Integrating Artificial Intelligence in Redesigning Self-Access Center (SAC) for Language Learning

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Abstract

The existence of Self-Access Center (SAC) has proven to be significant in promoting language learning. Not only do learners learn a language, but they also build up autonomous learning where they use resources independently for their improvement. Indeed, SACs provide a set of resources that learners can access directly on their own management. However, in traditional settings, the features of SACs still emphasize the use of hardware and printed materials rather than digital media. Due to the widespread usage of information and communication technology (ICT) and artificial intelligence (AI), the conventional settings of SACs need reformulation in their design. In addition to hardware and software, AI is required to facilitate language learners. This paper aims to reformulate the design of SAC for language learning by integrating AI into the learning process. The method used is library study to search for literatures in the reformulation of the SAC design. The study is expected to provide an improved model for the rearrangement of SAC at University of Jember Language Center, formally called UPA Bahasa. As the building is currently being renovated, the new design will be helpful in providing future arrangement of SAC, thereby leading to better services in language learning development.

Keywords: Self-Access Center (SAC), Artificial Intelligence (AI), redesigning, language learning

INTRODUCTION

Self-Access Center (SAC) has long existed due to the development of learning theories. Morrison (2008) believes that SAC originated from the Resource-Based Learning (RBL) approach widely discussed due to progress in language learning within 1960s and 1970s. The existence of SACs is instrumental in facilitating language learners to gain improvement in their learning process. Reinders (2013) argues that as SAC functions as a language learning facility that provides materials, activities, and support of the SAC staff. It enables learners to set the content, progress, and method of learning on their own. Indeed, SAC itself is closely linked to independent learning which is accommodated by SAC.

The facilitation of independent learning at SAC demands many resources. In addition to space where the learners undergo their learning process, the availability of materials that are accessible to them is needed to give learners opportunities to self-direct their learning process. Therefore, the setting of the learning resources requires a totally leaner-centered arrangement. In the early development of SAC, the learning materials were provided in physical mode, which mostly involved printed materials. However, as technology evolved rapidly, the learning paths found their own ways involving the products of technology. One revolutionary innovation in language learning was the use of CALL (Computer-Assisted Language Learning). By this aid, learning tends to be more self-directed rather than teacher-directed.

The features of CALL meet the learning needs at SAC. All aspects of language learning are accommodated by CALL. Through the generation of texts, images, and sounds, which are reflected in the existence of video and audio program in CALL, language learning becomes more alive. Besides, the programmed feedbacks attached to CALL enable learners to obtain inputs in their learning. This facility makes SAC provide a more helpful ways to assist learners to achieve improvement in their learning. Hsieh (2010:3-4) confirms that improvement in learning can be achieved within individualized activities in a space equipped with computer-assisted language learning, which provides individualization, direct feedback, and lower problems in it.

Nowadays, as Information and Communication Technology (ICT) has been growing significantly, CALLs have been widely used to equip SAC. With the use of CALLs, SAC is considered a modern facility that provides sophisticated learning tools. The challenge has now been growing bigger since ICT is equipped with Artificial Intelligence (AI) that potentially gives learners more interactive and alive learning. Not only are learning inputs that students may obtain, but also, they learn languages more naturally as if they learnt languages with humans. Many programs and tools on computers have now been available to facilitate learning. Thus, SAC needs rearrangement to incorporate AI in its services. By new arrangement, SAC is expected to accelerate language learning independently in addition to classroom learning.

SAC at UPA Bahasa, University of Jember, is among the learning facilities available at the university. To enhance its services which are adaptable to current situation, redesigning SAC needs to incorporate AI to support learning. Thus, the following research questions prompt inquiries for further investigation:

1. How is AI integrated in the development of Self-Access Center (SAC) at UPA Bahasa, University of Jember?
2. What types of AI-aided learning materials and activities need to be provided for the users of SAC UPA Bahasa University of Jember?
3. What is the impact of AI-aided learning materials and activities on the physical arrangement?

LITERATURE REVIEW

SAC and Autonomous Learning

SAC has been closely associated with autonomous learning. In other words, SAC has been seemingly available for independent learners characterized with learners' ability to set learning goals, to determine and apply learning strategies, to evaluate their own learning. Reinders (2013) clarifies misconception that possibly happens in the conception of SAC.

He points out that SAC differs in some ways from laboratories, which are teacher-directed rather than student-directed. However, it is not a kind of library with specific functions in storing information. Despite a big quantity of learning materials and systems, it focuses on learning process rather than simply providing information. In addition, self-access learning at SAC applies the same practice as self-study. Notwithstanding individual learning applicable in SAC, learners can possibly engage collaborative activities with their peers.

According to Littlewood (1996, 1999), autonomy in language learning is often related to two aspects: responsibility for their own learning and involvement in and ownership of the learning process. In the context of foreign language teaching and learning, the goal of education should be helping learners to become independent in learning and to be able to use the language to communicate meanings in situations they encounter, which involves generalized autonomy in life.

Establishment of self-access centers has been connected to the theories of learner autonomy and implementation of self-directed learning. An autonomous approach to teaching and learning is to facilitate the learners' exercise of responsibilities and help them develop the capacity to assume responsibility and independence. Early studies of self-directed learning used a learning structure to support the learner with self-access materials, a consultant for learning, and opportunities to speak with a native speaker (Holec, 1980).

The Significance of SAC in Language Learning

According to Gardner and Miller (1999), elements of a SAC create a learning environment that increases the possibilities for learning opportunities. As self-directed language learning is promoted in SAC, learning experiences may develop once learners begin to freely interact in such spaces through the carrying out of different activities and the use of the materials and resources offered to them (Domínguez, 2012).

SAC as a learning facility promotes learning for those who have been autonomous in learning. Cooker (2008) confirms that SAC should have four principles:

1) SAC is self-access,
2) SAC providers need to collaborate with SAC users,
3) SAC should be fun and
4) SAC should be one of the main media the students rely on.

The implementation of autonomous learning has proven to be significant in supporting learners to achieve their objectives. In English learning, for example, study shows that learner autonomy and English proficiency has a strong, positive, and significant correlation (Myartawan, et. al., 2013)

Incorporation of Artificial Intelligence in SAC Rearrangement

There are two reasons why SAC should be redesigned, involving artificial intelligence (AI). First, modern SAC has been utilizing computers in facilitating learners. The computers have been aided with sophisticated language learning programs which allow learners to learn and evaluate their learning at SAC. In more popular terms, the existence of computers is named CALLs. These tools make SAC readily set with more computer-related learning programs.

Second, despite its early development in learning, AI has gained more globally popular usage due to the spread of pandemic Covid-19 that pushed people throughout the world to work and learn at home through the assistance of computer and Internet connection. Post-pandemic Covid-19, people have been familiar with the use of AI. Accordingly, SAC needs adaptation in its rearrangement by involving AI in its services. Using AI, learners will benefit in succeeding in their learning which will affect their learning progress. Interactive learning with AI-aided computers enables learners to learn and achieve better.

METHOD

This paper is designed as a library study. This type of study is "an integral part of inquiry in any field," that lets the researchers determine what related work has already been done and how experts have assessed it." It is an investigation involving accepted facts, unknowns, speculation, logical procedures rigorously applied, verification, evaluation, repetition, and ultimately an interpretation of findings that extends understanding (George, 2008: 22-23). In this case, resources such as books, articles, and other texts related to the problems are reviewed for summary.

This study tries to investigate the possible future rearrangement of Self-Access Center (SAC) at Language Center, formally called UPA Bahasa, University of Jember. This center is now in total renovation post-termination due to pandemic Covid-19. Previously, a disorientation occurred due to wide use of learning materials by leaners throughout the Internet. The number of visitors decreased sharply from time to time until the emergence of pandemic Covid-19. The study is expected to provide directions in supplying future rearrangement of SAC.

FINDINGS

THE PROFILE OF SAC AT UPA BAHASA, UNIVERSITY OF JEMBER

SAC is one of the facilities at UPA Bahasa, University of Jember, that students may utilize as an extra opportunity to accelerate their learning progress. It exists along with the establishment of UPA Bahasa as one center of University of Jember that deals with language services. Since the major service in UPA Bahasa is language training, SAC is complementary in succeeding the students' learning.

In its early existence, UPA Bahasa has been facing rapid development in supplying tools and activities for users. At first, printed materials were dominating its space with accessible arrangement. Further, as the use of computers became an important part in teaching and learning, SAC involved computers supplied with language programs in the form of CALL (Computer-Assisted Language Learning). At this stage, language learning became a little more interactive where students could apply total language skills expressed through texts, images, and sounds. These tools won students' attention where many of them shifted their learning from printed to digital materials. Other electronic devices such as video and audio cassettes were also more preferable compared to fully printed materials.

To meet users' demands, various language learning programs were integrated into the CALLs, some of which were popularly demanded programs such as tests and games. These media showed a rapid increase in use instead of printed media. Since then, the SAC services at UPA Bahasa focused on the supplementation of electronic materials rather than printed ones.

However, this situation did not exist long as the Internet started to offer better speed in information and learning. With individualized facilities on computers, the use of Internet gave students widespread opportunities in learning where they can access, explore, and evaluate many materials available through the Internet on their own. As an effect, SAC experienced a decrease in the number of visitors. Moreover, the incorporation of AI in many programs and applications supported by the Internet connections has made self-study increasingly popular. Students tend to perform their learning in a more individualized setting. The emergence of pandemic Covid-19 which forced students to study at home made the situation even worse for SAC. As a result, SAC terminated its operation in addition to prevention in the disease dissemination. Post-pandemic situation now challenges SAC to serve better by employing not only computer-aided learning activities but also AI-integrated programs.

AI Integration in Redesigning SAC at UPA Bahasa, University of Jember

SAC at UPA Bahasa functions to facilitate language learners to achieve their learning goals. This means that SAC should provide materials and activities that support their learning. Due to widespread use of computers, the utilization of materials involves computers supplied with various programs and applications. In this case, the application of AI in supporting learning through computers wins its place. Learners simply do their activities in SAC by learning with and from computers.

Since SAC facilitates autonomous language learning, the availability of AI is beneficial in promoting SAC services. According to Han (2019), AI has accelerated autonomous English learning by providing individualized and adaptive learning experiences that enable speaking and listening practices, improve accessibility, and share helpful feedback.

The supplementation of AI-powered language learning programs is expected to provide more natural language learning. There have been many applications and platforms, such as ChatGPT, Coursera, Duolingo, Elsa, Grammarly, etc., that have been popular among language learners. As AI technology continues to develop, it is expected that AI will play an increasingly essential role in language learning by offering more individualized experiences and effective language learning assistances for students around the world (Yoon, 2019). Furthermore, AI is used in a wide range of applications, including speech recognition, image processing, self-driving cars, and language translation, among others. The goal of AI research is to create systems that can perform human-like tasks with a high degree of accuracy and efficiency (Bartneck et al., 2021).

The display of Talkpal website (https://talkpal.ai/learning-languages-easy-with-ai/) has practically promoted learning through AI. For example, some AI-Powered Language Learning Tools have been common in language learning, such as TalkPal, Duolingo, Rosetta Stone, Babbel, and Mondly. More practically, users prefer popular language test application such as TOEFL (Mukamil et. al., 2023). Thus, users of SAC prefer practical language applications for their improvement.

Physical Arrangement in Accommodating AI-Aided Learning at SAC at UPA Bahasa, University of Jember

Physical arrangement of SAC relies on the learning materials and activities. Material display in the computers should be well integrated with the space division. The way SAC space is arranged determines types of SAC that have been formulated by Miller and Rogerson-Revell as follows**:**

a. Menu-driven: the materials are grouped, and the information is stored either electronically or on printed materials. learners can refer to the menu anytime they need to gain access to the system. Training is possibly needed to let them familiar with how to use the system.
b. Supermarket: it is a self-access system in which the learner can look around and choose what to study. The system displays materials under categories such as: listening, reading, games, etc. The categories are highlighted with different colours. The end-users are teacher-students.
c. Controlled access: a system where learners are directed to a specific set of materials by their tutors. It is directed at engineering and science students.
d. Open access: This system is usually part of a library. The material is open for use by students studying a language.

DISCUSSION

The redesigning of SAC in relation to the use of artificial intelligent requires the SAC's adaptability covers two major areas. First, the core part of SAC services, that is, the materials and activities provided for the users' learning process. Generation of AI-aided sofwares and applications should involve interactiveness of the tools with the users. Second, the physical arrangement of the space, where the many tools and devices need to be designed in such a way that users can easily access all the resources. The convenient path and access for users to interact with the facilities needs serious consideration.

Since SAC applies particular procedure in its operation, the involvement of AI starts at early stage of the user's process i.e. registration as SAC member. In this step, learners are guided with information about the whole access in SAC. This process may also involve human interaction i.e. the SAC advisor for giving a tour on SAC services. The next part will fully be assisted with AI through computer programs that learners access. Outside the learning materials and activities, learner administration needs to be set to help learners evaluate the process that learners have passed. Record and feedback of learners' progress may also be provided in this step. Particular application on computer or mobile device is possible to be provided to give learners wider access in self-evaluation. In shorts, SAC rearrangement in relation to the use of AI should at least contain meet the following characteristics:

1. Individualized learning mode

2. Adaptiveness of materials

3. Language use through conversational AI

4. Data-driven progress evaluation

5. Interactive learning programs/applications

6. Accessibility and support

CONCLUSION

Redesigning of SAC at UPA Bahasa in relation to the incorporation of artificial intelligence (AI) can be started by the rearrangement of physical space based on the learning sequence that enables learners to undergo their learning experience at SAC. The layout of SAC needs to consider the characteristics of learners who are autonomous in learning. Interactivity, adaptiveness, language use, self-evaluation, accessibility, and support are the key ideas in developing SAC language services.

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