

## THE EFFECT OF USING A CHATBOT FOR ENHANCING WRITING SKILLS FOR LANGUAGE LEARNING IN A CLASSROOM

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### Abstract

Contemporary foreign language teaching sustains the trend of using traditional classroom methods, while there are a lot of other different options that are available for making language learning more engaging, participative, and interesting. Technology offers an opportunity to improve and to modernize language lessons in various ways. There are a lot of different tools to enhance the class experience. One of these tools represents the AI chatbots. In the present paper, the research attention focuses on the appliance of text-based chatbots to develop reading and writing skills with the help of chatbot Open GPT and through the following it describes the implementation in the classroom using the simulation of a real-life written conversation. The authors suggest possible applications in the classroom to enhance the language learning process. This publication analyses to what extent the usage of the chatbot influences the writing process for language learning and which advantages and disadvantages result of its use. After a written conversation with the chatbot the students evaluated their experience. The results show that the chatbot can improve the written language skills of the students as it gives the students continuous practice, a real-time language use and give very useful feedback. Nonetheless there are still some areas of improvement

**Keywords:** AI chatbots, artificial intelligence, language learning, writing and reading skills, interactive tool

### 1. INTRODUCTION

Artificial Intelligence is rapidly changing the way we interact with technology and represents already an inherent part of our life [1]. Different applications are becoming increasingly important for language learning inside the classroom [2]. In terms of pedagogical literature one can find a number of research works which focus their attention on the development of methods based on chatbots [3,4]. The suggested methods intend to improve students' writing, reading, and communication skills. As there are still some stereotyped preconceptions about artificial technologies, chatbots are not widely used in foreign language teaching. Hence this paper aims to focus on the possible application of the latter in the classroom as well as on the weighing the advantages and disadvantages of using a chatbot for language learning.

There are a lot of different types of chatbots that are mainly used. It can be distinguished between two main technologies, either rule-based or self-learning, also called AI-powered chatbots. The main difference between these technologies consists in the fact that rule-based chatbots have predefined questions, whereas self-learning chatbots are based on artificial intelligence, machine-learning and natural language

processing. Consequently, the AI-powered chatbots, based on algorithms, allow to learn from previous answers and can respond to conversational context. In terms of language learning, it means that the use of AI-powered chatbots fits better as they are less limited [5].

There are also two other criteria that are important for the choice of the right chatbot in the classroom, depending on the competence that should be developed. For instance, when concentrating on the pair reading-writing skills, a text-based chatbot fits logically better, whereas for listening-speaking competence a voice chatbot would be more suitable.

Another factor in choosing the right chatbot for a language class is its availability not only in the target language but also in a native one and in other languages the students know. This way the students could, for example, seek quick assistance in terms of the vocabulary. Some chatbots are available only in one language. This can be also considered as an advantage because the students are forced to remain in the target language [6, 7]. This publication focuses on the multilingual chatbot ChatGPT and the experiment with the students is carried out with students learning German as second language.

## 2. MATERIALS AND METHODS

How could a chatbot be used in the classroom? There are lots of different imaginable applications for a chatbot in the classroom such as role plays, debates, discussions and co-creation.

In this paper the focus will be laid on role plays in the written form to imitate a conversation through messengers such as WhatsApp or Telegram. Chatting is a common form of today's electronic communication and therefore a relevant situation for the student's life.

Considering the traditional methods of foreign language teaching we define a chatbot as an interactive training programme. The development of the latter is attributed to the dialogue between a student and a chatbot. During the class the students could access the chatbot on Telegram through a QR-Code on the PowerPoint presentation.

All students started with the same instruction for the chatbot. They copied them directly in the chatbot. This was necessary on the one hand to ensure a successful exchange between the students and on the other hand to ensure the comparability of the experiment. In the description was specified that the chatbot should not write the dialogue on its own. Throughout the test sessions it happened that the chatbot invented a whole dialogue by itself and it didn't interact. Another issue is that was revealed throughout previous trials that the chatbot had difficulties to "make up" a situation. Sometimes it refused to answer with the explanation that it can't answer such question for example "agree on a meeting". So if it was not specified to stick to its role, this could lead to communication difficulties and the chatbot was not always able to perform the tasks. In some cases it wrote very long answers, which is not helpful for the language level A2-B1. So in the instruction, it was asked to limit the answers to two sentences and to adapt to the language level. The description was not only written for the chatbot but also for the students. Consequently, it was a little bit longer, than it needed to be, if it were only for the chatbot.

The aim of the publication is to know how adapted a chatbot to develop the writing skills of the students in the classroom. After the interaction with the chatbot, all students filled out a half-standardized questionnaire with Likert scales, yes-no questions, multiple choice questions and open questions.

The study is only explorative with 39 participants. The students are between 17 to 22 years old. The language level varies but the majority of students disposes of a A2 to B1 level. These two language level were the main focus of this publication. The CEFR assumes that a total beginner (A1) cannot yet have a complete conversation. At this stage, the learner usually produces simple phrases about himself and other people [8]. For this reason, the chosen situation will be adapted to an elementary language level (A2) as the interactions start to be more evolved and there are already numerous situations performable for the learner. For example, the students can already produce simple phrases and sentences about family, work, living conditions and routine [8]. At the next language level, the intermediate learners (B1) dispose of a wider range of vocabulary. Consequently the texts are longer, and the learners can already discuss controversial subjects close to their field.

The students will be prepared before the role play to be able to communicate with chatbot efficiently with a brainstorming about gift ideas and a short matching task on linguistic means of expressions (making suggestions, asking for the other person's opinion, agreeing, and disagreeing).

Before the interaction with the chatbot starts, the students were informed not to share their personal data while using this tool. Then the students were asked to copy the instruction that is already tested in the ChatGPT. The students were instructed to speak only in the target language in this case German and to ask at least once for an explanation or a translation in the target language. At the end of the conversation, they were asked to copy a prepared text to get a list of mistakes and feedback.

The language situation had an authentic context adapted to real life, to the season and to the student's interests. The students are asked to have a written conversation with their friend Alex (the Chabot) about a joint Christmas present for their mutual friend Tim. They should make several suggestions and agree what they need to buy and where to meet up to buy the gift.

The written conversation gives the learners more time to organize their thoughts better and to formulate their arguments in comparison to oral speech. Especially in the language learning process it remains an advantage to have a written trace to be able to analyse the conversation afterwards.

Globally, it will be interesting to see if the Chabot can understand the instruction, adapt to the language level, can assist with explanation throughout the conversation, give a list with the mistakes and a feedback at the end of the conversation.

The questioner aims to evaluate the usage of a Chabot in the classroom and to examine the advantages and disadvantages.

Even though other factors such as the ease of use, the response time and the security aspect are important, they will be neglected in this paper. As these criteria are more general and can be used in different applications, not only in the classroom, they also will not be considered.

### 3. RESULTS AND DISCUSSION

The vast majority of students didn't use the chatbot yet in the language class. Those who already used this tool in the classroom used it to translate or to understand the grammar better.

None of the students tried to have a chat conversation with a chatbot as they would have with a human in order to improve their language skills. More than 60% never used tools such Telegram or Whatsapp for written role plays in the classroom.

The main challenge during the preparation was the formulation of the instruction for the chatbot. The instruction should be always pretested; otherwise it can come to difficulties in the classroom. This can be very time consuming, especially for a task such a written real-life conversation. The instructions were not only for the chatbot, but also for the students. The chatbot doesn't need whole sentences and can already execute tasks with a few keywords.

While giving instructions to the chatbot there occurred several times misunderstandings, for example the fact that the chatbot had to "make up" a situation and to "play a role". This was only possible, when it was explicitly mentioned. Additionally, the chatbot can't apply certain key concepts yet, such as the "language level" and all the criteria that are implied by the Common European Framework of Reference For Languages (8). The chatbot can understand and give the definition of these concepts but cannot apply them. Consequently, it cannot completely adapt. Even though this can be compensated through certain instructions such as a limitation of the length to not more than two sentences. In this publication the degree of adaptation to the language level were not further explored, but sometimes the chatbot was not always able to adjust itself to its language partner with too complex words or too long answers.

If the instruction becomes too long, the chatbot will not follow all the requirements. For example, it ignored several times, when it was asked not to write a dialogue by himself.

#### **Advantages of Using AI Chatbots for enhancing the writing skills in language class**

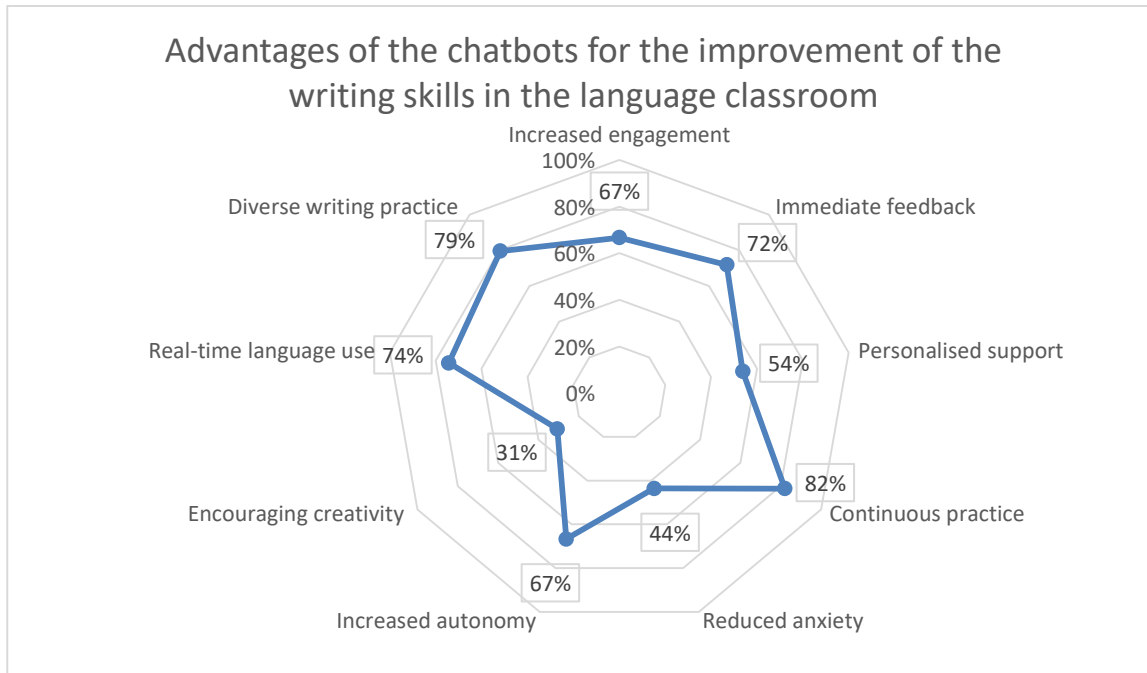
The application of chatbots in different sectors has a great potential [10]. This is also the case for the language learning process. [11] There are also many advantages of using a chatbot in the classroom.

The chatbot offers the possibility of language practice in the target language, enabling students to apply language skills in real-time interactions, contributing to improved fluency and contextual understanding of language use. The chatbot provides an interactive and engaging learning experience, allowing students to practice writing in a dynamic and conversational manner. In addition, the chatbot can tailor its responses to the individual student's needs. Chatbot increases the engagement of the students, almost 70% found the

task motivating or very motivating.

At the beginning of the conversation, the chatbot could understand the instruction in 95% of the cases. In rare cases it either doesn't start with the written conversation or writes the whole dialogue by itself. Sometimes it happened that there were understanding problems. For example, when the present mentioned was too specific.

80% of the students estimate that the chatbot was able to adapt to their language level. Nonetheless, the chatbot is sometimes writing rather long answers and especially the feedback was difficult to understand for A2/B1 students.



Picture 1. Advantages of the chatbots for the improvement of the writing skills in the language classroom

For 82% of the participants' continuous language practice was the main advantage of the chatbot. They can foster regular exposure to the target language and the opportunity to refine their writing skills over time in and outside of the classroom.

On the second place was the diverse writing practice that was beneficial for 79% of the students. This written practice can be extended to numerous different real-life language situations and for all language levels. As a tool in the language class, it can be used for example to prepare a real conversation at the end, as a final task in a formal or informal context at the end of the class or as homework. Beyond a conversation with the chatbot, it can facilitate varied other writing tasks, such as formal emails, descriptive narratives, and persuasive texts, allowing students to diversify their writing skills in different contexts.

On the third place was that the real-time language that was seen by 74% of the students beneficial. This tool gives the students the opportunity to practice their language skills at any moment and answers immediately to their request. With a human conversation partner there might be a certain delay, but with the chatbot they have an immediate response.

Throughout the conversation the students should ask the chatbot at least once for either a translation in their mother tongue or an explanation in the target language. The students were satisfied with the result. The chatbot could provide in 87% of the cases a good or very good support.

At the end of the conversation the students should ask the chatbot for a list of their mistakes and feedback, which was successful in almost 80% of the cases. The list of mistakes should allow the students to quickly identify and rectify their language errors. This would represent an enormous gain of time both for the student and the teacher, as it doesn't need to be done manually. Over 60% were convinced that the feedback was

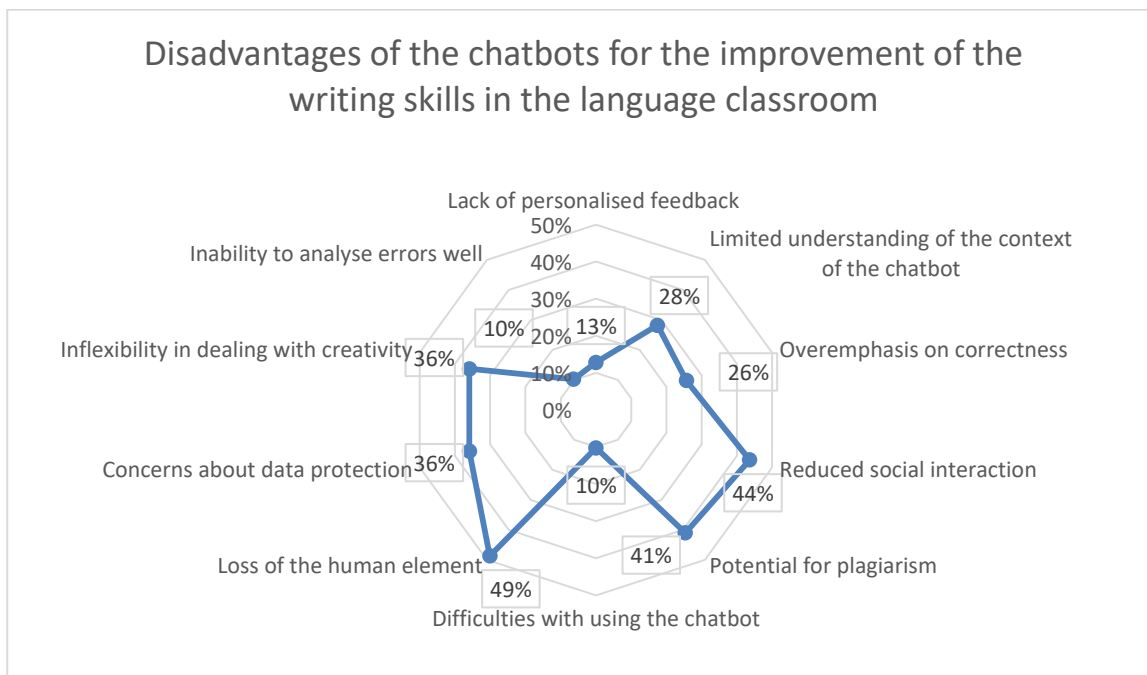
very good. It is difficult to estimate to which extent the list of mistake and the feedback is personalized and this question should be pursued in another study.

44% of the students had the impression that the use of the chatbot reduces their anxiety. The chatbot creates a low-pressure environment for language practice which lowers the stress level.

Only 31% estimated that it would promote creativity. Certainly, the chatbot gives a lot of different ideas, but might not be so effective to stimulate the students' creative expression through writing prompts.

By interacting with the chatbot, students can take more control of their learning, exploring language resources, seeking help, and practicing writing independently, promoting self-directed learning habits. Almost all students want to use Chatbots in the future in the language classroom, only three students were not convinced of its used. Two of them had a very low language level and there might have been problems for them to successfully interacting with the chatbot.

### Disadvantages Of Using AI Chatbots for enhancing the writing skills in language class



Picture 2 Disadvantages of the chatbots for the improvement of the writing skills in the language classroom

The main disadvantage for the students was the loss of the human element with almost 49%. The human touch in language class is essential. On the one hand the interaction with the teacher and on the other with the other learners. The teacher can provide empathy, encouragement and understanding on an emotional level what a chatbot cannot replace. Even though, the chatbot showed good “listening skills” and “interest,” what brings the conversation in a constructive way forward, it cannot entirely replace the human interaction.

The students found the reduction of social interaction with 44% as the second biggest disadvantage. Indeed, the usage of the chatbot in the classroom reduced social interaction and its excessive use might diminish opportunities for students to engage in meaningful conversations with peers and teachers and chatbots may not facilitate this aspect. When learners interact in a class the group dynamic can help them to motivate each other, to overcome difficulties and exchange experiences.

About 41% of the students saw the potential of plagiarism as the third biggest disadvantage. It can be a problem, as the students might exploit chatbots to generate content without truly understanding or internalizing the material. This could lead to plagiarism issues, if students submit work that is not their own.

For 36% of the students found the inflexibility in handling creativity. Despite the chatbot's ability to imitate human skills such as imagination and creativity. For example, it could invent all sorts of different approaches adapted to each student and could produce new ideas. The chatbot may struggle to appreciate and



encourage creative writing styles. They often rely on predefined patterns and may not be well-equipped to nurture individual creativity and expression.

The same number of students had concerns with privacy and data security concerns a disadvantage. Before the students started the interaction with the chatbot they were informed about the risks of using a chatbot and that they should not transmit sensitive data. It is a major concern how such data will be exploited and can be manipulated.

The technological barrier was relatively low, only 10% of the students saw the difficult usage of the chatbot as a disadvantage. The students are relatively young, so-called digital natives, who are generally comfortable with technology. Here the pretesting and the instructions helped to guide the students through the process smoothly. There might be some participants that are generally not comfortable or familiar with using technology hindering their learning experience. A low language level might influence also the comfort with the tool itself.

Only 10% of the students saw the inability to analyse errors as a disadvantage. Non the less by reading the mistakes closely, it seems to be difficult for the chatbot to correct some mistakes. Especially if the mistakes involve less common words or specialized terminology. But the chatbot suggest sometimes variants that are not necessarily more precise.

13% found the lack of personalized feedback a disadvantage. At first sight it seems to be as if it googled a list of advice, but while reading carefully, the feedback shows that it actually read the text and provides individual feedback. The chatbot gives very positive and often very detailed feedback. It provides the person with general feedback, a list of the relevant grammar topics, areas of improvement, sentences to practice and strategies. The different parts of the feedback vary each time, and a certain inconsistency can be observed, because sometimes it gives only one part of the feedback. In general, the given feedback provides a good overview, and it also encourages positively.

Consequently, a great majority were satisfied with the analyse of errors and with the feedback. Nonetheless the feedback itself was partly a little bit long and difficult to understand for the A2 learners. As already mentioned earlier the degree of personalized feedback is difficult to grasp and it may not provide as personalized and nuanced feedback as a human teacher. The chatbot might focus on surface-level errors without addressing the underlying issues in a student's writing, but this is not further addressed in this publication.

#### 4. CONCLUSIONS

Overall, the inclusion of chatbots in language learning in the classrooms has the potential to significantly enhance students' writing skills, offering personalized, interactive, and continuous language practice that supports students' language proficiency and overall learning experience. In general, the chatbot is more adapted to advanced learners. The length and complexity of the answers make the chatbot interesting, starting from an pre-intermediate level (A2) to an intermediate level (B1).

The usage of a chatbot in the classroom enables very diverse applications and goes far beyond the suggestions of this publication. The chatbot can be not only a great vector to motivation, but it may become that very interactive tool that can enhance the whole language learning process.

To mitigate these negative effects, it's essential to integrate chatbots thoughtfully into the language learning curriculum, supplementing them with human interaction, feedback, and a focus on holistic language skills. Nevertheless, there must be given clear guidelines and expectations as well as limitations and restrictions on how to work with the chatbots in a proper way. Step-by-step instruction on how to use it effectively can be beneficial because beginners especially can feel overwhelmed by this technology. The key is to use chatbots as tools rather than replacements for human guidance and interaction. The regarded interactive tool is very useful in a language class, because it allows optimizing time for consuming tasks makes the learning process more motivating and improves the writing skills. Almost 59% declared that they found it helpful or very helpful to use the chatbot to improve their writing skills and 93% of them would like to use the chatbot to improve their writing skills in the future.

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