

## Exploring the Integration of AI tools in Generating Authentic Materials in Lesson Planning

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### Abstract

It is axiomatic among educators that authentic material can offer considerable exposure to foreign language during the process of learning. Thus, with the spread of Generative Artificial Intelligence, teachers may harness it to smoothly design and integrate authentic content in their teaching. This study aims to explore English language teacher's integration of GAI in lesson planning regarding authentic materials since it can cater to teachers with a number of authentic materials that align with learners' cultural background, needs, and preferences. The sample involved 25 secondary school teachers and 4 inspectors, and it adopted mixed methods approach that consisted of two tools, a questionnaire addressed to teachers and an interview addressed to inspectors. Accordingly, the results suggest that instructors show positive attitudes toward the use of GAI in lesson planning since GAI generates authentic content, and most importantly, updated sources. Similarly, the inspectors underline the paramount importance of integrating GAI in lesson planning as a supplement to the traditional authentic materials.

**Keywords:** Generative Artificial Intelligence, EFL classroom, lesson planning, cultural content, authentic material

## 1. Introduction

Significant changes in education have occurred throughout the twenty-first century, mostly as an outcome of constant technological advancements. It is

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crucial for teachers to develop their technological knowledge to be digitally literate. For instance, emergent Generative Artificial Intelligence has paved the way for language teachers to be innovative since these tools can assist the teachers in addressing their students' needs and reduced workload. According to Danesi (2024), GAI is highly beneficial for the language teacher with regard to daily preparatory patterns of pedagogy such as the generation of lesson plans, the design of assessment tasks and grading efficiency. Thanks to GAI, the language teachers can assume the role of content creators to advance learner-centred pedagogy since the language classroom is considered as the appropriate venue to expose them to culturally relevant learning opportunities via authentic material. For Marzano and Brown (2009), thematic materials that link the learner to the target culture via the similarities and differences between local culture and the foreign one can advance active engagement in the language classroom. Thus, the proliferation of GAI can empower the teacher to develop materials to enhance the students' active engagement in the language classroom.

Therefore, the authenticity of teaching material advances language learning. Similarly, lesson planning is a crucial step that teacher focuses on as it helps learners and teachers meet their goals. According to Duncan & Met (2010), the lesson plan is the cornerstone of successful learning since it helps teachers to confirm the alignment of students' needs with the lesson objectives. In the same vein, lesson plans can help teachers in multiple things such as organizing content, materials, time, instructional strategies, and offer assistance in the classroom along with authentic materials. Nowadays, the process of lesson planning is fundamentally undergoing a revolutionary path that has transformed it from a static document into an evolving, dynamic practice via GAI. Similarly, GAI has unveiled new possibilities and dimensions across stages and material design in lesson planning. Thus, the following research questions were formulated:

1/What are the attitudes of secondary education teachers towards AI integration in generating authentic materials?

2/ What are the challenges that the teachers encounter when using AI tools to implement authentic materials into their lesson plans?

## **2. Review of literature**

The integration of Generative Artificial Intelligence in lesson planning is highly linked to the notion of authenticity in language learning. Thus, using teaching materials that reflect real life context and cultural practices is considered as a key factor in creating meaningful learning process. Furthermore, GAI provides teachers with multiple resources that can help learners develop learning skills as well as enhance cultural relevance of their lesson plans.

### **2.1. Authentic Materials: Genesis and definition**

Essentially, authentic materials are not created to teach languages, and they do not contain "contrived or simplified language" (Hedge, 2000, p.67). Tomlinson (2010) identified authentic materials as tools designed not to deliver knowledge but to equip learners with an experience of using language in context.

Widdowson (1990) indicated that language presented to learners should be simple and real to facilitate language learning. In this regard, teaching materials are used to satisfy some social purposes within target language speakers (Little et al., 1989), and these texts are particularly meant for native speakers in their daily life contexts with non-pedagogical purposes (Bacon and Finnemann, 1990). In addition, Tomlinson (2013) believes that an authentic text is created to communicate not to educate and authentic learning tasks engage the learners in

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communication to attain an end not to practice the language itself. By ways of illustration, he clarified that authentic materials involve learners in real life situations.

These materials include video clips, recordings of authentic interactions, television, radio and newspapers, signs, maps and charts, photographs and pictures, timetables, schedules and restaurants' menus. While these can reinforce specific aspects, they may ignore the diversity of language structures, vocabulary, and expressions, potentially leading to an unbalanced knowledge that neglects equally important language features; however, emphasizing everyday communication in diverse social contexts complements formal communication in the language classroom as well (Nunan, 1985).

### **2.2 The Role of Artificial Intelligence: Bridging Technology and Authenticity**

#### **2.2.1. Generative Artificial Intelligence and Readiness for Tailored Lesson Planning**

Harmer (2007a) stated that textbooks, for instance, may impede the enthusiasm and active participation and provide hard or culturally insensitive topics, also reducing their attraction, so instructors should make thoughtful choices in order to create their own curricula thanks to authentic materials. Though the integration of authentic materials may be tedious and time-consuming, it results in high-quality lesson plans that are responsive to students' needs and interests (Harmer, 2007b). Keeping up with innovations in education may empower teachers to opt for emergent GAI. Holmes et al, (2019) refers to GAI as an agent for change in teaching providing those teachers be assisted with suitable training. Similarly, van den Berg and Du Plessis (2023) believed that GAI has developed new opportunities to make education more accessible by creating lesson plans that can act as open educational resources. Therefore, teachers can also design their authentic materials via GAI. In this regard, GAI offer several benefits for educators, including integrating target context into lesson plans, creating resources of native language and culture, covering current events and subjects, and reducing the time spent on developing activities or resources. Additionally, teachers can produce GAI materials at a lower cost than textbooks and other resources (Mikeladze, 2023).

#### **2.2.2. AI-Driven Lesson Plans: Supporting real-life Language Learning**

Yilmaz and Durmus (2024) indicated that ChatGPT, for instance, generates original ideas and offers convenient relevant content compared to traditional lesson plans, which focus on visual representation, modelling, and detailed explanations. The results highlighted that ChatGPT-supported lesson plans presented diverse viewpoints and creative suggestions and helped teachers improve their critical thinking skills and adapt their teaching methodologies to meet students' needs compared to traditional lesson plans. GAI technologies should, therefore, be regarded as tools that enhance and boost teachers' work, not act as a substitute. In this regard, ChatGPT is a powerful tool for lesson planning, saving time and providing immediate assistance at many levels. Despite these facts, there is a dearth of studies concerning the effective integration of GAI as collaborative support in lesson planning with regard to authentic materials, particularly in the Algerian EFL context. In this context, Boughaddou and Chorfi (2024), in their research study, indicated that Algerian middle school teachers showed a positive attitude toward the use of GAI as it saves time and serves as a resource for lesson planning. Similarly, Mahtoum and Medjdoub (2024)

demonstrated that GAI applications such as ChatGPT serves as helpful tool for novice teachers in developing effective lesson plans while oldest teachers believed that this type of tools may offer inaccurate responses.

### **3. Research Methodology**

This study relied on a mixed-methods methodology based on two data collection tools since it intends to draw conclusions using both quantitative and qualitative approaches (Tashakkori and Creswell, 2007): in addition, all the involved parties can have a say towards the research matter. Thus, the data were collected via a questionnaire that was administered to second-year secondary education teachers, and a structured interview addressed to secondary education inspectors.

#### **3.1. Context and Participants**

The study was conducted in the academic year of 2024/2025 in the Algerian city of Djelfa via a convenience sampling technique, and 25 secondary school teachers whose teaching experience ranges between 1 to 30 years (18 males and 07 female teachers, aged between 23-50) filled in the questionnaire; besides, 4 male inspectors participated in the structured interview. 56% of the entire sample have master's degree in English while 24% of them are PhD students. For the rest of the participants, only 8% of the participants hold bachelor's degree in English. The questionnaire intends to collect both qualitative and quantitative data related to teachers' perspectives towards the use of GAI lesson planning and designing authentic material. It comprises four sections: demographic information, attitudes towards GAI and lesson planning, and future considerations for using GAI in pedagogical practice. The interview aims to collect qualitative data about their inspectors' opinions toward the use of GAI in planning lessons regarding authentic materials.

**Table 1: Years of Experience**

| <b>Years of Experience</b> | <b>Number of Responses</b> | <b>Percentage</b> |
|----------------------------|----------------------------|-------------------|
| 1-3 years                  | 3                          | 12%               |
| 4-7 years                  | 7                          | 28%               |
| 8-11 years                 | 7                          | 28%               |
| 12-15 years                | 5                          | 20%               |
| 16-24 years                | 2                          | 8%                |
| 24-30 years                | 1                          | 4%                |
| Total                      | 25                         | 100%              |

### **4. Data Analysis and Interpretation**

#### **4.1. Results of the Questionnaire**

This section provides insightful analysis of data gathered from teachers about the integration of GAI in lesson planning and the generation of authentic materials.

#### **4.2. Attitudes Towards Authentic Materials**

The frequency of using authentic material in the language classroom reflects the teachers' beliefs about their effectiveness and usage patterns. Question five "How often do you use authentic materials in planning your lessons?" aims to ensure learners' exposure to real world scenarios and authentic contexts, 44% of participants answered with "sometimes", 24% often used authentic material, 20% with "rarely", and 12% answered with "always". It seems that all the teachers

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were familiar with authentic materials and integrated them in their lesson planning with varying degrees. Similarly, the answers “sometimes” and “often” refer to the potential lack of the awareness of the importance of integrating authentic materials in lesson planning. In the same vein, the answer “rare” may indicate potential barriers such as lack of access to appropriate resources or unfamiliarity with the process of implementing authentic materials in lesson plans.

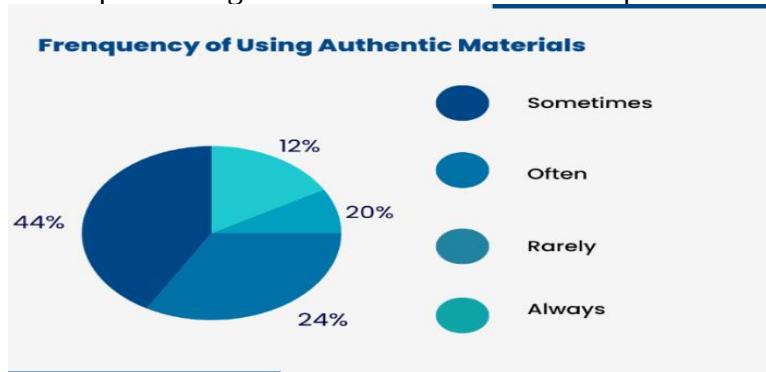


**Figure 1: Frequency of using authentic materials in lesson plans**

Question six, “What types of authentic materials do you usually use?”, aims to highlight the various authentic tools that the teachers opt for. 80% of the participants frequently used “real-world texts”, while 48% relied on “videos”, 44% of the participants preferred “newspapers’ articles”, and 28% used “podcasts”, and the rest of the participants, each accounting for 4%, demonstrated a preference for one of the following: “flashcards”, “pictures”, “textbook”, “games”, and “pictures and objects”. The teachers admitted that they use different authentic materials at once. The findings also indicate that the teachers integrated a variety of authentic materials that respond to various learning styles to boost real exposure to authentic language; however, the majority of teachers still rely on traditional tools such as texts that are addressed to visual learners. Furthermore, other teachers rely on games and flashcards as they prefer to engage their students in active learning.

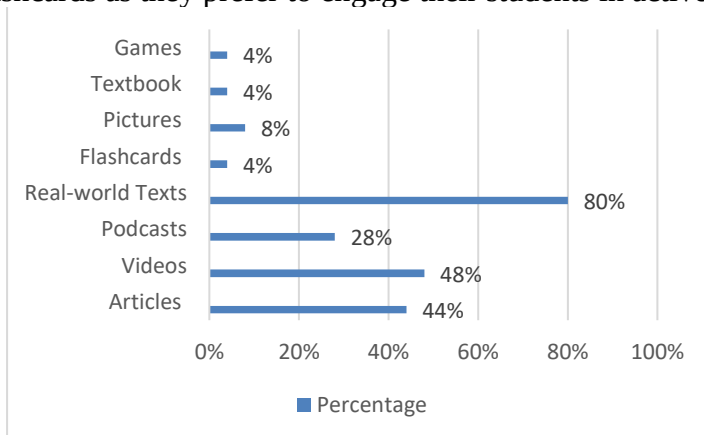


**Figure 2: Variety of authentic materials**

### 4.3. AI Tools and Lesson Planning

Question seven, “How familiar are you with GAI that assist in creating authentic materials (language learning apps, chatbots, translation services)?” aims to demonstrate teachers’ familiarity with GAI. The results indicate that 28% showed strong familiarity with GAI, 44% answered with somewhat familiar, 20% revealed less familiarity while 8% did not opt for it, so the teachers use GAI in educational settings to create authentic materials, however there is a small number of teachers who keep hesitating or resisting the incorporation of GAI in lesson planning; nevertheless, they still relied on traditional methods such as search engines, sharing lesson plans via Facebook groups or YouTube channels.

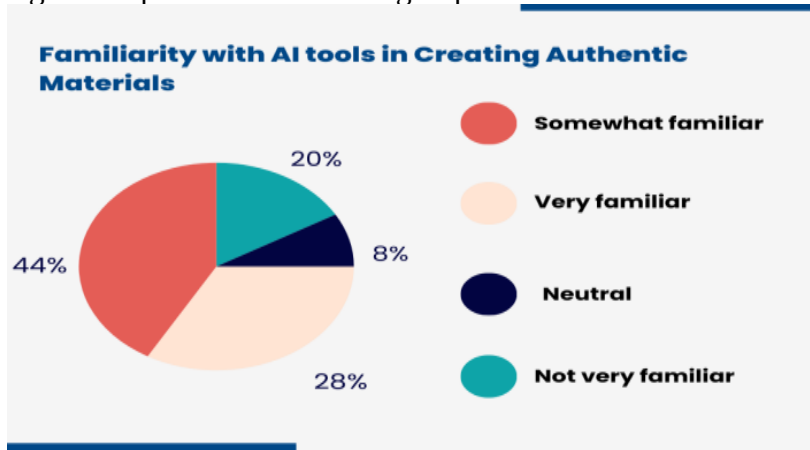


**Figure 3: Familiarity with GAI in creating authentic materials**

Question eight, “What are the GAI uses with regard to designing or looking for authentic materials?” aims to determine whether the teachers are keeping up with emergent trends such as GAI or not. In this respect, the participants admitted that they opted for GAI to ask for the generation of more than one type of authentic material at once. Hence, the results showed that 88% of the participants predominantly used GAI for generating texts and images using ChatGPT, Gemini, and Copilot etc., and 44% of the participants used GAI to generate listening transcripts and native-like dialogues. Similarly, 36% of the participants generated culturally relevant texts, and only 20% of the participants opted for GAI to consult English newspapers and tabloids to use in the unit of mass media.

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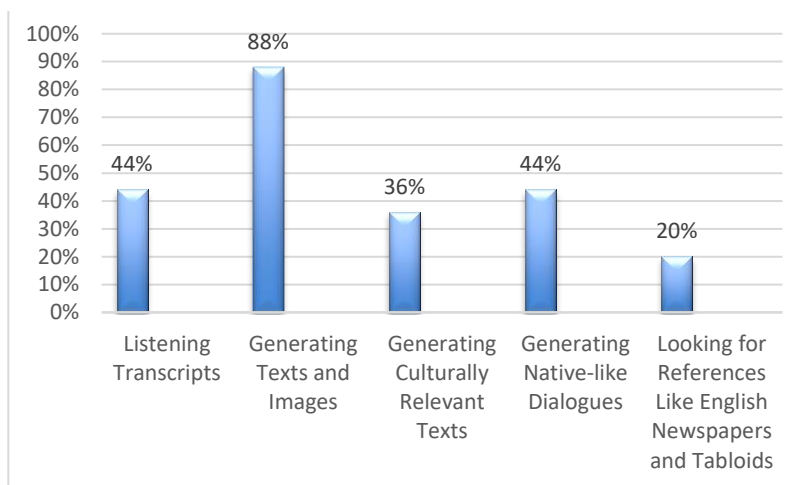


**Figure 4: Variety of authentic materials**

Question nine, “Have you ever planned lessons using GAI? Please list these GAI tools” aims to provide dichotomous understanding whether teachers used GAI in planning their lessons before. Thus, responses indicate that a significant number of teachers often use GAI, particularly ChatGPT, for different tasks such as brainstorming, content creation, structuring lesson steps, getting feedback on planned lessons. The frequency use of GAI in lesson planning indicates its efficacy in supporting lesson design while “No” responses might demonstrate the lack of awareness regarding technological resources or resisting technological inclusion in teaching. Therefore, the positive attitude toward the implementation of GAI in educational practices advances strong attitudes towards innovations and catering for the needs of digital learners.

**Table 2: AI tools used by secondary education teachers**

| AI Tool  | Purpose of Use                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ChatGPT  | - Generate multiple materials such as lesson plans, games, quizzes, interactive activities poems, stories and rubrics.                                                                                                                                                                                                                                                                                                                                 |
| Gemini   | Used to generate images and texts, answers, and helped the teachers customize specific units to include authentic materials such as the Unit of Mass Media (generating articles), Ancient Civilizations (images), Science or Fiction (Generating poems).<br>-Insert idiomatic expressions and metaphors in the students dialogues to make them authentic.<br>-Generating images about famous idiomatic expressions and ask the learners to guess them. |
| DeepSeek | -Generating entire lesson plans with authentic, real-life situations such as travel experience with specific requirements.                                                                                                                                                                                                                                                                                                                             |
| Claude   | -creates natural responses, summaries, texts, and listening scripts.                                                                                                                                                                                                                                                                                                                                                                                   |
| Copilot  | -generates original reading texts on various topics.<br>-creating contextual grammatical activities in natural contexts.                                                                                                                                                                                                                                                                                                                               |

|                      |                                                                             |
|----------------------|-----------------------------------------------------------------------------|
|                      | -produces role-plays, debates and problem-solving situations.               |
| Grammarly<br>Quilbot | -Enhances the quality of learners' dialogues to make the sound native-like. |

Question ten, “How effective do you find these GAI in enhancing your lesson planning process?” attempts to evaluate the effects of integrating GAI in improving the quality of lesson plans. In response to this question, 63% of the participants mentioned that these tools are “very effective”; 24% consider them “moderately effective” while 12% of these participants found GAI “slightly effective”. Only 1% stated that GAI are “extremely effective”. These results indicate a nuanced view toward the incorporation of GAI in planning the lesson. Most of teachers believe that GAI maintain a noticeable improvement in lesson plans. These tools can refine tasks such as providing resources and organizing the teaching materials. The percentage 12% represents the participants who highlighted the limitations of GAI and a lack of customization of teaching contexts, and 1% of the teachers suggested that GAI has revolutionized all the aspects of lesson planning and the generation of authentic materials.

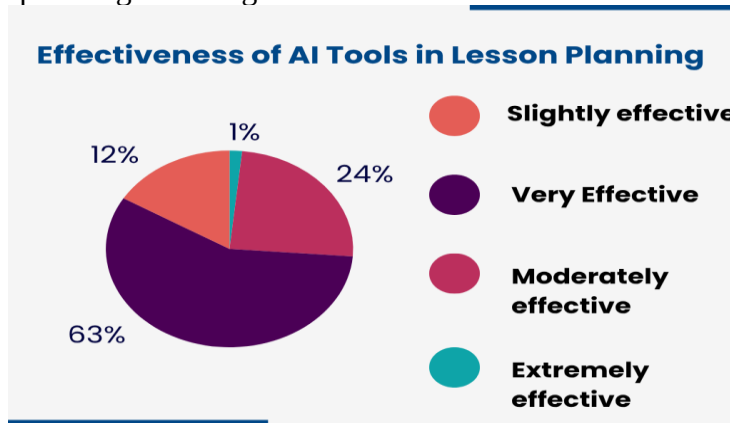


**Figure 5: Effectiveness GAI in lesson planning**

Question eleven, “Do you think GAI can make language learning more culturally relevant (understanding cultural contexts, slang, idioms)?” addresses cultural aspects beyond the acquisition of grammar rules and vocabulary. In this matter, 64% of participants answered with “agree” while 36% were neutral. The findings indicate strong agreement among teachers that GAI can create culturally relevant learning context since GAI can help create authentic materials to make learning a lived experience. On the other hand, a considerable number of teachers prefer to keep neutral in which they might have reservations about using these tools to bestow culturally relevant teaching content.

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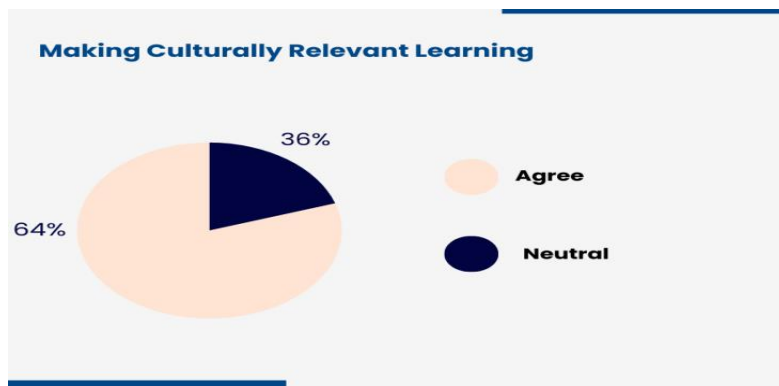


**Figure 6: Generating Culturally-relevant content**

Question twelve, “What are the main encountered obstacles of incorporating GAI into lesson planning?”. The participants highlighted various challenges and concerns regarding the integration of GAI in planning lesson. Major obstacles include upgrading the tools to get advanced features via online payments and poor internet connectivity, especially in schools with inadequate systems or in distant areas. The majority of participants raised their concerns about unavailable, clear guidelines about the implementation of GAI in lesson planning. Time constraints and lack of adequate knowledge and skills were also underlined as major barriers due to lack of training opportunities on pedagogy and GAI. Regardless of the challenges, some participants advocate the integration of GAI, particularly if they receive appropriate training to enhance their skills.

#### 4.4. Future considerations for using AI

Question thirteen, “How satisfied are you with GAI so far?” aims to evaluate the degree of satisfaction in using GAI among teachers. In this regard, the majority of the participants were satisfied (80%) and very satisfied (4%) using GAI. For them, GAI meet their expectations due to their efficiency in lesson planning. However, 12% admit that they have never opted for GAI to assist them in designing their lesson planning or generating authentic materials. Teachers have positive attitude toward GAI, particularly male young participants who demonstrated an extensive use of GAI in teaching compared to old generation, who resist the pedagogical trend of GAI.

Eventually, the question, “Any additional comments or suggestions on integrating GAI in lesson planning?”, probes the participants’ feedback and suggestions. The participants stressed the role of GAI in teaching to enhance the efficiency of lesson planning and saving time, mentioning that “GAI tools can save teachers time” and “GAI is very useful, it helps me to facilitate the activities to achieve the main goals of my lesson”, yet another participant showed notable reservation towards GAI, stating that scrutiny and caution are necessary since GAI may generate inaccurate, falsified data. One of the participants mentioned, “The teachers should be aware while using them” while another recommended, “I recommend checking the information before presenting it to the students”. These answers indicate significant levels of engagement and satisfaction among teachers, demonstrating that the integration of GAI must be supported to improve the quality of lesson planning and teaching.

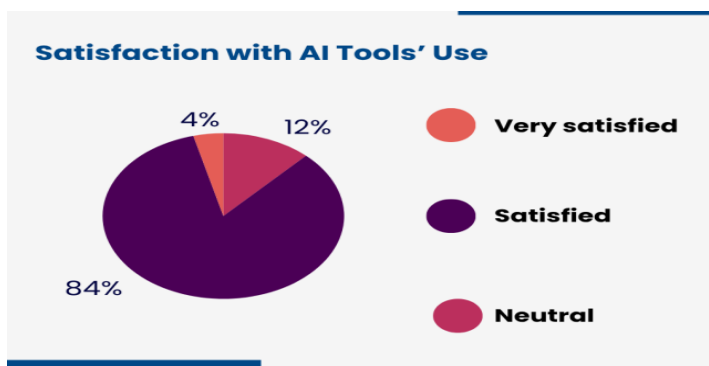


**Figure 7: Degree of satisfaction with GAI**

## **5. Results of the Interview**

The first question “How do you consider the importance of authentic material in advancing teaching English?” aims to evaluate the inspectors’ views on authentic materials. In this regard, all inspectors showed positive attitude toward the use of authentic materials in teaching.

The second question “What are the main factors that you ask your teachers to consider when selecting authentic material?”. All the participants emphasized the role of materials’ appropriateness, degree of difficulty, and accessibility. As for the third question “How do you perceive innovations with regard to authentic materials in foreign language classrooms in light of pedagogical trends?” seeks the inspectors’ views on authentic materials’ generation via GAI. All the inspectors admitted that the teachers should keep up with innovations and experiment with them, particularly if they assist teachers in multiple tasks.

The fourth question “What do you think of generating authentic material via GAI?” showed the inspectors’ holistic perspectives considering both advantages and potential obstacles toward the use of GAI. One of the inspectors admitted that “*AI is a double-edged sword*” that can be used to boost the teachers’ creativity and creation of real learning situations as long as teachers still incorporate traditional practices with emergent tools simultaneously, but the teachers should bear in mind overreliance and GAI-dependence. The fifth question emphasized the aspects of lesson planning and material design that GAI can boost to minimize teachers’ workload and maximize aspects like “personalizing learning” and “differentiation”. Most of inspectors agreed on the aspect of “breaking down difficult concepts for their students”.

The seventh question “Do you think that teachers can use AI-powered tools as a replacement or supplement to traditional authentic materials?” How?” Accordingly, all inspectors regarded GAI as a supplement to traditional authentic materials in lesson planning. For instance, one of the inspectors claimed “*Yes, because AI is easier and convenient. AI-powered tools are constantly updated, so they can always offer new dimensions to discover and harness to design new materials*”. Concerning the eighth question “How can inspectors ensure that teachers implement GAI to advance quality teaching and active learning across all the stages?”. The participants demonstrated the crucial role of initiatives such as GAI literacy and training via seminars and workshops to encourage optimal benefits. One of the participants stressed the importance stage of preparation and selection of authentic material as it can help teachers choose relevant materials.

## **6. Data Analysis**

The data were addressed via thematic analysis that aims to identify, analyse, and report themes. Thematic analysis often interprets different aspects of

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the research topic to be studied (Boyatzis, 1998). In essence, the researchers familiarized themselves with the inspectors' answers to generate initial codes and search for themes and their interpretations. The Final stage includes reviewing, then defining, and naming the themes emerged (Braun & Clarke, 2006).

### **6.1. AI-integration and Real-world Application in Authentic Context**

Integrating GAI in lesson planning and designing authentic material is the most noteworthy theme in this study as the majority of the participants advocate this endeavour. Similarly, all inspectors believe that GAI is increasingly revolutionizing authentic teaching and bridging the gap between the traditional practices and current pedagogical trends. Furthermore, GAI tools encourage teachers to support their practice at many levels.

### **6.2. Authentic Integration of AI Tools in Lesson Plan**

The integration of authentic material in lesson planning is promising endeavour. Thus, GAI teaching materials can provide real world contexts and customise teaching process to align with learners' needs, cultural background, learners' interests, level of proficiency, and learning styles. GAI applications such as ChatGPT, Gemini and Bard can enhance personalized authentic content. For instance, GAI can generate real-time examples such as podcasts, virtual role-plays, and interacting videos. Therefore, designing a dynamic and engaging lesson is significant as it leads to active communication.

### **6.3. Balancing AI use and Human Input in Lesson Planning**

Another theme is the participants' call for balancing human input and reliance on GAI tools to keep up with technological, educational trends and to maintain the emotional, human interaction, which is the essence of the human pedagogical relationship. Furthermore, the participants highlighted that GAI can help instructors in many tasks. The participants also address an ethical concern in which lesson planning, for instance, can effectively be generated using GAI and human input in order to limit biases and maintain pedagogical integrity. In the same vein, the inspectors and the teachers call for the right and the responsible use of GAI through balancing GAI usage and human role.

### **6.4. Professional Development and GAI**

To keep up with emergent trends in education, the EFL teachers should undertake training in GAI literacy and pedagogy. Thus, training educators to effectively integrate GAI in teaching to design authentic materials is of a paramount importance as making use of GAI is increasing. In planning lessons, teachers might overuse GAI in order to cater with authentic and efficient lesson plans; however, the training programs and GAI literacy should be put into practice. Thus, all inspectors indicate the need to stress professional development since the educator's role as a guide, mentor, and facilitator of authentic learning experiences is highly significant for the need of digitally-oriented learners.

## **7. Discussion**

The results show positive attitudes towards generating authentic materials via GAI. Based on the results, authentic incorporation of GAI, balancing the use of GAI and human input, and professional development are all themes indicated throughout the study. Hence, educators can boost personalized learning, improve lesson planning, and save their time and effort by using GAI in lesson planning (Keheo, 2023).

In this regard, the results suggest that integrating GAI in lesson planning may advance the design of personalized learning opportunities, and address learners' weaknesses, preferences, and styles. For instance, visual learners can

learn through images and videos provided by GAI if they are integrated in lesson plans. Additionally, auditory learners can learn best through the authentic audio materials generated by GAI. Teachers tend to use authentic materials in designing their lesson plans in order to make learning more relevant and align cultural relevance with authenticity. The findings of this study may harmonize with previous studies (Patrik & Ilona, 2024) indicating that there are three main benefits of using GAI in English lesson planning which are: Efficiency of time, data-driven point of views, and remarkable student engagement if authentic material is used. Similarly, a study by van den Berg & Plessis (2023) ends up with relevant findings indicating that ChatGPT, for example, can design an acceptable lesson plan. This lesson includes time guidelines for each stage. It may have the ability to be tailored to both teachers' and learners' needs and context. Moreover, by requesting a visual presentation, the researchers further stimulated ChatGPT using power point to teach a lesson. ChatGPT offered detailed instructions on what to include on the various slides, including sentences and images. It even recommends other resources for learning such as online games, worksheets, exercises, websites and books.

These studies align with this study findings in light of the effectiveness of integrating GAI in planning lessons and designing authentic materials via GAI. However, others suggest that human intervention is needed as claimed in van den Berg's & Plessis's study (2023) underlining that teachers are permitted to select their own resources and modify them to fit their learners' levels and contexts because ChatGPT gives them complete control over the texts and images they use. Hence, teachers are in charge of selecting resources and ideas that are appropriate for a particular cultural setting because ChatGPT is unable to offer contextual information or a wide variety of cultural perspectives. Based on the results obtained, the balance between GAI usage and human input is highly recommended and building training pathways based on GAI is of paramount importance. Huang (2021) suggested that while ensuring the ethical application of GAI, a skilled educator aims for a balanced endeavour that values human input and is enhanced via nurturing GAI literacy. Therefore, Al-Zyoud (2020) recommended that GAI literacy and prompt design should be key component in teacher pre- and in-service trainings.

## **Conclusion**

The incorporation of GAI teaching materials in educational practices serves as a paradigm shift in the use of authentic materials as well as lesson planning that requires considerable practical and ethical challenges. This study explored the opinions of the involved parties towards the matter via mixed method approach. The results indicate that authenticity of teaching materials can be granted through crafting lesson plans that align with learners' needs via GAI. While these tools, lesson plans, used to take time to be prepared, teachers can now focus on more pedagogical aspects and engaging tasks generated by GAI. The teachers should bear in mind that GAI is a supplement that should be regarded through constant, ethical lens. Essentially, it is recommended that educators can benefit from GAI integration in lesson planning by investing in teachers training programs to advance their GAI literacy and prompt engineering. Accordingly, it is crucial to indicate limitations of this study such as addressing one aspect of pedagogy, which is lesson planning and authentic materials in secondary education. Further research may address areas such as the implementation of GAI in assessment and feedback provision in secondary school. Furthermore, new studies are required to tackle the students' perspectives towards GAI in secondary education in general, and in exam classes in particular.

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