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Open the Black Box of Autonomous Learning: A Sustainable Approach to Language Learning

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Article abstract

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Abstract

Autonomous learning is a fundamental aspect of education that builds important skills, like critical thinking, problem-solving, and adaptability, which are important for achievement in a constantly changing professional environment. Cultivating it promotes lifelong learning, self-improvement, and knowledge beyond traditional educational settings. The objective of this study is to demonstrate the impact of the investigated autonomous learning approach to learners, and assess their ability to sustain the learning process, hence fostering lifelong learning within the framework of formal education. An Autonomous Learning Model (ALM) based 14-week qualitative study examined learners' work and reflections. Theme-based analysis was conducted with 62 fourth-semester English-language learners. A six-stage thematic analysis discovered coded responses' themes. The ALM examined the following key aspects of individual development: personal responsibility, positive self-esteem, decision-making, problem-solving, interpersonal skills, critical and

creative thinking abilities, and a strong enthusiasm for learning. The results showed that autonomous learning is achievable, and that instructors' support and institutional collaboration will improve new curriculum and courses. This study aims to enhance semester-end evaluations, leading to significant improvements for future language-programed learners and ensuring the sustainability of their learning.

Introduction

An autonomous learner, by definition, is one who solves problems by a combination of convergent and divergent thinking, and functions with little external guidance in selected areas of endeavour (Betts & Kercher, 1999). Learners who adopt the autonomous learning approach determine their own learning needs, create their own learning objectives, develop independent strategies for achieving those objectives, and assess their own learning progress. Autonomous learning is becoming more popular as a new approach to learning English. Autonomy in language acquisition, on the other hand, refers to people taking greater control over the objectives for which they acquire languages and the methods by which they learn them (Benson, 2006). One significant aspect of learner autonomy is that language learning is a lifelong endeavour (Lee, 1998), and that learners learn more outside of class than within. The role of the educator, or other types of learning, however, becomes outmoded. In place of that, instructors play a different function in the educational process. Instead of being the main force behind the learning process, teachers now serve more as facilitators and guides. This is a crucial strategy that should be used in higher-educational institutions (HEIs).

Learners can self-teach by taking full advantage of autonomous learning, such as being disciplined in managing study time, being independent, thinking in new and creative ways, and having an open mind (Hoo et al., 2022). Everyone needs to learn autonomously, especially adolescents, because when they enter adulthood, they will be able to acquire knowledge independently, get to know their own talents, and develop their own abilities to gain a competitive edge that will increase their self-efficacy. Previous research has shown that self-efficacy has a strong, positive, predictive impact on learners' deep learning styles (Kuo et al., 2020). Learners at HEIs feel the same way. This, in turn, will provide them with an environment in which to adjust to work situations, and increasing their employability chances.

This study looks at independent learning as of the utmost significance in the digital era. In developing countries, individuals today have widespread access to vast quantities of data and nearly universal access to information. The emergence of this trend gives rise to circumstances conducive to accelerate societal transformation, and causes difficulties for educational institutions in adequately preparing learners to meet the requirements of employment. These requirements encompass more than just knowledge of content, but also involve skill-based abilities, such as problem-solving, curiosity and reflection, creativity, written and verbal communication, collaboration, accepting and applying critical feedback, applying knowledge to real-life problems, as well as managing and supporting constant change (du Toit-Brits, 2019).

Nevertheless, the primary focus of higher education, and a prerequisite for creating a nation with strong educational institutions, is strengthening educational standards (Noben et al., 2021). Higher education is the most significant force for developing abilities in need of societal development. Deep learning capacity symbolizes the ability of invention, creation, and sustainable development in the current era of rapid development of information technology, and is a critical

skill that is required against the backdrop of current social and era development (Esteban-Guitart & Gee, 2020). At this point, undergraduates' duty is to learn how to learn, not to remain in the superficial understanding and structural memory of knowledge, but to understand in-depth knowledge, critically learn new knowledge, master knowledge through practical activities, exercize thinking, improve learning ability, and innovate ability (Zhan et al., 2021). As a result, the learning styles of learners are critical in determining instructional quality.

Researchers found that learners with competent autonomous learning abilities are more motivated to achieve success in both traditional classroom settings and online-learning environments (Gonzalez et al., 2020). According to the study conducted by Xie (2020), the group that implemented autonomous learning strategies performed better than the group that depended on live-broadcast and recorded-video learning materials. Consequently, the utilization of autonomous learning mechanisms is directly correlated with enhanced learner performance.

Thus, instructor autonomy support is crucial for students to actively participate in classroom activities, as well as cognitive autonomy support, which could encourage them to think about the content of learning at a more thorough level, and to have more lasting engagement, which would ensure that learning behaviours are cultivated. In this way, they would follow their own path to complete learning tasks. According to self-determination theory, perceived teacher autonomy support relates to the teachers' level of support or comprehension of the learners' knowledge (Mageau & Vallerand, 2003). It is considered that formal education should have lasting value for learners, and should inspire them to keep up their learning journeys, which is to pursue lifelong learning, in order to promote sustainable development in the learning process.

As a result, this research investigates students' abilities to continue their learning journey, so as to promote lifelong learning in formal education. This will offer a lasting value to language-program learners in the future, which would support sustainable development in learning. This study adopts ALM to analyze individual progress. The objective for this research is to persuade learners of the usefulness on this teaching strategy. Learners are given autonomy in the classroom, and their opinions are valued enough to be pursued and put into practice. Additionally, this research is intended to improve end-of-term evaluations.

Literature Review

Autonomous learning, also known as independent learning, is a process in which the student takes responsibility for his or her own learning by establishing objectives and selecting the most effective strategies to achieve them. Additionally, self-directed learning emphasizes learners defining their learning needs, setting objectives, and choosing strategies to accomplish them without external guidance. Self-directed learning involves students controlling their own learning. Due to the transition towards learner-centred instruction, and the need to equip learners with the skills and competencies that are needed to engage in lifelong learning, autonomous learning has gained importance in higher-educational institutions over the past decade (Blaschke, 2021). According to Knowles (1975), self-directed learning encourages students to recognize their learning needs and objectives, while independently selecting approaches to achieve the learning process. This understanding was established and recognized many years ago.

It is important to note that professions constantly evolve, and new abilities are becoming necessary, because of the continuously changing employment setting. In this context, graduates with the ability for autonomous learning demonstrate greater adaptability, enhancement, and the ability to re-skill throughout their careers. They recognize the necessity of doing so in the competitive employment market (Candy, 1991; Knowles, 1975). They are able to independently

seek out new information, learn new abilities, and maintain their relevance in their chosen industries on their own. Learning is not something that ends after graduation, in today's knowledge-based economy, rather, it is something that continues throughout one's entire life. Individuals who have graduated with the ability to pursue learning autonomously have a better understanding of the significance of ongoing education, which makes them more flexible and resilient in the face of change (Masland, 2021).

Therefore, one of the most important arguments that might be made in this paper is for graduates to develop their ability for autonomous learning, which can significantly influence a more promising future (Benson, 2006; Candy, 1991). It is necessary for learners to take responsibility for their education, a priority emphasized by educational institutions (Knowles, 1975; Vansteenkiste et al., 2010) to enable learners to deal with the complexities of the future job market and contribute to society (du Toit-Brits, 2019; Fischer, 2001). This literature review examines the concept of autonomous learning in higher education and its effect on learners' academic success (Anthonysamy & Singh, 2023).

Autonomous learning in higher education

In higher education, the concept of autonomous learning has been extensively studied, with research emphasizing its definition, characteristics, and benefits. According to Candy (1991), autonomous learning is a learning process in which the individual takes initiative and controls the learning process. Knowles (1975) visualizes the teacher’s role as that of a facilitator of learning, rather than an instructor, a procedural guide, rather than a content transmitter. Autonomous learners are those who take responsibility for their own learning, set their own objectives, and choose the most effective strategies to achieve them (Candy, 1991; Knowles, 1975).

Several studies indicate the advantages of autonomy to learn in higher education. Morris (1995), for instance, discovered that autonomous learners were more likely to be academically successful and content with their learning experiences. Khalid et al. (2020) discovered that autonomous learning was positively associated with learners' time management and goal-setting abilities, as well as their academic performance and critical thinking skills. Khalid et al. (2020) has also discovered that autonomous learning was positively associated with learners' time management and goal-setting abilities, as well as their academic performance and critical thinking skills. In addition, a study by Vansteenkiste et al. (2010) found that autonomous learners were more likely to be engaged in their learning and to feel more ownership over their learning experiences. This sense of ownership, according to the researchers, can increase motivation and perseverance, ultimately contributing to academic success.

Autonomous learning has many advantages, but it can also present difficulties for learners, especially those who have not adapted to assuming responsibility for their own education. Jackson (2020) found that some learners might be struggling with the autonomy required for self-directed learning, particularly when it comes to goal setting and learning planning. Furthermore, Li et al. (2020) identified that learners who have never been exposed to autonomous learning may experience anxiety and uncertainty, when given the responsibility of directing their own education. The authors suggest that educators may minimize these difficulties by providing guidance and encouragement to learners, as they transition to independent learning

Ertug and Faydali (2018) discovered that the COVID-19 pandemic has highlighted the significance of self-directed learning, particularly in the context of accelerated technological change. The researchers claim that educators must prepare learners for a future in which self-directed learning and adaptability will be indispensable.

Autonomous learning is a crucial part of higher education, as it empowers learners to carry out responsibility for their own education, and acquire the skills and competencies necessary for lifelong learning. Individual differences and external factors can impact autonomous learning, but research demonstrates that autonomous learning is associated with enhanced academic performance and a variety of other positive outcomes. Educators and institutions must therefore foster autonomous learning behaviours, and provide learners with the necessary support and resources to become successful, autonomous learners. Hence, the purpose of this paper is to assert that it is crucial for graduates of today to acquire independent learning skills as preparation for their future.

The Autonomous Learning Model (ALM)

ALM is a framework designed to facilitate the development of individuals' self-directed learning abilities (Betts & Kercher, 1999). Based on the theory that self-directed learners are more likely to achieve success in their academic and personal lives, ALM emphasizes the development of self-directed learning across five dimensions, which are:

The *orientation* dimension, which is the first part of ALM, teaches learners to think critically about what intelligence is, how the educational institution is assisting them in using their intelligence through various programs and teaching techniques, and how they may play a significant role in determining their future.

The significance of *individual development* is highlighted by the second dimension. Learners acquire the skills necessary to become autonomous learners. The development of knowledge-acquisition abilities, a grasp of academic and professional objectives, and the organizational and productivity techniques, that are required to meet those objectives, are all facilitated by instructors.

The third dimension is *enrichment*. There are numerous ways to be enriched. Learners will be pursuing knowledge based on real-world experiences, whether they are examining phenomena, discovering new ideas, participating in cultural activities, volunteering, or going on an adventure trip.

The fourth dimension is *seminar,* in which ALM seminars are not instructed by academics or trained instructors. Instead, it is the learners who design and direct seminars that showcase the information and concepts that they learned through the ALM process. These seminars are typically produced by small groups of learners.

The fifth and final dimension is the *in-depth study*. A project, a mentoring, a presentation, or an assessment can be used to accomplish this. This is regarded as the highest level of autonomy in learning. Learners synthesize the knowledge, abilities, and techniques they have acquired in order to exhibit what they have learned, mainly independently.

This paper uses ALM as the framework to answer the research questions as evidenced by the findings and discussion.

1. What are the themes developed from the analysis of autonomous learning strategies used by language learners in the ALM setting, in terms of their types and effectiveness?
2. What is the impact of these autonomous learning practices on learners' independence and skill level in language acquisition within the ALM framework?

These research questions focus on determining whether autonomous learning is possible or practicable in language learning, as well as building valuable insights on the potential of a particular approach or intervention to ensure the efficacy of integrating and embedding this approach into the curriculum structure.

Methodology

To investigate the independent learning experiences of language learners, specifically their level of engagement with learning and their ability to learn autonomously, three tasks were assigned at the start of the semester. These tasks included individual projects, individual presentations, and group projects. Each task was accompanied by learning logs to record the participants' learning abilities. This study employed a qualitative methodology to examine learners' outputs and reflections over a period of 14 weeks, focusing on the specific tasks. The aim was to discover patterns and themes related to autonomous learning behaviour adopting the ALM dimensions. The analysis was conducted using a thematic-analysis approach. The participants consisted of 62 fourth-semester undergraduates studying the English language. In the fourth semester, the participants were exclusively exposed to autonomous learning techniques to prepare them for future endeavours and careers (Figure 1). They demonstrated their engagement by setting objectives, managing their learning process, and proactively undertaking the assigned tasks with precise instructions. The responses were later coded, and subsequently the themes were identified using a six-stage thematic analysis proposed by Braun and Clarke (2006).

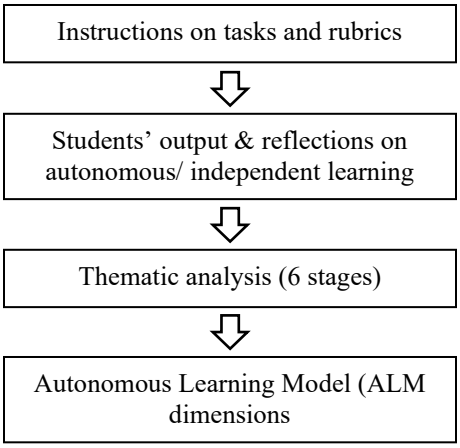

Figure 1: Methodology flow chart.

The analysis assessed the learners' independent learning abilities over the duration of the semester, by evaluating their performance on three tasks. The purpose of this study was to discover how this relates between their abilities and the aspects of ALM. The three tasks were collected in week six for individual projects, week nine for individual presentations, and week 15 for group projects, each accompanied by the learning logs. Subsequently, content analysis was carried out, which refers to the rubrics that were adopted in accordance with the criteria of the Malaysian Qualifications Framework (MQF, 2007). MQF is a tool that establishes and categorizes qualifications using a set of criteria that is nationally agreed upon and aligned with international standards. It also defines the academic levels, learning outcomes, and credit system, based on the academic workload of learners. Autonomous skill is in the third cluster and the ninth domain in MQF.

The analysis involved the process of assigning codes to the data in order to find significant patterns. These codes were then grouped into broader themes, and the data was interpreted to generate conclusions on the impact of the ALM on the autonomous learning skills of language learners. Thematic analysis offers in-depth and subtle understanding of the experiences and viewpoints of language learners. It is a powerful approach for examining the impact of the ALM on learner autonomy in a language-learning setting. This continuous approach evaluates progress and changes in students' independent learning.

The initial stage of the study consisted of analyzing and familiarizing the data that was obtained from the responses gathered, in order to classify them into distinct themes. All the repetitive responses from any participant were removed.

The next stage involved generating the initial codes. The responses were classified based on the ALM dimensions. To accomplish this, any recurrent phrases in the responses were identified, and using these repeated keywords, the coding themes were established.

The third stage involved the process of coding the responses into the first set of established themes. At this point, five themes were recognized for the content construct. They were as follows: 1) fostering a sense of responsibility, 2) cultivating a positive sense of esteem, 3) enhancing the ability to make sound decisions and solve problems, 4) improving interpersonal abilities, and 5) fostering critical and creative thinking skills, as well as an enthusiasm for learning in specific areas of interest. Additionally, ALM defined and aligned five dimensions with the highlighted themes: orientation, individual growth, enrichment, seminars, and in-depth study.

The fourth stage involved the meticulous analysis and ultimate completion of the previously established concepts. The previous themes were synthesized and renamed to developing responsibility, positive self-esteem, decision making and problem-solving skills, interpersonal skills, and critical and creative thinking skills, as well as a passion for learning in areas of interest.

The fifth stage involved aligning the finalized themes with ALM. The themes are now categorized based on the correct dimensions with a match of 26 components that are outlined in the ALM framework. The themes were structured and categorized to look at the attainment of independent learning skills, according to ALM, and were reported as attainable themes.

The last stage involved writing the report. The findings of this study were reported using descriptive data analysis. Table 1 aligns the five themes to the specific components of ALM.

Table 1: Mapping of identified themes to ALM components.

ALM Dimension	Theme	ALM Component	Description
1. Orientation	Developing responsibility	Program/school opportunities and responsibilities	Encourage learners to take ownership of their learning and responsibilities, aligning with the development of responsibility
	Positive self esteem	Self/personal development	Promote learners' goal-setting and self-regulation, which are essential for fostering positive self-esteem in learning
		Understanding giftedness, talent,	Reach learners' achievements, confidence and self-worth in establishing a supportive and empowering learning environment

		intelligence and creativity	
	Critical and creative thinking skills and passion for learning	Group-building activities	Encourage learners' development of higher-order thinking skills and develop a passion for learning language
2. Individual Development	Developing responsibility	Inter/intrapersonal skills	Help learners to understand and appreciate their strengths, developing responsibility
		Organizational skills	Build learners' self-awareness and confidence, which are important for organizational skills
	Positive self-esteem	Learning skills	Encourage learners to develop skills, including critical thinking, creativity, communication, and problem-solving to promote lifelong learning
		College and career involvement	Promote learners' independence and active participation in their learning experiences
	Interpersonal skills	Technology	Enhance individualization and self-directedness in utilizing technology for language acquisition
	Critical and creative thinking skills and passion for learning	Productivity	Encourage learners to actively use their cognitive skills to understand the what, why, and how of learning
3. Enrichment	Decision making and problem-solving skills	Explorations and investigations	Engage learners in activities that require critical thinking and problem-solving, helping them to develop these skills
	Critical and creative thinking skills and passion for learning	Service	Provide learners with instances to make decisions and solve complex problems to improve their decision-making and problem-solving skills
4. Seminars	Decision making and problem-solving skills	Problematic	Strengthen learners' communication and teamwork skills for effective interactions
	Critical and creative thinking skills and passion for learning	General interest and advanced knowledge	Encourage learners' collaboration and enhance relationships through group work
5. In-Depth Study	Critical and creative thinking skills and passion for learning	Explorations and investigations	Encourage learners' curiosity and creative thinking, allowing them to explore areas of interest deeply

	General interest and advanced knowledge	Inspire students' passion for learning by engaging them in enriching, critical discussions on topics of interest
Decision making and problem-solving skills	Individual, group projects, and mentorship	Motivate learners to pursue their interests in-depth, fostering critical and creative thinking, while applying their knowledge in practical, self-directed projects
	Presentation and assessment	Support learners' personal development, develop teamwork, facilitate language acquisition, utilize language to examine personal interests, get insights into different cultures, and seek further learning resources

Results

The first theme identified, developing responsibility, refers to an individual's capacity to assume responsibility for his or her own learning and effectively manage time. This includes establishing objectives, tracking progress, and adjusting to change. The significance of a positive self-image in the learning process is highlighted by the second theme, positive self-esteem. Learners with a high sense of self-worth are more likely to be motivated, persistent, and assured of their abilities. The third theme, decision-making and problem-solving skills, incorporates the development of critical thinking abilities and the capacity to make decisions based on evidence and reasoning. This includes the ability to recognize and solve problems, evaluate data, and reason creatively. The fourth theme, interpersonal skills, emphasizes the significance of collaboration and communication in the learning process. This includes the ability to negotiate differences and work effectively in groups. The fifth and final theme, critical and creative thinking skills, and a passion for areas of learning that are of interest, emphasize the importance of curiosity and a love of learning. Autonomous learners are passionate about what they are learning, and are motivated to explore new ideas and concepts.

In Table 2, the five ALM dimensions that have been determined, based on the personal logs, are presented. Learners primarily achieved the six components of learning skills, of which the productivity (individual development) dimension is clearly exhibited in four themes. This demonstrates that the individual growth dimension is extremely perceptive. The learners' accomplishments also demonstrated that the learning skill is also deemed important. They were gradually adapting to the nature of ALM, which strongly required full commitment in comprehending the self-responsibility in guiding the outcome of the task that was provided. This was comparable to the dimension of orientation, and it was occurring at the same time.

Table 2: Achievement of independent learning skills based on ALM.

		Themes				
Dimension	Component	1st	2nd	3rd	4th	5th
Orientation	Understanding giftedness, talent, intelligence, and creativity		√			√
	Group-building activities					√
	Self/personal development	√	√			√
	Program/school opportunities & responsibilities	√				

Individual	Inter/intrapersonal skills	√			√	√
Development	Learning skills	√	√		√	√
	Technology				√	√
	College & career involvement		√		√	√
	Organizational skills	√		√	√	√
	Productivity		√	√	√	√
Enrichment	Explorations			√		√
	Investigations			√		√
	Cultural activities					
	Service			√		√
	Adventure trips					
Seminars	Futuristics					
	Problematic			√		√
	Controversial					
	General interest			√		√
	Advanced knowledge			√		√
In-Depth Study	Individual projects			√		√
	Group projects			√		√
	Mentorships			√		
	Presentation					√
	Assessment					√

It is interesting to note that more evidence is provided by the three dimensions of enrichment, seminars, and in-depth study, where learners were mostly highly engaged only in themes three and five. It is fascinating to take note of the fact that, despite their lack of experience, the learners place equal importance on the following four aspects of education: cultural events, adventure trips, futuristics, and problem-solving throughout the allotted period.

By the third task in this study, learners had produced comprehensive planning schedules, demonstrating progress in their self-directed learning. Over the course of the 14 weeks, their reflections transitioned from early doubts to more assured remarks, demonstrating a noticeable improvement in autonomous learning. They demonstrated a shift towards a mindset that is more substantial and confident in the context of autonomous learning. These examples demonstrate the presence of specific themes in the personal logs, their correlation with ALM characteristics, and the observed development, or patterns, in students' autonomous- learning abilities during the semester. These results, taken together, offer valuable insights into the later themes of the ALM model, when it was successfully implemented, to bring learners to a state of self-autonomy in managing their own learning processes.

Discussion

Developing responsibility

The results of the first theme indicate that learners were able to take responsibility for their own learning. For example, one of the participants mentioned, "[I] will send a message to one of my classmates to ask his or her permission to use their [sic] assignment," displaying accountability. Another has remarked "There is a problem in showing my learning logs to Madam Jean, as my classmates failed to adhere to the time limit given. I reached out to the class representative to discuss my turn. The class representative pushes [sic] my consultation slot to Thursday, [the] 6 the [sic] [of] April," showing time management and proactive problem-solving skills, with a commitment to learn supporting orientation in the ALM dimension. This aligns with Khalid et al.

(2020), who claimed that autonomous learning develops time-management and goal-setting abilities in learners.

Learners were able to be accountable for their progress that could be inferred from the remark, "After doing proper research, I understood how Grammarly analyzes each sentence, and how they suggest a solution to their customers," indicating active engagement in learning, and the following comment also supports this idea: "I have listened and taken note of the assessment briefing. I have also prepared the learning logs that will help me [to] organize my workload," supporting individual development in the ALM dimension that encourages learners to be able to set goals and adhere to deadlines, by using institution-provided software.

These behaviours, that highlight participants' accountability for their learning progress, support the ALM dimension of orientation, when learners actively seek knowledge and understanding with institutional support, showing dedication to managing their learning journey with the facility, by setting clear goals and deadlines that correspond with personal development, as well as program opportunities and responsibilities. In addition, participants' acknowledgement of the assessment briefing and production of learning logs to plan their workload, using institution-provided software, demonstrate goal-setting behaviour, which is reflected in the ALM dimension of individual development, showing improvement of learners' interpersonal learning, learning skills, and organizational skills. This contradicts Jackson's (2020) findings on students' difficulties in transitioning to autonomy, which was not the case in this study. This investigation demonstrates that learners prove adaptability skills, hence emphasizing that the ALM effectively fosters the development of autonomous learning skills.

The analysis demonstrates that ALM greatly enhances language learners' sense of responsibility. They strengthen their self-directedness, by accepting responsibility, establishing objectives, effectively managing their time, being accountable for their learning progress, and demonstrating a strong commitment to learning. This reinforces the need to provide learners with autonomy in their education, and suggests that ALM can cultivate responsibility.

Positive self-esteem

The results of the second theme indicate that learners were able to build confidence in language skills. This can be inferred from the remark, "It is a bit convoluted, but I will keep improving it. There are still plenty of kinks [that] I need to fix; some of the words seem off. It is hard to keep up with the plan. I kept up with the plan and continued updating it," demonstrating learners' goal-setting and self-regulation, which play an important role for building a positive sense of belonging in the process of learning. This aligns with Morris (1995), who argued that autonomous learners often experience increased satisfaction with their learning process, indicating that perseverance and resilience strengthen self-efficacy.

Next, learners can overcome challenges and setbacks in their process of learning. For example: "I was able to find a different website option that can recognize all types of error[s] that the prior website I used was unable to recognize." Another remark showed how to overcome a setback, when the participant stated, "My laptop ran out of battery, and I am away from any charging plugs. The printing shop is closed. I got back to my dorm room, charged my laptop and submitted it. I contacted a learner who provides a printing service." It appears that students were capable of developing independence, and engaging actively as language learners, which resulted in a positive self-image.

The participants demonstrated resilience and a growth attitude, by recognizing areas that need improvement and making a commitment to keep getting better. This shows an understanding

of personal development within the orientation dimension, where learners know that skill development happens in steps, so they keep trying to build their confidence. In addition, they not only dealt with immediate problems, but also created a sense of autonomy and adaptability in how these problems were solved, which supports learning skills and productivity within the individual development dimension.

The analysis portrays a positive self-image as a language learner, which was developed by participants' self-awareness and willingness to take action to improve. This reflected individual development in learning skills and college involvement, showing an alignment with the individual-development dimension. This also demonstrates that each action matches with the orientation dimension for understanding giftedness, talent, intelligence, creativity, and personal growth. It also helps learners to improve their learning skills, get involved in their careers, and be productive.

Decision-making and problem-solving skills

The results in the third theme indicate that learners were able to analyze language-learning options. This can be inferred from the remark, "The repeaters are not cooperative and did not inform us of anything. They were also slow at replying and made us waste a day of discussion. [We] discussed [this] with the lecturer and was [sic] informed that we are able to continue our consultation according to our class time. If there is time, I will be consulting her on Thursday." This comment demonstrates the growth of language learners' decision-making and problem-solving abilities, through learners' communication and teamwork skills for effective interactions. The participants were also able to evaluate their strategies, techniques, and abilities, as seen in this example: "I decided to use the MicroSoft Teams software to do my individual presentation," demonstrating that learners have the ability to pursue their interests in-depth, fostering critical and creative thinking.

The participant analyzes the issue, identifies any communication barriers, practices organizational skills and productivity, reflecting the ALM dimension of individual development and enrichment. Additionally, they practice the necessity for systematic and practical planning of collaborative projects, asking for help and references. This reflects their proactive attitude to language problems, which are aligned with seminars and in-depth study dimensions.

The analysis shows that learners were able to actively engage in activities that require critical thinking and problem-solving abilities. Learners too were also able to develop effective communication skills, and practice collaboration in applying their knowledge in practical, self-directed projects, while discovering additional educational resources, which align with individual development, enrichment, seminars and in-depth study dimensions. This study demonstrates that the strategies used by these participants to overcome collaborative challenges were constructive, providing practical solutions for the application of ALM in language instruction.

Interpersonal skills

The results in the fourth theme reveal that the ALM positively influences language learners' abilities to seek and provide constructive feedback. This can be inferred from the remark, "I finished my overall analysis and managed to praise my classmate's hard work." Another comment about the students engaging in group discussions or projects, showed some problems: "The group had a hard time deciding the best method to ensure [that] all [the] learners will consult with the lecturer twice. The group came to a consensus, [so] I will be consulting the lecturer on 30 March 2023 and 10 April 2023." This shows that these individuals actively participated in group

discussions and projects. Moreover, it demonstrates that the students successfully used their learning skills by incorporating technology, and effectively demonstrated strong organizational abilities, resulting in high-quality outcomes. Nevertheless, previous research by Li et al. (2020) has indicated that cultural and contextual factors may affect group dynamics; however, this does not apply to the Malaysian educational context, where learners successfully overcame these barriers. This suggests that ALM prioritizes mutual accountability in autonomous learning, which demonstrates strong interpersonal skills among learners.

The analysis demonstrates the learners' favourable remarks, which is an important aspect of interpersonal competence. Their evaluation and commendation of a classmate created an environment that was favourable for learning. This action encourages respect, as well as collaboration among peers, aligning with the ALM dimension of individual development, and highlighting the importance of interpersonal and organizational components. The students also collaborated to reach a consensus on the timing of consultations, showcasing their proficient skills in group discussions and decision-making. This showcases their interpersonal, organizational, and productivity skills. It corresponds to the ALM feature of individual development, by demonstrating the learners' dedication to collaborative assignments and achieving objectives. The improvement of language learners' critical and creative thinking skills, and developing a passion for learning in certain areas within the framework of language, correspond to all the five dimensions in ALM.

Critical and creative thinking skills and a passion for learning in areas of interest

The results in the fifth theme show that ALM helps to emphasize the ways that students reflect on language learning experiences. This is shown in the remark, "I made a few research [explorations] on how to find my style. I found my style after analyzing a few examples of written report from my classmates and the internet." The comment demonstrates that this learner was able to analyze and interpret language materials and apply logical reasoning to language tasks. Another example highlighted the errors from the original essay, which used both physical and online dictionaries: "Done proofreading the original essay using software and manually in hard copy," which proves that this participant was able to generate innovative language-learning strategies from the tasks given. Additionally, this student was able to challenge assumptions and explore alternative perspectives, as autonomous learning skills were emphasized more towards the end of the semester. This was seen in the remark, "Having problems with the website where I was supposed to upload my softcopy of the assessment, since the 2nd of May--Having to submit the assessment on the 5th of May instead--I have finally submitted the softcopy of the assessment." In this case, the learner was able to seek out additional resources or opportunities from the tasks given.

The analysis shows learners' reflective practice and self-discovery in language learning by developing an ALM orientation and individual development-aligned personal style. Self-reflection promotes development and innovation. The student analyses linguistic elements and corrects errors, demonstrating learning and organizational abilities, increasing productivity. They also used rationality and organization to categorize and correct language problems, which aligns with ALM, and fosters productivity, learning, and problem-solving. Learners' innovative use of traditional and digital resources, resilience, and technical problem-solving abilities show flexibility and determination by submitting the assessment despite language learning challenges, and by using multiple proofreading tools. These instances show creativity and thoroughness, which matches the ALM components of explorations, investigations, and technologies, corresponding to the enrichment and seminars' dimensions. This finding substantiates the claim made by Ertug and

Faydali (2018) that self-directed learning is needed for adapting to technological changes. This study demonstrated that integrating ALM enabled learners to exhibit resilience and creativity in problem-solving, emphasizing the necessity of developing higher-order thinking skills with autonomous learning frameworks to prepare learners for future challenges.

ALM encourages students to explore their passions, learn about various cultures, and find new resources. Significant personalization and personal autonomy motivate language learners. This highlights the need to teach higher-order thinking abilities to help them to learn more and use language differently. These data align orientation, individual growth, enrichment, seminar, and in-depth study with the fifth theme of ALM.

Learners have a better grasp of the language by thinking about it, analyzing it, using logic, and looking at it from different points of view. This helps them be more creative with what they know. These results show how important it is to help students to develop higher-order thinking skills, so that they can learn more and use language in different ways. ALM makes learners curious and self-motivated, by encouraging them to study their own interests, learn about other cultures, and look for more resources. Personalization and student autonomy are important for making individuals want to learn a language. Because of these findings, the concepts of orientation, individual growth, enrichment, seminar, and in-depth study are aligned with the ideas of the fifth theme within ALM.

Conclusion

The use of ALM significantly enhances language learners' sense of responsibility and autonomy by defining goals and managing time. Hence, their self-esteem increased and developed from different challenges in the process of learning. This highlights the need for an inclusive, empowered, educational environment that promotes confidence and language development. ALM-based learning could help strengthen language students' problem-solving and decision-making. Engaging in the study of language learning, assessing and responding to critiques, enhances learners' proficiency in language and decision-making abilities. Therefore, it is important to guide these students in the skills of critical thinking and problem-solving.

Furthermore, ALM-based learning improves the social skills of language learners. The participants developed interpersonal skills, by engaging in collaborative activities, receiving constructive feedback, participating in group discussions, and engaging in interactions. This study focused on the acquisition of the English language through ALM-based learning, which fosters the development of critical and creative thinking skills in language learners. Cognitive processes such as thinking, analyzing, reasoning, and accepting multiple viewpoints are beneficial for language students to enable them to apply their knowledge in a creative manner. Developing higher-order thinking skills is crucial as well, since it enhances learners' acquisition of knowledge, and facilitates the use of language in unconventional ways. This study demonstrates that the use of ALM-based learning enhances language students' passion for certain subjects, promotes personal interests, fosters cross-cultural understanding, and facilitates the discovery of alternative resources. This demonstrates the influence of personalization and autonomy on language learners. Therefore, self-directed learning has an impact on both language competency and the acquisition of language over a long period of time, as well as on the topics of the ALM framework.

This is strongly supported with the claim made by the Ministry of Higher Education (Malaysia) that stressed the importance of autonomous learning for university students, due to the adoption of a hybrid and flexible learning system, along with the reduction in program length from four years to three years (Higher Education Ministry to shorten 44 Degree Programmes at IPTA

to three years, 2023). Since students require more control over their learning, hence, hybrid and flexible learning systems have been implemented. Students will now have more freedom in scheduling and accessing materials, with both virtual and physical components. They must become more self-directed in time management, prioritization, and independent learning. However, shortening the program from four years to three means that students must learn the relevant skills faster. This emphasizes self-learning. They must show more initiative in searching out resources, studying independently, and learning progress. Optimizing learning strategies requires autonomy. The hybrid, flexible learning system, and shorter program duration, emphasize self-regulation and time management. Students must be actively involved in their own learning, set objectives, and manage their time, to finish assignments and study for tests (Kasinathan et al., 2023).

Autonomous learners can better manage their time, balance competing demands, and choose optimal study hours by seeking opportunities for growth and self-improvement outside of school. Self-directed study in a hybrid and adaptable learning system emphasizes lifelong education. Learners are more likely to continue self-directed learning beyond graduation, assuring their professional success in a changing world. This study showed the need for independent knowledge as acquisition. The participants were able to successfully incorporate a personalized learning style, and with greater guidance from educators and university cooperation, the courses and new curriculum will reinforce this notion.

This study also provides strong evidence from multiple research studies that support the claim that autonomous learners actively engage in reflective learning. They are willing to make a conscious effort to comprehend what, why, and how they are learning (Gathercole, 1990). They additionally manage their own ways of garnering information. Systematic, flexible, adventurous, inquiring, and motivated learners are prominent. They are confident, dependable, and socially adept (Candy, 1991). Furthermore, self-directed learners require fewer instructions from instructors, and necessitate a self-governing educator (Benson, 2006; Fischer, 2001; Gathercole, 1990; Jebbour, 2022). Autonomous instructors have the ability to work independently and adhere to ethical principles. They do not engage in teaching, but rather coordinate, advise, and communicate. This evidence substantiates the assertion that these methods assist learners in fostering a passion for acquiring knowledge in specific domains, within the context of language.

Nevertheless, this study also found significant findings that needed to be considered when trying to teach and encourage students to engage in autonomous learning. Discovering their own growth, collaborating to improve their language skills, getting to know people who speak the language, using language to explore their personal interests, learning about related cultures, and showing their own curiosity and drive are also necessary (Hoo et al., 2023). Therefore, both research questions for this study were answered by the results and the discussion presented.

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