

Research Article

Level of Self-Directed Learning and Associated Factors among Undergraduates in the Faculty of Allied Health Sciences, University of Sri Jayewardenepura: A Cross-Sectional Study

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Abstract

Background: Self-Directed Learning (SDL) is a fundamental educational approach in higher education, particularly in healthcare, where it fosters continuous learning and professional growth. There is a paucity of data regarding SDL among Allied Health undergraduates in the Sri Lankan state university context. Hence, this study aimed to evaluate SDL levels and associated demographic and academic factors among undergraduates in the Faculty of Allied Health Sciences (FAHS), University of Sri Jayewardenepura (USJ).

Methods: A descriptive cross-sectional study was conducted among 341 Allied Health undergraduates using a census sampling method at FAHS, USJ, each with at least one year of academic experience. A pre-tested self-administered Self-Rating Scale of Self-Directed Learning (SRSSDL) was used with the author's permission for data collection. Data were analyzed using descriptive statistics, and Chi-square tests were performed to determine associations between SDL levels and demographic or academic variables. Ethical clearance was obtained from the Research Ethics Committee, Faculty of Medical Sciences, USJ.

Results: The study included 341 undergraduates from the second, third, and fourth years of the B. Pharm (n=107), BSc Nursing (n=91), BSc Medical Laboratory Sciences (n=106), and BSc Optometry (n=37) programmes, aged 21 to 30 years. The majority (58.4%) exhibited a high level of SDL, with a mean SDL score of 225.9 out of 300. No statistically significant associations were found between SDL and age, gender, academic year, or degree programme. However, fourth-year undergraduates demonstrated slightly higher mean SDL scores compared to second- and third-year undergraduates.

Conclusions: While most undergraduates exhibited high SDL levels, no significant demographic or academic associated factors were identified. Future research should investigate the potential impact of SDL development on academic performance.

Keywords: *Allied Health undergraduates, higher education, self-directed learning, factors*

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Introduction

Self-Directed Learning (SDL) is a fundamental aspect of higher education, particularly in healthcare, where continuous learning is essential for professional competence. Self-Directed Learning is defined as the process in which learners identify their learning needs, establish objectives, select appropriate strategies, and evaluate their progress (Knowles, 1975). It requires self-motivation, autonomy, and independent learning, which are critical for developing clinical decision-making skills and adapting to evolving healthcare challenges (Lee et al., 2020). Overall, SDL empowers healthcare professionals to continuously develop their knowledge and skills, ensuring they remain competent and adaptable in an ever-changing field.

In higher education, SDL fosters active learning by encouraging students to gather, organize, and evaluate information beyond structured curricula, leading to enhanced academic performance and lifelong learning (Geng et al., 2019). It enables learners to take responsibility for their education by selecting relevant content and using various learning strategies (Kidane et al., 2020). Moreover, SDL plays a crucial role in professional development by equipping students with the skills necessary for continuous learning and self-improvement (Ramli et al., 2018). Hence SDL empowers students to become proactive and autonomous learners, paving the way for both academic success and professional growth.

Multiple factors influence SDL, including internal factors such as self-motivation, time

management, and learning attitudes, and external factors such as institutional support, teaching strategies, and peer interactions (Ramli et al., 2018). Understanding these factors is essential for designing effective educational interventions that foster SDL in students.

Globally, there has been a paradigm shift towards SDL, particularly in medical and Allied Health education. The European Higher Education Area (EHEA) emphasizes student autonomy and lifelong learning as essential components of healthcare education (Kidane et al., 2020). In nursing education, SDL has been recognized for its role in enhancing professional autonomy and self-regulated learning (Noh & Kim, 2019).

Allied Health Sciences education in Sri Lanka has experienced significant development over the past two decades, with several universities establishing dedicated faculties and programs to meet the country's healthcare needs. The Faculty of Allied Health Sciences (FAHS) at the University of Sri Jayewardenepura (USJ) was established in 2019 and currently offers four-degree programs: BSc (Hons) in Nursing and Midwifery, Bachelor of Pharmacy and Pharmaceutical Sciences (Hons), BSc (Hons) in Medical Laboratory Sciences, and BSc (Hons) in Optometry.

Despite its acknowledged importance, the implementation and awareness of SDL remain limited in developing countries, including Sri Lanka (Samarasooriya et al., 2019). Most local research focuses on medical and nursing students, leaving a significant gap in understanding SDL among

Allied Health undergraduates. This gap is critical, given the expanding role and responsibilities of Allied Health professionals in modern healthcare. Assessing SDL levels and associated factors in this group is essential to enhance academic performance and prepare students for independent, evidence-based practice. This study will provide valuable insights to inform curriculum design and educational strategies that promote lifelong learning and professional competence. By addressing this gap, the findings have the potential to support educational improvements and contribute to better healthcare outcomes in Sri Lanka.

This study aims to assess the level of SDL readiness and associated factors among Allied Health undergraduates in the FAHS, USJ. Findings will identify degree programs requiring additional support to enhance SDL and inform strategies to promote SDL.

Methods

Design and setting

A descriptive cross-sectional study was conducted among Allied Health undergraduates of the FAHS, USJ, Sri Lanka.

Study population and sample

The study population consisted of all undergraduates enrolled in FAHS, USJ, with at least one year of academic experience to ensure adequate exposure to SDL. Hence, the students studying from the 2nd to the final (4th) year were enrolled in the study, with the inclusion of the total population due to the small population size and reaching the total population was deemed feasible. This total population or census sampling ensured that

all subgroups within the faculty were proportionally represented in the study. First-year students (students who had not sat for the first-year end exam), absentees on the date of data collection, and those students who declined the participation were excluded from the study.

During the data collection period, 370 students were available in the faculty. This entire population sampling enabled to maximize representativeness and minimize potential sampling bias, ensuring that all subgroups within the faculty were proportionally represented in the study.

Study instrument

Data were collected in May 2024 using a pre-tested, self-administered questionnaire. The questionnaire was adapted from the Self-Rating Scale of Self-Directed Learning (SRSSDL) developed by Williamson (2007), with permission obtained from the original author. It comprised 60 items across five subscales (awareness, learning strategies, learning activities, evaluation, and interpersonal skills) with each subscale comprising 12 items. All items were rated on a five-point Likert scale ranging from 1 (never) to 5 (always). There were 4 demographic questions (age, gender, academic year and degree programme). The original questionnaire has been pre-validated (Williamson, 2007) and has shown acceptable reliability based on the commonly accepted threshold. Cronbach's alpha by domains have been identified Williamson (2007) are as follows: Awareness 0.79, Learning Strategies 0.73, Learning Activities

0.71, Evaluation 0.71, Interpersonal Skills 0.71.

After obtaining the questionnaire from the original authors, it was reviewed by the two academics from FAHS and verified the content is adequate to assess the SDL readiness among the FAHS students. Thereafter, the questionnaire underwent a pre-test among 30 randomly selected FAHS students from Faculty of Allied Health Sciences, University of Ruhuna. No changes were proposed following the pre-test, ensuring face validity of the questionnaire. The questionnaire was administered in English, as all FAHS undergraduates are instructed in English.

Data collection

The principal investigator (PI) distributed the hard-copy questionnaires at the university premises during scheduled breaks and between classes to ensure minimal disruption to students' academic activities. The questionnaires were handed out in common areas, such as the student lounge and library, where students frequently gather. Participants were given approximately 15-20 minutes to complete the questionnaires, which they returned immediately after finishing.

The data collection period lasted two weeks to accommodate students who may not have been to university due to clinical placements or other reasons; 341 students returned the questionnaire after completion, yielding a response rate of 92.2%.

Data analysis

There were no missing data in the analyzed dataset. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to analyse data. Chi-square test and one-way ANOVA were conducted to examine associations between SDL levels and demographic variables. Statistical significance was accepted at a p-value of less than 0.05. The scores for each item were calculated based on the respondents' self-reported levels of SDL across five key domains: Awareness, Learning Strategies, Learning Activities, Evaluation, and Interpersonal Skills. The mean score and standard deviation (SD) were computed for each domain. These domain scores were then used to determine the overall SDL score, which was categorized into three levels: low (60–140), moderate (141–220), and high (221–300) according to the SRSSDL criteria (Williamson, 2007). Data analysis was conducted using SPSS version 26.0.

Ethical considerations

Ethical approval was granted by the Research Ethics Committee of the Faculty of Medical Sciences, USJ on 21/02/2024 (REC/NSG 22). Written informed consent was obtained from all participants before data collection. An information sheet in English was provided, ensuring that participants understood the study's objectives, risks, and voluntary nature. Participants were assured of confidentiality and their right to withdraw at any time without consequences. Data were securely stored, accessible only to the principal investigator and supervisor. There

were no financial incentives or risks associated with participation.

Results

Socio-demographic characteristics

The majority of participants were female ($n = 282$, 82.7%). All participants fell within the age range of 21–30 years, (mean = 25 years) with the majority being around 25 years (Table 1). In terms of academic standing, the highest proportion of respondents were second-year students ($n = 142$, 41.6%), followed by third-year ($n = 115$, 33.7%) and fourth-year students ($n = 84$, 24.6%).

The distribution of students across degree programs (Table 1) showed a higher number of respondents from the Bachelor of Pharmacy and Pharmaceutical Sciences (Hons) (31.4%) and BSc. (Hons) in Medical Laboratory Sciences (31.1%) compared to the BSc. (Hons) in Nursing and Midwifery (26.7%) and BSc. (Hons) in Optometry (10.9%).

Self-directed learning readiness among the undergraduate students at FAHS

The majority of the participants (58.4%, $n=199$) fall into the high self-directedness category, while 41.6% ($n=142$) are categorized as having moderate self-directedness, showing a trend towards higher levels of self-directed learning readiness among the participants.

The supplementary table shows the individual components of SRLDS, Awareness, Learning Strategies, Learning Activities, Evaluation, and Interpersonal

Skills. Overall awareness related to self-directed learning was generally high, across all four disciplines with total mean scores ranging from 45.18 to 47.11. Pharmacy students reported the highest level of awareness, followed closely by Optometry and Medical Laboratory Sciences (MLS), while Nursing students showed slightly lower awareness.

Students demonstrated strong recognition of taking responsibility for their own learning. This was reflected in the highest mean scores for items related to identifying areas of deficiency and being responsible for their learning. Optometry students showed the highest total score (47.08, SD = 7.44), followed by Pharmacy (47.11, SD = 5.65) and MLS (46.87, SD = 5.55), with Nursing students scoring slightly lower (45.18, SD = 6.60). The item "*I am responsible for my own learning*" recorded the highest mean across all groups, with scores ranging from 4.14 (Optometry) to 4.36 (Pharmacy).

Optometry students reported the highest use of learning strategies (46.59, SD = 8.16), followed by Pharmacy (45.68, SD = 4.98) and MLS (45.00, SD = 5.83). Nursing students showed the lowest mean score (43.44, SD = 7.35) in the learning strategies domain. The item "*I find simulation in teaching-learning useful*" was highly rated across all groups, with scores ranging from 3.69 (Nursing) to 3.92 (Optometry). Conversely, "*I find concept mapping is an effective method of learning*" received lower scores, particularly among Nursing students (3.31, SD = 0.92). Students across all disciplines showed moderate to high engagement in learning activities. Optometry

Table 1: Socio-demographic characteristics (n=341)

Characteristics	Category	Frequency (n)	Percentage (%)
Age (years)	20-25	251	73.6
	26-30	90	26.4
Gender	Male	59	17.3
	Female	282	82.7
Academic year	Second year	142	41.6
	Third year	115	33.7
	Fourth year	84	24.6
Degree programme	Nursing and Midwifery	91	26.7
	Pharmacy and Pharmaceutical Sciences	107	31.4
	Medical Laboratory Sciences	106	31.1
	Optometry	37	10.9

Table 2: Mean scores of SDL domains by degree programme

Program me	Freq uency (n)	Aware ness	Learning strategie s	Learning activities	Evaluati on	Interper sonal skills	Overall score	p value
		Mean± SD	Mean± SD	Mean± SD	Mean± SD	Mean± SD	Mean± SD	
Nursing	91	45.18 ± 6.60	43.44 ± 7.35	41.92 ± 6.82	42.47 ± 7.43	45.41 ± 7.55	218.42± 16.01	0.10
Pharmacy	107	47.11 ± 5.65	45.68 ± 4.98	45.33 ± 5.55	44.49 ± 6.00	46.07 ± 5.70	228.68± 12.49	0.01
MLS	106	46.87 ± 5.55	45.00 ± 5.83	44.72 ± 6.25	45.71 ± 6.05	45.33 ± 6.27	227.63± 13.41	0.26
Optometry	37	47.08 ± 7.44	46.59 ± 8.16	46.27 ± 8.92	45.14 ± 8.61	46.30 ± 8.67	231.38± 18.73	0.19
Total	341						225.90± 27.87.	

students demonstrated the highest engagement (46.27, SD = 8.92) while nursing students reported lower engagement scores (41.92, SD = 6.82). Items like "*I enjoy exploring information beyond the prescribed course objectives*" and "*I prefer to take any break in between learning tasks*" received high ratings, with optometry students showing the highest means for these (4.16, SD = 0.90). On the other hand, "*I raise relevant questions during learning sessions*" showed lower scores across disciplines, particularly in nursing (3.08, SD = 0.90).

Evaluation-related behaviours were also rated positively, with total scores ranging from 42.47 (Nursing, SD = 7.43) to 45.71 (MLS, SD = 6.05). The item "*I identify the areas for further development in what I have accomplished*" scored well across all groups, with Optometry students having a mean of 3.65 (SD = 0.86). However, "*I check my portfolio to review my progress*" had lower scores, particularly in nursing (3.14, SD = 1.00).

Students generally reported strong interpersonal skills, with Optometry (46.30, SD = 8.67) and Pharmacy students (46.07, SD = 5.70) showing the highest scores, while Nursing (45.41, SD = 7.55) and MLS (45.33, SD = 6.27) students had slightly lower but still strong interpersonal competence. Items such as "*I am able to express my ideas effectively in writing*" had high ratings across all groups, with Optometry students scoring the highest (4.03, SD = 0.93) (Table 2).

Table 2 shows the mean scores comparison of SDL domains by degree programmes. Overall, students demonstrated moderately high self-directed learning readiness, with

total mean scores ranging from 218.42 ± 16.01 in Nursing to 231.38 ± 18.73 in Optometry. Pharmacy students scored higher than Nursing students across most domains, with notable strengths in Awareness and Learning Strategies, and the difference in overall scores reached statistical significance for Pharmacy ($p = 0.01$). MLS and Optometry students also demonstrated relatively high scores across all domains, though differences among these programmes were not statistically significant ($p > 0.05$). Overall, the data suggest that while all groups exhibit self-directed learning readiness, Pharmacy and Optometry students showed slightly higher engagement, particularly in strategic and interpersonal aspects of learning

Factors associated with SDL readiness

SDL readiness of undergraduates was generally moderate to high among students. None of the students were in the low-level readiness category. Table 3 shows the factors associated with SDL readiness. Age, gender, and academic year ($p > 0.05$) were not significantly associated with SDL readiness, while degree programme showed a small but significant difference ($p = 0.02$), with Pharmacy and MLS students having slightly higher readiness than Nursing and Optometry students. Overall, SDL readiness appears largely consistent across demographic factors but varies modestly by programme.

Discussion

This study evaluated SDL levels and associated factors among Allied Health undergraduates at the FAHS, USJP. Findings revealed that more than a half (58.4%) of

Table 3: Factors associated with SDL (n=341)

Associated factors	SDL readiness		Chi-square p value	One-way ANOVA p value
	Moderate	High		
	Percentage (%)	Percentage (%)		
Age				
20-25	78.20	70.40	0.05	0.10
26-30	21.80	29.60		
Gender				
Female	81.00	83.90	0.57	0.48
Male	19.00	16.10		
Academic year				
Second year	40.80	42.20	0.17	0.64
Third year	38.70	30.20		
Fourth year	20.40	27.60		
Degree program				
Nursing	33.80	21.60	0.07	0.02
BPharm	28.20	33.70		
MLS	26.80	34.20		
Optometry	11.30	10.60		

students demonstrated a high level of SDL, while 41.6% showed a moderate level, and none were in the low category. The mean SDL score of 225.9 indicates a generally high readiness for SDL among Allied Health undergraduates. Further, no associations were found in terms of age, gender or the academic factors such as degree programme and academic year.

The readiness for SDL is consistent with findings from Aksum University, Ethiopia (Kidane et al., 2020), which reported a

comparable mean score of 225.63 using the same SRSSDL instrument (Williamson, 2007). Also, readiness for SDL in our study is consistent with recent findings from allied health science students in India: a cross-sectional study in Chennai reported a strong self-directed learning ability, particularly in domains such as learning motivation and self-monitoring, though planning and implementation scored relatively lower (Govindharaj & Swaminathan, 2025).

The absence of low SDL levels suggests that

FAHS undergraduates possess a strong foundation for autonomous learning. This may reflect the impact of outcome-based curricula and interactive teaching-learning strategies currently implemented in Sri Lankan Allied Health programs. Furthermore, the high SDL levels observed across all disciplines imply that students have developed essential attributes such as self-awareness, self-evaluation, and motivation for independent learning, skills vital for continuous professional growth in healthcare. These results are consistent with the findings of (Govindharaj & Swaminathan, 2025).

These results are comparable with findings from (Samarasooriya et al., 2019), who reported high SDL readiness among Sri Lankan nurses engaged in continuing education. Globally, studies among health sciences students similarly highlight a strong tendency toward SDL (Zimmerman, 2002). The current findings therefore confirm that Allied Health undergraduates in Sri Lanka exhibit similar learning readiness patterns to their international counterparts. Nevertheless, moderate SDL scores among 41.6% of participants suggest that some students may still rely partially on teacher guidance and structured learning environments. Introducing more experiential and reflective learning opportunities could further cultivate independent learning behaviors. These results resonate with global trends. For example, a large study of online learning health professions students found intermediate SDLA but noted that professional identity and the academic atmosphere strongly predicted SDL ability (Xu et al., 2024). This suggests that even in digital-learning contexts, students' sense of

belonging and professional self-concept contribute to their self-directed learning behavior.

The predominance of high SDL levels indicates that Allied Health curricula at FAHS effectively nurture independent learning capabilities, possibly through early exposure to clinical experiences and problem-solving activities. The moderate scores observed in certain domains, especially interpersonal skills, suggest areas for targeted pedagogical improvement. This pattern may also reflect a transition phase, where students are shifting from teacher-dependent to learner-centered education. Time management also appears to be a significant factor. In a recent study, time management skills were shown to predict SDL readiness among nursing students, along with GPA and place of residence. (Sadeghi et al., 2024). Therefore, interventions targeting time-management training could help strengthen SDL, especially for those currently in the moderate group.

Our findings of no significant SDL differences across academic years contrast with prior literature suggesting SDL evolves with progression in training (Govindharaj & Swaminathan, 2025). This stability may indicate that SDL skills are cultivated early in the FAHS curriculum and maintained, rather than progressively increasing over time.

Importantly, the balance between high awareness and somewhat lower interpersonal adaptability indicates that while students are cognitively ready for SDL, emotional and collaborative competencies still need development. Promoting reflection,

mentorship, and group-based SDL activities may bridge this gap and better prepare students for interprofessional healthcare settings. For example, a recent study of interprofessional workshop activities among allied health students demonstrated that group-based and collaborative learning helped improve teamwork and communication skills, even when students initially struggled with mutual support and communication (Lestari et al., 2020).

Allied Health undergraduates in this study demonstrated strong awareness of SDL concepts and effective learning strategies. This aligns with prior research emphasizing that interactive and technology-driven learning strategies are crucial for developing self-directed learners (Biggs & Tang, 2011). While most students valued group discussions, simulations, and case studies, fewer engaged in role-playing or concept mapping. These findings suggest that incorporating more active learning techniques into curricula may further enhance SDL. Studies have shown that SDL can be fostered through structured interventions, such as workshops and guided reflection sessions (Abd-El-Fattah, 2010). Therefore, institutions should consider integrating SDL-enhancing activities into their academic programs to optimize student learning outcomes.

The study identified strong engagement in self-evaluation practices, reinforcing the importance of reflection and self-assessment in SDL (Zimmerman, 2002). Peer feedback and the ability to view both success and failure as learning opportunities were key strengths observed among students.

However, interpersonal skills showed moderate engagement, particularly in adapting to culturally diverse learning environments. Given Sri Lanka's increasing focus on multicultural learning, targeted interventions to enhance collaborative and culturally inclusive learning environments may benefit students in developing well-rounded SDL skills.

Despite prior research suggesting that SDL evolves with academic progression (Caffarella & Merriam, 1999), the current study found no statistically significant differences in SDL levels between second, third, and fourth-year students. This contrasts with findings from (Kidane et al., 2020), who reported significant differences between first- and second-year medical students and is further supported by (Shahi et al., 2024), who similarly explored demographic and academic predictors of SDL readiness. The relatively stable SDL levels across academic years in this study could indicate that students at FAHS, USJ, develop self-directed learning skills early in their education.

Similarly, the lack of significant differences in SDL across degree programs suggests that curricular structure and teaching methodologies across health-related disciplines may foster comparable SDL engagement. However, Optometry undergraduates had the highest mean SDL score, while Nursing undergraduates had the lowest. These findings suggest that further research is needed to examine whether specific program structures influence SDL development.

A qualitative study in Sri Lanka, Munasinghe et al. (2019) identified several factors

influencing SDL, including reading culture, learning environment, time adequacy, perception of SDL, learning style, prior knowledge, and future goals. These contextual factors might play a more significant role in SDL than demographic variables such as age or gender. In more recent cross-cultural work, researchers in Nepal and elsewhere have found that demographic variables (like academic year, type of family) and personal factors (motivation, personality, prior knowledge) also matter (Suyal & Pandey, 2024; Salter et al., 2017).

Overall, students across Nursing, Pharmacy, MLS, and Optometry demonstrated moderate to high readiness for self-directed learning across the SRLDS domains of Awareness, Learning Strategies, Learning Activities, Evaluation, and Interpersonal Skills. Pharmacy, MLS, and Optometry students generally reported slightly higher scores than Nursing students, particularly in awareness, strategic learning, and evaluative practices. Strengths across disciplines included taking responsibility for learning, using interactive and technology-enhanced methods, applying knowledge to practice, collaborating effectively, and maintaining positive interpersonal relationships. Areas with lower scores involved maintaining consistent self-learning routines, using concept mapping, raising questions, critical reflection, portfolio review, and engaging with culturally diverse learning environments. These findings indicate that while students possess a solid foundation in self-directed learning and interpersonal skills, there is potential to further strengthen reflective, organizational, and culturally competent practices to support

their development as autonomous, lifelong learners. However, certain advanced self-regulation behaviours such as structured concept mapping, regular critical reflection, portfolio review, and disciplined self-learning routines are less consistently adopted. This pattern aligns with earlier evidence indicating that while SDL can foster autonomy and knowledge acquisition, its effectiveness depends heavily on learner motivation, institutional support, and scaffolded teaching strategies (Kharroubi & ElMediouni, 2024). A recent scoping review of clinical science programmes underscored that SDL outcomes are strongly influenced by the learning environment and the role of instructors as facilitators rather than mere content deliverers (Gupta et al., 2024). Moreover, research exploring use of concept mapping in health management education found that when concept mapping is explicitly integrated into problem-based learning and coupled with self-assessment criteria, it can significantly improve students' goal-setting, task strategies, time management and environment structuring, core sub-domains of self-regulation (Alt & Naamati-Schneider, 2021). Similarly, the growing evidence on reflective writing underscores its importance in developing deeper learning, critical thinking, and professional identity among health professions students, yet it remains underutilized in many curricula (Artioli et al., 2021; Heydari & Beigzadeh, 2024). Taken together, present results suggest that although students are generally predisposed to SDL and value collaborative, interactive learning and communication skills, health science curricula may need to more intentionally

embed structured metacognitive tools (e.g., concept mapping, reflective writing), guided self-evaluation (e.g., portfolios or peer review), and support for time/learning management to cultivate true lifelong learners. Without such supports, there is a risk that SDL remains superficial, limited to surface-level engagement, rather than fostering deep, reflective, and adaptive learning that aligns with contemporary demands on healthcare professionals to continuously update and apply complex knowledge.

This study contributes to the growing body of research on SDL in health sciences education, particularly in Sri Lanka, where limited studies have examined SDL levels among Allied Health undergraduates. The study's high response rate strengthens the accuracy of findings. However, several limitations should be acknowledged such as the study was conducted at a single institution, which may limit generalizability to other universities, the cross-sectional design captures SDL at a single point in time, limiting conclusions on SDL development over time and the study focused on self-reported SDL perceptions, which might introduce response bias. Lack of exploration into the influence of SDL on academic performance also considered as a limitation of this study

Conclusion

This study on the level of SDL readiness among undergraduates in the FAHS, USJ revealed that the majority of students exhibit a high level of SDL readiness, indicating an overall positive inclination towards

autonomous learning, suggesting that the curriculum and teaching strategies in place are effectively fostering self-directed learning skills among these students.

Although the study found significant differences in SDL readiness across degree programs, particularly with Optometry students exhibiting the highest scores, no significant associations were observed between SDL readiness and age, gender, or academic year. This suggests that demographic and academic variables may have a limited influence on SDL readiness in this context, and that factors specific to the degree programs themselves may play a more important role in shaping students' self-directed learning abilities.

The findings also highlight strengths in interpersonal skills and self-awareness among students, but there is room for improvement in areas like learning strategies and evaluation techniques. To further enhance SDL, integrating more experiential learning opportunities, reflective practices, and active learning strategies could prove beneficial.

Despite the positive overall findings, moderate SDL levels in certain domains point to areas where further development is needed, such as time management and the adaptation of interpersonal skills for diverse learning environments. These insights underscore the importance of ongoing curricular adjustments and targeted interventions to promote comprehensive SDL competencies.

This study provides valuable insights into the self-directed learning behaviors of Allied

Health undergraduates in Sri Lanka. The results suggest that, while the students are generally well-prepared for independent learning, continued efforts to refine pedagogical approaches and enhance specific SDL domains could further strengthen their readiness for lifelong learning in healthcare settings. Further research exploring the impact of SDL on academic performance and its development over time would be beneficial for understanding the long-term effects of SDL readiness on student success.

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Conflicts of Interest

The authors declared that they have no conflicts of interest.

References

- Alt, D., & Naamati-Schneider, L. (2021). Health management students' self-regulation and digital concept mapping in online learning environments. *BMC Medical Education*, 21(1), 110. <https://doi.org/10.1186/s12909-021-02542-w>
- Artioli, G., Deiana, L., De Vincenzo, F., Raucci, M., Amaducci, G., Bassi, M. C., ... & Ghirotto, L. (2021). Health professionals' and students' experiences of reflective writing in learning: A qualitative meta-synthesis. *BMC Medical Education*, 21(1), 394. <https://doi.org/10.1186/s12909-021-02831-4>
- Biggs, J., & Tang, C. (2011). Train-the-trainers: Implementing outcomes-based teaching and learning in Malaysian higher education. *Malaysian Journal of Learning and Instruction*, 8, 1–19. <https://doi.org/10.32890/mjli.8.2011.7624>
- Caffarella, R. S., & Merriam, S. B. (1999). Perspectives on adult learning: Framing our research. *Adult Education Research Conference*. <https://newprairiepress.org/aerc/1999/papers/10>
- Geng, S., Law, K. M. Y., & Niu, B. (2019). Investigating self-directed learning and technology readiness in blended learning environment. *International Journal of Educational Technology in Higher Education*, 16(1), 17. <https://doi.org/10.1186/s41239-019-0147-0>
- Govindharaj, P., & Swaminathan, N. (2025). Self-directed learning ability among undergraduate allied health sciences students in Chennai, India: A cross-sectional study. *BMC Medical Education*, 25(1), 968. <https://doi.org/10.1186/s12909-025-07458-3>
- Gupta, N., Ali, K., Jiang, D., Fink, T., & Du, X. (2024). Beyond autonomy: Unpacking self-regulated and self-directed learning through the lens of learner agency: A scoping review. *BMC Medical Education*, 24(1), 1519. <https://doi.org/10.1186/s12909-024-06476-x>

- Heydari, S., & Beigzadeh, A. (2024). Medical students' perspectives of reflection for their professional development. *BMC Medical Education*, 24(1), 1399. <https://doi.org/10.1186/s12909-024-06401-2>
- Kidane, H. H., Roebertsen, H., & Van Der Vleuten, C. P. M. (2020). Students' perceptions towards self-directed learning in Ethiopian medical schools with new innovative curriculum: A mixed-method study. *BMC Medical Education*, 20(1), 7. <https://doi.org/10.1186/s12909-019-1924-0>
- Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers* (Illustrated, reprint ed.). Cambridge Adult Education.
- Kharroubi, S., & ElMediouni, A. (2024). Conceptual review: Cultivating learner autonomy through self-directed learning & self-regulated learning: A socio-constructivist exploration. *International Journal of Language and Literary Studies*, 6(2), 276–296. <https://doi.org/10.36892/ijlls.v6i2.1649>
- Lee, S., Kim, D. H., & Chae, S.-M. (2020). Self-directed learning and professional values of nursing students. *Nurse Education in Practice*, 42, 102647. <https://doi.org/10.1016/j.nepr.2019.102647>
- Lestari, E., Scherpbier, A., & Stalmeijer, R. (2020). Stimulating students' interprofessional teamwork skills through community-based education: A mixed methods evaluation. *Journal of Multidisciplinary Healthcare*, 13, 1143–1155. <https://doi.org/10.2147/JMDH.S267732>
- Noh, G.-O., & Kim, D. H. (2019). Effectiveness of a self-directed learning program using blended coaching among nursing students in clinical practice: A quasi-experimental research design. *BMC Medical Education*, 19(1), 225. <https://doi.org/10.1186/s12909-019-1672-1>
- Ramli, N., Muljono, P., & Afendi, F. M. (2018). External factors, internal factors and self-directed learning readiness. *Journal of Education and E-Learning Research*, 5(1), 37–42. <https://doi.org/10.20448/journal.509.2018.51.37.42>
- Sadeghi, N., Janatolamakh, M., Rezaeian, S., Rashi, M., & Khatony, A. (2024). Exploring self-directed learning readiness and related factors: The role of time management skills in nursing students. *BMC Medical Education*, 24(1), 1088. <https://doi.org/10.1186/s12909-024-06083-w>
- Samarasooriya, R. C., Park, J., Yoon, S. H., Oh, J., & Baek, S. (2019). Self-directed learning among nurse learners in Sri Lanka. *The Journal of Continuing Education in Nursing*, 50(1), 41–48.

<https://doi.org/10.3928/00220124-20190102-09>

Shahi, R., Acharya, S., & Nai, S. (2024). Readiness towards self-directed learning among bachelor level nursing students in a campus, Banke District. *Academia Research Journal*, 4(1), 114–126. <https://doi.org/10.3126/academia.v4i1.73362>

Slater, C. E., Cusick, A., & Louie, J. C. (2017). Explaining variance in self-directed learning readiness of first-year students in health professional programs. *BMC Medical Education*, 17(1), 207. <https://doi.org/10.1186/s12909-017-1043-2>

Suyal, S., & Pandey, A. (2024). Self-directed learning readiness among undergraduate nursing students in a nursing campus. *Journal of Birgunj Nursing Campus*, 1(1), 18–25. <https://doi.org/10.70397/jbnc.7>

Williamson, S. N. (2007). Development of a self-rating scale of self-directed learning. *Nurse Researcher*, 14(2), 66–83. <https://doi.org/10.7748/nr2007.01.14.2.66.c6022>

Xu, X., Li, Z., Mackay, L., Li, N., Zhang, Y., Wu, Y., & Zhang, Y. (2024). The state of health professions students' self-directed learning ability during online study and the factors that influence it. *BMC Medical Education*, 24(1), 25. <https://doi.org/10.1186/s12909-023-04876-z>

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2

Supplementary Table

<https://drive.google.com/drive/u/4/folders/1COpFognAHlyvU1uKxYRHnqDy8wkWPEiq>