BMT22
4th International Conference
Business Meets Technology
Ansbach, 7th – 9th July 2022

PROJECT: DIAS – DIGITAL INTELLIGENT STUDY ASSISTANT

Fersch, Mascha-Lea[a]; Henne, Sophie[a]; Mehlin, Vanessa[a]; Schacht, Sigurd[a]; Schmid, Elena[a] and Sui, Vincent[a]

[a]Ansbach University of Applied Sciences, Germany

ABSTRACT: A successful study requires an efficient study organization. Not all students succeed in this, especially in distance learning scenarios. In the DIAS project, a digital intelligent assistant for studying and teaching is to be developed. The AI-based assistant will accompany students, motivate them and enable them to better organize and successfully complete their studies. It serves as a planner, communicator, analyzer and motivator. The assistant is being developed in close cooperation with all stakeholders and tested as a model in two degree courses at the University of Applied Sciences Ansbach. An app and an information terminal are to be implemented as exemplary output channels at Ansbach University of Applied Sciences.

Keywords: *Digital assistant; Distance learning; Chatbot; Education*

1. INTRODUCTION

During the Covid-19 pandemic universities needed to provide distance learning resources, but most universities lack appropriate digital assistants to provide students without face-to-face teaching a full educational experience. Innovations in the field of digital assistants with the usage of AI are offering a promising opportunity for new supporting systems in the educational domain. Since October 2021, the DIAS project has been running at Ansbach University of Applied Sciences with the goal of accompanying, motivating, and empowering students to better organize and successfully complete their studies. Therefore a **D**igital **I**ntelligent **A**ssistant for **S**tudying and teaching (**DIAS**) is to be developed.

How to cite: Fersch, Mascha-Lea; Henne, Sophie; Mehlin, Vanessa; Schacht, Sigurd; Schmid, Elena and Sui, Vincent. Project DIAS – digital intelligent study assistant. In Proc.: 4th International Conference Business Meets Technology. Ansbach, 7th – 9th July 2022.

2022, Editorial Universitat Politècnica de València

2. RELATED WORK

An intelligent assistant can be defined as an artificial intelligence system which is capable of talking to users in natural language (Windiatmoko, Rahmadi & Hidayatullah, 2021). They are able to respond to instructions and to help with certain tasks or queries by finding and providing information (Chandra & Suyanto, 2019). Reviewing related literature, different potential application areas for a digital study assistant can be identified. However, it can be stated that the majority of digital agents in this context are chatbots. One study represents therefore a comprehensive literature review demonstrating use cases of chatbots in education (Wollny et al., 2021). But the DIAS project aims to take a different approach to a digital assistant. To cover the various needs of students multiple components shall be developed in addition to the communication component. Therefore a planning, analysis and motivation component is also foreseen for the DIAS.

3. METHOD

The project comprises three central measures that are interlinked through feedback. The first step is the conception involving all stakeholders and data protection issues. For this purpose, among other things, a target group-specific needs analysis is drawn up on the basis of a preceding persona analysis. Their experiences, needs and requirements are queried and recorded in the form of a specification sheet. Since DIAS mainly collects personal data of the students, the implementation of appropriate data protection is necessary and planned from the beginning ("privacy by design").

The second step is the technical development. Agile development of the underlying, central AI service is planned according to the CRISP-DM (Cross Industry Standard Process for Data Mining) procedure model.

The third step is the testing and scientific evaluation. In the project, a model implementation and testing will initially take place over the course of three semesters in two model study courses.

4. RESULTS

The DIAS shall consist of these components in more detail:

- Communicator: Chatbot for quick answers to questions related to studying and teaching
- Motivator: Reward and gamification elements to illustrate learning objectives
- Planner: Active support in study planning and self-organization
- Analyser: Voluntary, AI-based study analysis and progression forecast

Additionally following key features of innovation are ensured:

- Student-centeredness: Students and their needs are the center of the project. The overarching goal is to improve their motivation to study and their success in their studies.
- Benefit for other stakeholder groups: Teachers, course directors, advisors and administrative units also benefit. The digital assistant brings f.e. together data sources and information platforms already used by students, teachers and the administration, which ensures greater efficiency and clarity.
- Making available and using in other contexts: The DIAS is being developed as open source software, so it can be implemented not only at Ansbach University of Applied Sciences, but also at other universities.

5. CONCLUSION

Ansbach University of Applied Sciences wants to overcome the digital resource gap and enhance its information and counselling services for students with an innovative, digitally-supported approach summarized in the DIAS project. Therefore DIAS takes on various functions as a planner, motivator, analyzer, and communicator in the form of an AI-based chatbot. Students can interact with DIAS via various messenger services, the learning management system Moodle, the university's homepage, a hologram, and terminals on the university campus. It shall not only help students but also support additional stakeholders like teachers and administration. The results of the DIAS project is implemented university-wide for all study programmes and shall be made available as an open source solution for further usage.

REFERENCES

Chandra, Y., & Suyanto, S. (2019). Indonesian Chatbot of University Admission Using a Question An-swering System Based on Sequence-to-Sequence Model. Procedia Computer Science, 157, 367-374. doi: 10.1016/j.procs.2019.08.179

Windiatmoko, Y., Rahmadi, R., & Hidayatullah, A. (2021). Developing Facebook Chatbot Based on Deep Learning Using RASA Framework for University Enquiries. IOP Conference Series: Materials Science And Engineering, 1077(1), 012060. doi: 10.1088/1757-899x/1077/1/012060

Wollny, S., Schneider, J., Di Mitri, D., Weidlich, J., Rittberger, M., & Drachsler, H. (2021). Are We There Yet? - A Systematic Literature Review on Chatbots in Education. Frontiers In Artificial Intelligence, 4. doi: 10.3389/frai.2021.654924