporated into the lesson.

Moreover, in order to test the tools' capability to differentiate the lesson plan, the action "Differentiate" was used from the tool bar. Then, as prompted, the tool was given information on who it should differentiate the lesson for and students with dyslexia were chosen as the target of the differentiation. The tool successfully generated a list of differentiating strategies teachers can incorporate in their practice; however, it did not differentiate this particular lesson plan. Then, Raina was asked to make the necessary modifications to accommodate students with dyslexia and this time, the tool differentiated every section of the lesson plan. The difference in the output lies in the phrasing of the request. As Raina informs us, a specific request leads to a specific result. The tool, through the button "Differentiate", generated the request "give me suggestions", whereas Raina was asked to "differentiate this lesson plan". Consequently, users have to pay attention to the phrasing of the request they use and try to make it as specific as possible in order to enjoy the optimum results.

The last question the tool was asked was to incorporate all of the modifications in one coherent lesson plan. The output was an improved version of the original lesson plan; however, the teacher could have probably organized the modifications manually in a more effective manner. Raina was also provided with the generated lesson plan and all of the modification requests and it similarly generated an improved lesson plan, but failed to incorporate all of the changes.

An example of the modifications provided by the tool after the follow-up questions can be found below, whereas the rest of the modifications can be found in the appendix.

Figure 5 MagicSchool: materials section modification



3.3.2 Learnt.ai

Learnt.ai is another platform with generative AI tools for education. It offers a first and a second generation lesson plan builder among other generative AI tools.

The first generation lesson plan builder can be used free of charge for unlimited generations. In its initial prompt, the teacher is urged to provide the topic and duration of the lesson, the age of the students and the lesson plan's language.

Figure 6 Learnt.ai: first generation lesson plan builder initial prompt

The image shows a web interface for a lesson plan builder. At the top left is a home icon. The main heading is "Lesson Plan (1st Gen)". Below this are three input fields: "Topic: 0/500" with the placeholder "What is your lesson about?", "Learner Age: 0/5" with the placeholder "How old is the learner (years)", and "Lesson Duration: 0/100" with the placeholder "How long is the lesson?". Below these is a "Language" dropdown menu currently showing "English (United States)". Underneath is a "Select a Model" section with two buttons: "Faster" and "Better". At the bottom is a large dark blue "Generate" button.

By completing the tool's prompt, it becomes evident that it does not cater to the prerequisites we have set in the teaching scenario. Regarding the lesson, we can only provide the topic as, if we attempt to fit all of the other information i.e. subject, aim, objectives, learning theory and strategy in the same box, the extra information does not register. Similarly, the only information we can provide regarding the students is their age, while we cannot even attempt to add more information in that box as there is a five character limit. Having completed the prompt with the information of the teaching scenario, Learnt.ai generated a lesson plan which was admittedly, far removed from the prerequisites set.

More specifically, the lesson plan was organized under the headings: learning objective, essential insights, engagement starter, interactive introduction, collaborative exploration, individual reflection, formative assessment, closing, extension activity, question to test understanding and homework. The full lesson plan can be found in the Appendix.

The objectives section needed improvement as the objectives were not matched with the categories from Bloom's Taxonomy and they mostly focused on the comprehension of the content, the endangered animals and their conservation, rather than the development of students' four skills. The prerequisites in regard to students' background knowledge were missing along with the description of the learning environment. Furthermore, the materials needed were not provided in a separate paragraph.

The activities also needed improvement as while we could say that the lesson exhibited some constructivist principles such as the activation of students' background knowledge described in the "Engagement Starter" section, or the collaborative exploration where students work in groups to research and create a poster about an endangered animal, the learning strategy was not employed and there was no clear indication that the activities work towards students achieving the A2 level of competence as described in the CEFR.

Regarding the student and teacher roles and the types of interaction, they could be deemed satisfactory as they were indirectly described in the procedure of the activities. The time frame was also not taken into consideration. Furthermore, the assessment and homework were satisfactory as a separate formative assessment and homework section were generated respectively. The resources were missing, along with the provision for differentiation and digital media use other than a video which was used in one of the activities.

Constructive alignment was achieved as there was a clear connection between the objectives set, the activities and the assessment. Student engagement was satisfactory as students seem engaged in most of the tasks where they are asked to watch a video, do research, create and present a poster and write a paragraph on the importance of animal conservation. However, student collaboration could be improved since students are only asked to work in groups in one of the activities. No pedagogical novelty was employed. All in all, the lesson plan was in need of a lot of modifications in order to satisfy the requirements set in the teaching scenario and score high in the assessment rubric.

Once the tool has generated the lesson, the user can improve it by filling in the bar above the lesson plan which encourages them to describe how they would like to refine the output. However, since a lot of the requirements have not been taken into account in the first place, the teacher would have to proceed with a great number of refinements, which

then defeats the purpose of using the tool. In addition, constant refinements make the tool lose its focus and the ability to implement the changes in the original lesson plan. Whereas, in some cases, a single request in the refinement bar would cause a glitch and instead of refining the lesson on endangered animals, the tool would generate a lesson on a completely different topic such as the water cycle.

In the process of tweaking the phrasing of the prerequisites in order to help the tool better digest them, it was noticed that providing the information in the form of full sentences yielded better results than providing them in the form of notes.

This second lesson plan which was generated from a prompt that used full sentences, was organized under the headings learning objective, key points, opening, introduction, guided practice, independent practice, closing, extension activity, question to test understanding and homework. The full lesson plan is provided below.

It can be observed that these same headings, namely “Opening”, “Introduction”, “Guided practice” and “Independent practice” which had also been presented in the lesson plan generated by MagicSchool, seem to allude, as pointed out in section 3.3.1, to Barak Rosenshine’s Principles of Instruction (Rosenshine, 2012).

Figure 7 Learnt.ai: first generation builder lesson plan 2

Describe how you would like to refine this generation...

Learning Objective:

By the end of this lesson, students will be able to identify and describe four endangered animals, explain the reasons for their endangerment, and articulate at least two actions individuals can take to help protect them, demonstrating skills in speaking, reading, writing, and listening in English.

Key Points:

- **Defining Endangered Species:** Understanding what it means for an animal to be endangered.
- **Causes of Endangerment:** Discussing habitat loss, poaching, climate change, etc.
- **Conservation Efforts:** Exploring how individuals and organizations can contribute to wildlife protection.

Opening:

Begin with a quick interactive quiz using an online platform (like Kahoot or Quizizz) to assess prior knowledge about endangered animals. Pose questions such as, "Can you name an endangered animal?" or "Why do you think some animals are endangered?"

Introduction:

Introduce the topic of endangered species with a short video clip (2-3 minutes) highlighting various endangered animals and their habitats. After the video, engage the class in a discussion: "What surprised you about the video? Why do you think these animals are important to our environment?"

Guided Practice:

Implement the Think-Pair-Share strategy:

1. **Think:** Give students a few minutes to think about one endangered animal they know about.
2. **Pair:** Have them turn to a partner to share their thoughts.
3. **Share:** Invite pairs to share their conversations with the larger class. Use visuals (pictures or infographics) of the animals discussed to reinforce learning.

After the sharing, provide a brief presentation on key causes of endangerment and highlight real-world examples.

Independent Practice:

Assign students to work individually on an activity where they choose one endangered animal. They will write a short paragraph (5-7 sentences) describing the animal, the reasons it is endangered, and what can be done to help protect it. Students can also draw a picture of the animal or create a digital poster using a tool like Google Slides.

Closing:

Gather students back together and create a class "Endangered Animals Wall" where they can display their work. Each student will share one interesting fact about their chosen animal with the class. Conclude with a wrap-up discussion on why it's important to care about endangered animals and the steps individuals can take to help.

Extension Activity:

Invite students to research a wildlife conservation organization (such as WWF or Conservation International) and prepare a one-minute presentation on what the organization does to protect endangered species. Afterward, students can share their findings in small groups.

Question to Test Understanding:

Pose the reflective question: "Why should we care about endangered animals?" Have students write a few sentences expressing their thoughts. This checks their understanding of the lesson's significance.

Homework:

Ask students to create a "Wildlife Protection Pledge" where they commit to one action that can help endangered animals, whether it's raising awareness, reducing plastic use, or supporting conservation efforts. Encourage them to illustrate their pledge creatively and bring it to the next class for sharing.

How would you rate the quality of this response?

The most noticeable difference was that in this case the generated lesson plan managed to implement the learning strategy in one of the activities. Another noticeable improvement was the fact that this lesson plan implemented digital media such as interactive quizzes on online platforms like Kahoot and digital tools like Google Slides. The implementation of these digital media is not a mere substitution of traditional materials as using the online quiz in the opening stage of the lesson can attract students' attention and increase their enthusiasm for the new material being taught. In addition, the use of Google Slides to create

a digital poster can have the same effect, too, while it can also engage visual learners and through the spelling check the tool provides facilitate students who struggle with writing and orthography.

The objectives section was improved since this time the development of the four skills was mentioned even though there was again no clear matching of the objectives with the categories from Bloom's taxonomy. The prerequisites and learning environment description were still missing. Regarding the activities, as mentioned above, one of them managed to implement the learning strategy and even though the lesson plan does not explicitly state it, we can trace constructivist principles in activation of prior knowledge in the "Opening" section, the collaborative activities and the research on wildlife conservation organizations. However, it is unclear whether the A2 level of language competence as described in the CEFR has been taken into account.

The student-teacher roles and the types of interaction, though not explicitly stated, are satisfactory because they are indirectly described in the teaching procedure of the activities. According to the evaluation rubric, the generated homework can be deemed satisfactory as there is one homework activity generated instead of two activities (one for each teaching hour) which would have been the ideal. However, it is worth noting that the homework activity generated was quite imaginative, as the students were asked to design a "Wildlife Protection Pledge", where they describe some measures they are willing to take in order to protect the endangered animals.

Student engagement could be considered ideal according to the evaluation rubric, as the students seem to be engaged throughout the lesson, doing a quiz on an online platform, watching a video and answering questions on it, discussing with a partner about an endangered animal and reporting their conversation back to the class in a Think-Pair-Share activity, writing a paragraph and doing research on a wildlife conservation organization and sharing their findings with a presentation in small groups. Student collaboration is satisfactory as pair and group work is employed. Constructive alignment was also successful. However, the materials, the resources, the timing and the differentiation section are missing along this time with the assessment. No pedagogical novelty seems to be implemented.

To conclude, the evaluation of this second lesson plan designed by the first generation lesson plan builder, even though it exhibits some improvements when compared to the first

lesson plan, it lacks a lot of the elements required and it would need a lot more than a couple of modifications in order to satisfy the requirements set in the evaluation rubric.

Lastly, one of the tool's advantages is that the content can be downloaded in a Microsoft Word file, which can easily be edited and saved.

All in all, the first generation lesson plan builder is a free tool that can offer a basic lesson plan. Teachers could use this tool to generate an initial lesson plan structure and in some cases get some creative ideas. Then, they could easily save the output and edit it in order to supplement and personalise it for their students' needs.

A second generation lesson builder is also available. The user is only given five free generations, since this is a premium tool. The teacher is urged to provide information on the lesson topic, the learners and the duration of the lesson and to choose one instructional model out of the available ones in a drop down menu. In the topic prompt, the teacher is urged to provide information on desired outcomes and activities. As for the learners prompt, the character limit has been increased compared to the one of the first generation lesson plan builder so that besides the age, the teacher can also provide information about the number of students and their needs. Using the second generation lesson builder, the information of the teaching scenario was fed into the tool's initial prompt. Conveniently, the "Think-Pair-Share" learning strategy was included in the instructional model drop down menu.

The tool generated a lesson plan organized under the headings: learning objectives, materials needed, structure / activity, adaptations and assessment. The lesson plan seems to include all of the necessary information needed for the teaching of the lesson. More specifically, according to the evaluation rubric the objectives could be deemed ideal as they are phrased using Bloom's measurable action verbs and correctly matched with the categories of the taxonomy. The only downside of the objectives is that even though the development of students' four skills is indirectly mentioned (e.g. "summarize information from a listening activity" or "write a short paragraph"), they do not seem to focus on them but rather focus on familiarizing students with the content, the endangered animals. The prerequisites in terms of students' necessary background knowledge were missing, along with the specification of the learning environment. The generated materials section is satisfactory as the materials needed are provided in a separate paragraph, which saves

teachers time when preparing for the lesson. Perhaps this section could have only been improved by having the materials matched with the activities.

The lesson plan is organized in three parts: introduction, main body and conclusion and the activities cover all of the four skills. The activities are appropriate for the students' profile. The "Think-Pair-Share" framework is evidently followed in one of them. However the standards set regarding the constructivist learning theory and the CEFR have not been explicitly addressed. So, the activities could be improved in that respect.

The student-teacher roles and types of interaction can be deemed satisfactory as even though they have not been explicitly presented as such, they can be identified in the teaching procedure of the activities. Time allocation also needs improvement. The activities have been timed; nevertheless, the allocated time has been exceeded by five minutes while the lesson plan has also been organized in one, ninety minute teaching hour instead of two forty-five minute ones. A satisfactory formative assessment section has been provided whereas homework is missing.

Figure 8 Learnt.ai: second generation lesson plan builder generated lesson plan

Exploring Endangered Animals: A Multifaceted Language Skills Lesson

```html

### Learning Objectives

Generated Text.

- Identify and describe various endangered animals using newly acquired vocabulary (Remembering, Understanding).
- Summarize information from a listening activity about endangered animals (Understanding).
- Discuss the importance of protecting endangered animals and propose solutions in pairs and small groups (Applying, Analyzing).
- Write a short paragraph about an endangered animal, including its habitat, reasons for its endangerment, and possible conservation efforts (Applying, Creating).

### Materials Needed

Generated Text.

- Textbook or handouts with information about endangered animals.
- Audio recording or video about endangered animals.
- Whiteboard and markers.
- Projector and computer.
- Worksheets for the writing activity.
- Sticky notes and pens.

### Structure/Activity

Generated Text.

1. **Introduction (10 minutes):**
  - Begin with a brief discussion about animals and ask students to name their favorite animals.
  - Introduce the topic of endangered animals and explain what it means.
2. **Listening Activity (20 minutes):**
  - Play an audio recording or video about endangered animals.
  - Ask students to listen carefully and take notes on key points.
  - After the audio/video, ask students to summarize what they have learned in pairs.
3. **Reading Activity (15 minutes):**
  - Distribute the handouts/textbook pages about endangered animals.
  - Students read the material in pairs, highlighting important information.
  - Each pair shares their findings with the class.
4. **Think-Pair-Share Activity (30 minutes):**
  - Pose a question: "Why is it important to protect endangered animals?"
  - Give students a few minutes to think individually.
  - Students then discuss their thoughts with a partner.
  - Each pair shares their ideas with the class, and the teacher writes key points on the whiteboard.
5. **Writing Activity (15 minutes):**
  - Students choose an endangered animal and write a short paragraph about it.
  - Include its habitat, reasons for its endangerment, and possible conservation efforts.
  - Students can use the information from the reading and listening activities.
6. **Conclusion (5 minutes):**
  - Recap key points discussed in the lesson.
  - Encourage students to think about ways they can help protect endangered animals.

### Adaptations

Generated Text.

- **Lower Ability:**
  - Provide a word bank with key vocabulary for the writing activity.
  - Pair these students with those who have a higher ability for peer support.
- **Higher Ability:**
  - Encourage students to research additional information about their chosen endangered animal.
  - Ask them to present their findings to the class.
- **Special Considerations:**
  - Ensure that the audio and video materials are captioned for students with hearing impairments.
  - Provide printed materials in large print or Braille if necessary.

### Assessment

Generated Text.

- Formative assessment through observation during pair and group discussions.
- Monitor students' notes during the listening activity.
- Review and provide feedback on the students' written paragraphs to ensure understanding and correct use of vocabulary.

...

In terms of resources, the tool had been able to provide supporting questions, the lesson handout, a glossary of terms and supporting slide text, the latter of which the teacher can

use to create a presentation. As in the first generation lesson plan builder, all of the generated material could be downloaded in a Microsoft Word file and edited. The generated supporting questions are provided below, whereas the rest of the generated resources can be found in the Appendix.

**Figure 9 Learnt.ai: second generation lesson plan builder generated supporting questions**

### Exploring Endangered Animals: A Multifaceted Language Skills Lesson | Supporting Questions

1. Can you name three endangered animals and describe their habitats?
2. What were the key points you took away from the listening activity about endangered animals?
3. Why is it important to protect endangered animals and what solutions did you propose in your group discussion?
4. Can you share a paragraph you wrote about an endangered animal, including reasons for its endangerment and conservation efforts?
5. How did the reading activity help you better understand the challenges faced by endangered animals?
6. What new information did you learn about endangered animals during the lesson?
7. How did working in pairs and small groups enhance your understanding of the importance of protecting endangered animals?
8. Can you explain how you can personally contribute to the conservation efforts for endangered animals?
9. What steps can we take as a class to raise awareness about the plight of endangered animals?
10. Reflect on the lesson - what aspects do you feel most confident about and what do you still have questions or uncertainties about?

Constructive alignment is achieved in this lesson plan, since there is a clear link between objectives, activities and assessment. Student collaboration is satisfactory as on the one hand the students are asked to work collaboratively, in pairs for most of the activities; on the other hand some other forms of collaborative work such as group work could have also been utilized. Student engagement is satisfactory as students seem fairly engaged in their tasks and new knowledge is negotiated and acquired through discussion rather than teacher lecture. However, a lot of discussion activities are employed which may fail to retain students' engagement. Furthermore, since a lot of these discussion activities are meant to be done in pairs, the students can easily digress from the activity and become restless and loud.

Regarding differentiation, an adaptations section has been provided for students with a higher or lower ability and visual or hearing impairments. Digital media adoption has been minimal, limited to the use of a computer and videos. No major pedagogical novelty has been introduced.

In conclusion, the lesson plan is not in dire need of modifications. However, if it were to be improved, it could probably be split into two separate teaching hours with a distinct

introduction and conclusion. It could also include an activity for homework, provide the prerequisites and learning environments and implement the “Think-Pair-Share” framework in every activity. Lastly, it could contain some more - entertaining for the students - activities through greater utilization of digital media.

Interestingly enough, while in the first generation lesson plan builder the user has the option to refine the content from the bar above it; this option is not available in the second generation lesson plan builder. As already mentioned in section 2.3, the teacher could get some feedback or improve the lesson plan through the “Lesson planner assistant sidekick”, one of the AI chat bots offered under the premium plan. However, the teacher would have to copy information from the original lesson plan and paste it on the sidekick’s chat box, which is not as convenient as being able to interact with the tool directly and improve the output on the same page it is offered.

Having explored the tool’s affordances, it was found that the second generation lesson plan builder is much more effective in generating a lesson plan which has utilised the information the tool has been given through the prompt. It is advisable that the teacher experiment with the five lesson plans the second generation lesson plan builder offers for free and then decide if they would like to proceed with a subscription.

### **3.3.3 ChatGPT**

ChatGPT is a language model which uses artificial intelligence to simulate human language. It can be used as an intelligent interlocutor to answer questions and generate content. It is not a tool exclusively developed for education but it can be utilized to that end.

Since ChatGPT is not a lesson planning tool, there is no initial prompt to be completed. Therefore, the tool’s chat box was filled in with the teaching scenario prompt along with a question urging the tool to create a lesson plan using all of the information it has been provided with.

The tool generated a complete lesson plan organized under the headings: objectives, materials, activities, assessment, differentiation and homework. The generated lesson plan is provided below. The first thing to be noted is that ChatGPT, unlike the other tools studied,

acknowledged the fact that the lesson plan is to cover two separate forty-five minute teaching hours which share the same topic and aim and created two lessons.

## Figure 10 ChatGPT generated lesson plan: lesson 1

### Lesson 1: Introduction to Endangered Animals

Duration: 45 minutes

#### Objectives:

1. **Remembering:** Identify vocabulary related to endangered animals.
  2. **Understanding:** Describe what makes an animal endangered.
  3. **Applying:** Illustrate the concept of endangered animals with examples.
- 

#### Materials:

- Flashcards with pictures and names of endangered animals
  - Whiteboard and markers
  - Worksheets with a short reading passage on endangered animals
  - Audio recording of the reading passage
  - Projector for visuals
- 

#### Activities:

##### 1. Warm-up (10 minutes):

- **Activity:** Show flashcards with pictures of different animals.
- **Purpose:** Activate prior knowledge and introduce new vocabulary.
- **Interaction:** Whole class discussion.
- **Procedure:** Ask students to name the animals they recognize and introduce the concept of "endangered" by discussing which animals they think might be in danger of extinction.

##### 2. Presentation (15 minutes):

- **Activity:** Read a short passage about endangered animals.
- **Purpose:** Develop reading and listening comprehension.
- **Interaction:** Individual and whole class.
- **Procedure:**
  1. Hand out the worksheets with the reading passage.
  2. Play the audio recording of the passage while students follow along.
  3. Discuss the passage as a class, focusing on why some animals are endangered.

##### 3. Practice (10 minutes):

- **Activity:** Think – Pair – Share.
- **Purpose:** Encourage deeper understanding through discussion.
- **Interaction:** Pairs.
- **Procedure:**
  1. **Think:** Students individually think about one reason why animals become endangered.
  2. **Pair:** Students pair up and share their thoughts with a partner.
  3. **Share:** Each pair shares their ideas with the class.

##### 4. Assessment (10 minutes):

- **Activity:** Vocabulary matching exercise.
- **Purpose:** Assess understanding of key vocabulary.
- **Interaction:** Individual.
- **Procedure:** Students match pictures of endangered animals with their names and a brief description.



## Figure 11 ChatGPT generated lesson plan: lesson 2

### Lesson 2: Endangered Animals Project

Duration: 45 minutes

#### Objectives:

1. **Analyzing:** Compare different endangered animals and their habitats.
  2. **Evaluating:** Assess the reasons why these animals are endangered.
  3. **Creating:** Produce a poster or presentation about an endangered animal.
- 

#### Materials:

- Internet access or printed materials for research
  - Poster boards, markers, and other art supplies
  - Projector for student presentations
  - Rubric for evaluating projects
- 

#### Activities:

##### 1. Warm-up (5 minutes):

- **Activity:** Review key vocabulary from the previous lesson.
- **Purpose:** Reinforce vocabulary.
- **Interaction:** Whole class.
- **Procedure:** Quick oral quiz where students name animals and describe why they are endangered.

##### 2. Research and Planning (15 minutes):

- **Activity:** Research on an endangered animal.
- **Purpose:** Develop research and note-taking skills.
- **Interaction:** Individual or small groups.
- **Procedure:**
  1. Assign each student (or group) an endangered animal.
  2. Provide resources (internet or printed materials) for students to research their animal's habitat, why it is endangered, and any conservation efforts.

##### 3. Project Creation (20 minutes):

- **Activity:** Create a poster or digital presentation.
- **Purpose:** Practice writing and creative skills.
- **Interaction:** Individual or small groups.
- **Procedure:**
  1. Students use their research to create a poster or digital presentation.
  2. Include information about the animal's habitat, reasons for endangerment, and how people can help.

##### 4. Presentation and Feedback (5 minutes):

- **Activity:** Present projects to the class.
  - **Purpose:** Develop speaking and listening skills.
  - **Interaction:** Whole class.
  - **Procedure:**
    1. Each student or group presents their poster or digital presentation.
    2. Class provides feedback using a rubric focused on content, creativity, and presentation skills.
- 

#### Assessment:

- **Formative:** Vocabulary matching exercise, class discussions, and pair sharing during Lesson 1.
- **Summative:** Poster or digital presentation assessed using a rubric.

#### Differentiation:

- Provide additional resources for students who need more support.
- Allow advanced students to explore more complex aspects of conservation.

#### Homework:

- Write a short paragraph about how they can help protect endangered animals and share it in the next class.

Regarding the objectives, they have been successfully phrased with measurable action verbs, matched with the categories from Bloom's Taxonomy and they have been divided into two teaching hours, too. It's worth mentioning that the objectives which are meant to develop lower thinking skills i.e. remembering and understanding are found in the first teaching hour, while those which are meant to develop higher order thinking skills, i.e. evaluating and creating, are found in the second teaching hour, showing that the lesson plan aims to progressively scaffold students' knowledge and facilitate them in the development of their critical thinking skills. There is no provision of prerequisites or description of the learning environment.

The materials section is satisfactory as the materials are provided in a separate paragraph for each teaching hour but they have not been matched with each activity. As for the activities, they have been organized in a linear warm –up, main body, ending manner. There is only one activity marked as following the “Think-Pair-Share” framework. Even though constructivism isn't clearly mentioned, the activation of prior knowledge described in the warm up of the first teaching hour, the collaborative activities and the project creation activity of the second teaching hour follow the constructivist principles. The description of each activity under its name along with information regarding its purpose and the procedure are quite helpful in understanding the rationale underlying each activity and also in understanding how to orchestrate it. The explicit reference to type of interaction (e.g. individual, whole class, pairs or small groups) satisfies the corresponding evaluation criterion of the rubric, while the student-teacher roles can be easily identified in the activity procedures.

As mentioned above, the lesson plan has been split into two forty-five minute teaching hours. The overall allocation of time meets the limit and each individual activity is also reasonably timed. The generated assessment can be deemed ideal according to the evaluation rubric as two types of assessment, a formative and a summative one have been provided. As far as homework is concerned, only one activity has been suggested for both teaching hours in a separate section, whereas there is no provision of resources.

Constructive alignment is achieved in this lesson plan since there is a clear link between the objectives, the activities and the assessment. Student collaboration is satisfactory as students are asked to work in pairs and groups. Furthermore, student engagement is also up

to par, as the activities are largely student-centered and the time spent for lecturing or presentation of content by the teacher is minimal.

As for differentiation provision, it is satisfactory as on the one hand, there is a paragraph dedicated to it, on the other hand, it is somewhat vague. Teachers are only urged to provide extra resources to students who are in need of support and cater for more advanced students by encouraging them to explore more complex issues relevant to the topic, without however providing the steps the teacher needs to take to successfully differentiate the lesson. Digital media use needs improvement as it is limited to internet access and the use of a projector. However, the use of the internet is not central to the lesson plan as it is only offered as a mere substitution of printed material. Lastly, the lesson plan does not seem to introduce any major pedagogical novelty.

All things considered, this lesson plan could easily be used in the classroom without any significant changes. Working towards its improvement, one could ask the tool to provide the requirements and learning environment specification, to implement the “Think-Pair-Share” framework in the majority of the activities and to make them more entertaining by employing greater digital media utilization. Another step towards the lesson plan’s optimization would be the tool’s provision of greater guidance around differentiation, which could be achieved by the teacher providing the tool with more information on the students’ profile.

The ChatGPT user can easily modify the output by interacting with the tool through the chat box. Even though, as mentioned above, the lesson plan is not in dire need of a heap of modifications, a number of follow-up questions were addressed to the tool, for the sake of studying its affordances and testing its limits. The follow-up questions are shown in the table below.

ChatGPT answered all of the follow-up requests successfully and implemented the changes in the original lesson plan. More specifically, it responded to theoretical matters, justifying how the lesson plan follows the principles of constructivism and whether it abides by the CEFR and explaining why constructive alignment is achieved. Furthermore, ChatGPT successfully implemented the “Think-Pair-Share” framework to all of the activities. In addition, it managed to incorporate more digital media, as it was asked to do. However, in the majority of the activities, digital media were used merely as substitutes of traditional

methods of teaching and learning. For example, reading a passage on a printed worksheet was substituted by reading a passage on a computer or a tablet.

**Table 4 ChatGPT follow-up questions**

---

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Follow-up questions | Could you make more of the activities above follow the "Think-Pair-Share" framework?<br>Does this lesson plan follow the principles set by constructivism and the CEFR?<br>Is constructive alignment achieved in this lesson plan?                                                                                                                                                                                                                                                                                                                      |
|                     | Can you provide the prerequisites for this lesson plan?<br>Can you provide the student and teacher roles for each activity?<br>Can you provide the learning environment for each activity in this lesson plan?<br>Can you add more digital media in order to make the lesson more engaging for students?<br>Can you provide instructions on differentiating this lesson plan for a student with dyslexia?<br>Can you provide resources for this lesson plan?<br>Can you write a short text of 150 words about endangered animals for A2 level students? |

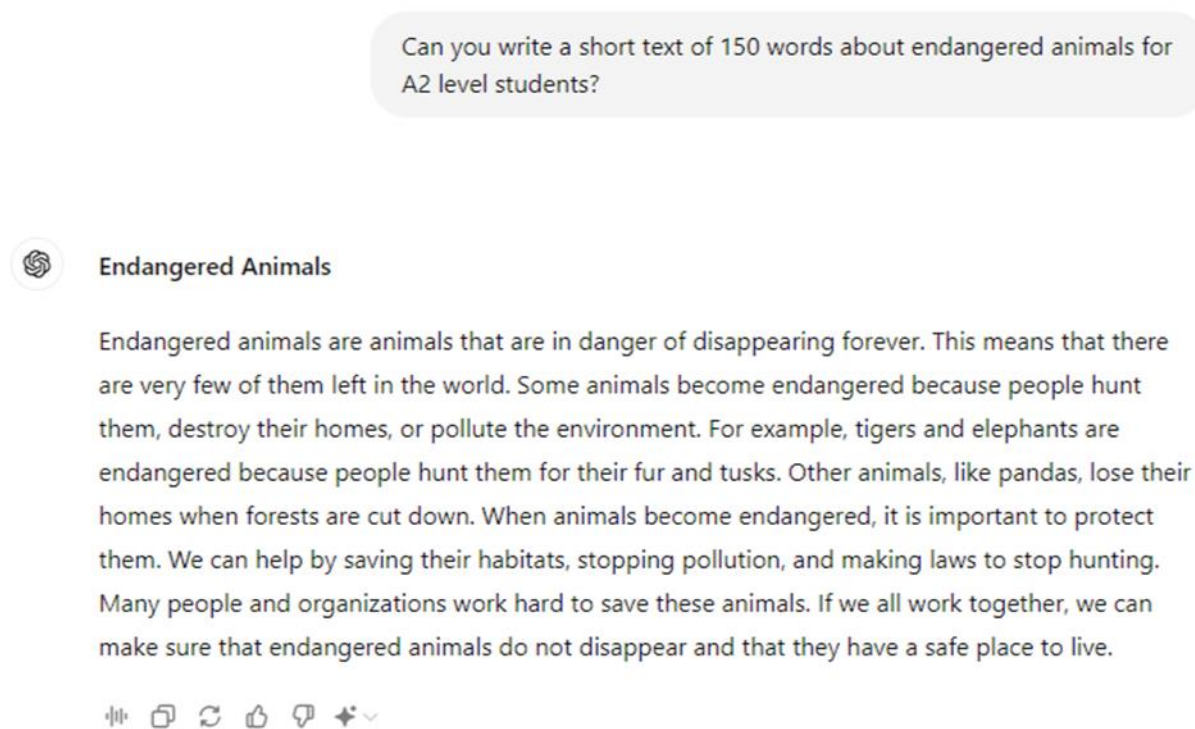
---

In addition, ChatGPT was able to provide the prerequisites in terms of students' background knowledge (e.g. some essential ICT or research skills) and to describe in detail the roles the students and the teacher are to assume in each activity of the lesson plan. For example in certain activities the students would have to assume the role of a researcher or an editor and the teacher would have to assume the role of a facilitator or feedback provider. Moreover, the tool was able to provide the learning environment for each activity, giving information about the physical space, the resources and the atmosphere.

In terms of resources, ChatGPT managed to provide a detailed list of resources matched with the activities they correspond to, including digital tools like Kahoot and Canva and even links to useful websites such as the International Union for Conservation of Nature (IUCN) red list of threatened species. Every resource was accompanied by a link which is really

convenient as it saves teachers' time; even though a lot of these were broken. It was also able to write the reading passage it mentioned in the list of resources in the desired word count and CEFR level. The generated reading passage is provided below, while the rest of the lesson plan modifications can be found in the Appendix.

**Figure 12 ChatGPT: reading text generation**

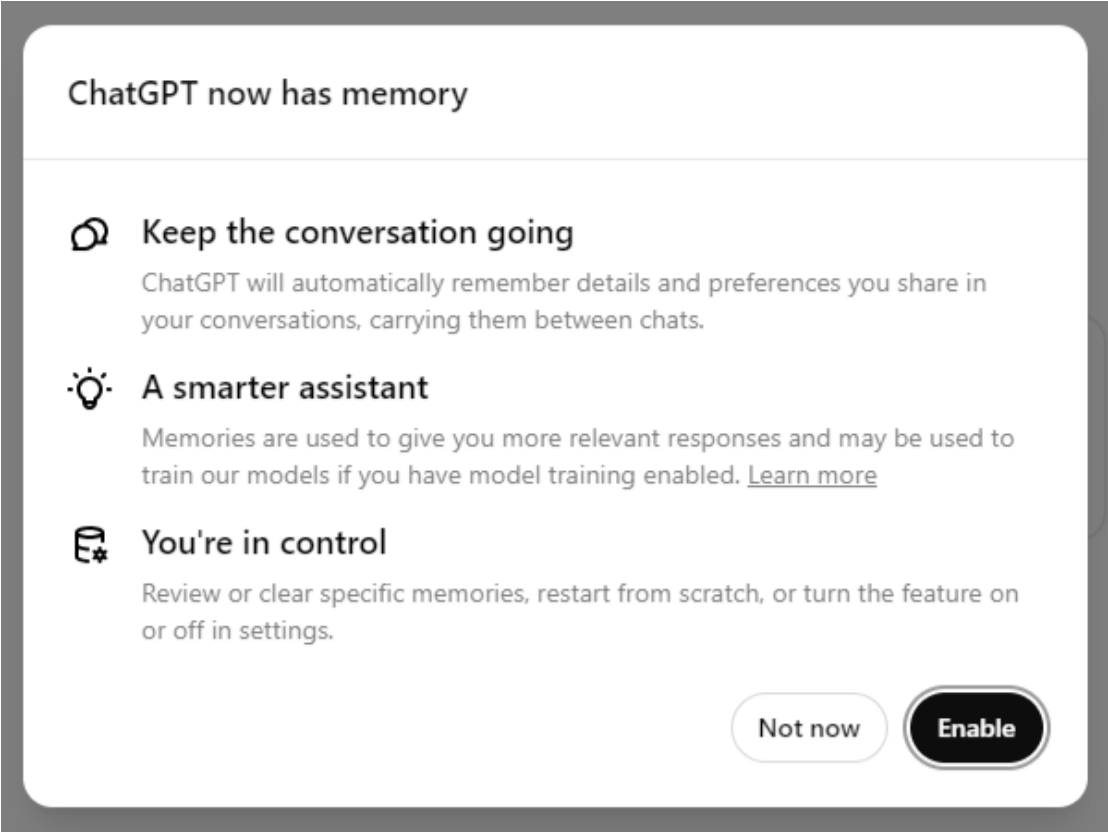


Moreover, while the initially generated lesson plan provided us with generic information relating to differentiation, the follow-up question offered the tool the student profile it had to differentiate the lesson for i.e. a student with dyslexia and thus, the tool presented much more specific and practical results. It offered supporting strategies such as using multisensory activities and allowing extra time on tasks. It also provided for every single activity, tips on how to differentiate the resources by for example highlighting key vocabulary on flashcards or encouraging students to use the speech-to-text feature of tools.

Last but not least, one of the tool's advantages is its capability to save the generated output. Even though this may not be a permanent lesson plan archiving solution, this feature, which is offered under a subscription plan in many other tools, liberates teachers from the stress of misplacing or losing the generated content.

It is also worth mentioning that as of September 5<sup>th</sup> 2024, ChatGPT has memory. According to OpenAI (2024) ChatGPT now has the ability to remember information the user has provided the tool with, in order to offer them improved output. The user is able to review the saved memories and request ChatGPT to remember or forget a specific piece of information. The user can also opt for disabling this new feature. On the one hand, this development could save ELT teachers from having to repeat certain information that seldom change throughout the year such as students' age or level of language proficiency in English. It could even help the tool remember that it is used for teaching purposes and urge it to offer more education-oriented output, since as it has been mentioned above ChatGPT is not a tool specifically developed for education. On the other hand, privacy issues arise regarding the conscious or unconscious sharing of students' personal data by the teacher.

Figure 13 ChatGPT memory update



In conclusion, even though ChatGPT is not a lesson plan builder by definition and it has not been exclusively designed for education, is a valuable lesson planning tool. Its free version, managed to register all of the information we had provided it with, in order to generate a lesson plan that could be readily used in the ELT classroom and all of this initial lesson plan's defects, were able to be corrected through follow-up questions.

The study's findings in terms of ChatGPT's affordances in lesson planning and resources generation correspond to Koraishi's (2023).

## **Chapter 4 – Conclusion**

### **4.1 General overview and discussion of findings**

This thesis aimed to evaluate certain popular AI tools in terms of their effectiveness in the generation of a comprehensive lesson plan for the development of students' reading, writing, listening and speaking skills in the ELT classroom. It also aimed to provide ELT teachers with useful advice on increasing the effectiveness of the lesson plans' generation and getting around the tools' limitations. By evaluating the tools MagicSchool.ai, Learnt.ai and ChatGPT, the thesis has shown that despite their shortcomings, these AI tools can generate in no time, a lesson plan along with its resources that can be used by a teacher with minimal modifications. The findings suggest that AI tools for lesson planning can be valuable assistants to ELT teachers.

First and foremost, it is worth noting that even though the same prompt was used, each tool generated a different lesson plan. This finding is consistent with Baytak (2024) who has also found that the same prompt yields different results every time it is used and thus, the teacher could use the prompt to generate more than one lesson plans and choose the most suitable.

All of the three tools generated in mere seconds a complete lesson plan readily available to be promptly used in the classroom. Even if all of the tools did not make use of every piece of the information given and did not generate the ideal lesson plan, the fact that the teacher can be provided with a basic structure of a lesson plan on the subject and topic they want to teach saves them significant time. In the worst case scenario, teachers can use this basic lesson plan structure as a draft and then intersperse it with their notes in order to better contextualise it to their class. This basic draft serves as a starting point which can motivate the teacher and help them overcome the initial writer's block. In the best case scenario, the teacher gets a lesson plan which has utilized all of the information it has been provided with, in order to create a personalised lesson plan along with the resources needed for its implementation in the classroom. It is clear then that since in this case AI tools can serve as

educators' teacher assistants in lesson planning, the time they need to devote on researching or creating resources can drop significantly. Teachers can then utilize this valuable time on reflecting on their lesson plan, critically evaluating it after the lesson's delivery and looking for ways to make it more engaging and inclusive for every student.

Secondly, in their majority, the lesson plans exhibited elements of pedagogical principles. The generated output revealed that in the lesson plans' generation, the tools themselves were drawing from some underlying pedagogical principles that were not set by the user as a standard to be followed in the initial prompt. This is particularly true for MagicSchool.ai and Learnt.ai which, as mentioned in sections 3.3.1 and 3.3.2 respectively, seem to follow Barak Rosenshine's Principles of Instruction. MagicSchool.ai does not state that it draws specifically from this theoretical framework but it claims to have utilized best practices stemming from research and teacher feedback.

Elements of pedagogical principles can also be traced in ChatGPT, too. It can particularly be observed in the regard for differentiation. While MagicSchool.ai generated an extension activity for early finishers and Learnt.ai generated an adaptations section for students with higher and lower ability and audiovisual impairments, ChatGPT generated a differentiation section with recommendations for students in need of support and for more advanced students. Since the prompt the tools were provided with did not mention any specific student needs based on which the lesson had to be differentiated, the mere reference to differentiation is important as it serves as a reminder that we should not create lesson plans for some nameless "average" students but rather design them taking our own students' individual needs into consideration, regardless of whether these fall under a learning difficulty diagnosis or not. This idea alludes to the principles of Universal Design for Learning (UDL) which urges the teacher to anticipate certain barriers that may affect students' learning and try to minimize them in order to accommodate every single student (Meyer et al., 2013). It is gratifying to know that in using such generative AI tools, teachers do not cut corners but they actually employ an assistant trained in pedagogical frameworks to achieve better results than the ones they would have produced alone.

Another advantage of AI tools worth mentioning is the tools' ability to use all of the information the user has provided them with in the initial prompt in order to create a bespoke lesson plan. The teacher can set the standards and frameworks the lesson plan



needs to align with, for example the CEFR, and in this way receive a lesson plan that meets all of the formal requirements and can be used for official administrative tasks. Furthermore, besides the information we provide the tools with upon our initial request, according to which the lesson plan is generated, all of the tools offer the user the chance to regenerate and get a different response using the same prompt. In addition, the tools provide the user with the chance to refine the output and adjust it according to their needs by interacting with the integrated chatbots (Moundridou et al., 2024). A MagicSchool.ai generated lesson plan can be modified through either the chat box below the lesson plan or through the chatbot, Raina. A Learnt.ai generated lesson plan can be modified through either the bar above the lesson plan (first generation builder) or through the Lesson planner assistant sidekick and a ChatGPT generated lesson plan can directly be modified through the chat box below the generated lesson. The ability to interact with the tool gives the user the sense of actually having a conversation with an experienced colleague who is always willing to help. It also allows the teacher to supplement the lesson plan and correct any possible oversights in order to finally design a lesson plan that fully meets students' needs.

Another important benefit in using the chat-bots and chat-boxes that come with the tools besides modifying the lesson plan, is the opportunity to ask follow-up questions which can answer queries on pedagogical issues. For example, the user can ask the tool to suggest some activities that follow the constructivist principles. Some other follow-up questions can ask the tool to check and verify whether the lesson plan it has generated meets the requirements. For instance, the user can ask the tool whether the lesson plan is aligned with the CEFR. That is another way in which the tools can act as teaching assistants. The answers they provide on pedagogical issues can be valuable for both the pre-service and the in-service teachers, especially the ones lacking a lot of years of experience.

Moreover, through follow-up questions the user can ask the tool to describe or even provide the resources needed for the suggested lesson plan. Teachers can use generative AI tools to obtain teaching resources like lesson plans, texts, images, worksheets, case studies, educational games and assessment rubrics. MagicSchool.ai was able to generate the worksheets and suggest a list of websites and YouTube channels along with digital applications and tools the teacher could use to teach the proposed lesson plan. Learnt.ai managed to generate a glossary, a handout, a potential slide structure and supporting questions to accompany the generated lesson plan. Finally, ChatGPT managed to describe

the resources in detail, to match them with the activities and to provide certain links to useful websites which can be used to supplement the lesson plan.

MagicSchool and ChatGPT were also able to generate a reading text of the desirable length on the topic of the lesson plan and the English level of the students. Simple as the generation of such a text may be, it is really valuable for ELT teachers, as they often need to use reading texts for worksheets and assessment activities. More specifically, regarding assessment activities, the format of exams which includes the length of reading texts is often specified in the school regulations set by the government. Thus, a text of a specific length, e.g. 150 words, and English level which can be quite time consuming for teachers to write can be generated in mere seconds.

Lastly, these tools can also differentiate the generated lesson plan based on students' abilities. As mentioned above, without mentioning differentiation in the initial prompt fed to the tools, all of them provided some form of instructions on differentiation either it was explicitly provided in a separate section titled "differentiation" or not. However, after they had generated the lesson plan, they were able to differentiate it anew based on our explicit request for differentiation for certain students' profiles. For example, after a follow-up request, MagicSchool.ai managed to provide some more general differentiation modifications and the original lesson differentiated and similarly, ChatGPT generated general strategies for differentiation and a detailed list of the differentiated activities for students with dyslexia. This finding is consistent with Trust et al. (2023) who have highlighted ChatGPT's capability to offer teachers advice on how to improve their teaching.

Consequently, it is understood that the teacher could choose to use only one tool and by exploiting its affordances generate a lesson plan along with its resources, differentiate it for specific student profiles and also get an insight into pedagogical issues. These generative AI tools can offer a lot of useful applications for the ELT teacher to explore. However, teachers should also be mindful of the tools' limitations in order to protect their students from them and maximize the effectiveness of their use.

Firstly, there are some limitations in regards to the tools' initial prompt and the way the tools process the information they have been given. On the one hand, the tool prompt encourages the teacher to provide the essential information for a quality lesson plan. On the other hand, the prompt's design could prove to be limiting. For instance, Learnt.ai's first

generation lesson plan builder only allows the teacher to fill in information about the topic, the learner age, the lesson duration and the language. Therefore, the teacher is unable to provide other pieces of essential information such as the aim or the educational framework the lesson plan needs to follow. Learnt.ai's second generation lesson plan builder, being a bit more advanced, urges the teacher to provide the lesson's topic in which box they can also provide desired outcomes and activities, information around the learners' age and needs, the lesson duration and the instructional model. More specifically, the teacher has to choose out of a drop down menu of predetermined instructional models, which may not include the teacher's choice. What is more, the second generation lesson plan cannot be altered, while the first generation builder can only be modified through a bar above the generated lesson. However, when so many requirements have not been provided through the initial prompt, the user would have to try to modify the lesson plan through a number of requests. Nevertheless, the constant requests result in the tool losing its focus and its ability to incorporate the changes into the original lesson plan. In addition, when so many corrections are needed, the mere purpose of using an AI tool is lost as the teacher would not save any time in this process.

As for MagicSchool.ai, its prompt allows the teacher more freedom in the description of the requirements, since it is rather open-ended and the teacher is urged to provide grade level, topic, standard or objective, additional criteria and standards to align the lesson to. However, it seems that again, the more information the tool is provided with, the higher the chances are for it to disregard certain requirements. For instance, MagicSchool.ai omitted the allocation of time in its generated lesson.

Furthermore, as AI is becoming more and more widespread and new capabilities emerge, a lot of tools make their more sophisticated applications available after payment. As mentioned in section 3.3.1, the MagicSchool.ai generated lesson cannot be modified or supplemented through the action options of the chat box below the generated output, unless the user has opted for the paid plan. Learnt.ai offers its "Faster" model free of charge, while the "Better" model along with the AI sidekicks are offered under a paid plan. Similarly, ChatGPT offers its more sophisticated model under a subscription. As a result, educational institutions and teachers who can afford to opt for the premium version of the tools can benefit from the more advanced affordances, while underprivileged institutions

and educators, unable to enjoy them, will opt for the free version, amplifying thus the digital divide.

Lastly, it is worth mentioning some drawbacks which are not specific to lesson plan generators but are in general valid for AI tools. For one thing, the tools tend to reproduce the ideas of the texts they have been trained on, which makes them prone to reproducing prejudice or favoring certain ideologies and since these tools utilize the user's input, copyright and privacy issues can also arise. For another, teachers should be mindful of AI "hallucinations", as incidents of the tools producing false or unrelated results have been documented (Kukulska-Hulme et al., 2023). Regarding ChatGPT in particular, Rettberg (2022) highlights the tool's pervasive cultural bias, stating that despite it being multilingual, ChatGPT seems to be monocultural, since it has been trained on texts in English and its output seems to follow US laws and reproduce US values and formats. No such incidents were detected in the lesson plans produced by the tools for the purposes of this study; however teachers always need to check the generated output as the tools themselves remind every user to do. MagicSchool.ai warns users of these potential dangers from the onset, right after signing up, encouraging them to omit student data from the information they provide the tool with and to review the output, keeping in mind that the tool may present them with dated, biased or wrong answers. ChatGPT issues a similar warning after signing up, while the user constantly reads the message "ChatGPT can make mistakes. Check important info." under the chat-box of the tool's interface.

Nevertheless, as explained in chapter 3.3 there are ways in which the user can effectively get around most of the limitations of the tools mentioned above. The problem of the tool failing to take into account certain of the requirements provided through the prompt can be dealt with by the teacher asking the tool through follow-up questions to address the disregarded requirements. Whereas, the problem of constant refinements and follow-up questions making the tool lose its focus can be dealt with by beginning new chats with the tools' chat-bots instead of feeding the same chat with new requests. This can easily be done in ChatGPT. As for Learnt.ai and MagicSchool.ai the teacher could use the Lesson planner assistant sidekick and Raina, the chat-bot, respectively to begin new chats and through them modify the generated lesson plan.

As for subscriptions and premium plans, the teacher could opt for a tool whose free plan allows for unlimited generations and offers complete lesson plans, like ChatGPT. The teacher could also explore the tools' capabilities through the free trial of the premium versions of the tool and if they find that their affordances cannot be matched by the free plans available, they could propose that the administration of the educational institution they work for consider buying a platform customization plan for their institution like the ones MagicSchool.ai offers.

Finally, regarding potential privacy issues, the quality of the generated output and the possibility of it including biased or incorrect content, the teacher should not forget that such tools have been trained to simulate human intelligence. Therefore, even though they can be valuable assistants in educators' teaching practice; they have not been created to replace them and assume their role (Moundridou et al., 2024). As Clark and van Kessel (2023) have pointed out, while ChatGPT can help teachers approach a topic and design a lesson plan, they cannot replace and exhibit the professional judgement educators have gained through their training and experience. The teacher is the one who has studied and been trained on educational and pedagogical principles and has experience in their application in the classroom. The teacher is the one who knows the philosophy of the educational institution they work for and the profile, interests and needs of their students. Therefore, the teacher is the one who has to protect students' personal data, inspect the generated lesson plan and edit it in order to contextualize it to their classroom experience. Simple as the use of these generative AI tools may be, educators should be trained in their use in order to maximize their benefits and avert any potential dangers that could result from their use.

Having pointed out the affordances and the limitations of the AI tools studied, the findings of this thesis have highlighted the value of generative AI for lesson planning and they have suggested practical ways for overcoming their shortcomings.

#### **4.2 Limitations and implications for future research**

The main limitation of the thesis is the lack of educators' feedback. Including teachers' feedback on the effectiveness of the AI tools studied, along with the usefulness of the tips provided on how the tools' shortcomings could be overcome, would provide the study with additional value, offering a more objective outlook. However, the thesis, according to the

Master's programme regulations, had to be completed during the summer months, which is the period when Greek schools are closed for summer break. Thus, the collection of data through questionnaires was deemed impossible.

Additionally, this thesis studied the affordances of only three AI tools, namely MagicSchool.ai, Learnt.ai and ChatGPT. However, since AI is in its blooming period, new AI tools are constantly being introduced and the affordances of the existing ones are constantly being improved. Therefore, more studies about AI's application in lesson planning are needed in order for educators to fully comprehend the tools' affordances, to be encouraged to be trained in their use and to benefit from it by successfully implementing them in their teaching practice.

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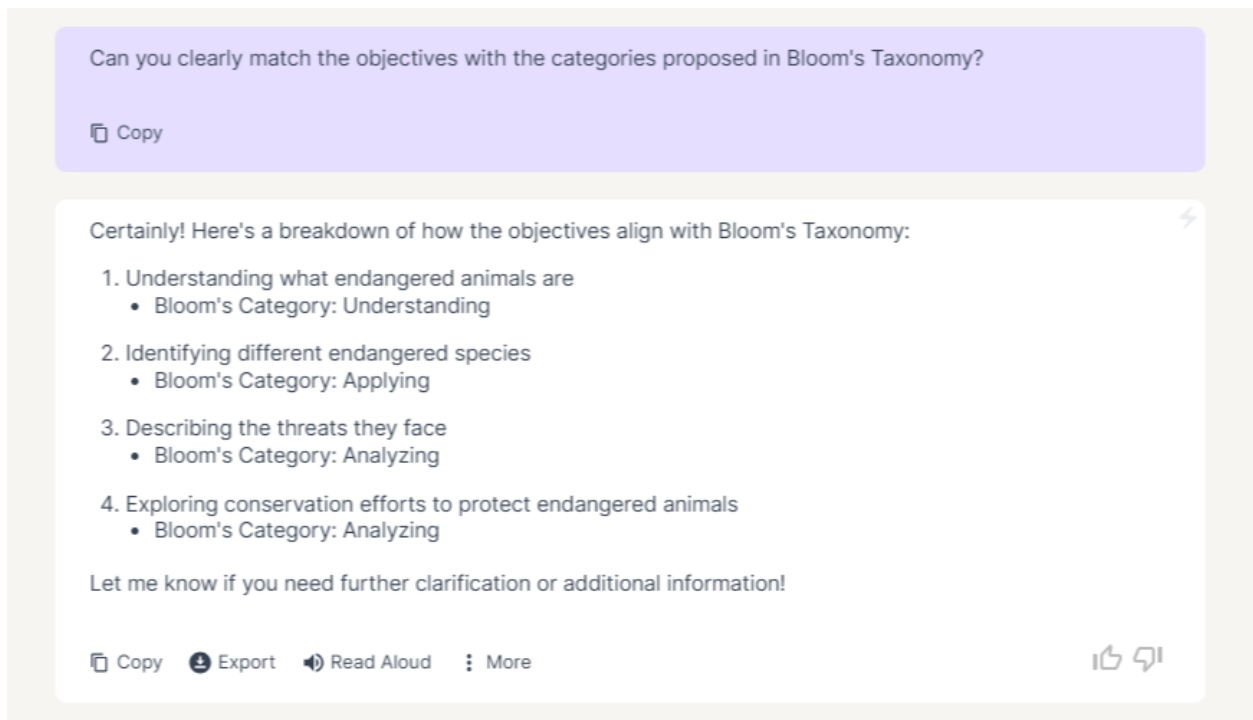
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## Appendix

**Figure 14 MagicSchool: objectives modification**



Can you clearly match the objectives with the categories proposed in Bloom's Taxonomy?

Copy

Certainly! Here's a breakdown of how the objectives align with Bloom's Taxonomy:

1. Understanding what endangered animals are
  - Bloom's Category: Understanding
2. Identifying different endangered species
  - Bloom's Category: Applying
3. Describing the threats they face
  - Bloom's Category: Analyzing
4. Exploring conservation efforts to protect endangered animals
  - Bloom's Category: Analyzing

Let me know if you need further clarification or additional information!

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**Figure 15 MagicSchool: theoretical framework alignment modification**

Can you redesign the activities by applying the Constructivist learning theory and the "Think-Pair-Share" learning strategy?

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### Exploring Endangered Animals

#### Objective:

Students will be able to construct their own understanding of endangered animals through research, collaborative work, and presentations. They will practice their reading, writing, listening, and speaking skills in English, and develop an awareness of the importance of wildlife conservation.

#### Assessment:

Students will work in pairs to research and create a presentation on an endangered animal of their choice. By engaging in the Think-Pair-Share strategy, they will share their findings with the class, demonstrating their understanding and communication skills.

#### Key Points:

- Constructing knowledge about endangered animals through research and presentations
- Collaborating with peers to deepen understanding
- Sharing findings with the class to enhance communication skills
- Reflecting on the importance of wildlife conservation

#### Opening:

- Show pictures of various endangered animals and ask students to discuss what they already know about them in pairs using the Think-Pair-Share strategy.
- Facilitate a class discussion based on their initial thoughts and ideas.

#### Introduction to New Material:

- Guide students to define what endangered animals are through a collaborative brainstorming session.
- Introduce examples and discuss the main reasons why animals become endangered, encouraging students to share their thoughts with a partner before sharing with the class.

#### Guided Practice:

- Provide resources for pairs to research specific endangered animals together.
- Encourage them to discuss and analyze the threats these animals face before presenting their findings to the class.
- Monitor and guide their progress, offering support as needed.

#### Independent Practice:

- In pairs, students will create a presentation on their chosen endangered animal, incorporating information on habitat, threats, and conservation efforts.
- They will practice the Think-Pair-Share strategy by sharing their presentations with the class, receiving feedback and questions from their peers.

#### Closing:

- Lead a class reflection on the key points learned about endangered animals through the presentations.
- Encourage students to reflect on the collaborative learning experience and discuss the impact of conservation efforts.

#### Extension Activity:

- Students can create posters advocating for the protection of endangered animals in pairs, applying their knowledge and creativity to raise awareness.

#### Homework:

For homework, students can write a reflection on their learning experience, highlighting the importance of protecting endangered species and proposing individual actions to support conservation efforts.

#### Standards Addressed:


- CEFR Level A2: Listening, Speaking, Reading, Writing
- Bloom's Taxonomy: Understanding, Applying, Analyzing
- Constructivism Learning Theory (Piaget): Students construct their own understanding through collaborative research and presentations
- Think-Pair-Share Learning Strategy (Lyman): Students engage in collaborative learning by discussing and sharing their findings with peers

This revised plan emphasizes student-centered, collaborative learning experiences that align with Constructivist principles and the Think-Pair-Share strategy. Let me know if you need further adjustments or additional details!

**Figure 16 MagicSchool: Think-Pair-Share implementation follow-up question**

Could you provide additional guidance on how to effectively implement the Think-Pair-Share strategy during the lesson?

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Certainly! Here is a more detailed guidance on how to effectively implement the Think-Pair-Share strategy during the lesson: 

**1. Think (5 minutes):**

- Introduce the topic by showing pictures of endangered animals.
- Instruct students to individually think about what they already know about endangered animals.
- Encourage them to jot down key points or questions in their notebooks.

**2. Pair (10 minutes):**

- Divide students into pairs and ask them to share their thoughts with their partner.
- Instruct them to discuss and compare their initial ideas, clarifying any misconceptions and building on each other's knowledge.
- Encourage active listening and respectful communication within the pairs.

**3. Share (15 minutes):**

- Invite pairs to share a summary of their discussions with the class.
- Each pair can present one key point or question they discussed.
- Facilitate a brief class discussion after each pair shares to deepen understanding and address any common questions or misconceptions.

**4. Application (20 minutes):**

- Transition into the main activities of researching and creating presentations on endangered animals in pairs.
- Encourage students to continue using the Think-Pair-Share strategy throughout the research process to discuss findings, analyze information, and plan their presentations collaboratively.

**5. Closure (5 minutes):**

- Conclude the lesson with a final Think-Pair-Share reflection.
- Ask students to individually think about one new thing they learned during the lesson.
- Have pairs share their reflections with each other before sharing with the whole class.

By incorporating the Think-Pair-Share strategy at key points throughout the lesson, you can promote active engagement, collaborative learning, and effective communication among students. This structured approach will not only deepen their understanding of endangered animals but also enhance their overall language skills. Feel free to adapt the timing and activities based on the dynamics of your classroom and the specific needs of your students.

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**Figure 17 MagicSchool: CEFR alignment follow-up question**

Can you explain how the lesson plan follows the standards set by CEFR?

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Certainly! The lesson plan aligns with the Common European Framework of Reference for Languages (CEFR) by focusing on the development of students' language skills in English at the A2 level. Here's how the lesson plan corresponds to the CEFR standards: 

**1. Listening (CEFR Level A2):**

- **Implementation:** Students will engage in listening activities such as watching videos or listening to passages about endangered animals.
- **Expected Outcome:** Students will practice listening for specific information, key details about endangered animals, threats they face, and conservation efforts.

**2. Speaking (CEFR Level A2):**

- **Implementation:** Students will participate in class discussions, pair work, and presentations on endangered animals.
- **Expected Outcome:** Students will practice speaking by describing endangered animals, their habitats, threats, and conservation efforts to their peers.

**3. Reading (CEFR Level A2):**

- **Implementation:** Students will read information about endangered animals during research for their presentations.
- **Expected Outcome:** Students will practice reading for gist and specific information to gather details about endangered species.

**4. Writing (CEFR Level A2):**

- **Implementation:** Students will write a short paragraph for homework on the importance of protecting endangered animals.
- **Expected Outcome:** Students will practice writing by expressing their ideas clearly and cohesively in English on the topic of wildlife conservation.

By incorporating listening, speaking, reading, and writing activities at the A2 level of the CEFR, the lesson plan provides a comprehensive language learning experience for students. It offers opportunities for students to develop and practice their language skills in a meaningful context related to endangered animals and conservation efforts.

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**Figure 18 MagicSchool: timing modification**

Can you time the activities so that they can be done in two, 45 minute teaching hours?

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Here's a revised timeline for the lesson plan to fit within two 45-minute teaching hours: 

**First 45-Minute Teaching Hour:**

**1. Opening (5 minutes):**

- Show pictures of endangered animals and initiate a brief discussion on why it's important to protect them.

**2. Introduction to New Material (10 minutes):**

- Define what endangered animals are and discuss reasons for their endangerment.
- Address the common misconception about animals in zoos.

**3. Guided Practice (15 minutes):**

- Show videos or read short passages about specific endangered animals.
- Ask questions to check for understanding and engage students in discussion.

**4. Independent Practice (15 minutes):**

- Assign pairs and provide guidelines for researching and creating presentations on endangered animals.

**Second 45-Minute Teaching Hour:**

**1. Opening & Pair Activity (10 minutes):**

- Use the Think-Pair-Share strategy for students to discuss what they know about endangered animals with a partner.

**2. Independent Practice (20 minutes):**

- Students continue working in pairs on their presentations, researching, and preparing their materials.

**3. Closing & Presentations (10 minutes):**

- Have pairs present their findings on endangered animals to the class.
- Facilitate a brief class discussion summarizing key points learned.

**4. Extension Activity & Homework Assignment (5 minutes):**

- Introduce the extension activity of creating posters advocating for the protection of endangered animals.
- Assign the homework task of writing a short paragraph on the importance of wildlife conservation.

By following this timeline, you can effectively cover the key components of the lesson plan within two 45-minute teaching hours while allowing for student engagement, collaboration, and reflection on the topic of endangered animals. Feel free to adjust the timing as needed based on the pace and dynamics of your classroom.

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**Figure 19 MagicSchool: prerequisites modification**

Can you provide the prerequisites for this lesson plan?

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**Prerequisites for the Exploring Endangered Animals Lesson Plan:**

**1. Basic Understanding of Animals:**

- Students should have prior knowledge of common animals and their characteristics.

**2. Reading Skills:**

- Students should be able to read and comprehend age-appropriate texts about animals and conservation.

**3. Research Skills:**

- Students should have experience with basic research techniques, including using books and online resources to gather information.

**4. Presentation Skills:**

- Students should be familiar with presenting information to peers, including how to organize and articulate their thoughts clearly.

**5. Collaboration Skills:**

- Students should be comfortable working in pairs or small groups and sharing responsibilities during collaborative tasks.

**6. Awareness of Environmental Issues:**

- Students should have a basic awareness of environmental conservation and the impact of human activities on wildlife.

**7. Listening Skills:**

- Students should be able to listen actively and engage in discussions about various topics.

**8. Writing Skills:**

- Students should be able to write clear and coherent paragraphs, expressing their ideas effectively.

By ensuring that students meet these prerequisites, educators can facilitate a more effective and engaging learning experience during the lesson on endangered animals.

**Figure 20 MagicSchool: teacher - student roles and types of interaction modification 1**

Can you provide the teacher and student roles and the types of interaction for every activity in this lesson plan?

 Copy

Certainly! Below are the **teacher and student roles** along with the **types of interaction** for each activity in your lesson plan on endangered animals.

### Opening

**Teacher Role:**

- Show pictures of various endangered animals.
- Facilitate a discussion about the animals and their significance.
- Guide students to articulate their thoughts on wildlife conservation.

**Student Role:**

- Observe the pictures and share any recognition or prior knowledge about the animals.
- Participate in the discussion, expressing opinions and ideas on why animal protection is important.

**Type of Interaction:**

- Whole-class discussion.
- 

### Introduction to New Material

**Teacher Role:**

- Define endangered animals and provide examples.
- Explain the main reasons for endangerment.
- Clarify common misconceptions, such as the idea that all zoo animals are endangered.

**Student Role:**

- Listen and take notes.
- Engage with the material by asking clarifying questions or sharing thoughts.

**Type of Interaction:**

- Teacher-led instruction with student participation.
- 

### Guided Practice

**Teacher Role:**

- Show videos or read passages about specific endangered animals.
- Ask questions to check for understanding and probe deeper analysis.
- Monitor and provide feedback on student responses.

**Student Role:**

- Actively listen to videos or readings.
- Answer questions and engage in discussions about the content.
- Work collaboratively to identify key information.

**Type of Interaction:**

- Small group or pair work, with teacher guidance.
-



**Figure 21 MagicSchool: teacher - student roles and types of interaction modification 2**

### **Independent Practice**

**Teacher Role:**

- Provide guidance and support as students research and create their presentations.
- Clarify expectations for the presentation and offer resources if needed.

**Student Role:**

- Collaborate in pairs to research an endangered animal.
- Create a presentation that includes information on habitat, threats, and conservation efforts.
- Practice their speaking skills while preparing to present to the class.

**Type of Interaction:**

- Pair work, with teacher support.
- 

### **Closing**

**Teacher Role:**

- Facilitate a class discussion summarizing key points learned.
- Encourage students to reflect on individual actions for wildlife protection.

**Student Role:**

- Participate in the summary discussion, sharing insights and reflections.
- Discuss personal actions they can take to contribute to conservation efforts.

**Type of Interaction:**

- Whole-class discussion.
- 

### **Extension Activity**

**Teacher Role:**

- Provide materials and guidelines for creating advocacy posters.
- Encourage creativity and support students in their efforts.

**Student Role:**

- Create posters advocating for endangered animal protection, incorporating facts and visuals.
- Share their posters with classmates.

**Type of Interaction:**

- Small group or individual work, with teacher encouragement.
- 

### **Homework**

**Teacher Role:**

- Assign the writing task and clarify expectations.

**Student Role:**

- Write a short paragraph on the importance of protecting endangered animals and individual actions for conservation.

**Type of Interaction:**

- Independent work.
- 

This structure helps ensure that both the teacher and students have clear roles and that interactions are designed to foster engagement and learning throughout the lesson.

## Figure 22 MagicSchool: learning environment modification

Can you provide the learning environment for each activity in this lesson plan?

Copy

Certainly! Here's a breakdown of the **learning environment** for each activity in your lesson plan on endangered animals:

### Opening:

- **Learning Environment:**
  - **Setting:** Classroom, with visual aids such as posters or pictures of endangered animals displayed.
  - **Interaction:** Encourage a collaborative discussion where students can share their thoughts and experiences related to the images shown. Create an open atmosphere where students feel comfortable expressing their ideas.

### Introduction to New Material:

- **Learning Environment:**
  - **Setting:** Classroom, possibly using a whiteboard or projector for definitions and examples.
  - **Interaction:** Utilize a whole-group instruction approach, inviting questions and clarifications. Create a safe space for students to discuss misconceptions and engage in dialogue about endangered animals and their significance.

### Guided Practice:

- **Learning Environment:**
  - **Setting:** Classroom, with access to videos or reading materials.
  - **Interaction:** Facilitate small group discussions or partner work. Encourage students to ask questions and share insights while monitoring their understanding. Provide constructive feedback in a supportive manner.

### Independent Practice:

- **Learning Environment:**
  - **Setting:** Class or library, with access to research materials (books, internet, etc.) for students to create their presentations.
  - **Interaction:** Partner work allows for collaboration and peer learning. Encourage students to support each other in their research and presentation preparation, fostering teamwork and communication skills.

### Closing:

- **Learning Environment:**
  - **Setting:** Classroom, conducive to a reflective discussion where students can gather and share their thoughts.
  - **Interaction:** Facilitate an inclusive discussion that encourages all students to participate. Create an environment where students can express their reflections and ideas on conservation actions.

### Extension Activity:

- **Learning Environment:**
  - **Setting:** Classroom or art area with supplies for poster-making.
  - **Interaction:** Encourage creativity and collaboration among students. Allow them to work together, exchanging ideas and resources while creating advocacy posters that promote conservation efforts.

### Homework:

- **Learning Environment:**
  - **Setting:** Home environment, where students have a quiet space to reflect and write.
  - **Interaction:** Encourage students to think independently and express their thoughts in writing, reinforcing their understanding of the topic.

This structured approach will help create a dynamic and engaging learning environment throughout your lesson on endangered animals.

**Figure 23 MagicSchool: worksheets and resources design follow-up question**

In the lesson above, build me all the worksheets and resources in detail

 Copy

Certainly! Here are the detailed worksheets and resources for the lesson plan on endangered animals: 

**1. Worksheet 1: Research Guide for Endangered Animals Presentation**

- This worksheet provides a structured guide for students to research and gather information about their chosen endangered animal. It includes sections for habitat description, threats faced by the animal, and conservation efforts being made to protect it.

**2. Worksheet 2: Presentation Planning Template**

- This template helps students organize their research findings and plan their presentation. It includes sections for key points, visuals to include, and speaking notes for the presentation.

**3. Presentation Rubric**

- A rubric outlining the criteria for assessing student presentations. It includes categories such as content knowledge, organization, delivery, and collaboration (if applicable).

**4. Posters Materials**

- Provide students with art supplies, colored paper, markers, and images of endangered animals to create advocacy posters. Encourage them to include facts, slogans, and visuals to raise awareness about wildlife conservation.

**5. Homework Assignment Sheet**

- A homework assignment sheet instructing students to write a short paragraph on the importance of protecting endangered animals and suggesting actions individuals can take to support conservation efforts.

**6. Presentation Peer Feedback Form**

- A feedback form for students to provide constructive feedback to their peers after each presentation. It includes prompts for positive feedback and areas for improvement.

These resources will support the implementation of the lesson plan and enhance the learning experience for students as they engage in researching, presenting, and reflecting on the topic of endangered animals and conservation efforts. Let me know if you need further details or additional resources!

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**Figure 24 MagicSchool: worksheet design follow-up question**

Can you create the "Worksheet 1" proposed above?

 Copy

Certainly! Below is the "Research Guide for Endangered Animals Presentation" worksheet for students to use in researching their chosen endangered animal:

---

### **Research Guide for Endangered Animals Presentation**

**Animal Name:** \_\_\_\_\_

**Habitat Description:**

- Where does the animal live?
- What is its natural habitat like?
- Are there any specific environmental conditions it requires to survive?

**Threats Faced by the Animal:**

- What are the main threats to this animal's survival?
- Are there human activities contributing to its endangerment?
- How have these threats impacted the population of this animal?


**Conservation Efforts:**

- What efforts are being made to protect this endangered animal?
  - Are there conservation organizations or programs dedicated to saving this species?
  - How can individuals contribute to the conservation of this animal?
- 

This worksheet will guide students in conducting thorough research on their chosen endangered animal, focusing on its habitat, threats, and conservation efforts. Students can use the information gathered to prepare their presentations for the class. Feel free to customize the worksheet further based on specific requirements or additional details you want to include.

**Figure 25 MagicSchool: reading text generation**

Can you write a text of 150 words on endangered animals for students of an A2 level of English?








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### Endangered Animals

Many animals in the world are in danger. This means they might not be here in the future. Endangered animals can lose their homes because of people. For example, cutting down trees and pollution make it hard for them to survive.


Some famous endangered animals are the **tiger**, **giant panda**, and **elephant**. Tigers live in forests, but their homes are getting smaller. Giant pandas eat bamboo, but there is less bamboo because of farms. Elephants are hunted for their tusks, which is very sad.

We can help these animals. First, we can learn about them and tell our friends. Second, we can support wildlife parks that take care of endangered animals. Lastly, we can recycle and use less plastic to keep our planet clean. Together, we can protect endangered animals and help them live safely in their homes!

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**Figure 26 MagicSchool: follow-up question on video links provision**

Can you give me the link to a video about specific endangered animals?







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I currently do not have the capability to provide real-time links to external resources such as videos. However, you can easily find educational videos about specific endangered animals on platforms like YouTube or educational websites.

Here are some tips for finding appropriate videos:

1. Search for documentaries or educational videos on endangered species.
2. Look for videos from reputable sources such as national geographic or wildlife conservation organizations.
3. Ensure the video content aligns with the age group and English language level of your students.


By searching with keywords like "endangered animals documentary" or the specific name of the endangered species you are interested in, you should be able to find relevant videos to supplement your lesson plan.

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**Figure 27 MagicSchool: YouTube channel and website recommendations follow-up question**

Can you provide a list of recommended YouTube channels or websites that have high-quality videos about endangered species?

 Copy

Certainly! Here is a list of recommended YouTube channels and websites that offer high-quality videos about endangered species: 

**YouTube Channels:**

1. **National Geographic:** The National Geographic YouTube channel features a wide range of videos on wildlife conservation, endangered species, and habitat protection.
2. **BBC Earth:** BBC Earth's YouTube channel showcases documentaries and educational videos about animals, including those that are endangered.
3. **Smithsonian's National Zoo:** The Smithsonian's National Zoo YouTube channel provides informative videos about conservation efforts and endangered species.
4. **World Wildlife Fund (WWF):** The WWF YouTube channel offers videos on wildlife conservation projects, species protection, and environmental initiatives.
5. **Wildlife Conservation Society:** The Wildlife Conservation Society's YouTube channel highlights conservation work, field research, and stories about endangered animals.

**Websites:**

1. **National Geographic Kids:** The National Geographic Kids website offers educational resources, videos, and articles about endangered animals suitable for younger audiences.
2. **Discovery Channel:** The Discovery Channel website provides access to documentaries and video clips on wildlife conservation and endangered species.
3. **World Wildlife Fund (WWF) Educational Resources:** The WWF website features educational videos, virtual tours, and resources on endangered species and conservation efforts.
4. **San Diego Zoo Global:** The San Diego Zoo Global website offers live cams, videos, and educational content about endangered species and wildlife conservation.
5. **Defenders of Wildlife:** The Defenders of Wildlife website provides videos, webinars, and resources focused on protecting endangered species and their habitats.

These channels and websites are valuable resources for finding engaging and informative videos about endangered species to enhance your lesson on wildlife conservation. Always preview the content beforehand to ensure it aligns with the learning objectives and age appropriateness for your students.

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**Figure 28 MagicSchool: digital media integration modification**

Can you add more digital media in order to make the lesson more engaging for students?

 Copy

Certainly! Here are some additional digital media resources and tools that can be incorporated to make the lesson on endangered animals more engaging for students:

**1. Virtual Field Trips:**

- Utilize virtual reality (VR) or 360-degree videos to take students on virtual field trips to wildlife reserves, sanctuaries, or natural habitats of endangered animals. Platforms like Google Expeditions or National Geographic Explore offer immersive experiences.

**2. Interactive Websites:**

- Explore interactive websites like WWF Together, National Geographic Kids, or ARKive that provide engaging multimedia content, games, and virtual tours related to endangered species and conservation efforts.

**3. Educational Apps:**

- Integrate educational apps such as Endangered Animals AR, Wild Kratts World Adventure, or Seek by iNaturalist for interactive learning experiences, quizzes, and real-time wildlife identification.

**4. Digital Storytelling Tools:**

- Encourage students to create digital stories or presentations using tools like Adobe Spark Video, Canva, or Book Creator to combine text, images, and audio in a creative way to share information about endangered animals.

**5. Video Conferencing:**

- Invite guest speakers from wildlife conservation organizations or zoos to join the lesson via video conferencing platforms like Zoom or Skype, allowing students to interact with experts and ask questions about endangered species.

**6. Online Collaborative Platforms:**

- Use collaborative platforms such as Padlet, Google Docs, or Flipgrid to facilitate group research, discussions, and sharing of information about endangered animals among students.

**7. Gamification Elements:**

- Incorporate elements of gamification through platforms like Kahoot, Quizizz, or Gimkit to create interactive quizzes, challenges, or trivia games related to endangered animals to reinforce learning in a fun and engaging way.

**8. Social Media Projects:**

- Engage students in social media projects where they create awareness campaigns or advocacy posts about endangered species on platforms like Instagram, Twitter, or TikTok, promoting conservation messages to a wider audience.

By integrating these digital media resources and tools into the lesson, you can enhance student engagement, foster creativity, and provide interactive learning experiences that cater to diverse learning styles and preferences. These multimedia elements can make the lesson on endangered animals more dynamic, memorable, and impactful for students.

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**Figure 29 MagicSchool: constructive alignment achievement follow-up question**

Is constructive alignment achieved in this lesson plan?

 Copy

Yes, constructive alignment is achieved in this lesson plan on endangered animals. Constructive alignment refers to the alignment of intended learning outcomes, teaching and learning activities, and assessment tasks to ensure that students are actively engaged in meaningful learning experiences that lead to the achievement of the desired outcomes.

In this lesson plan:

**1. Intended Learning Outcomes:**

- The objective is clearly defined: Students will be able to identify and describe endangered animals, practice their language skills, and develop an awareness of wildlife conservation.
- Assessment tasks are aligned with the outcomes, such as creating a presentation on an endangered animal to demonstrate reading, writing, listening, and speaking skills.

**2. Teaching and Learning Activities:**

- Activities are designed to engage students in exploring the concept of endangered animals through discussions, guided practice, independent research, and presentations.
- The use of videos, readings, pair work, and class discussions caters to different learning styles and levels of language proficiency.

**3. Assessment Tasks:**

- The assessment task of creating a presentation requires students to apply their knowledge, research skills, and language abilities to effectively communicate information about endangered animals.
- The rubric for assessing presentations aligns with the learning outcomes and provides clear criteria for evaluating student performance.

By aligning the learning outcomes with the teaching and assessment strategies, this lesson plan ensures that students are actively involved in meaningful tasks that support their language development and understanding of wildlife conservation. This alignment enhances the coherence and effectiveness of the lesson in promoting student learning and achievement of the desired outcomes.



**Figure 30 MagicSchool: differentiation modification**

For the output above, give me suggestions to differentiate it for students with dyslexia.

 Copy

To differentiate the lesson plan for students with dyslexia, you can make the following modifications and accommodations: 

**1. Visual Supports:**

- Use more visual aids such as pictures, diagrams, and infographics to supplement written information. Visuals can help students with dyslexia better understand concepts and retain information.

**2. Font and Formatting:**

- Use dyslexia-friendly fonts such as Arial, OpenDyslexic, or Dyslexie, which are easier to read for students with dyslexia.
- Increase font size and use bold or colored text to emphasize key points.

**3. Audio Resources:**

- Provide audio recordings of reading passages or instructions to accommodate students who may struggle with reading.
- Encourage students to use text-to-speech tools or audiobooks for additional support.

**4. Scaffolded Instructions:**

- Break down complex tasks into smaller, manageable steps with clear instructions.
- Provide visual or written prompts to guide students through activities and assignments.

**5. Interactive Activities:**

- Incorporate hands-on and interactive activities that engage different senses, such as role-playing, group discussions, or multimedia presentations.
- Allow students to demonstrate understanding through alternative means, such as creating visual posters or multimedia projects.

**6. Flexible Assessment Options:**

- Offer alternative assessment methods, such as oral presentations, visual projects, or video recordings, to allow students to showcase their knowledge and skills in ways that suit their strengths.

**7. Provide Extra Time and Support:**

- Allow additional time for reading tasks, completing assignments, and processing information.
- Offer one-on-one support or peer tutoring to clarify instructions and provide personalized assistance.

**8. Encourage Self-Advocacy:**

- Encourage students to communicate their needs and preferences regarding learning accommodations.
- Foster a supportive and inclusive classroom environment where students feel comfortable seeking help and advocating for themselves.

By implementing these strategies and accommodations, you can create a more inclusive and accessible learning environment for students with dyslexia, enabling them to fully engage in the lesson activities and achieve the intended learning outcomes.

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## Figure 31 MagicSchool: Raina's differentiation modification

Certainly! Here's a differentiated version of your lesson plan on **Exploring Endangered Animals** that addresses a variety of learning styles and abilities:

### Exploring Endangered Animals: Differentiated Lesson Plan

#### Objective:

Students will be able to identify and describe endangered animals, practice their reading, writing, listening, and speaking skills in English, and develop an awareness of the importance of wildlife conservation. Differentiation will allow all students to engage with the content at their appropriate level.

#### Assessment:

Students will create a presentation or alternative project (e.g., poster, digital slideshow) describing an endangered animal of their choice, including information on its habitat, threats, and conservation efforts. Students will present their findings to the class, demonstrating their reading, writing, listening, and speaking skills.

#### Key Points:

- Understanding what endangered animals are
- Identifying different endangered species
- Describing the threats they face
- Exploring conservation efforts to protect endangered animals

#### Opening:

- Show pictures of various endangered animals and ask students if they recognize any of them.
- Discuss why it's important to protect endangered animals and why they are at risk of extinction.
- **Differentiation:** For visual learners, provide a visual chart that categorizes animals by habitat or level of endangerment.

#### Introduction to New Material:

- Define what endangered animals are and provide examples.
- Discuss the main reasons why animals become endangered.
- **Common Misconception:** Some students may think that all animals in zoos are endangered.
- **Differentiation:** Provide definitions and examples in multiple formats (text, audio, visuals) to cater to varied learning styles.

#### Guided Practice:

- Show videos or read short passages about specific endangered animals.
- Ask questions to check for understanding, starting with simple recall questions and progressing to more complex analysis questions.
- Monitor student responses and provide feedback as they work on identifying key information.
- **Differentiation:** Use graphic organizers for students who benefit from visual aids. Provide sentence starters for English language learners (ELLs) to support their speaking and writing.

#### Independent Practice:

- In pairs, students will research and create a presentation or alternative project on an endangered animal of their choice.
- They will include information on the animal's habitat, threats it faces, and conservation efforts being made to protect it.
- **Differentiation:** Allow students to choose the format of their project (e.g., written report, digital presentation, poster) based on their strengths and interests. Provide varied research materials (e.g., books, articles, videos) at different reading levels.

#### Closing:

- Have a class discussion summarizing the main points learned about endangered animals.
- Ask students to reflect on what actions they can take to help protect endangered species.
- **Differentiation:** Use a think-pair-share strategy to allow students to discuss in pairs before sharing with the larger group, providing a more comfortable setting for some students.

#### Extension Activity:

- Students who finish early can create posters advocating for the protection of endangered animals. They can include facts, pictures, and ways people can contribute to conservation efforts.
- **Differentiation:** Offer options for students to create digital posters using tools like Canva or Google Slides if they prefer technology.

#### Homework:

- For homework, students can write a short paragraph about why it's important to protect endangered animals and what individuals can do to help.
- **Differentiation:** Provide sentence frames or prompts for students who may struggle with writing, and encourage more advanced students to research and include a specific case study in their paragraphs.

#### Standards Addressed:

- CEFR Level A2: Listening, Speaking, Reading, Writing
- Bloom's Taxonomy: Understanding, Applying, Analyzing
- Constructivism Learning Theory (Piaget): Students construct their own understanding of endangered animals through research and presentations
- Think-Pair-Share Learning Strategy (Lyman): Students engage in collaborative learning by working in pairs and sharing their findings with the class

This differentiated lesson plan aims to engage all students by addressing their varied learning needs while still focusing on the important content related to endangered animals.

**Figure 32 MagicSchool: all modifications incorporated into the lesson plan**

Can you incorporate all of the adjustments you made after my questions into one lesson plan?

Copy

### Exploring Endangered Animals: Engaging Lesson Plan

#### Objective:

Students will be able to identify and describe endangered animals, practice their reading, writing, listening, and speaking skills in English, and develop an awareness of the importance of wildlife conservation.

#### Assessment:

Students will create a presentation describing an endangered animal of their choice, including information on its habitat, threats, and conservation efforts. They will present their findings to the class, demonstrating their reading, writing, listening, and speaking skills.

#### Key Points:

- Understanding what endangered animals are
- Identifying different endangered species
- Describing the threats they face
- Exploring conservation efforts to protect endangered animals

#### Opening:

- Show pictures and videos of various endangered animals using VR or 360-degree experiences to engage students visually.
- Discuss why it's important to protect endangered animals and why they are at risk of extinction.

#### Introduction to New Material:

- Define what endangered animals are using dyslexia-friendly fonts and provide examples with visual supports.
- Discuss the main reasons why animals become endangered, incorporating interactive websites like WWF Together for engaging content.

#### Guided Practice:

- Show videos or read short passages about specific endangered animals, offering audio recordings for students with dyslexia.
- Use interactive websites like National Geographic Kids for hands-on exploration of endangered species.
- Monitor student responses and provide feedback tailored to individual needs.

#### Independent Practice:

- In pairs, students will research and create a presentation on an endangered animal of their choice using digital storytelling tools like Adobe Spark Video.
- They will include information on the animal's habitat, threats it faces, and conservation efforts being made to protect it.
- Students can utilize educational apps like Endangered Animals AR for additional engagement.

#### Closing:

- Have a class discussion summarizing the main points learned about endangered animals, encouraging students to share their findings using online collaborative platforms.
- Ask students to reflect on what actions they can take to help protect endangered species, possibly through social media projects promoting conservation messages.

#### Extension Activity:

Students who finish early can participate in a virtual field trip to a wildlife sanctuary or engage in a gamified quiz on endangered animals using platforms like Kahoot.

#### Homework:

For homework, students can write a reflection on their learning experience, incorporating multimedia elements such as images or videos to express their understanding of endangered animals.

#### Standards Addressed:

- CEFR Level A2: Listening, Speaking, Reading, Writing
- Bloom's Taxonomy: Understanding, Applying, Analyzing
- Constructivism Learning Theory (Piaget): Students construct their own understanding of endangered animals through research and presentations
- Think-Pair-Share Learning Strategy (Lyman): Students engage in collaborative learning by working in pairs and sharing their findings with the class

By incorporating these adjustments, the lesson plan offers a dynamic and inclusive approach to exploring endangered animals, catering to diverse learning needs and enhancing student engagement through varied digital media resources and tools.

**Figure 33: MagicSchool: all modifications incorporated by Raina 1**

Sure! Here's a comprehensive lesson plan incorporating all the requested adjustments and details:

---

### **Exploring Endangered Animals Lesson Plan**

#### **Objective:**

Students will be able to identify and describe endangered animals, practice their reading, writing, listening, and speaking skills in English, and develop an awareness of the importance of wildlife conservation.

#### **Assessment:**

Students will create a presentation describing an endangered animal of their choice, including information on its habitat, threats, and conservation efforts. They will present their findings to the class, demonstrating their reading, writing, listening, and speaking skills.

---

#### **Key Points:**

- Understanding what endangered animals are
  - Identifying different endangered species
  - Describing the threats they face
  - Exploring conservation efforts to protect endangered animals
- 

#### **Prerequisites:**

- Basic knowledge of animal classifications
  - Familiarity with reading and summarizing texts
  - Prior experience with group presentations
- 

#### **Materials Needed:**

- Pictures of endangered animals
  - Access to videos about endangered species (YouTube or educational websites)
  - Internet-enabled devices for research (tablets or computers)
  - Poster-making supplies (markers, paper, etc.)
  - Worksheets for guided practice and independent research
- 

#### **Timing for Two 45-Minute Teaching Hours:**

##### **Hour 1:**

1. **Opening (10 minutes)** - Show pictures of various endangered animals, discuss recognition and importance.
2. **Introduction to New Material (15 minutes)** - Define endangered animals, provide examples, discuss reasons for endangerment.
3. **Guided Practice (20 minutes)** - Watch a video/read passages, ask questions, and monitor student understanding.

##### **Hour 2:**

1. **Independent Practice (30 minutes)** - Research and create presentations in pairs.
  2. **Closing (10 minutes)** - Class discussion summarizing key points and reflection on actions to help protect endangered species.
-

**Figure 34: MagicSchool: all modifications incorporated by Raina 2**

---

### **Bloom's Taxonomy Alignment:**

- **Understanding:** Define endangered animals and describe their threats.
  - **Applying:** Research an endangered animal and gather information.
  - **Analyzing:** Present findings and engage in class discussions.
- 

### **Constructivist Learning Theory and Think-Pair-Share:**

- **Constructivism:** Students build understanding through research and collaboration.
  - **Think-Pair-Share Implementation:**
    - **Think:** Give students a question about endangered animals to think about individually for a minute.
    - **Pair:** Have them discuss their thoughts with a partner for 3-5 minutes.
    - **Share:** Invite pairs to share their insights with the class.
- 

### **Digital Media Enhancements:**

- Incorporate short videos showcasing endangered animals and conservation efforts.
  - Use interactive websites for research (e.g., National Geographic, WWF).
- 

### **Differentiation for Students with Dyslexia:**

- Provide printed materials with larger fonts and clear spacing.
  - Use audio versions of texts.
  - Allow for oral presentations instead of written reports.
- 

### **A2 Level Text (150 words):**

Endangered animals are species that are at risk of disappearing. Many animals are endangered because of habitat loss, poaching, and climate change. For example, the tiger is endangered because people destroy its home, the forest. Another endangered animal is the blue whale, which is threatened by hunting and pollution in the ocean. Conservation efforts help protect these animals. People work to create safe spaces for them and educate others about their needs. We can help by supporting wildlife organizations and spreading awareness. It is important to protect endangered animals so that they do not become extinct. We can all make a difference!

---

### **Worksheet 1: Endangered Animals Research Worksheet**

1. **Name of Endangered Animal:**
  2. **Habitat:**
  3. **Threats:**
  4. **Conservation Efforts:**
  5. **Interesting Fact:**
- 

### **Recommended Video Links:**

- For specific videos, I recommend using a search like "endangered animals documentary" on YouTube.

### **Recommended YouTube Channels:**

- National Geographic
  - BBC Earth
  - World Wildlife Fund (WWF)
- 

### **Final Adjusted Lesson Plan:**





This lesson plan now includes all requested adjustments, ensuring a comprehensive approach to teaching about endangered animals while engaging students at an A2 English level.

---

Feel free to use or modify any part of this plan to suit your classroom needs!

**Figure 35 Learnt.ai: first generation builder generated lesson plan 1**

Describe how you would like to refine this generation...

**Learning Objective:**

By the end of this lesson, students will be able to identify at least five endangered animals, describe their habitats and threats, and express their opinions about animal conservation both verbally and in writing.

**Essential Insights:**

- **Understanding Endangered Animals:** Definition and significance of endangered species.
- **Habitats and Threats:** Common habitats of endangered animals and the main threats they face.
- **Conservation Efforts:** Importance of protecting endangered species and what can be done to help.

**Engagement Starter:**

Begin the lesson with an intriguing question: "What makes an animal endangered?" Encourage students to share their thoughts. This stimulates discussion and assesses their prior knowledge on the topic.

**Interactive Introduction:**

Present a short, engaging video showcasing various endangered animals and the ecosystems they inhabit. Afterward, encourage a discussion about students' favorite animals from the video and what they learned regarding their status.

**Collaborative Exploration:**

Divide the class into small groups and assign each group a specific endangered animal. Each group will research:

- The animal's habitat
- The primary reasons it is endangered
- Possible conservation strategies

Groups will create a visual poster to present their findings. This encourages teamwork and peer learning, allowing students to teach one another.

**Individual Reflection:**

After the group presentations, students will write a short paragraph describing their thoughts on why animal conservation is important. They can also include what steps they believe can be taken to help endangered animals.

**Formative Assessment:**

Monitor group discussions and presentations to gauge understanding. Use the written paragraphs to assess individual comprehension of endangered animals and conservation challenges.

**Closing:**

Engage the entire class in a reflective discussion on what they found most surprising or interesting about endangered animals. This allows for sharing insights and reinforces the lesson's key points.

**Extension Activity:**

Encourage students to create a small presentation (1-2 minutes) on an endangered animal of their choice for a future class session. They can include interesting facts and advocate for conservation efforts.


**Question to Test Understanding:**

"What are two reasons why an animal might become endangered, and what can we do to help?"

**Homework:**

Ask students to find an article or a book chapter relating to endangered animals and write a summary of what they learned. They should be prepared to share their findings in the next class.

How would you rate the quality of this response?



**Figure 36 Learnt.ai: second generation lesson plan builder generated handout**

## Exploring Endangered Animals: A Multifaceted Language Skills Lesson | Handout

```html

About Endangered Animals

Endangered animals are species that are at risk of becoming extinct due to various factors such as habitat loss, climate change, poaching, and pollution. It is important to protect these animals to maintain biodiversity and ensure a healthy ecosystem.

Why Protect Endangered Animals?

- Preserve biodiversity
- Maintain ecosystem balance
- Conserve natural resources
- Promote scientific research

Key Vocabulary

Here are some important terms related to endangered animals:

- Endangered species
- Habitat loss
- Poaching
- Conservation efforts
- Biodiversity

Conservation Efforts

Various organizations and initiatives work towards protecting endangered animals. Some conservation efforts include:

1. Creating protected areas and wildlife reserves
2. Implementing laws and regulations against poaching and illegal trade
3. Engaging in breeding programs to increase population numbers
4. Raising awareness through education and advocacy

Figure 37 Learnt.ai: second generation lesson plan builder generated glossary

Exploring Endangered Animals: A Multifaceted Language Skills Lesson | Glossary of Key Terms

```html

### Glossary of Supporting Terms

Generated Text.

#### Endangered Animals

Species that are at risk of extinction due to various factors such as habitat loss, climate change, and human activities.

#### Conservation

The act of protecting and preserving the environment and wildlife to prevent extinction and maintain biodiversity.

#### Habitat

The natural environment where a specific species of animal, plant, or organism lives and thrives.

#### Extinction

The complete disappearance of a species from the Earth, often caused by human actions or environmental changes.

#### Biodiversity

The variety of living organisms in a particular habitat or ecosystem, essential for the balance and health of the environment.

...

**Figure 38 Learnt.ai: second generation lesson plan builder generated slide structure**

## Exploring Endangered Animals: A Multifaceted Language Skills Lesson | Potential Slide Structure

```html

Introduction

Welcome, class! Today we are going to learn about endangered animals. Can you think of any animals that are endangered?

What Does Endangered Mean?

Endangered means that a species of animal is at risk of becoming extinct, or disappearing forever. It's important to protect these animals to ensure they survive for future generations.

Listening Activity

- Listen carefully to the audio recording or video about endangered animals.
- Take notes on key information about why these animals are endangered.

Reading Activity

- Read the handouts or textbook pages about different endangered animals.
- Highlight important information like where they live and why they are in danger.

Why Protect Endangered Animals?

Discuss with your partner why it's important to protect endangered animals. Think about how we can help them survive.

Writing Activity

- Choose an endangered animal and write a paragraph about it.
- Include details about its habitat, why it's endangered, and what can be done to help it.

Conclusion

Today we learned about the importance of protecting endangered animals. Remember, every little action we take can make a big difference in preserving these species. Let's think about how we can help!

```



## Figure 39 ChatGPT: Think-Pair-Share implementation modification - lesson 1

Could you make more of the activities above follow the "Think-Pair-Share" framework?

### Lesson 1: Introduction to Endangered Animals

#### Activities:

#### 1. Warm-up (10 minutes):

- **Activity:** Show flashcards with pictures of different animals.
- **Purpose:** Activate prior knowledge and introduce new vocabulary.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually look at the flashcards and think about which animals they recognize.
  2. **Pair:** Students pair up and discuss which animals they know and think might be endangered.
  3. **Share:** Pairs share their thoughts with the class, and the teacher introduces the concept of "endangered."

#### 2. Presentation (15 minutes):

- **Activity:** Read a short passage about endangered animals.
- **Purpose:** Develop reading and listening comprehension.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. Hand out the worksheets with the reading passage.
  2. Play the audio recording of the passage while students follow along.
  3. **Think:** Students individually think about the main reasons why animals are endangered based on the passage.
  4. **Pair:** Students pair up and discuss their ideas.
  5. **Share:** Pairs share their ideas with the class, leading to a whole-class discussion.

#### 3. Practice (10 minutes):

- **Activity:** Think – Pair – Share.
- **Purpose:** Encourage deeper understanding through discussion.
- **Interaction:** Pairs.
- **Procedure:**
  1. **Think:** Students individually think about one reason why animals become endangered.
  2. **Pair:** Students pair up and share their thoughts with a partner.
  3. **Share:** Each pair shares their ideas with the class.

#### 4. Assessment (10 minutes):

- **Activity:** Vocabulary matching exercise.
- **Purpose:** Assess understanding of key vocabulary.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually attempt to match pictures of endangered animals with their names and descriptions.
  2. **Pair:** Students pair up to compare and discuss their matches.
  3. **Share:** Pairs share their answers with the class, and the teacher provides feedback.

## Figure 40 ChatGPT: Think-Pair-Share implementation modification - lesson 2

### Lesson 2: Endangered Animals Project

#### Activities:

#### 1. Warm-up (5 minutes):

- **Activity:** Review key vocabulary from the previous lesson.
- **Purpose:** Reinforce vocabulary.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually recall and write down as many vocabulary words related to endangered animals as they can.
  2. **Pair:** Students pair up and compare their lists.
  3. **Share:** Pairs share their lists with the class, and the teacher writes the vocabulary on the board for review.

#### 2. Research and Planning (15 minutes):

- **Activity:** Research on an endangered animal.
- **Purpose:** Develop research and note-taking skills.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually think about what they need to research about their assigned animal (habitat, reasons for endangerment, conservation efforts).
  2. **Pair:** Students pair up to share their research plans and help each other find information.
  3. **Share:** Pairs share their research findings with another pair, forming small groups for discussion.

#### 3. Project Creation (20 minutes):

- **Activity:** Create a poster or digital presentation.
- **Purpose:** Practice writing and creative skills.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually think about how to organize their information on the poster or digital presentation.
  2. **Pair:** Students pair up to create their projects, discussing and dividing tasks.
  3. **Share:** Pairs share their progress with another pair, providing feedback and suggestions to each other.

#### 4. Presentation and Feedback (5 minutes):

- **Activity:** Present projects to the class.
- **Purpose:** Develop speaking and listening skills.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Each student or group individually prepares what they will say during their presentation.
  2. **Pair:** Students pair up with another group to practice presenting and receive feedback.
  3. **Share:** Each group presents to the class, and the class provides feedback using a rubric focused on content, creativity, and presentation skills.

---

#### Assessment:

- **Formative:** Vocabulary matching exercise, class discussions, and pair sharing during Lesson 1.
- **Summative:** Poster or digital presentation assessed using a rubric.

#### Differentiation:

- Provide additional resources for students who need more support.
- Allow advanced students to explore more complex aspects of conservation.

#### Homework:

- Write a short paragraph about how they can help protect endangered animals and share it in the next class.

## Figure 41 ChatGPT: digital media implementation modification - lesson 1

Can you add more digital media in order to make the lesson more engaging for students?

### Lesson 1: Introduction to Endangered Animals

Activities:

#### 1. Warm-up (10 minutes):

- **Activity:** Show flashcards with pictures of different animals using an interactive whiteboard.
- **Purpose:** Activate prior knowledge and introduce new vocabulary.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually look at the flashcards displayed on the interactive whiteboard and think about which animals they recognize.
  2. **Pair:** Students pair up and discuss which animals they know and think might be endangered.
  3. **Share:** Pairs share their thoughts with the class, and the teacher introduces the concept of "endangered."

#### 2. Presentation (15 minutes):

- **Activity:** Read a short passage about endangered animals on tablets or computers.
- **Purpose:** Develop reading and listening comprehension.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. Students access the digital worksheet with the reading passage on their tablets or computers.
  2. Play the audio recording of the passage while students follow along on their devices.
  3. **Think:** Students individually think about the main reasons why animals are endangered based on the passage.
  4. **Pair:** Students pair up and discuss their ideas.
  5. **Share:** Pairs share their ideas with the class, leading to a whole-class discussion.

#### 3. Practice (10 minutes):

- **Activity:** Think – Pair – Share.
- **Purpose:** Encourage deeper understanding through discussion.
- **Interaction:** Pairs.
- **Procedure:**
  1. **Think:** Students individually think about one reason why animals become endangered.
  2. **Pair:** Students pair up and share their thoughts with a partner.
  3. **Share:** Each pair shares their ideas with the class.

#### 4. Assessment (10 minutes):

- **Activity:** Vocabulary matching exercise using an online quiz platform.
- **Purpose:** Assess understanding of key vocabulary.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually attempt to match pictures of endangered animals with their names and descriptions on an online quiz platform (e.g., Kahoot).
  2. **Pair:** Students pair up to compare and discuss their matches.
  3. **Share:** Pairs share their answers with the class, and the teacher provides feedback.

## Figure 42 ChatGPT: digital media implementation modification - lesson 2

### Lesson 2: Endangered Animals Project

#### Activities:

##### 1. Warm-up (5 minutes):

- **Activity:** Review key vocabulary from the previous lesson.
- **Purpose:** Reinforce vocabulary.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually recall and write down as many vocabulary words related to endangered animals as they can on their tablets or computers.
  2. **Pair:** Students pair up and compare their lists.
  3. **Share:** Pairs share their lists with the class using an interactive whiteboard, and the teacher writes the vocabulary for review.

##### 2. Research and Planning (15 minutes):

- **Activity:** Research on an endangered animal.
- **Purpose:** Develop research and note-taking skills.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually think about what they need to research about their assigned animal (habitat, reasons for endangerment, conservation efforts).
  2. **Pair:** Students pair up to share their research plans and help each other find information using their tablets or computers.
  3. **Share:** Pairs share their research findings with another pair, forming small groups for discussion.

##### 3. Project Creation (20 minutes):

- **Activity:** Create a digital presentation using Google Slides or Canva.
- **Purpose:** Practice writing and creative skills.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Students individually think about how to organize their information on the digital presentation.
  2. **Pair:** Students pair up to create their projects, discussing and dividing tasks.
  3. **Share:** Pairs share their progress with another pair, providing feedback and suggestions to each other.

##### 4. Presentation and Feedback (5 minutes):

- **Activity:** Present projects to the class using the projector.
- **Purpose:** Develop speaking and listening skills.
- **Interaction:** Think-Pair-Share.
- **Procedure:**
  1. **Think:** Each student or group individually prepares what they will say during their presentation.
  2. **Pair:** Students pair up with another group to practice presenting and receive feedback.
  3. **Share:** Each group presents to the class, and the class provides feedback using a rubric focused on content, creativity, and presentation skills.

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#### Assessment:

- **Formative:** Vocabulary matching exercise, class discussions, and pair sharing during Lesson 1.
- **Summative:** Digital presentation assessed using a rubric.

#### Differentiation:

- Provide additional resources for students who need more support.
- Allow advanced students to explore more complex aspects of conservation.

#### Homework:

- Create a short video or digital poster about how they can help protect endangered animals and share it in the next class.

## Figure 43 ChatGPT: theoretical framework alignment follow-up question

Does this lesson plan follow the principles set by constructivism and the CEFR?



Yes, this lesson plan follows the principles of constructivism and aligns with the Common European Framework of Reference for Languages (CEFR) at the A2 level. Here's how:

### Constructivism (Piaget)

Constructivist principles emphasize active learning, where students build their own understanding and knowledge through experiences and reflecting on those experiences. The lesson plan incorporates these principles in the following ways:

1. **Active Engagement:** Students actively engage with the content through hands-on activities like matching exercises, research, and creating digital presentations.
2. **Social Interaction:** The Think-Pair-Share strategy encourages social interaction and collaboration, which are key components of constructivist learning.
3. **Connecting to Prior Knowledge:** The warm-up activities tap into students' existing knowledge about animals, allowing them to connect new information to what they already know.
4. **Student-Centered Learning:** Students take an active role in their learning process by conducting research and creating projects, rather than passively receiving information.

### CEFR A2 Level

The lesson plan aligns with the CEFR A2 level descriptors, which emphasize the ability to understand and use simple language in familiar contexts. Here's how the lesson addresses the A2 criteria:

1. **Listening and Reading Comprehension:**
  - The use of an audio recording of the passage helps students develop listening skills.
  - The digital worksheet with a reading passage is designed for A2 level learners, focusing on simple language and familiar topics.
2. **Speaking and Interaction:**
  - Activities such as Think-Pair-Share and class discussions provide ample opportunities for students to practice speaking and interacting in English.
  - The final presentations give students a chance to use their language skills in a structured format.
3. **Writing and Production:**
  - Students create digital presentations or posters, which involve writing simple sentences and organizing information clearly.
  - Homework assignments encourage students to write short paragraphs or create digital content, reinforcing writing skills.
4. **Vocabulary and Grammar:**
  - The lesson introduces and reinforces vocabulary related to endangered animals, which is appropriate for the A2 level.
  - Matching exercises and discussions help students use this vocabulary in context, supporting their language development.

### Detailed Alignment with CEFR A2 Level

- **Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g., very basic personal and family information, shopping, local geography, employment):**
  - The reading passage and discussions focus on familiar and relevant topics, such as animals and conservation.
- **Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar topics and activities:**
  - Think-Pair-Share and group discussions enable students to exchange information about endangered animals in a straightforward manner.
- **Can describe in simple terms aspects of their background, immediate environment, and matters in areas of immediate need:**
  - Students describe endangered animals and their habitats in their presentations, using simple language appropriate for their level.

By incorporating these elements, the lesson plan adheres to constructivist principles and meets the CEFR A2 level requirements, ensuring that students engage in meaningful, level-appropriate learning activities.

## Figure 44 ChatGPT: constructive alignment follow-up question

Is constructive alignment achieved in this lesson plan?

Constructive alignment is a principle that ensures that learning activities and assessments are directly aligned with the intended learning outcomes (ILOs). It involves three main components:

1. **Intended Learning Outcomes (ILOs):** Clear statements of what students are expected to learn.
2. **Teaching and Learning Activities (TLAs):** Activities designed to help students achieve the ILOs.
3. **Assessment Tasks (ATs):** Methods to evaluate whether students have achieved the ILOs.

Let's review the lesson plan to ensure constructive alignment is achieved:

### Intended Learning Outcomes (ILOs)

1. **Remembering:** Identify vocabulary related to endangered animals.
2. **Understanding:** Describe what makes an animal endangered.
3. **Applying:** Illustrate the concept of endangered animals with examples.
4. **Analyzing:** Compare different endangered animals and their habitats.
5. **Evaluating:** Assess the reasons why these animals are endangered.
6. **Creating:** Produce a poster or presentation about an endangered animal.

### Teaching and Learning Activities (TLAs)

1. **Warm-up Activities:**
  - Think-Pair-Share with flashcards to identify and discuss animals (aligns with ILO 1).
  - Reviewing key vocabulary using Think-Pair-Share (aligns with ILO 1).
2. **Presentation:**
  - Listening to and reading a passage about endangered animals (aligns with ILO 2).
  - Think-Pair-Share to discuss main ideas (aligns with ILO 2).
3. **Practice:**
  - Think-Pair-Share to discuss reasons animals become endangered (aligns with ILO 2 and 3).
4. **Research and Planning:**
  - Think-Pair-Share to plan and conduct research on endangered animals (aligns with ILO 4 and 5).
5. **Project Creation:**
  - Creating a digital presentation or poster (aligns with ILO 6).
6. **Presentation and Feedback:**
  - Presenting projects to the class and receiving feedback (aligns with ILO 6).

### Assessment Tasks (ATs)

1. **Formative Assessments:**
  - Vocabulary matching exercise (aligns with ILO 1).
  - Class discussions and Think-Pair-Share activities (aligns with ILO 2 and 3).
2. **Summative Assessment:**
  - Digital presentation or poster assessed using a rubric (aligns with ILO 4, 5, and 6).

### Constructive Alignment Review

1. **Intended Learning Outcomes (ILOs):** Clearly stated and cover various levels of Bloom's Taxonomy from remembering to creating.
2. **Teaching and Learning Activities (TLAs):** Activities are varied and designed to help students achieve the ILOs. Each activity is purposeful and aligns with specific ILOs:
  - Identifying and discussing animals with flashcards and vocabulary reviews support the remembering ILO.
  - Reading and discussing the passage help students understand what makes animals endangered.
  - Research and creating projects require applying, analyzing, evaluating, and creating skills.
3. **Assessment Tasks (ATs):** Assessments are directly aligned with the ILOs:
  - Vocabulary matching assesses students' ability to remember key terms.
  - Discussions and Think-Pair-Share activities assess understanding and application.
  - The digital presentation or poster assesses higher-order skills like analyzing, evaluating, and creating.

### Conclusion

The lesson plan achieves constructive alignment by ensuring that all teaching and learning activities (TLAs) and assessment tasks (ATs) are aligned with the intended learning outcomes (ILOs). Each activity and assessment is designed to support students in meeting the specific learning objectives, ensuring a coherent and effective learning experience.

**Figure 45 ChatGPT: prerequisites modification**

Can you provide the prerequisites for this lesson plan?



## Prerequisites for the Lesson Plan on Endangered Animals

To ensure that students are adequately prepared for this lesson on endangered animals, they should have the following prior knowledge, skills, and experiences:

### 1. Basic Vocabulary

- **Animals:** Students should know the names of common animals (e.g., tiger, elephant, panda, etc.).
- **Habitats:** Familiarity with basic habitat-related terms (e.g., forest, ocean, desert).
- **Basic Adjectives:** Ability to describe animals using simple adjectives (e.g., big, small, fast, slow).

### 2. Reading and Listening Skills

- **Reading Comprehension:** Ability to read and understand short, simple texts on familiar topics.
- **Listening Comprehension:** Ability to understand spoken English at a slow, clear pace, especially when related to familiar topics like animals.

### 3. Speaking and Writing Skills

- **Basic Sentence Formation:** Ability to form simple sentences in the present tense (e.g., "The tiger lives in the forest.").
- **Oral Communication:** Comfort with participating in pair or group discussions, asking and answering questions.
- **Simple Writing:** Ability to write short sentences or a few sentences describing an animal or object.

### 4. Basic Research Skills

- **Using Digital Tools:** Familiarity with using a computer or tablet for simple research tasks, such as navigating a website or using Google to find information.
- **Following Instructions:** Ability to follow step-by-step instructions for completing a task online.

### 5. Group Work Experience

- **Collaboration:** Prior experience working in pairs or small groups, sharing ideas, and taking turns during discussions.
- **Responsibility:** Understanding the importance of contributing to group tasks and respecting others' ideas.

### 6. Basic ICT Skills

- **Presentation Tools:** Basic knowledge of using digital tools like Google Slides or Canva for creating simple presentations or posters.
- **Multimedia Usage:** Ability to watch videos or listen to audio clips and understand the content.

These prerequisites will help ensure that students are ready to engage with the lesson content, participate in activities, and achieve the learning objectives. If some students lack these prerequisites, additional support or review sessions might be needed to bring them up to speed.

## Figure 46 ChatGPT: learning environment modification - lesson 1

Can you provide the learning environment for each activity in this lesson plan?



Certainly! Here's a description of the learning environment for each activity in the lesson plan on endangered animals:

### Lesson 1: Introduction to Endangered Animals

#### 1. Warm-up (10 minutes)

- **Activity:** Flashcards and Vocabulary Review
- **Learning Environment:**
  - **Physical Space:** The classroom should be arranged so that students can see the interactive whiteboard or projector screen clearly. Desks can be arranged in pairs or small groups to facilitate the Think-Pair-Share activity.
  - **Resources:** Interactive whiteboard or projector displaying flashcards with images and text, individual flashcards (optional), and visual aids.
  - **Atmosphere:** A welcoming and engaging environment where students feel comfortable sharing ideas.

#### 2. Presentation (15 minutes)

- **Activity:** Reading Passage and Listening to Audio
- **Learning Environment:**
  - **Physical Space:** Students remain at their desks in pairs or small groups. Ensure that audio equipment (speakers or headphones) is functioning properly and that the text is visible to all students.
  - **Resources:** Printed copies of the reading passage, audio recording played through speakers or headphones, and highlighters or pens for annotating the text.
  - **Atmosphere:** A focused and quiet environment that supports listening and reading comprehension.

#### 3. Practice (10 minutes)

- **Activity:** Think-Pair-Share on Reasons for Endangerment
- **Learning Environment:**
  - **Physical Space:** Students work in pairs at their desks, with enough space to discuss comfortably. Desks should be arranged to facilitate easy interaction.
  - **Resources:** Whiteboard or chart paper for the teacher to record shared ideas, and writing materials for students.
  - **Atmosphere:** A collaborative environment where students feel encouraged to share and listen to others' ideas.

#### 4. Assessment (10 minutes)

- **Activity:** Kahoot Quiz
- **Learning Environment:**
  - **Physical Space:** Students remain at their desks with access to a device (tablet, laptop, or smartphone) to participate in the quiz. Ensure a stable internet connection for smooth participation.
  - **Resources:** Devices for each student or pair, Kahoot quiz projected on the board or accessed individually, and a clear display for tracking results.
  - **Atmosphere:** An energetic and competitive atmosphere that fosters engagement and excitement.



## Figure 47 ChatGPT: learning environment modification - lesson 2

### Lesson 2: Endangered Animals Project

#### 1. Warm-up (5 minutes)

- **Activity:** Vocabulary Review
- **Learning Environment:**
  - **Physical Space:** Students should be seated in pairs or small groups, with a clear view of the interactive whiteboard or projector screen.
  - **Resources:** Interactive whiteboard or projector displaying key vocabulary, individual notebooks for taking notes, and markers for students to highlight important words.
  - **Atmosphere:** A warm-up environment that is interactive and encourages student participation.

#### 2. Research and Planning (15 minutes)

- **Activity:** Research on Endangered Animals
- **Learning Environment:**
  - **Physical Space:** Students should have access to computers, tablets, or laptops, either at their desks or in a computer lab. The space should be organized to allow easy movement and collaboration.
  - **Resources:** Access to reliable internet, digital research tools, bookmarked websites for research, and note-taking tools.
  - **Atmosphere:** A quiet and focused environment where students can engage deeply in research, with support readily available.

#### 3. Project Creation (20 minutes)

- **Activity:** Creating a Digital Presentation or Poster
- **Learning Environment:**
  - **Physical Space:** Students work at their desks or in a computer lab with access to digital devices. The room should be arranged to facilitate group work and collaboration.
  - **Resources:** Computers or tablets with presentation software (Google Slides, Canva), project guidelines, templates, and visual resources.
  - **Atmosphere:** A creative and collaborative environment where students feel encouraged to experiment with ideas and tools.

#### 4. Presentation and Feedback (5 minutes)

- **Activity:** Presenting Projects
- **Learning Environment:**
  - **Physical Space:** The classroom should be arranged so that all students can easily see and hear the presentations. Desks can be arranged in a semi-circle or rows facing the front.
  - **Resources:** A computer or tablet connected to a projector or screen for displaying presentations, a rubric for feedback, and a quiet room conducive to attentive listening.
  - **Atmosphere:** A supportive and respectful environment where students feel confident presenting and providing constructive feedback.

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### Homework

- **Activity:** Create a Short Video or Digital Poster
- **Learning Environment:**
  - **Physical Space:** Students should work at home or in a location where they have access to a computer or tablet and a quiet space for recording or creating.
  - **Resources:** Access to digital tools like Flipgrid or Canva, clear instructions, and examples provided by the teacher.
  - **Atmosphere:** An independent and self-directed learning environment that encourages creativity and personal expression.

---

By carefully designing the learning environment for each activity, the lesson plan ensures that students have the appropriate physical space, resources, and atmosphere to effectively engage with the content and achieve the learning objectives.

## Figure 48 ChatGPT: student and teacher roles modification lesson 1

Can you provide the student and teacher roles for each activity?

### Student and Teacher Roles for Each Activity

Here's a breakdown of the roles for students and the teacher during each activity in the lesson plan on endangered animals:

#### Lesson 1: Introduction to Endangered Animals

##### 1. Warm-up (10 minutes)

- **Activity:** Flashcards and Vocabulary Review
- **Student Role:**
  - **Think:** Individually observe and think about the animals on the flashcards.
  - **Pair:** Discuss with a partner what they know about each animal (e.g., where it lives, why it might be endangered).
  - **Share:** Share their thoughts with the class when called upon.
- **Teacher Role:**
  - **Facilitator:** Present the flashcards, guiding students to think about each animal.
  - **Observer:** Monitor pairs during discussions, offering support if needed.
  - **Moderator:** Lead the class discussion, asking follow-up questions and providing correct information.

##### 2. Presentation (15 minutes)

- **Activity:** Reading Passage and Listening to Audio
- **Student Role:**
  - **Active Listener:** Listen carefully to the audio recording of the reading passage.
  - **Reader:** Follow along with the text, highlighting or noting key points.
  - **Pair:** Discuss the main ideas with a partner, summarizing the key points.
  - **Share:** Participate in the class discussion by answering questions about the passage.
- **Teacher Role:**
  - **Presenter:** Play the audio and guide students through the reading passage.
  - **Questioner:** Ask comprehension questions and encourage students to think critically about the content.
  - **Supporter:** Provide help with difficult vocabulary or concepts, ensuring all students understand.

##### 3. Practice (10 minutes)

- **Activity:** Think-Pair-Share on Reasons for Endangerment
- **Student Role:**
  - **Think:** Reflect on the reasons why animals might become endangered.
  - **Pair:** Discuss their thoughts with a partner, comparing ideas.
  - **Share:** Share their pair's ideas with the class, contributing to a group list of reasons.
- **Teacher Role:**
  - **Facilitator:** Pose the initial question and guide the Think-Pair-Share process.
  - **Listener:** Pay attention to student discussions to gauge understanding and identify misconceptions.
  - **Summarizer:** Summarize the shared ideas on the board, ensuring clarity and correctness.

##### 4. Assessment (10 minutes)

- **Activity:** Kahoot Quiz
- **Student Role:**
  - **Participant:** Actively engage in the quiz, selecting answers based on the content learned.
  - **Reflector:** Reflect on their answers, considering why they were right or wrong.
- **Teacher Role:**
  - **Quizmaster:** Run the Kahoot quiz, ensuring all students are participating.
  - **Feedback Provider:** Offer immediate feedback on answers, explaining correct and incorrect choices.

## Figure 49 ChatGPT: student and teacher roles modification lesson 2

### Lesson 2: Endangered Animals Project

#### 1. Warm-up (5 minutes)

- **Activity:** Vocabulary Review
- **Student Role:**
  - **Responder:** Participate in the review by answering questions or repeating key vocabulary.
  - **Think-Pair-Share:** Use Think-Pair-Share to discuss the vocabulary in context with a partner.
- **Teacher Role:**
  - **Leader:** Guide the vocabulary review, prompting students to recall and use words in sentences.
  - **Facilitator:** Assist students during Think-Pair-Share, ensuring they understand and can use the vocabulary correctly.

#### 2. Research and Planning (15 minutes)

- **Activity:** Research on Endangered Animals
- **Student Role:**
  - **Researcher:** Use provided links to find information about an endangered animal.
  - **Planner:** Plan with a partner how to organize and present the information they find.
  - **Collaborator:** Share ideas and divide tasks with their partner or group, working cooperatively.
- **Teacher Role:**
  - **Guide:** Provide instructions on how to use research resources, ensuring students understand how to find reliable information.
  - **Supporter:** Offer help with navigating websites, finding information, or clarifying difficult concepts.
  - **Monitor:** Circulate the classroom to ensure all students are on task and progressing with their research.

#### 3. Project Creation (20 minutes)

- **Activity:** Creating a Digital Presentation or Poster
- **Student Role:**
  - **Creator:** Work on creating a digital presentation or poster, using tools like Google Slides or Canva.
  - **Collaborator:** Continue to collaborate with their partner, dividing tasks, and offering feedback.
  - **Editor:** Review and refine their work, ensuring it meets the project guidelines.
- **Teacher Role:**
  - **Advisor:** Provide guidance on how to use digital tools effectively, offering suggestions for improvement.
  - **Feedback Provider:** Offer real-time feedback on student work, ensuring they are on the right track.
  - **Tech Support:** Assist with any technical issues students might encounter.

#### 4. Presentation and Feedback (5 minutes)

- **Activity:** Presenting Projects
- **Student Role:**
  - **Presenter:** Present their digital project to the class, explaining their research and conclusions.
  - **Peer Reviewer:** Listen to others' presentations, providing constructive feedback using a simplified rubric.
- **Teacher Role:**
  - **Facilitator:** Organize the presentation session, ensuring all students have the opportunity to present.
  - **Evaluator:** Use the rubric to assess each presentation, providing feedback to both the presenters and the audience.
  - **Encourager:** Encourage positive peer feedback and help students reflect on their work.

---

### Homework

- **Activity:** Create a Short Video or Digital Poster
  - **Student Role:**
    - **Content Creator:** Work independently to create a short video or digital poster, using voice input tools if needed.
    - **Researcher:** Continue to research additional information as needed to complete their project.
  - **Teacher Role:**
    - **Resource Provider:** Offer resources and guidelines for the homework task, ensuring students understand what is expected.
    - **Supporter:** Be available to answer questions or provide additional help as needed.
- 

These roles ensure that students are active participants in their learning while the teacher provides support, guidance, and feedback throughout the process. This approach aligns with constructivist principles, encouraging students to build their understanding through interaction and collaboration.

## Figure 50 ChatGPT: resources modification

Can you provide resources for this lesson plan?

### Resources

#### 1. Flashcards

- **Link:** [Endangered Animals Flashcards](#)
- **Purpose:** To introduce and reinforce vocabulary related to endangered animals.

#### 2. Reading Passage and Audio

- **Reading Passage:** A short, simple text about endangered animals suitable for A2 level students.
- **Audio Recording:** Pre-recorded reading of the passage to support listening comprehension.
- **Link:** [Reading and Audio on Endangered Animals](#)

#### 3. Digital Worksheets

- **Link:** [Endangered Animals Worksheet](#)
- **Purpose:** To provide interactive reading comprehension activities and vocabulary exercises.

#### 4. Online Quiz Platform

- **Platform:** Kahoot
- **Link:** [Kahoot Endangered Animals Quiz](#)
- **Purpose:** To assess understanding of key vocabulary and concepts in a fun, interactive way.

#### 5. Research Resources

- **Websites for Research:**
  - National Geographic Kids: [Endangered Animals](#)
  - World Wildlife Fund (WWF): [Endangered Species](#)
  - IUCN Red List: [Endangered Species](#)
- **Purpose:** To provide students with reliable sources for researching their endangered animal projects.

#### 6. Digital Tools for Creating Presentations

- **Google Slides:** [Google Slides](#)
- **Canva:** [Canva](#)
- **Purpose:** To enable students to create visually appealing digital presentations or posters.

#### 7. Presentation and Feedback Tools

- **Projector:** For displaying student presentations.
- **Rubric:** A detailed rubric to assess student presentations based on content, creativity, and presentation skills.
- **Link:** [Presentation Rubric](#)

## Figure 51 ChatGPT: generated resources matched with the activities

### Detailed Activities with Resources

#### Lesson 1: Introduction to Endangered Animals

##### Warm-up (10 minutes)

- **Flashcards:** Display using an interactive whiteboard or projector.
- **Link:** [Endangered Animals Flashcards](#)

##### Presentation (15 minutes)

- **Reading Passage and Audio:** Provide students with digital worksheets and play the audio recording.
- **Link:** [Reading and Audio on Endangered Animals](#)

##### Practice (10 minutes)

- **Think-Pair-Share:** Discussion prompts based on the reading passage.

##### Assessment (10 minutes)

- **Kahoot Quiz:** Conduct an interactive quiz to assess vocabulary comprehension.
  - **Link:** [Kahoot Endangered Animals Quiz](#)
- 

#### Lesson 2: Endangered Animals Project

##### Warm-up (5 minutes)

- **Vocabulary Review:** Use an interactive whiteboard to review key vocabulary.

##### Research and Planning (15 minutes)

- **Research Resources:** Provide students with links to research websites.
- **Links:**
  - [National Geographic Kids: Endangered Animals](#)
  - [WWF: Endangered Species](#)
  - [IUCN Red List: Endangered Species](#)

##### Project Creation (20 minutes)

- **Digital Tools:** Use Google Slides or Canva for creating presentations.
- **Links:**
  - [Google Slides](#)
  - [Canva](#)

##### Presentation and Feedback (5 minutes)

- **Rubric for Assessment:** Share the rubric with students for self-assessment and peer feedback.
  - **Link:** [Presentation Rubric](#)
- 

### Homework

- **Create a Short Video or Digital Poster:** Using tools like Flipgrid or Canva to explain how they can help protect endangered animals.
- **Links:**
  - [Flipgrid](#)
  - [Canva](#)

By using these resources, the lesson plan integrates digital media, follows the principles of constructivism, and aligns with CEFR A2 level objectives.

## Figure 52 ChatGPT: differentiation modification

Can you provide instructions on differentiating this lesson plan for a student with dyslexia?



### Differentiating the Lesson Plan for a Student with Dyslexia

#### General Strategies for Supporting Students with Dyslexia

1. **Use of Multisensory Teaching Methods:** Incorporate visual, auditory, and kinesthetic learning activities.
2. **Provide Extra Time:** Allow additional time for reading and writing tasks.
3. **Simplify Texts:** Use texts with simpler language or offer audio versions.
4. **Highlight Key Information:** Use colors or underlining to highlight important parts of texts.
5. **Use Technology:** Leverage digital tools designed for dyslexic learners (e.g., text-to-speech software).

---

#### Resources and Adjustments

##### 1. Flashcards

- **Visual Support:** Use flashcards with both images and words. Highlight key vocabulary in bold or color.
- **Link:** [Endangered Animals Flashcards](#)

##### 2. Reading Passage and Audio

- **Audio Support:** Provide an audio version of the reading passage to help with decoding difficulties.
- **Simplified Text:** Offer a simplified version of the passage.
- **Link:** [Reading and Audio on Endangered Animals](#)

##### 3. Digital Worksheets

- **Interactive Features:** Use worksheets with interactive elements that include visual aids and voiceovers.
- **Link:** [Endangered Animals Worksheet](#)

##### 4. Online Quiz Platform

- **Adjust Settings:** Use quizzes with text-to-speech options and adjustable font sizes.
- **Link:** [Kahoot Endangered Animals Quiz](#)

##### 5. Research Resources

- **Simplified and Visual Content:** Use websites with more visual content and simpler language.
- **Links:**
  - [National Geographic Kids: Endangered Animals](#)
  - [WWF: Endangered Species](#)
  - [IUCN Red List: Endangered Species](#)

##### 6. Digital Tools for Creating Presentations

- **Templates and Guides:** Provide templates to help structure their presentations.
- **Voice Input Tools:** Encourage the use of voice-to-text features.
- **Links:**
  - [Google Slides](#)
  - [Canva](#)

##### 7. Presentation and Feedback Tools

- **Support with Preparation:** Allow extra time for preparation and practice.
- **Simplified Rubric:** Use a simplified rubric with clear, visual criteria.
- **Link:** [Presentation Rubric](#)

## Figure 53 ChatGPT: differentiated activities

### Detailed Activities with Differentiation

#### Lesson 1: Introduction to Endangered Animals

##### Warm-up (10 minutes)

- **Flashcards:** Use an interactive whiteboard with flashcards that include images and highlighted text.
- **Link:** [Endangered Animals Flashcards](#)

##### Presentation (15 minutes)

- **Reading Passage and Audio:** Provide both an audio recording and a simplified text. Encourage students to listen to the audio while following the text.
- **Link:** [Reading and Audio on Endangered Animals](#)

##### Practice (10 minutes)

- **Think-Pair-Share:** Provide sentence starters to help structure their thoughts and discussions.

##### Assessment (10 minutes)

- **Kahoot Quiz:** Use the quiz with text-to-speech and font size adjustments.
- **Link:** [Kahoot Endangered Animals Quiz](#)

#### Lesson 2: Endangered Animals Project

##### Warm-up (5 minutes)

- **Vocabulary Review:** Use an interactive whiteboard with highlighted key vocabulary.

##### Research and Planning (15 minutes)

- **Research Resources:** Provide links to websites with simplified and visual content.
- **Links:**
  - [National Geographic Kids: Endangered Animals](#)
  - [WWF: Endangered Species](#)
  - [IUCN Red List: Endangered Species](#)

##### Project Creation (20 minutes)

- **Digital Tools:** Offer templates and encourage the use of voice-to-text features.
- **Links:**
  - [Google Slides](#)
  - [Canva](#)

##### Presentation and Feedback (5 minutes)

- **Simplified Rubric:** Use a rubric with visual criteria and clear expectations.
- **Link:** [Presentation Rubric](#)

---

### Homework

- **Create a Short Video or Digital Poster:** Allow the use of voice input tools and provide examples or templates.
- **Links:**
  - [Flipgrid](#)
  - [Canva](#)

By implementing these adjustments, the lesson plan provides appropriate support for a student with dyslexia, ensuring they can fully participate and achieve the learning objectives.

