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Proceedings

_ accelerating towards a digital and inclusive campus

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_accelerating towards a digital and inclusive campus

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EADTU ANADOLU UNIVERSITY

The Message of Istanbul

Accelerating towards a digital and inclusive campus
Empowering Learners: Micro-credentials, Generative AI, and Equity

The IHE-2023 Conference has explored some of the most prominent topics of the year: the use of Large Language Models (LLM) such as ChatGPT in higher education, the conceptualization and implementation of micro-credentials, equity and widening participation, and personalisation..

EADTU and the affiliated universities have worked intensively in these areas in recent years, resulting in reports and input in EU consultation meetings.

Generative AI and LLM in Digital Education
Generative AI and in particular Large Language Models (LLMs) have significantly disrupted higher education, leading to debates about their use and implications. The introduction of LLMs affects all key stakeholders, including students, teachers, support services, institutional leadership, and authorities.

Universities should establish the educational and ethical conditions for using LLMs to enhance education by integrating them into teaching and learning design models. The process of incorporating generative AI and LLMs in higher education requires building trust in what are new and effective ways to teach and learn with AI.

With the support of the European Commission, EADTU keeps up with these developments by:

- Continuously monitoring the latest developments in research, innovation, and institutional policies related to LLMs in education;
- Developing frameworks for the deliberate use of LLMs in teaching and learning design based on these developments;
- Implementing and evaluating the use of LLMs in teaching and learning activities in the membership;
- Developing recommendations for the ethical use of LLMs and Generative AI for teachers and students, including institutional policies;
- Providing ongoing professional development for staff and leadership on the use of LLMs and generative AI in higher education.

Micro-Credentials and the Bologna Process
The European Council Recommendation characterizes micro-credentials as short, flexible learning programmes that aid individuals in reskilling, upskilling, or changing careers. The EU encourages Member States to use micro-credentials to facilitate lifelong learning, with a goal of 60% of adults participating annually.

Open and distance universities in EADTU have been delivering continuing education online through short courses for many years. The digital delivery of micro-credentials has the benefit to offer flexible and scalable solutions for continuing education and career development for large numbers of students across Europe. However, there is a significant variation in the institutional qualifications for continuing education among universities.

To ensure transparency of micro-credential qualifications for academia and employers, it is crucial for universities and governments to agree on a unified award structure for micro-credentials that

aligns with the European Qualification Framework. EADTU and the European MOOC Consortium have already pioneered the Common Microcredential Framework (CMF), which offers consistent microcredential programmes with a total volume of 4-6 ECTS, making it suitable for continuing education for learners who are combining work and study.

The CMF Framework represents an initial common qualification. It's suggested that additional layers or exit points should be defined in a qualification framework for micro-credentials, based on the learning volume and the EQF qualification levels. This would form a comprehensive framework that should be incorporated into the Bologna Process.

Equity and widening participation

In higher education institutions, diversity arises from a variety of factors such as differences in prior knowledge, cultural background, language skills, self-learning abilities, availability of time, and self-esteem. This leads to a variety of needs that must be addressed. As society's need for complex competencies grows, the challenge of promoting key competences for all through high-quality education, training, and lifelong learning becomes even greater.

Higher education institutions have an increasing responsibility to promote inclusion in degree programs as well as in continuing education. This requires implementing measures to widen participation, improve retention, and provide adaptive education that meets the individual needs of learners.

As part of their mission, EADTU member universities have a unique position in national higher education systems to ensure equal opportunities for all to access higher education and the labour market. They have established a task force to optimize participation and retention in higher education and better prepare all individuals for the labour market.

In line with their core mission, EADTU universities are in the fore-front of promoting equity is one of the strategic objectives for cooperation in education and training at the EU-level (European Pilar of Social Rights).

Personalisation

Open and distance teaching universities are committed to providing high-quality, scalable, cost-effective, personalized, and tailored course offerings to meet individual and entrepreneurial needs. This commitment to openness and personalization has been a distinguishing feature of European open and distance universities.

The advent of digital teaching and learning, supported by learning analytics and AI, has created new opportunities for combining openness and scalability with personalization. EADTU members are developing new technology-based strategies and methodologies for teaching and learning to achieve this. However, these are still in the early stages, and the continuous emergence of new technologies provides ongoing opportunities for further exploration and development.

Key strategies include adapting the mode, content, or pace of instruction based on students' learning needs as indicated by learning analytics and AI, and providing real-time pathways and resources that go beyond one-size-fits-all learning experiences.

Also, study counselling plays a crucial role in personalization, especially for part-time students balancing work and family. It assists students in making study career decisions, including advice on study planning, course selections, choosing a major or taking the opportunity of workplace learning. At open and distance teaching universities, study counselling starts when students begin their studies and assess what knowledge and skills they already have and need for potential career and

corresponding study options. Technology can play a significant role in assisting with this personal mapping of knowledge and skills and progress made.

Ensuring the well-being of students is another important aspect of study counselling. It helps students feel confident in their studies.

EADTU and the members establish a Task Force Personalization to share expertise and experience and for developing a framework for modelling personalization.

European and global outreach

EADTU is committed to ensuring European and global outreach by initiating European projects that result in generic models and guidelines for digital higher education, collaboration, and mobility. It provides online continuous professional development for higher education staff and leadership through its EMPOWER services. Quality assurance for online and blended education is ensured through the e-excellent scheme.

EADTU maintains an ongoing dialogue with its members, the European Commission, and other authorities. In collaboration with other European organizations, it has a service contract with the European Commission for the European Digital Education Hub.

Leveraging Chatbots As An Agile Student Support System in Open and Distance Education: A Case of Anadolu University Open Education System

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Abstract

Open and distance education has witnessed significant advancements in recent years by providing learners with flexible learning opportunities regardless of time and location. However, the lack of adequate and immediate interaction and support can be a challenge for learners. To address this challenge, leveraging chatbots as an intelligent and agile student support system holds promise. The use of chatbots in education milieus has been a topic of growing interest in recent years as they have the potential to enhance learners' engagement by providing personalized support, feedback, and guidance to learners. Taking this into account, this case study aims to examine the usage, effectiveness, and potential use of chatbots as a student support model in the open and distance education system of Anadolu University. With this aim, the study focuses on the following research questions: How integration of chatbots as an agile student support model maximize student support? What are the usage statistics of the chatbot system in the open education system of Anadolu University?? The obtained findings highlight that even though chatbots are helpful, the learners seek human interaction. In addition, the compatibility of the system with artificial intelligence technologies can provide a great convenience for institutions as a workforce. The study findings will provide information for further understanding of chatbot usage as an agile student support model in open and distance education. The recommendations and implications based on the paper's findings may appeal to other open and distance education providers who desire to adapt the lessons learned and results and build the chatbot system in their own educational contexts.

Keywords: student support, chatbot, open and distance education, online learning

1. Introduction

With the development of information and communication technologies and the digitalisation of the world, online distance education is becoming increasingly popular and widespread. Especially in the Covid-19 process, online distance education has been competing to be an important part of mainstream education. So, it is necessary to develop methods for fostering interactions between teachers and learners as well as strategies for enhancing learners' self-directed learning. This has increased interest in deploying chatbots in the educational sector (Han et al., 2022). However, in this form of teaching and learning, student support services have a very important place as students are far from each other, teachers and learning resources. In addition, there may be a lack of interaction between learners and teachers and the institution in online distance education. This can lead to a sense of isolation and disengagement. In this case, the provision of an efficient quick, and agile support service for learners can be of paramount importance (Adamopoulou & Moussiades, 2020). One important way to address this issue is through the use of chatbots in online distance education

processes. Within this context, chatbots can be broadly defined as computer programs that can interact with people or other users by using natural language models (Adamopoulou & Moussiades, 2020; Han et al., 2022; Luo, et al., 2022; Tamayo et al., 2020). Chatbots can be used efficiently in all areas where interaction and support are required. They can also be used in online distance learning to provide personalised support to students, answering their questions and giving them feedback on their studies. In this paper, we explore the use of chatbots as student support services in online distance education and examine their effectiveness in supporting students. We also discuss the design and development of chatbot usage in Anadolu University's Open Education System, the current status of this technology implementation, and the challenges faced in this process.

2. Chatbots Usage in Open and Distance Education

The use of chatbots as student support tools in online distance education has gained attention in recent years. In online distance education, chatbots have become flexible tools for student support that offer individualized assistance and improve learning and engagement of students (Hanet al., 2022; Neo et al., 2022). Within this context, several studies have investigated the impact and potential of chatbot-based learning on learner motivation, performance and engagement. According to a study conducted by Winkler and Söllner (2018), chatbots are still in the early stages of entering the field of education, indicating the need for further research and development in this area. However, Malik et al. (2021) worked on chatbot adoption for learning among higher education students. The researchers applied and extended the Technology Acceptance Model (TAM) to understand the factors that influence the adoption of chatbots for educational purposes. The study highlights the importance of perceived convenience and improved performance in the adoption of chatbots for learning. Another study conducted by Pérez et al. (2020) identified different chatbot applications used in non-formal learning and non-formal education, such as SmarterChild and Duolingo. Their review provides an overview of the different contexts in which chatbots have been used in education.

According to the literature, chatbots could improve the learning process by giving learners individualized support, feedback, and guidance. By doing so, guidance and counselling services can be automated using through chatbots, making them more readily available to learners. The chatbot technology also presents unique opportunities as digital learning instruments for communication and information. As a result, chatbots can effectively improve student learning and have a favourable impact on learning outcomes. A study conducted by Baskara (2023) explored the potential of chatbot technology in a flipped classroom teaching model. The study highlighted the ethical and privacy issues when implementing chatbots in education. It also suggested future research directions to further enhance learner engagement and learning outcomes through personalised support and collaboration. On the other hand, Kuhail et al. (2022) conducted a systematic review of 36 articles to understand the use of chatbots in education, analysing various dimensions related to education setting and chatbot usage indicators. Their review provides a comprehensive overview of recent attempts to use chatbots in education. In addition, Huang et al. (2021) conducted a systematic review of on chatbot usage in language education settings. Their review identified 25 empirical studies that investigated the use of chatbots in language learning. The review aimed to discover the technological, pedagogical and social affordances that chatbots enable in language learning. Overall, the literature suggests that chatbots have the potential to increase learners' motivation, performance, engagement in online learning environments.

3. Student Support in Anadolu University’s Open Education System

Anadolu University Open Education System is one of the largest open education service providers in the world with 1 million active students each term and more than 4 million graduates. In such a large institution, the place and importance of student support services is also of great importance. At the university, different

channels are used to provide effective and robust support to students. The support services used at the university include phone call, Frequently Asked Questions (FAQ) module, question tracking system and chatbot technology (Figure 1). One of the most important services among these is phone call support service. In previous years, it was not possible to manage and monitor the intensity due to direct calls to the phone numbers in the offices, but with a special call center infrastructure, support is provided by the office staff and open to everyone during working hours on weekdays. The Interactive Voice Response (IVR) system is used to reduce the intensity of the call system and to direct students more quickly. IVR is updated in calendar-specific processes such as enrolment - enrolment renewal, examination, and diploma delivery, delivering announcements to students. The phone call service, which can be provided through the internet infrastructure established in the offices around the country, has been structured so that the office staff can carry out this service from home during the pandemic period. The phone support service within the open education system is one of the busiest calls center in Türkiye. Especially during the pandemic period, the call intensity was at a high level. In addition to this system, learners are also informed through FAQ.

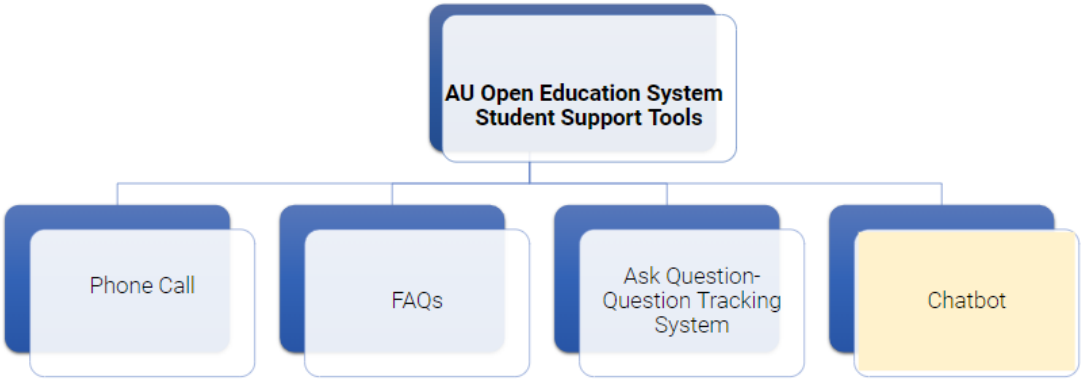


Figure 1: Student support tools used in Anadolu University's Open Education System

Anadolu University Open Education System also provides support services to students, graduates, and anyone who wants to get information through the question tracking system (https://aosdestek.anadolu.edu.tr). The system has been in service since 2018. While announcements, searches, frequently used links, and question categories are offered on the website, questions received through the "Ask a Question" link are directed to the relevant office staff. The questions of those who choose from the question categories created in the “Ask a Question” section are automatically directed to the subject matter expert officer. Questions from students who do not select a category are directed to the relevant unit with a special moderator team. The relevant office staff answers questions received via the "Ask a Question" link within an average of 4 hours. Besides these tools, the chatbot system, which began to serve in 2022, answers student questions automatically 24/7 through special questions and answers created by the support services desk (Figure 2). Using natural language processing and keyword-sensitive artificial intelligence systems, pre-designed answers to students' questions are used through the system. In the first phase, there are 2573 questions within the scope of 209 questions and 21 scenarios, each created in 5 different ways. Besides website, the mobile application of the chatbot support tool can also be used by students (Figure 3).

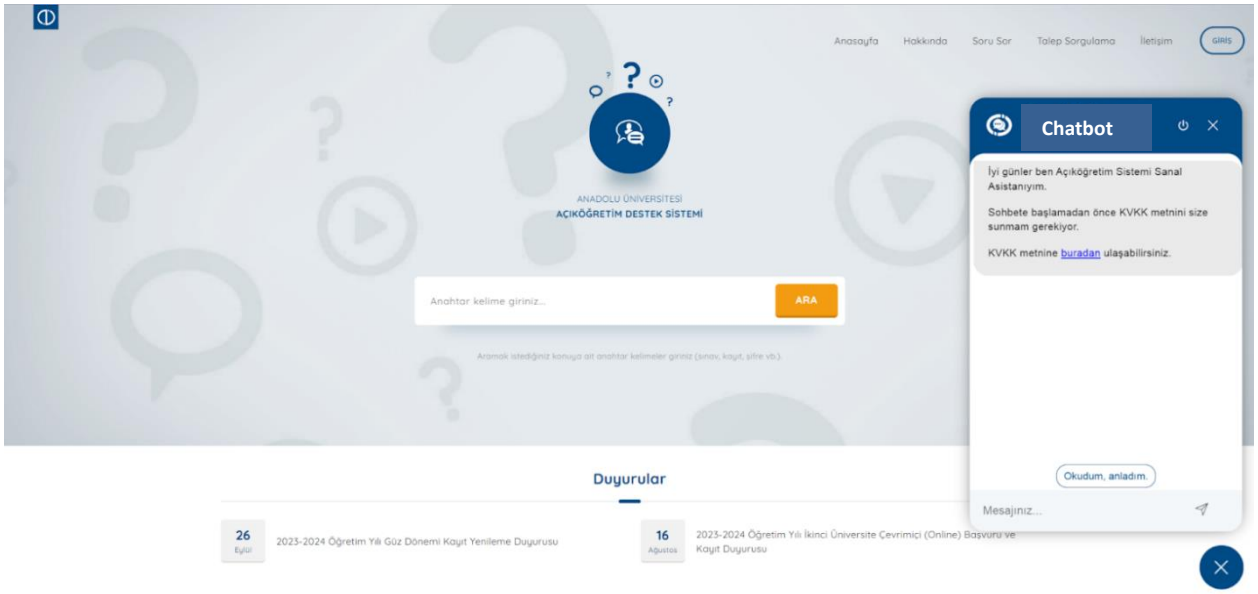


Figure 2: Question tracking system and chatbot tool in Anadolu University's open education system

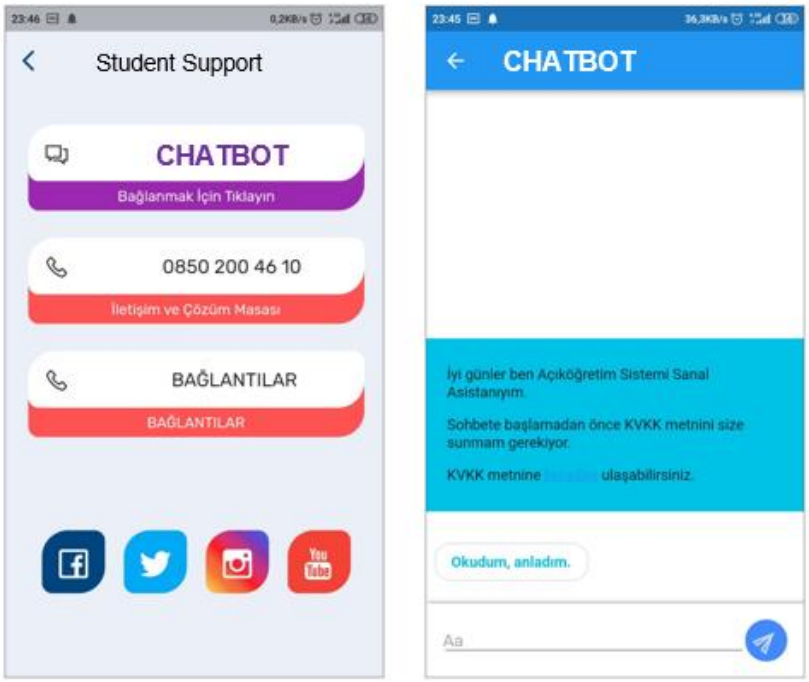


Figure 3: Chatbot usage in mobile app of Anadolu University

Lastly, apart from these services, SMS messages are also used to support online distance students. Approximately 40 million SMS messages are sent annually for purposes such as announcements, promotions, reminders and information about the open education system. In addition to general information about enrolment and examination procedures, SMS messages are also sent to specific student groups on the requested topic.

4. Chatbot as an Agile Student Support Tool in Anadolu University's Open Education System

The use of chatbot technology in Anadolu University Open Education system started in 2022. Usage statistics so far show that this technology is a robust support system. After the chatbot started to be used in the system,

there was a significant decrease in the number of telephone calls and the use of the question tracking system support tool (Figure 4). This can be considered as a positive indicator of the use of chatbot in support services.

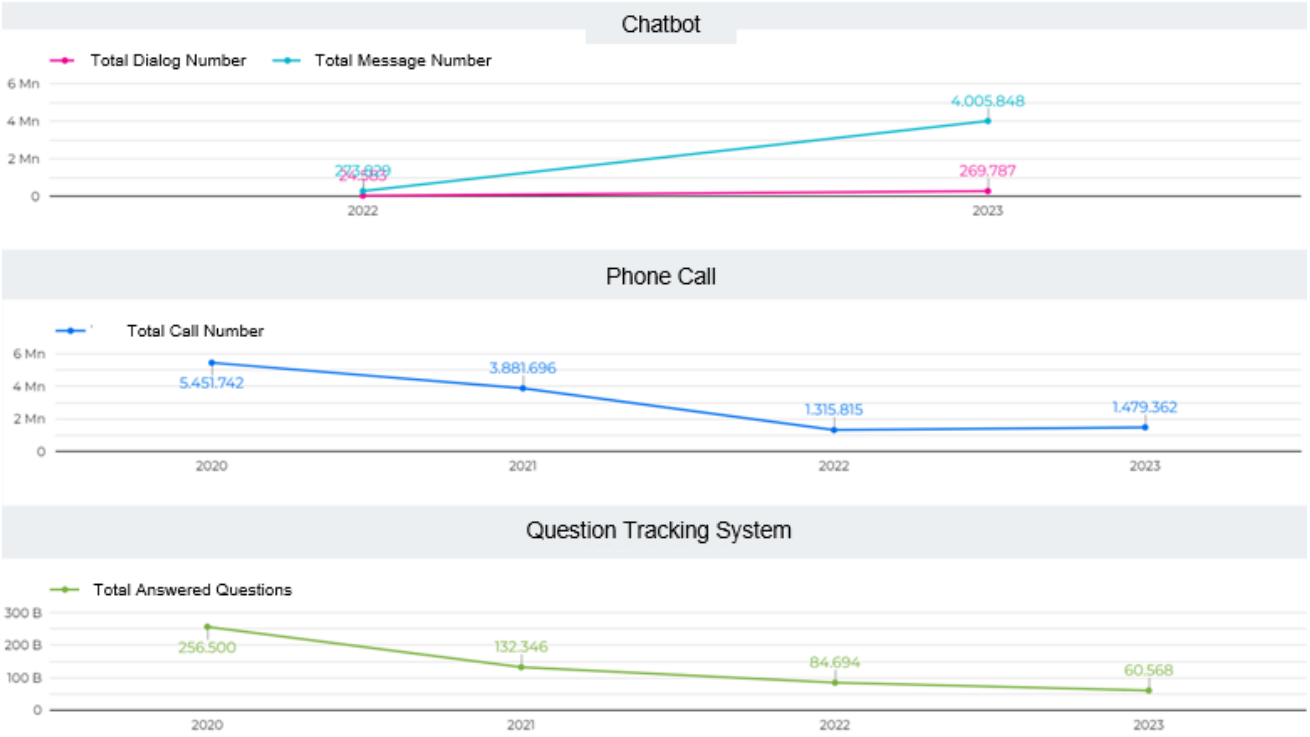


Figure 3: Comparing the chatbot usage numbers with other support tools.

Besides statistics, there are some user and system challenges with this system. For example, students who use phone support servives often report that they would prefer to speak to a live person rather than use a chatbot. The uptake of this technology is not yet at the desired level in terms of some of the habits that students accept and the ease of use of this technology. In addition, it takes time to integrate some data provider systems into this technology due to some personal data regulations and institutional policies. In general, however, it can be said that the system is being used slowly but surely.

5. Conclusions

Chatbots have become agile student support tools in online distance education by providing tailored support and boosting students' learning experiences. By supporting interaction between student and teacher or institution, and enhancing learning, they have the potential to make a big impact on the online distance education milieus. The full potential of chatbots in online distance education can be unlocked as technology develops further thanks to research and development in this field. The implications of Anadolu University Open Education System suggest that chatbot technology has a promising future and can be used as a robust student support service in online distance education environments.

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