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Learner Autonomy as an Instructional Strategy in Enhancing Language Learning

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Abstract: The purpose of this research is to assess the applicability of learner autonomy as an instructional strategy in language learning, specifically English as a second language. The study made use of the descriptive correlational research design with a Microsoft Form questionnaire as the main instrument in gathering the data needed from the senior high school students. The results revealed that most senior high school students were enrolled in academic track and the majority of them have outstanding academic performance. The findings also showed that learning technologies were often utilized by these students and collaborative assistance were very often employed. Meanwhile, the extent of manifestation of learner autonomy to language learning is up to great extent. Moreover, a significant relationship between manifestation of learners' autonomy and profile variables were found except, the relationship between academic performance and control over learning management and control over cognitive processing. Also, the respondents were able to identify several problems and challenges in their autonomy. Finally, based on the findings of the study, a learning strategy matrix was prepared to further enhance the learner autonomy in language learning among senior high school students of Lyceum of the Philippines University campuses.

Keywords: Learner autonomy; Instructional strategy; Collaborative assistance; Learning technologies; Learning strategy matrix

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1. Introduction

Today's learners are considered the center of the teaching and learning process. Learning is no longer restricted to the four walls of a typical classroom, where the teacher serves as the focal point of all educational activities and students are merely passive recipients of instruction with no autonomy. 21st-century education currently focuses on the skill development and critical thinking skills of the learners. Suskie [1] described that students of today can master content from a wide variety of subjects while synthesizing, evaluating, and producing information with an understanding of and respect for diverse cultures. Virtual tools and open-source software,

which are the highlights of the 21st century, create borderless learning grounds for students of all ages, anytime and anywhere.

The current setting in the educational system advocates learner autonomy. Today's classrooms are now training venues for self-efficacy and independence. Among educators, the growing inclination towards learner-centeredness was a radical shift, which involved the primary focus of learning moving from the teacher to the learner. Whereas traditional learning relies heavily on the teacher as the interpreter and presenter of knowledge, learner-centered education opens up opportunities for individual learners to be participants in their own learning [2].

Learners now drive their learning, with opportunities for self-management, collaboration, discovery, creation, and self-assessment, guided by teachers. Globally, curricula aim to cultivate independent learners prepared for local and global challenges. Accordingly, the current educational principles emphasize lifelong learning and life skills development. Tamer [3] explained that the trend among students is to be more and more independent of teachers. Students are being transformed into independent learners, assuming more responsibility for their own learning, and teachers are only becoming facilitators, advising more and lecturing less. Today, where classrooms are spurred by advances in information technology, students can be autonomous.

In the Philippines, few studies have been conducted regarding learner autonomy (LA) in language learning [4]. Learner autonomy is a new concept in Philippine education, but it is a significant move by the government to change the old curriculum into a learner-centered curriculum, which is a big leap toward learner autonomy. The Philippine educational system acknowledges the importance of learner autonomy; however, learner autonomy seems to be less recognized as an educational aim in the country than the others [5].

The implementation of the K–12 curriculum, which focuses on learner-centeredness in curriculum design, implementation, and evaluation [6], implied that education in the Philippines may see a more autonomous learning scenario in the near future. Language learning may lead the way for more autonomous learning in the Philippines since research shows autonomy in language learning is most effective. Lewis, *et al.* [7] asserted that independence, autonomy, and the ability to control learning experiences have come to play an increasingly important role in language education.

Further, Nugraheni [8] pointed out that the teacher should provide learning activities that develop and exercise learning competencies. Students need guidance and encouragement to help them set goals, make choices, show interest in different learning tasks, and engage more actively in learning activities. In addition, teachers must be aware of the progress made or the difficulties encountered during autonomous learning in order to provide immediate and appropriate support [9].

Learner autonomy, once a fringe idea challenging traditional teaching, is now globally recognized, especially in language learning. It emphasizes learners' independence, which can occur with support from teachers and peers both inside and outside the classroom [10]. Autonomy entails psychological independence in the learning process and content, not just learning mode [11]. It is distinct from terms like self-instruction or distance learning, focusing on learners' abilities and attitudes to learn independently [12].

Autonomous learners excel in self-learning but are not limited to it [11]. Globally, language learning emphasizes learner autonomy [2], crucial for adapting to rapid changes in science and technology through lifelong learning. Its integration into education aims to cultivate responsible learners capable of self-directed learning, both in class and outside, to improve language proficiency [13].

Abun *et al.* [14] highlighted that Philippine classrooms often feature teacher-dominated environments, with controlling behavior prevalent over autonomy support. Autonomy-supportive teachers motivate students and foster open discussion, whereas controlling behavior involves excessive teacher talk and limited student input. This approach is typically reinforced with rewards, praise, or punishment based on student participation [14].

In contrast to many Western educational systems, Philippine classrooms remain entrenched in traditional teaching methods, lacking emphasis on learner autonomy. Passive learning prevails, with students often relegated to the role of mere listeners and observers, resulting in poor retention and lack of motivation. To address this issue, promoting strategies that foster learner autonomy is crucial. Incorporating learner autonomy as an instructional approach in language learning can help overcome this educational challenge.

Filipino students generally exhibit developing proficiency levels in English, as indicated by past and current English standardized tests administered by both the Department of Education (DepEd) and private academic institutions. This suggests a lack of communicative competence in English within the current educational context. The findings align with the 2018 Program for International Student Assessment (PISA) report, which highlighted below-average English reading literacy among Filipino students compared to the OECD average. Alarmingly, only one out of five Filipino students achieved at least the minimum proficiency level in overall reading literacy, resulting in one of the lowest rankings worldwide [15].

While the current academic challenges facing senior high school students at the Lyceum of the Philippines University are daunting, they present an opportunity for improvement rather than despair. The researcher suggests that a shift in instructional strategy could address these challenges effectively. Embracing autonomous learning empowers students to understand their learning processes, including strengths and weaknesses. This self-awareness is crucial for language proficiency acquisition and fosters lifelong learning skills.

The study examined learner autonomy as an effective instructional strategy for enhancing language learning, specifically English as a second language. Furthermore, it envisioned the development of learner autonomy among English language students. Being autonomous, therefore, in the initial state, meant being scaffolded by teachers to enhance the learning process. Finally, the investigation aimed to promote a learning strategy matrix that could enhance learner autonomy among senior high school students. This learning strategy matrix for learner autonomy development would have been very useful for the transition of learners from teacher-dependent learners to autonomous learners in English. With the aid of a competent English teacher, this matrix for autonomous learner development would have helped facilitate activities that exposed these learners to numerous autonomous learning opportunities.

2. Objectives of the study

This study aimed to determine the applicability of learner autonomy (LA) in language learning as an instructional strategy for senior high school learners.

Specifically, this study achieved the following objectives:

(1) To describe the profile variables of the senior high school students in terms of:
   (a) strand;
   (b) academic performance;
   (c) utilization of learning technologies; and
   (d) collaborative assistance.
(2) To determine the extent of manifestation of learners' autonomy as instructional strategy in language learning relative to the following controls over:
   (a) learning management;
   (b) cognitive processing; and
   (c) control over content.
(3) To find out the relationship between the extent of manifestation of learners' autonomy and profile variables.

3. Hypothesis of the study

The study was premised on the following null hypothesis:

There is no significant relationship between the respondents' demographic profile variables and the extent of manifestations of their learner autonomy.

4. Results and discussion

4.1. Profile of the senior high school students

This study examines the demographic profile of senior high school students in a private school, encompassing their academic track, performance, use of learning technologies, and collaborative assistance. Understanding these factors is crucial for assessing students' autonomy in language learning, as they significantly influence attitudes, motivation, and strategies. The sample includes 799 students from a total population of 3,317, offering insights into students' characteristics and their implications for language learning autonomy.

Understanding the track and strand in language learning is essential for assessing learner autonomy. Different tracks and strands offer varying degrees of freedom to learners, impacting their ability to take charge of their learning. Profiling enables teachers to identify learners' abilities and challenges, providing tailored support and resources to foster autonomy. This approach enhances learner motivation and engagement, leading to improved language learning outcomes. Profiling track and strand helps identify learners' needs, facilitating targeted teacher support and autonomy promotion.

Table 1 shows more than half (53%) of the student-respondents were enrolled in the Science, Technology, Engineering, and Mathematics (STEM) strand. The result also showed that most of the respondents are enrolled in academic track. This was almost similar to the study conducted by Brillantes *et al.* [16] wherein the largest concentration in the distribution of enrolment by strand/track was in academic and Technical-Vocational-Livelihood (TVL) tracks.

Table 1. Strand of the respondents

Strand/Track	Frequency	Percent*
Science, Technology, Engineering, and Mathematics (STEM)	424	53.10
Accountancy and Business Management (ABM)	187	23.40
Humanities and Social Sciences (HUMSS)	80	10.00
Technical-Vocational-Livelihood Track: Home Economics Strand:	60	7.50
Arts and Design Track (ADT)	30	3.80
General Academic Strand (GAS)	18	2.30
Total	**799**	**100.00**

*Percent is based on the total respondents of 799

Table 1 reveals that a majority of student-respondents were enrolled in the Science, Technology, Engineering, and Mathematics (STEM), Accountancy and Business Management (ABM), and Humanities and Social Sciences (HUMSS) strands within the academic track. This suggests a significant inclination towards pursuing college degrees among students. Academic track, designed for college-bound students, emerged as the most popular choice in the K–12 curriculum [17]. This trend aligns with prior studies, such as those conducted by Brillantes *et al.* [16], which also observed high enrollment concentrations in Academic and Technical-Vocational-Livelihood (TVL) tracks.

However, there were also students opting for the Technical-Vocational-Livelihood Track, with strands like Information and Communication Technology (ICT), Home Economics: Tourism cluster (HET), and Home Economics: Culinary Arts cluster (HEC). This choice indicates a preference for immediate employment after senior high school, bypassing college education. The TVL track is tailored for students aiming to enter the workforce directly after completing basic education. Overall, the data suggests that most senior high school students are inclined towards pursuing college education after completing basic education.

4.2. Academic performance

As for the academic performance category, **Table 2** presents the academic performance of the students. Based on the data presented in **Table 2**, a significant percentage of the students belong to the group with very satisfactory and outstanding grades. Likewise, the study of Tus [18] supported this finding by indicating that the academic performance of senior high school students mostly belonged to the very satisfactory and outstanding group.

Table 2. Academic performance of the respondents

Academic performance	Frequency	Percent
90-100 (Outstanding)	543	68.00
85-89 (Very satisfactory)	187	23.40
80-84 (Satisfactory)	52	6.50
75-79 (Fairly satisfactory)	17	2.10
Total	**799**	**100.00**

*Percent is based on the total respondents of 799

Scholars also agree that the academic success of students is a "net product" of their cognitive and non-cognitive attributes [19] as well as the sociocultural context in which the learning process takes place [20,21].

Although it can be seen in the table that there are some students who have fairly satisfactory grades, the study of Quinn-Nilas *et al.* [22] believed in the significance of self-management and academic success courses in coaching students with successful strategies for performing well in their studies. Their study revealed that lack of personal capacity positively predicts academic resourcefulness, which in turn, predicts academic degrees. Therefore, it is particularly important to understand the factors that affect the academic performance of students if educators intend to foster a culture of academic success.

Additionally, Magulod's [23] research looked at the learning style preferences, study patterns, and level of academic achievement of students. His study revealed that most students have a high degree of academic achievement. Based on the results in **Table 2**, it could be concluded that most senior high school students of the four LPU campuses were able to achieve high academic success.

4.3. Utilization of learning technologies

Table 3 shows that half of the learning technologies were used very often by the students. The grand mean indicates that senior high school students often utilize learning technologies such as the internet, social media, multimedia, and computer-based/gadget-based in their everyday learning. This was evident especially in this time of pandemic where students were not allowed to interact face-to-face with their classmates and teachers. The amount of time they spent using the learning technologies increased. The current finding was similar to the study of Ubaedilla and Damar [24] stating that learning technologies are often used in distance learning.

Table 3. Utilization of learning technologies by the respondents

Learning technologies	Mean	Standard deviation	Interpretation
1. Internet	3.81	0.481	Very often
2. Computer-based/Gadget-based	3.59	0.764	Very often
3. Multimedia	3.51	0.736	Very often
4. Video	3.50	0.649	Very often
5. Social media	3.36	0.781	Very often
6. Pen and paper	3.13	0.841	Often
7. Non-multimedia	2.92	0.829	Often
8. Audio	2.85	1.077	Often
9. Simulations	2.51	1.031	Often
Composite mean	**3.24**	**0.401**	**Often**

For interpretation, the following remarks apply to mean interval: 4: 3.50–4.00 Very often/Great extent; 3: 2.50–3.49 Often/Moderate; 2: 1.50–2.49 Seldom/Slight; 1: 1.00–1.49 Very seldom/Least

Ratnasari and Haryanto [25] supported the utilization of learning technologies, noting their positive impact on student learning achievement. They emphasized the significance of gadgets and other learning technologies in modern education, suggesting their increasing importance in the future. They urge curriculum planners and policymakers to recognize the potential of learning technologies in accommodating diverse learning styles.

Similarly, Francis [26] advocated for technology in education, highlighting its role in fostering alternative learning approaches and community building. Despite some students' continued use of traditional methods like pen and paper, the Internet is perceived as a stronger and more convenient resource, particularly during the pandemic. It serves as a vital knowledge source, enhancing reading habits and academic performance.

The Internet's accessibility has revolutionized education [27], with a large percentage of students owning smartphones, granting them constant access to educational resources [28]. It offers vast information resources, including online libraries, research papers, articles, and multimedia content, facilitating comprehensive learning experiences [29]. Additionally, the Internet enables interactive learning through multimedia elements like videos and simulations, promoting engagement, critical thinking, and knowledge retention [30,31].

In-depth, the Internet promotes collaborative learning by enabling seamless communication and knowledge-sharing among students and teachers. Learning management systems and video conferencing tools, for example, encourage virtual collaboration by allowing students to participate in group projects, peer reviews, and real-time discussions [32]. The Internet's collaborative nature encourages social interaction and knowledge co-construction.

Multimedia technology has become prominent in education due to its ability to enhance learning retention, engage learners through multisensory experiences, provide interactive environments, and cater to various learning styles. Leveraging visuals, audio, and interactivity, multimedia fosters active engagement, deep understanding, and knowledge application. As technology evolves, multimedia's role in education is poised to expand further, offering students innovative and immersive learning experiences.

By incorporating multiple sensory modalities, multimedia technology enhances learning retention. The integration of visual, auditory, and kinesthetic elements aids learners in processing and retaining information. Research indicates that multimedia, such as videos, animations, and graphics, improves learning outcomes and

long-term memory [33].

Multimedia technologies also engage learners through multisensory experiences. Multimedia captures learners' attention and stimulates their senses by incorporating visual, auditory, and interactive components. This multisensory engagement encourages active learning and allows for greater comprehension [34]. Learners can visualize concepts, hear explanations, and interact with the content, resulting in a more engaging learning experience.

Multimedia technologies offer interactive learning environments, engaging students through simulations, virtual reality (VR), and gamification, promoting exploration, critical thinking, and knowledge application [35]. Additionally, multimedia accommodates various learning styles by presenting content in different modes, catering to visual, auditory, and kinesthetic learners [36].

Video technology has transformed education delivery, captivating learners with compelling visual content that enhances understanding and retention [37]. With the widespread accessibility of smartphones and other devices, learners can easily access video content anytime, anywhere [38]. Videos engage learners emotionally, sparking curiosity and increasing motivation [39], while offering a versatile instructional tool for lectures, demonstrations, simulations, and more [40].

Social media platforms serve as effective learning technologies, fostering community and collaborative experiences [41]. Users can create and share educational content, promoting active participation and knowledge creation [42].

Social media platforms offer personalized learning experiences by tailoring content to users' interests, preferences, and learning styles. Algorithms analyze user behavior to recommend relevant resources, courses, and communities, enhancing learner engagement and motivation [43].

What sets social media apart for learners is its capacity for rapid information dissemination, enabling access to real-time updates, news, and trends. Educators utilize platforms like Twitter, Facebook, and LinkedIn to share timely resources and learning materials, keeping students informed and adaptable to changing educational landscapes [44].

With its ability to foster social connectivity, facilitate user-generated content, provide personalized learning experiences, and enable real-time information dissemination, social media stands out as the most widely used learning technology. Learners engage in collaborative learning, create and share educational content, receive personalized recommendations, and access up-to-date information through social media platforms. As social media continues to evolve, its impact on education will redefine traditional learning paradigms and increase global learner engagement.

4.4. Collaborative assistance

Students who engage in collaborative assistance in language learning demonstrate willingness to work with others, effective communication in the target language, ability to provide constructive feedback and support, and integration of their own learning needs with those of peers. This collaborative approach allows them to benefit from collective knowledge and support, potentially leading to greater language learning success and a more enjoyable experience (**Table 4**). Self-paced, grouping, and online methods are commonly employed for collaborative assistance among senior high school students, reflecting the importance of contemporary learning environments.

Table 4. Collaborative assistance of the respondents

Collaborative assistance	Mean	Standard deviation	Interpretation
1. Online	3.67	0.582	Very often
2. Self-paced	3.50	0.666	Very often
3. Grouping	3.40	0.489	Often
4. Dyadic	3.12	0.869	Often
5. Coaching	3.03	0.776	Often
6. Mentoring	2.96	0.851	Often
Composite mean	**3.28**	**0.425**	**Often**

For interpretation, the following remarks apply to mean interval: 4: 3.50–4.00 Very often/Great extent; 3: 2.50–3.49 Often/Moderate; 2: 1.50–2.49 Seldom/Slight; 1: 1.00–1.49 Very seldom/Least

Students prefer comparing skills with peers rather than solely relying on coaching from teachers. Reinders and White [45] emphasized that learner autonomy involves interdependence, not just freedom. This notion is supported by Sulaiman and Shahrill's study [46], which found that collaborative learning positively influenced student attitudes and enhanced learning outcomes. Collaboration fosters active learning, positive social support, teamwork, and exposure to multiple cognitive perspectives. However, students also face challenges in collaborative learning, including teamwork, communication, personal priorities, and external constraints [47].

Numerous studies highlight the benefits of collaborative learning. Mosley *et al.* [48] support this notion, emphasizing collaboration's diverse educational applications, including enhancing critical thinking and fostering positive group dynamics. Collaborative learning provides students with opportunities to develop confidence and skills in challenging subjects, making them more academically competitive.

Online collaborative assistance stands out as the most prominent indicator of language learning autonomy, empowering learners to actively engage in language acquisition and practice. Online platforms offer enhanced accessibility, allowing learners to connect and collaborate with peers and language experts worldwide. Regardless of geographical constraints or time zones, learners can access language resources, participate in discussions, and seek assistance, thanks to the ubiquity of the Internet and mobile devices.

Online collaborative platforms facilitate interactive communication, enabling meaningful interactions among learners and native speakers of the target language. Through features like video conferencing, instant messaging, and discussion forums, students can practice language skills, receive feedback, and engage in authentic conversations [49]. This interactive communication fosters learner autonomy while enhancing linguistic and cultural competence.

Moreover, online collaborative assistance empowers learner autonomy by granting students control over their learning experiences. Learners can set objectives, choose materials, and engage in self-directed learning at their own pace [50]. These platforms offer diverse resources, including online courses and language exchange communities, enabling learners to personalize their learning journey.

Furthermore, online collaborative language learning platforms provide personalized experiences tailored to individual needs and preferences. Adaptive technologies and machine learning algorithms assess progress, strengths, and weaknesses, offering targeted recommendations and feedback [51]. This personalization enhances engagement, motivation, and learning outcomes.

Due to its increased accessibility, interactive communication, learner autonomy, and personalized learning experiences, online collaborative assistance has emerged as the dominant approach to fostering language learning autonomy. Language learners can connect with a global community, engage in authentic interactions,

and take control of their learning journeys through online platforms. As technology continues to evolve, online collaborative assistance will continue to shape the landscape of language learning autonomy, empowering learners to achieve their proficiency goals.

Mentoring serves as a crucial component of collaborative assistance in language learning autonomy, offering personalized guidance and support to learners. Mentors, typically experienced language users or educators, provide individualized feedback, resources, and assistance tailored to learners' specific needs and goals [44]. This personalized support enables learners to identify strengths and areas for improvement, enhancing the effectiveness of their language learning experiences.

Moreover, mentoring plays a pivotal role in boosting learners' motivation and self-efficacy. Mentors act as role models, offering encouragement, inspiration, and positive reinforcement [52]. Through regular interactions, mentors help learners set achievable goals, monitor progress, and overcome challenges, fostering intrinsic motivation and persistence in language learning [53].

Significantly, mentoring promotes the growth of cultural competence in language learning. Language mentors can help students understand cultural nuances, norms, and communication styles associated with the target language [54]. Mentors help learners become more effective communicators and gain a deeper appreciation for intercultural diversity by providing insights into cultural contexts and facilitating authentic language use.

Mentoring also encourages learners to engage in self-reflection and metacognition. Mentors help learners develop critical thinking skills by guiding them to reflect on their language learning strategies, progress, and goals [55]. Mentors encourage learners to evaluate their learning approaches, make informed decisions, and develop autonomy in managing their language learning journey through discussions and feedback.

In the end, through mentoring relationships, learners receive personalized guidance, motivation, and cultural insights, enabling them to take ownership of their language learning process. As mentoring continues to evolve in online and offline contexts, it will continue to play a crucial role in supporting language learners on their path to autonomy.

4.5. Extent of manifestation of learners' autonomy in language learning

4.5.1. Control over learning management

Control over learning management refers to the extent to which learners are able to manage their learning environment by using resources, tools, and technology available to them. In language learning, this includes the ability to use language learning software, mobile apps, online resources, and social media to enhance language learning. Moreover, learners may use various tools and technologies to monitor their learning progress and seek feedback, such as language learning journals, online language assessments, and language learning platforms.

When learners have control over their learning management, they are more likely to customize their learning experience to their individual needs, which can enhance motivation and learning outcomes. Therefore, the manifestation of learners' autonomy in language learning relative to control over learning management is crucial for effective language learning. Control over learning management is described as planning, organizing, and evaluating the learning process [56].

Table 5 shows that the manifestation of the learner's autonomy to control over learning management is to a moderate extent. The majority of the students were able to set the pace of their own learning according to their learning style, choose resources on their own, and improve their language learning through self-practice. In short, learners make decisions that have a huge effect on the results of their learning.

Table 5. Extent of manifestation of learners' autonomy in language learning relative to control over learning management

Item	Mean	Standard deviation	Interpretation
1. Set the pace and place of studying in accordance with own style of learning	3.51	0.637	Great extent
2. Choose the means and resources for my studying if given the opportunity	3.46	0.612	Moderate extent
3. Improve English proficiency through self-induced language skills practice	3.45	0.637	Moderate extent
4. Set practical use of learned skills in the English language	3.44	0.565	Moderate extent
5. Use various learning materials from school, community, friends, and home to achieve learning goals	3.28	0.708	Moderate extent
6. Hone language skills by doing additional out-of-school activities such as listening to English podcasts and watching English videos	3.26	0.800	Moderate extent
7. Read learning materials on my own even outside the school	3.23	0.737	Moderate extent
8. Define specific learning goals on a daily, weekly, or monthly basis	3.20	0.750	Moderate extent
9. Assess own learning after every lesson discussion	3.16	0.760	Moderate extent
10. Visit the library often and look for supplementary and advanced materials for learning	2.09	0.978	Slight extent
Composite mean	**3.21**	**0.438**	**Moderate extent**

For interpretation, the following remarks apply to mean interval: 4: 3.50–4.00 Very often/Great extent; 3: 2.50–3.49 Often/Moderate; 2: 1.50–2.49 Seldom/Slight; 1: 1.00–1.49 Very seldom/Least

The study conducted by Muhammad [57] revealed that students demonstrated the ability to manage their learning independently, leading to a sense of ownership and control over their learning styles and preferences. Similarly, Balakrishnan and Gan [58] explored the factors influencing students' intentions to use social media for learning, highlighting the effectiveness of student-centered teaching methods. Lumanog [59] and Wong [60] emphasized the importance of teaching styles in enhancing learning experiences, supported by Magulod [23] and Aventijado *et al.* [61], who emphasized the impact of tailored strategies on student success.

Moreover, learners' autonomy in language learning involves setting their own pace and studying in environments that suit their preferences [62,63]. Learners can select methods and resources that align with their learning goals, promoting self-directed learning and increasing their chances of success in language acquisition [64,65]. Self-initiated practice is crucial for improving language proficiency, as emphasized by Oxford and Crookall [66] and Camilleri [67], enabling learners to focus on specific skills and areas for improvement.

While some indicators, such as defining specific learning goals and utilizing library resources, were perceived as less relevant, they still reflect learners' autonomy in setting goals, self-assessment, and seeking additional materials to support their learning journey. Learners exercise control over their learning management and increase autonomy in language learning by personalizing their learning experiences and accessing diverse resources to enhance their language skills [65,68].

4.5.2. Control over cognitive processing

Learner autonomy in language learning is evident in cognitive processing. Firstly, autonomous learners take charge of their learning journey by setting goals and crafting strategies to achieve them. They actively seek language practice opportunities through various means like online resources, conversations with native speakers, or reading in the target language. Secondly, autonomous learners engage in deeper cognitive processes such as critical thinking and analysis. They question information, seek additional resources for validation, and connect new concepts with existing knowledge, enhancing their understanding and retention of the language.

Table 6 displayed that the manifestation of the learner's autonomy to control cognitive processing is to a moderate extent. Students were able to acknowledge their limitations and challenges and do something to improve their weaknesses, use background knowledge effectively to absorb and process current lessons, and gain knowledge and skills through collaboration with others.

Table 6. Extent of manifestation of learners' autonomy in language learning relative to cognitive processing

Item	Mean	Standard deviation	Interpretation
1. Acknowledge limitations and challenges and do something to improve my weaknesses	3.46	0.640	Moderate extent
2. Use background knowledge effectively to absorb and process current lessons	3.43	0.623	Moderate extent
3. Gain knowledge and skills through collaboration with others	3.38	0.751	Moderate extent
4. Plan learning activities such as time, strategy to be used, source, quality, and quantity of learning materials	3.37	0.649	Moderate extent
5. Put newly learned language skills into practice	3.33	0.683	Moderate extent
6. Use various learning approaches if the current one is not working well to stimulate interest in language learning	3.32	0.665	Moderate extent
7. Make some efforts to overcome emotional issues that may hinder language learning	3.30	0.720	Moderate extent
8. Keep in line with the predetermined plan during the process of completing academic tasks.	3.29	0.653	Moderate extent
9. Understand the lessons even with less supervision from the teacher	3.27	0.708	Moderate extent
10. Provide an opportunity for self-assessment as a part of learning	3.25	0.752	Moderate extent
Composite mean	**3.34**	**0.444**	**Moderate extent**

For interpretation, the following remarks apply to mean interval: 4: 3.50–4.00 Very often/Great extent; 3: 2.50–3.49 Often/Moderate; 2: 1.50–2.49 Seldom/Slight; 1: 1.00–1.49 Very seldom/Least

The findings suggest that independent learners are more likely to succeed in language learning as they acknowledge limitations, use background knowledge effectively, and collaborate with peers [7]. This task knowledge, part of metacognitive knowledge, is crucial for controlling cognitive processing, which entails managing attention, reflection, and metacognitive knowledge itself [59]. Muhammad's study emphasized students' attentiveness, error awareness, and willingness to help others as signs of cognitive control [57]. Similarly, Yildiz and Akdag argued that students with high metacognitive knowledge tend to act more strategically and productively [69]. Research by Warni *et al.* further supported this, showing the feasibility of involving students in decision-making about learning objectives and self-evaluation [70], while also highlighting the importance of teachers sharing control over classroom learning with students. Ultimately, learners' autonomy in language learning, regarding control over cognitive processing, involves students taking charge of their learning process and actively employing strategies to enhance their learning, characterized by acknowledging challenges, using background knowledge effectively, and collaborating with others.

4.5.3. Control over content

Learners' autonomy in language learning entails taking charge of their learning journey, including setting goals, selecting strategies, and owning their outcomes. This autonomy is evident in various forms, such as choosing materials, pacing their learning, and selecting topics aligned with their interests. Controlling content is particularly crucial, as it enhances engagement and motivation by allowing learners to choose relevant

materials that cater to their preferences and needs, ultimately leading to a more enjoyable and effective learning experience.

Table 7 shows the manifestation of the learner's autonomy to control content to a moderate extent, which explains how it allows learners to tailor their learning to their individual strengths and weaknesses, leading to improved language proficiency over time.

Table 7. Extent of manifestation of learners' autonomy in language learning relative to content

Item	Mean	Standard deviation	Interpretation
1. Decide what to learn during self-study	3.47	0.714	Moderate extent
2. Check the authenticity and reliability of researched learning materials	3.46	0.675	Moderate extent
3. Understand clearly the objectives/goals of the lesson whenever I look for supplemental resources	3.42	0.638	Moderate extent
4. Choose the learning materials needed based on learning objectives	3.40	0.659	Moderate extent
5. Research for additional learning materials that could help master the learning competencies	3.36	0.702	Moderate extent
6. Choose the reading materials and performance tasks that I have personal preference	3.34	0.699	Moderate extent
7. Choose learning objectives for self-study	3.32	0.757	Moderate extent
8. Compare and contrast teacher-provided materials and self-provided materials for better understanding	3.26	0.795	Moderate extent
9. Check learning material content that can be used in practical ways	3.25	0.723	Moderate extent
10. Scrutinize books and other learning materials to make sure they fit my learning needs	3.07	0.781	Moderate extent
11. Look for indigenous materials that I can use for my own learning	3.02	0.858	Moderate extent
12. Suggest more effective learning materials to my teachers	2.73	1.010	Moderate extent
Composite mean	**3.26**	**0.491**	**Moderate extent**

For interpretation, the following remarks apply to mean interval: 4: 3.50–4.00 Very often/Great extent; 3: 2.50–3.49 Often/Moderate; 2: 1.50–2.49 Seldom/Slight; 1: 1.00–1.49 Very seldom/Least

Students were able to decide on what materials to learn during self-study, check the authenticity of their learning materials, choose the learning materials they needed based on the learning objectives, etc. Students' control relates to their freedom to choose activities that agree with their expectations, needs, and choices. They reflect integrated ideas related to the optimistic, healthy growth, motivation, and engagement of students, combined as a voice and choice. This result was consistent with the findings of the study by Ding and Shen, revealing that control over content provides an ingenious context for learners to exercise proactive autonomy.

Moreover, this finding was solidified by the result of the study which revealed that their respondents suggested that the automated feedback in the app should have not only stated the correct and incorrect answer but also provided an explanation [59]. This action of the students illustrated that participants have reflected on the learning process. This reflection, as believed by many scientists, is a key to the psychological element of learners' autonomy.

Though students only have a moderate extent of suggesting more effective learning materials to their teachers, looking for indigenous materials that they can use for their learning, and scrutinizing books and other learning materials to make sure they fit their learning needs, the study of Warni *et al.* [70] indicated that the concepts of learner autonomy should be viewed as closely linked to the political aspect of the teachers' freedom

to share control of various learning elements with the students. The same view as Reinders and Benson [71], who stated that the promotion of learner autonomy should take into account political aspects. Teachers are mediators for the promotion of learner autonomy practice in diverse contexts [72]. Therefore, understanding the curriculum with all its components should be taken into account to further enhance autonomy among learners.

In terms of control over content, the manifestation of learners' autonomy in language learning involves students taking control of the learning materials and resources they use. This autonomy is demonstrated by making decisions about what to learn during self-study, evaluating the authenticity and dependability of researched learning materials, and having a clear understanding of the objectives and goals of the lesson when seeking supplemental resources.

One manifestation of learners' autonomy is the ability to decide what to learn during self-study. Autonomy empowers learners to choose topics, skills, or aspects of the language they want to focus on based on their personal interests, needs, or goals. By taking responsibility for their learning choices, learners can direct their efforts toward areas that are most relevant or meaningful to them, fostering motivation and engagement [72].

Another manifestation of learners' autonomy is the critical evaluation of the authenticity and reliability of researched learning materials. Autonomy entails learners actively assessing the quality and credibility of resources they encounter. This involves checking the source, considering the expertise of the author or provider, and evaluating the accuracy and relevance of the content. By exercising autonomy in selecting reliable materials, learners can ensure that they are exposed to accurate and valuable language input.

Understanding the objectives and goals of the lesson is another aspect of language learners' autonomy. Autonomous learners understand the intended outcomes of a lesson or learning activity. When looking for additional resources, students should match their choices to the specific objectives or goals they want to achieve. This deliberate selection of materials ensures that students remain focused and effectively improve their language skills [62].

Furthermore, learners' autonomy in language learning, relative to control over content, is demonstrated through the ability to decide what to learn during self-study, the evaluation of the authenticity and reliability of learning materials, and the understanding of lesson objectives when seeking supplemental resources. By exercising autonomy over content choices, learners can tailor their learning experiences to their specific needs and goals, enhancing their language acquisition process.

4.6. Relationship between the extent of manifestation of learners' autonomy and profile variables

The extent of learners' autonomy can vary based on profile variables in this particular study. Education, track, strand, and other variables have also been found to be predictors of autonomy. Further, the manifestation of learners' autonomy is a complex and multifaceted process that is impacted by a range of variables. However, with proper support and encouragement, learners can develop their autonomy skills and take greater control of their own learning. This can lead to greater motivation, engagement, and success in educational pursuits. Teachers and educators can play a critical role in fostering learners' autonomy by providing opportunities for choice and self-directed learning, while also offering guidance and support as needed.

Table 8 also reveals that there was a significant relationship between the strand or track of students and their control over cognitive processing. For the first profile variable, the result expressed that there was a significant relationship between the strand or track of students and their control over learning management. This was supported by the study of Villas [73], which stated that students enrolled in different tracks are equally confident in the performance of academic and health-related tasks.

Table 8. Significant relationship between the extent of manifestation of learner's autonomy and their profile variables

Demographic characteristics	Usage factor	Pearson χ^2	*df*	*P* value	Interpretation
Strand/Track	Control over learning management	69.995	24	0.019	With significant relationship
	Control over cognitive processing	69.080	24	0.031	With significant relationship
	Control over content	58.850	24	0.023	With significant relationship
Academic performance	Control over learning management	11.118*	9	0.240	No significant relationship
	Control over cognitive processing	14.348*	9	0.129	No significant relationship
	Control over content	23.919	9	0.020	With significant relationship
Utilization of learning technologies	Control over learning management	458.30	9	0.000	With significant relationship
	Control over cognitive processing	877.50	9	0.000	With significant relationship
	Control over content	250.50	9	0.000	With significant relationship
Collaborative assistance	Control over learning management	594.70	9	0.000	With significant relationship
	Control over cognitive processing	962.52	9	0.000	With significant relationship
	Control over content	416.40	9	0.000	With significant relationship

*The test value (χ^2) is not significant at 0.05 level

The study revealed contrasting results with Malaga and Oducado [74], indicating no significant relationship between cognitive processing and the strand or track of senior high school students. However, it underscored a significant association between students' strand or track and their control over content, as suggested by Madrazo and Dio [75]. This relationship suggests that modules effectively prepare students for logical and critical thinking, enhancing their analytical skills [76].

When students utilize meaningful knowledge, they actively engage in various learning activities. Therefore, the hypothesis suggesting no significant relationship between respondents' demographic profiles and the extent of their learner autonomy is rejected.

The study found no significant relationship between students' academic performance and their control over learning management, differing from Cobb's [77] findings regarding web-based courses. However, it revealed a significant association between academic performance and control over content, suggesting that the availability of learning materials positively impacts students' performance. Therefore, the hypothesis regarding the relationship between demographic profile and learner autonomy is accepted for learning management but rejected for content control.

Regarding the utilization of learning technologies, the study indicated a significant relationship with control over learning management, contrary to the study by Venter *et al.* [78]. Their study suggested that factors beyond technology may influence student engagement in online learning.

Table 8 highlighted a significant relationship between the utilization of learning technologies and students' control over cognitive processing and content. The use of computers motivated students to engage actively in learning activities. The study by Abdul Rabu *et al.* [79] supported this, indicating that technology use allows flexibility in self-assessment and expands students' learning opportunities. Therefore, the hypothesis that demographic profile has no significant relationship with learner autonomy is rejected based on these findings.

The results indicated a significant relationship between collaborative assistance and students' control over learning management, cognitive processing, and content. Younger students preferred teamwork and independent problem-solving. Ikhsan [80] supported this, suggesting that collaborative assistance impacts learning discipline

and material control, allowing students to learn at different speeds. Therefore, the hypothesis stating no significant relationship between demographic profile and learner autonomy is rejected based on these findings.

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Disclosure statement

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