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Self-Regulated Learning and Mental Health Among Gen Z University Students Within a Framework of Islamic Values

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Keywords :

Gen Z; Islamic Religious Education; Learning, Mental health, Self-regulated.

ABSTRACT

This study examines self-regulated learning (SRL) among Gen Z students at the undergraduate, master's, and doctoral levels, describes their mental health, and analyzes the relationship between SRL and mental health at each level. A quantitative approach was used, supported by interview data to deepen the interpretation of findings. The respondents were 230 Gen Z students: 175 undergraduates, 40 master's students, and 15 doctoral students. Data were analyzed using descriptive statistics, the Kruskal–Wallis test, Spearman correlation, and simple linear regression. Students' SRL was moderate, tending toward high, with a mean of 3.64, while mental health was moderate, with a mean of 3.39. Significant differences across study levels were found for SRL ($H = 9.949$; $p = 0.007$) and mental health ($H = 16.275$; $p < 0.001$). Overall, SRL was significantly and positively associated with mental health (rho = 0.360; $p < 0.001$). The strongest statistically significant relationship was observed among undergraduates (rho = 0.447; $p < 0.001$; $R^2 = 0.146$). The relationship was not significant among master's and doctoral students. Interviews indicated that undergraduates primarily faced challenges of academic adjustment and digital distraction, master's students experienced pressure from multiple roles, and doctoral students faced demands related to research, publication, and study completion. The findings underscore SRL as an important resource for Gen Z students' mental health, particularly at the undergraduate level, while mental health at the master's and doctoral levels is influenced by more complex factors. The study recommends strengthening SRL, academic mentoring, and mental health services tailored to the characteristics of each study level.

Kata Kunci :

Gen Z; Kesehatan Mental; Pendidikan Agama Islam; *Self-regulated learning***.**

ABSTRAK

Tulis Penelitian ini mengkaji pembelajaran mandiri yang diatur oleh diri sendiri (self-regulated learning/SRL) pada mahasiswa Generasi Z di jenjang sarjana, magister, dan doktoral, mendeskripsikan kondisi kesehatan mental mereka, serta menganalisis hubungan antara SRL dan kesehatan mental pada setiap jenjang pendidikan. Penelitian ini menggunakan pendekatan kuantitatif yang didukung oleh data wawancara untuk memperdalam interpretasi hasil penelitian. Responden penelitian berjumlah 230 mahasiswa Generasi Z, yang terdiri atas 175 mahasiswa sarjana, 40 mahasiswa magister, dan 15 mahasiswa doktoral. Data dianalisis menggunakan statistik deskriptif, uji Kruskal–Wallis, korelasi Spearman, dan regresi linear sederhana. Hasil penelitian menunjukkan bahwa SRL mahasiswa berada pada kategori sedang dan cenderung tinggi, dengan nilai rata-rata 3,64, sedangkan kesehatan mental berada pada kategori sedang, dengan nilai rata-rata 3,39. Terdapat perbedaan yang signifikan antarjenjang

pendidikan dalam SRL (H = 9,949; p = 0,007) dan kesehatan mental (H = 16,275; p < 0,001). Secara keseluruhan, SRL memiliki hubungan positif dan signifikan dengan kesehatan mental (rho = 0,360; p < 0,001). Hubungan signifikan secara statistik paling kuat ditemukan pada mahasiswa sarjana (rho = 0,447; p < 0,001; R^2 = 0,146), sedangkan hubungan tersebut tidak signifikan pada mahasiswa magister dan doktoral. Hasil wawancara menunjukkan bahwa mahasiswa sarjana terutama menghadapi tantangan berupa penyesuaian akademik dan distraksi digital, mahasiswa magister mengalami tekanan akibat beragam peran yang harus dijalankan, sementara mahasiswa doktoral menghadapi tuntutan terkait penelitian, publikasi, dan penyelesaian studi. Temuan ini menegaskan bahwa SRL merupakan sumber daya penting bagi kesehatan mental mahasiswa Generasi Z, khususnya pada jenjang sarjana, sedangkan kesehatan mental mahasiswa magister dan doktoral dipengaruhi oleh faktor-faktor yang lebih kompleks. Oleh karena itu, penelitian ini merekomendasikan penguatan SRL, pendampingan akademik, serta penyediaan layanan kesehatan mental yang disesuaikan dengan karakteristik setiap jenjang pendidikan.

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INTRODUCTION

In recent years, Indonesian higher education policy has increasingly emphasized flexible, adaptive, student-centered learning oriented toward competency attainment. The Merdeka Belajar–Kampus Merdeka (MBKM) policy, for example, gives students opportunities to gain broader learning experiences through courses across academic programs and learning activities outside their universities (Kementerian Pendidikan dan Kebudayaan, 2020). This direction also aligns with the National Higher Education Standards, which position graduate learning outcomes as an important reference for higher education provision (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2023). From an educational psychology perspective, this policy shift requires adjustments to curricula and learning governance as well as students' psychological readiness to become active, independent, reflective, and responsible learners.

In practice, however, students do not always find it easy to manage greater freedom in learning. Many have academic goals but struggle to maintain consistent study habits. Some experience difficulties managing time, delay assignments, are easily distracted by digital devices and social media, and feel pressured when academic tasks arise simultaneously. Undergraduates often transition from relatively structured school learning to more independent university learning. Master's students navigate complex roles as students, employees, family members, or professionals. Doctoral students face demands involving research, publication, supervision, revisions, and dissertation completion. These circumstances indicate that independent learning involves not only academic techniques but also psychological capacities for managing oneself, pressure, emotions, and the meaning of learning.

For Gen Z students, SRL is particularly important because they learn within a fast-paced digital environment rich in stimulation and distraction. Digital devices, social media, notifications, multitasking, and unrestricted access to information offer substantial learning opportunities but may also undermine focus, shorten attention spans, and increase procrastination. The WHO Regional Office for Europe reported that problematic social media use among adolescents rose from 7% in 2018 to 11% in 2022, while 36% reported almost constant online contact with friends (WHO Regional Office for Europe, 2024). Although these data concern adolescents, they provide relevant generational context for Gen Z students learning in highly intensive digital environments.

Student mental health has also become an increasingly important issue in higher education. WHO describes mental health as a state of well-being that enables individuals to cope with life's stresses, recognize their abilities, learn and work effectively, and contribute to their communities (WHO, 2025). Mental health therefore extends beyond the absence of psychological disorders and provides a foundation for students' academic, social, and personal functioning. Among university students, it is reflected in the ability to manage stress, anxiety, emotional exhaustion, mood, and a sense of personal agency while continuing to fulfill academic roles effectively.

Students not only struggle to understand course material but also face pressures involving assignments, examinations, publication requirements, academic relationships, employment, family, and social expectations. Among undergraduates, pressure often arises from academic adjustment, accumulated assignments, and anxiety about new demands. Among master's students, it more often involves multiple roles across study, employment, family, and professional responsibilities. Among doctoral students, pressure involves research, revisions, communication with supervisors, publication, and uncertainty about study completion. Student mental health is therefore inseparable from learning contexts and the differing structures of academic demands at each level.

Student mental health has attracted substantial empirical attention. In an umbrella review covering more than 8.7 million students from 1,655 primary studies included in 62 meta-analyses, Paiva et al. (2025) reported a high prevalence of mental disorder symptoms among university students, including depression, anxiety, stress, sleep disturbances, and suicide-related outcomes. In Indonesia, Kotera et al. (2022) reported that approximately 37–53% of undergraduates exhibited high stress symptoms, approximately 25% experienced depression, and approximately 51%

experienced anxiety. Marthoenis et al. (2018), Astutik et al. (2020), and Listiyandini et al. (2023) likewise showed that psychological distress among Indonesian students is a prominent concern requiring serious attention. These findings establish student mental health as an integral aspect of learning experiences, continuation of study, and functioning in higher education.

Nevertheless, the relationship between SRL and mental health cannot be assumed to be uniform across students. Undergraduate, master's, and doctoral students may all belong to Gen Z, but they face different academic demands, levels of learning autonomy, task complexity, role expectations, and support structures. At the undergraduate level, SRL largely involves adjusting to university routines, managing assignments, controlling distractions, and developing study discipline. At the master's level, it intersects with multiple roles, professional responsibilities, and more analytical academic demands. At the doctoral level, it involves research independence, originality, publication, supervisory communication, and persistence in long-term scholarly work. The relationship between SRL and mental health may therefore differ across study levels.

Against this background, the study entitled "Self-Regulated Learning and Mental Health among Gen Z University Students within a Framework of Islamic Values" seeks to provide a more comprehensive understanding of learning dynamics and student mental health in higher education. It describes levels of SRL and mental health and examines how their relationship operates across different academic levels. It also interprets empirical findings through Islamic values as resources for strengthening learning regulation, academic resilience, and student mental health.

The study therefore aims to describe SRL profiles and mental health among Gen Z undergraduate, master's, and doctoral students; analyze the relationship between SRL and mental health and the variance explained by SRL; identify the SRL dimensions most relevant to mental health; and examine Islamic values—intention, effort, steadfastness, patience, self-reflection, trust in Allah, and scholarly responsibility—as a framework for strengthening learning regulation. Theoretically, the study seeks to enrich educational psychology by positioning SRL as relevant to mental health as well as academic achievement. Practically, the findings may inform lecturers, academic programs, and universities in designing more adaptive, humane, and meaningful learning, academic mentoring, and mental health services within a framework of Islamic values.

LITERATURE REVIEW

Concepts of Self-Regulated Learning and Mental Health

In educational psychology, students' ability to manage learning independently, purposefully, and sustainably is known as self-regulated learning (SRL). SRL is an active process through which students consciously direct thoughts, motivation, emotions, behavior, and learning strategies toward academic goals. Zimmerman (2002) describes self-regulated learners as actively managing their thoughts, motivation, behavior, and strategies to achieve academic goals. Pintrich (2000) likewise emphasizes planning, monitoring, controlling, and reflecting on cognition, motivation, behavior, and learning contexts. Students with effective SRL can thus learn independently, set goals, plan actions, monitor progress, evaluate strategies, and adjust their actions in response to feedback during learning.

Conceptually, SRL may be regarded as a psychological resource that supports student mental health. Students who can set goals, manage time, monitor progress, regulate effort, control distractions, and adapt learning strategies tend to have a stronger sense of control over academic demands. This sense of control can reduce academic uncertainty, strengthen self-efficacy, limit procrastination, and support more adaptive management of learning pressure. Kapil and Hadwin (2026) emphasize that stress and mental health are dynamic conditions that both shape and are shaped by students' learning regulation, rather than merely background variables. Academic achievement and psychological well-being should therefore be understood as interconnected dimensions.

Self-Regulated Learning within a Framework of Islamic Values

Within Islamic values, SRL can be understood as an ethical and spiritual practice of fulfilling the responsibility entrusted to learners, alongside its psychological and cognitive dimensions. Intention (niyyah) concerns clarity of learning goals. The Prophetic hadith emphasizing that actions depend on intentions establishes inner orientation as a foundation for the quality of action (al-Bukhari, 2002; Muslim, 2007). In SRL, intention may provide a foundation for setting learning goals that are academic, moral, and spiritual. Effort (ikhtiar) concerns earnest striving, consistent with the Quranic teaching that people receive according to what they strive for (Quran, al-Najm 53:39). This value aligns with effort regulation in SRL, or the ability to sustain effort when facing learning difficulties.

Steadfastness (istiqamah) concerns consistency and persistence in learning. In Islamic education, consistency in doing good is important for character formation and self-discipline. Patience (sabr) concerns endurance in facing academic difficulties, pressure, and obstacles. In Iḥyā' 'Ulūm al-Dīn, al-Ghazali presents patience as the strength of the soul to resist impulses that weaken its orientation toward goodness, allowing patience to be understood as psychological endurance under adversity (al-Ghazali, 2021; Munir, 2019). In SRL, patience overlaps with persistence on difficult academic tasks, addressing revisions, accepting feedback, and continuing to learn despite temporary setbacks.

Self-reflection (muhasabah) concerns self-monitoring and self-evaluation. In Islamic tradition, it involves assessing oneself, examining actions, and improving one's life orientation. Al-Ghazali discusses muhasabah as spiritual training for developing self-awareness and continuous improvement (al-Ghazali, 2021). Within SRL, it closely corresponds to monitoring learning progress, evaluating strategies, and improving study practices. Trust in Allah (tawakkul) concerns accepting outcomes after optimal effort. The Quran emphasizes trust in Allah following consultation and decision-making, indicating that it means surrender after effort and planning rather than resignation without action (Quran, Ali 'Imran 3:159). The Ma'arif al-Qur'an commentary likewise emphasizes that trust in Allah does not mean abandoning effort or planning.

Scholarly responsibility (amanah ilmiah) concerns academic accountability in seeking knowledge. The Quran instructs that trusts be delivered to those entitled to them (Quran, al-Nisa' 4:58) and elevates those who believe and possess knowledge (Quran, al-Mujadilah 58:11). In Islamic educational thought, al-Attas emphasizes adab, an ethical and spiritual order that places knowledge, teachers, oneself, and life's purposes in their proper positions (al-Attas, 1980; Wan Daud, 1998). Scholarly responsibility thus entails honesty, accountability, earnestness, and proper conduct in acquiring knowledge, beyond simply completing academic tasks.

Islamic values may therefore provide a framework for strengthening SRL by helping students understand learning as a moral, spiritual, and intellectual responsibility alongside academic demands. Muslim students need effective learning strategies and meanings that sustain psychological endurance. When learning is understood as an entrusted responsibility, academic tasks become opportunities for effort and personal growth. When failure is interpreted through patience, self-reflection, and trust in Allah, students can evaluate themselves without becoming

overwhelmed by excessive guilt. When consistent study is understood as steadfastness, academic discipline becomes more meaningful. Islamic values may thus enrich SRL by orienting it toward mental resilience, learning character, and a meaningful academic life as well as academic attainment.

METHODS

Research Approach and Participants

This study used a quantitative approach supported by interview data to deepen the interpretation of results. The respondents were 230 Gen Z students: 175 undergraduates, 40 master's students, and 15 doctoral students. Quantitative data were obtained using SRL and mental health scales. Interviews were used to explain learning experiences and pressures at each study level.

Research Instruments

The SRL scale comprised 14 items covering seven dimensions: goal setting, time management, self-monitoring, effort regulation, distraction control, learning strategies, and self-evaluation. The mental health scale comprised eight items covering resilience and psychological stability, mood and academic interest, stress or academic pressure, and anxiety or calmness. Instrument quality was examined using item–total correlations and Cronbach's alpha.

Data Analysis

Data analysis proceeded in stages aligned with the study objectives. First, participant characteristics across undergraduate, master's, and doctoral levels were analyzed using frequencies and percentages. This described the composition and distribution of respondents across study levels.

Second, SRL was analyzed using descriptive statistics, including means, standard deviations (SD), and score categories. Analyses were conducted for all respondents and separately for undergraduate, master's, and doctoral students to describe overall SRL tendencies and compare profiles across study levels.

Third, mental health was analyzed using descriptive statistics, including means, standard deviations, and score categories. Analyses covered the full sample and each study level separately, describing overall mental health and variations across educational levels.

Fourth, the relationship between SRL and mental health was analyzed using Spearman correlation because normality tests indicated non-normal distributions. Spearman correlation was used to determine the direction and strength of the association overall and within each study level.

Fifth, simple linear regression was used to examine the variance in mental health explained by SRL. SRL was the predictor and mental health the dependent variable. This analysis assessed how much variation in Gen Z students' mental health could be explained by overall SRL.

Sixth, multiple linear regression examined the contributions of SRL dimensions to mental health. Goal setting, time management, self-monitoring, effort regulation, distraction control, learning strategies, and self-evaluation were entered as predictors, with mental health as the dependent variable. The analysis assessed their joint contribution to variation in student mental health.

Seventh, multiple linear regression was also conducted separately for undergraduate, master's, and doctoral students to examine patterns within each group. Findings for master's and doctoral students were interpreted cautiously because their samples were smaller and data variation limited. The main interpretation therefore emphasized overall patterns and statistically more stable results.

Beyond statistical analysis, the findings were interpreted within a framework of Islamic values. This served as a conceptual lens for enriching their meaning. Intention, effort, steadfastness, patience, self-reflection, trust in Allah, and scholarly responsibility were used to interpret SRL as both a psychological and cognitive skill and an ethical and spiritual practice of fulfilling learning responsibilities. The analysis thus examined the empirical relationship between SRL and mental health and the possibility of strengthening SRL through Islamic values.

Differences in SRL and mental health across study levels were analyzed using the Kruskal–Wallis test. Interviews supported the interpretation of quantitative findings, while Islamic values provided a conceptual lens. Mapping Islamic values was not treated as an empirical measurement of religiosity or a test of the effects of a religiously grounded intervention

RESULTS

Respondent Profile

The participants were 230 Gen Z students at undergraduate, master's, and doctoral levels. Undergraduates comprised the majority, with 175 respondents (76.1%), followed by 40 master's

students (17.4%) and 15 doctoral students (6.5%). Most respondents were thus undergraduates, with relatively fewer postgraduate participants, particularly doctoral students. There were 135 female respondents (58.7%) and 95 male respondents (41.3%), with women outnumbering men.

This section may be divided into subheadings. It should provide a concise and precise description of the experimental results, their interpretation, and the experimental conclusions that can be drawn.

Table 1. Characteristics of the Respondents

Characteristic	Category	N	Percentage
Study level	Undergraduate	175	76,1%.
	Master's	40	17,4%
	Doctoral	15	6,5%
	Total	230	100%
Gender	Female	135	58,7%
	Male	95	41%
	Total	230	100%

Instrument Quality

Both the SRL and mental health scales had Cronbach's alpha values above 0.70. The 14-item SRL scale had an alpha of 0.816, while the eight-item mental health scale had an alpha of 0.843. Both instruments therefore demonstrated good reliability and were considered suitable for further analysis.

Table 2. Reliability of the Research Instruments

Theme	Reference	Scientific knowledge	Limits of conclusions
Self-Regulated Learnin	14	0.816	Reliable
Mental Health	8	0.843	Reliable

The use of prayer and dhikr is directly illustrated by M1's statement:

Item validity was also examined through item–total correlations. For the SRL scale, correlations ranged from 0.220 to 0.616. Most items demonstrated adequate discrimination. Some, however, require review because of relatively low item–total correlations, particularly those concerning studying without clear goals, rarely monitoring learning progress, and using the same study approach for all courses. These items were retained with the understanding that they warrant attention in future instrument development.

For the mental health scale, item–total correlations ranged from 0.330 to 0.809, indicating that all items were relatively adequate for measuring the construct. The mental health instrument thus demonstrated good measurement quality in terms of both reliability and item validity.

Descriptive Findings for SRL and Mental Health

Descriptive analysis examined SRL and mental health among Gen Z students overall and across undergraduate, master's, and doctoral levels. Table 3 presents the results.

Table 3. Descriptive Statistics of SRL and Mental Health Based on Educational Leve

Study level	N	Mean SRL	SD	SRL category	Mean mental health	SD	Mental health category
Undergraduate	175	3.60	0.52	Moderate	3.30	0.72	Moderate
Master's	40	3.68	0.70	High	3.52	0.77	Moderate
Doctoral	15	3.95	0.09	High	4.13	0.59	High
Total	230	3.64	0.54	Moderate	3.39	0.75	Moderate

The overall SRL mean was 3.64 (SD = 0.54), categorized as moderate in Table 3. Doctoral students had the highest mean (3.95), followed by master's students (3.68) and undergraduates (3.60). The overall mental health mean was 3.39 (SD = 0.75), also moderate. The means were 4.13 for doctoral students, 3.52 for master's students, and 3.30 for undergraduates.

The Kruskal–Wallis test indicated significant differences across study levels in SRL ($H = 9.949$; $p = 0.007$) and mental health ($H = 16.275$; $p < 0.001$). These results indicate that at least one group differed; without post hoc tests, the specific pairs of study levels showing significant differences cannot be determined.

Profiles of SRL and Mental Health Dimensions

Further analysis examined scores for each SRL dimension. This is important because SRL encompasses interconnected aspects of goal setting, time management, self-monitoring, effort regulation, distraction control, learning strategies, and self-evaluation, beyond a general ability to learn independently. Dimension means identify relative strengths and areas requiring improvement among Gen Z students.

Table 4. Mean Scores of Self-Regulated Learning Dimensions among Gen Z Students

SRL dimension	Mean
Goal setting	4.04
Effort regulation	3.94
Self-evaluation	3.66
Self-monitoring	3.65
Time management	3.54
Learning strategies	3.53
Distraction control	3.08

As shown in Table 4, goal setting had the highest mean (4.04), followed by effort regulation (3.94). These findings suggest that Gen Z students are relatively proficient in setting learning targets and sustaining effort through academic difficulties. Most have a reasonably clear learning orientation and a willingness to continue addressing academic demands.

Self-evaluation had a mean of 3.66 and self-monitoring 3.65, both at the upper boundary of the moderate category. Students were reasonably able to evaluate learning outcomes and monitor academic progress, although these abilities could become more consistent and reflective.

Time management had a mean of 3.54 and learning strategies 3.53. These dimensions indicate reasonable but not fully optimal abilities to manage time and select study approaches. Some students may still struggle to prioritize tasks, organize schedules, or choose strategies suited to particular academic assignments.

Distraction control had the lowest mean (3.08). This suggests that Gen Z students remain vulnerable to learning disruptions, especially digital distractions, multitasking, social media, device notifications, and difficulties maintaining focus. Despite relatively clear goals and willingness to make an effort, maintaining concentration and controlling distractions remain the SRL abilities most in need of strengthening.

The next analysis examined scores across mental health dimensions. Mental health encompasses interconnected aspects of resilience, psychological stability, mood, academic interest, stress, academic pressure, anxiety, and calmness, alongside overall psychological functioning. Dimension means identify relative strengths and areas needing attention. Table 5 presents these means.

Table 5. Mean Scores for Mental Health Dimensions among Gen Z Students

No	Mental health dimension	Mean
1	Resilience and psychological stability	3.69
2	Mood and academic interest	3.39
3	Stress/academic pressure	3.27
4	Anxiety/calmness	3.23

Table 5 shows that resilience and psychological stability had the highest mean (3.69). Overall, Gen Z students demonstrated reasonably good psychological endurance and were relatively able to persevere, adapt, and maintain stability under academic demands.

Mood and academic interest had a mean of 3.39, placing them in the moderate category. Some students thus retained interest and engagement in their studies, although mood fluctuations may influence the consistency of their learning.

Stress/academic pressure had a mean of 3.27, while anxiety/calmness had the lowest mean (3.23). These dimensions suggest that some students continue to experience pressure, worry, or tension during their studies. Despite relatively good resilience, anxiety and academic stress warrant attention, particularly in relation to assignments, examinations, study completion, academic relationships, and pressure to succeed.

Relationship between SRL and Mental Health

Table 6. Correlations between SRL and Mental Health among Gen Z Student

Group	N	Spearman's rho	p-value
Total	230	0.360	<0.001
Undergraduate	175	0.447	<0.001
Master's	40	-0.084	0.607
Doctoral	15	0.500	0.058

Overall, SRL was significantly and positively correlated with mental health (rho = 0.360; $p < 0.001$). The correlation was also significantly positive among undergraduates (rho = 0.447; $p < 0.001$). Among master's students, it was not significant (rho = −0.084; p = 0.607). Among doctoral students, it was positive but not significant at the 0.05 level (rho = 0.500; p = 0.058)

Contribution of SRLto Mental Health

Table 7. Regression of SRL on Mental Health among Gen Z Students

Group	B	Beta	t	p-value	R^2
Total	0.391	0.283	4.460	<0.001	0.080
Undergraduate	0.532	0.382	5.429	<0.001	0.146

Group	B	Beta	t	p-value	R^2
Master's	-0.150	-0.136	-0.846	0.403	0.018
Doctoral	1.125	0.176	0.646	0.529	0.031

For all respondents, simple linear regression yielded B = 0.391; Beta = 0.283; t = 4.460; $p < 0.001$; and $R^2 = 0.080$. The model explained 8.0% of the variance in mental health scores. For undergraduates, B = 0.532; Beta = 0.382; t = 5.429; $p < 0.001$; and $R^2 = 0.146$. For master's students, B = −0.150; Beta = −0.136; t = −0.846; p = 0.403; and $R^2 = 0.018$. For doctoral students, B = 1.125; Beta = 0.176; t = 0.646; p = 0.529; and $R^2 = 0.031$. The regression association was significant for the full sample and undergraduates but not for master's or doctoral students.

Regression of Mental Health on SRL Dimensions

Simultaneous multiple linear regression was performed to assess the variance in mental health explained by SRL dimensions. The analysis examined how their combination explained variation in mental health across all Gen Z respondents. The following table presents the results for the full sample.

Table 8. Multiple Regression Model Summary for All Respondents

Model	N	R^2	Adjusted R^2	F	p-value
SRL dimensions → Mental health	230	0.128	0.101	4.658	<0.001

Together, the seven SRL dimensions explained 12.8% of the variance in mental health ($R^2 = 0.128$; Adjusted $R^2 = 0.101$; $F = 4.658$; $p < 0.001$). Table 9 presents the coefficients for each predictor.

Table 9. Regression Coefficients for SRL Dimensions among All Respondents

No	SRL dimension	B	p-value
1	Time management	0.301	<0.001
2	Distraction control	0.100	0.194
3	Effort regulation	0.010	0.914
4	Goal setting	0.027	0.734
5	Self-monitoring	-0.126	0.194
6	Learning strategies	0.054	0.567
7	Self-evaluation	-0.020	0.826

Time management was the only significant predictor in the full sample (B = 0.301; $p < 0.001$). The other six dimensions did not have significant coefficients when analyzed simultaneously.

Table 10. Multiple Regression Model Summary for Undergraduate Students

Model	N	R^2	Adjusted R^2	F	p-value
SRL dimensions → Undergraduate mental health	175	0.213	0.180	6.448	<0.001

Among undergraduates, the seven SRL dimensions explained 21.3% of the variance in mental health ($R^2 = 0.213$; Adjusted $R^2 = 0.180$; $F = 6.448$; $p < 0.001$).

Table 11. Regression Coefficients for SRL Dimensions among Undergraduate Students

No	SRL dimension	B	p-value
1	Distraction control	0.252	0.003
2	Time management	0.210	0.017
3	Effort regulation	0.204	0.052
4	Learning strategies	0.132	0.190
5	Self-monitoring	-0.111	0.317
6	Self-evaluation	-0.104	0.299
7	Goal setting	-0.061	0.469

Among undergraduates, distraction control ($B = 0.252$; $p = 0.003$) and time management ($B = 0.210$; $p = 0.017$) had significant coefficients. Effort regulation yielded $B = 0.204$ and $p = 0.052$ and therefore did not reach significance at the 0.05 level. The other dimensions were also not significant. Interpretation of regression findings for master's and doctoral students must account for their limited group sizes.

Supporting Interview Findings

An undergraduate described the challenge of managing schedules and assignments: "At university, I feel I have to organize everything myself. If I do not make a schedule, assignments can pile up and eventually make me panic" (W-S1-01).

Digital distraction also appeared in an undergraduate's experience: "I actually already have study goals, but I often get distracted by my phone. At first, I only want to check messages, but then I end up spending quite a long time on social media" (W-S1-03).

A master's student emphasized the challenge of balancing roles: "I have already made a study schedule, but it often changes because of work or family matters. So the challenge is not just studying, but balancing roles" (W-S2-02).

A doctoral student highlighted management of the dissertation process: “If I cannot organize my reading, writing, and communication with my supervisor, the dissertation process can easily become stressful” (W-S3-01).

DISCUSSION

SRL as a Psychological Resource

These findings align with Rodríguez et al. (2022), who showed that self-regulation strategies and deficits are related to various dimensions of student well-being. SRL is therefore relevant to psychological well-being as well as academic achievement. This helps explain why students with better SRL in this study tended to have more adaptive mental health. Students who manage learning effectively are less likely to feel directionless or overwhelmed by assignments and are better able to organize psychological responses to academic demands.

These findings also agree with Rodríguez et al. (2022), who linked self-regulation strategies and deficits to different dimensions of student well-being. SRL can therefore be understood as a psychological resource related to well-being and mental health, alongside its role in academic success. Nevertheless, the 8.0% of explained variance indicates that SRL alone cannot account for student mental health. WHO emphasizes the combined influence of individual, family, community, social, environmental, and structural factors. SRL should thus be understood as one protective factor rather than the sole determinant of student mental health.

Taken together, the results indicate that SRL significantly explains variation in Gen Z students’ mental health, although its contribution differs across study levels. Among undergraduates, its role is more apparent because they are developing basic academic independence. Among master’s students, mental health is intertwined with multiple roles and nonacademic pressures. Among doctoral students, it is closely related to the complexity of research, publication, supervision, and study completion. These regression findings do not establish causality, but indicate meaningful predictive value for SRL, especially at the undergraduate level.

The importance of SRL also aligns with recent findings on time management and well-being. Shen et al. (2026) identified time management disposition and academic self-efficacy as important predictors of learning well-being. This helps explain why SRL, especially management of learning processes, is related to mental health in this study: students who organize time and learning

routines tend to experience more orderly academic processes, making psychological pressure more manageable.

Differences in Context across Study Levels

Across study levels, the strongest statistically significant relationship was found among undergraduates (rho = 0.447; $p < 0.001$). This indicates a clear association between SRL and mental health in this group. Undergraduates commonly transition from relatively structured school learning to more independent university study. They must organize schedules, understand lecturers' expectations, complete independent assignments, develop new social relationships, and establish study habits. When SRL is insufficient, these demands can readily become sources of stress and anxiety. Barbayannis et al. (2022) showed that academic stress correlates with lower mental well-being, indicating that academic pressure can directly affect students' psychological condition.

The association between SRL and undergraduate mental health may also be explained by distraction control, the most problematic dimension. This dimension had the lowest SRL mean and is particularly relevant to Gen Z students living in digital environments. Martin et al. (2025) showed that digital distractions disrupt concentration, shift attention, encourage ineffective multitasking, and create difficulties in personal performance. This helps explain the importance of distraction control for undergraduate mental health: uncontrolled distractions delay assignments, reduce study time, and increase psychological pressure.

Among master's students, the relationship between SRL and mental health was not significant (rho = −0.084; $p = 0.607$). This does not mean SRL is unimportant, but suggests that mental health may be influenced more strongly by other, more complex factors. Many master's students occupy multiple roles as students, employees, educators, parents, spouses, or family members with social responsibilities. WHO emphasizes that mental health reflects individual, social, environmental, and structural factors and cannot be explained by a single psychological variable.

Among doctoral students, the relationship was positive (rho = 0.500) but not significant ($p = 0.058$). Substantively, this direction matters because doctoral study requires independence, persistence, organization of reading and writing, and sustained engagement in long-term research. However, the group included only 15 respondents, limiting statistical power. Doctoral mental health is also influenced by numerous factors. Guo and Liu (2026) showed that doctoral

students' mental health and well-being are jointly shaped by individual, academic, interpersonal, organizational, and environmental influences.

These correlations agree with the regression findings for SRL dimensions, which identified time management as the most consistent dimension explaining mental health in the full sample. Shen et al. (2026) found that time management disposition was positively related to learning well-being, partly through academic self-efficacy. Katajavuori et al. (2025) likewise emphasized time and effort management as important for well-being, academic performance, and study progress. Better time management may therefore support mental health by preventing accumulated assignments, reducing pressure near deadlines, and maintaining stable study routines.

Overall, the correlations indicate a positive relationship between SRL and Gen Z students' mental health, with differing patterns across study levels. The relationship is most evident among undergraduates, for whom SRL provides a foundation for academic independence and managing early university pressures. Among master's students, mental health is more strongly influenced by multiple roles. Among doctoral students, SRL remains important alongside research, publication, supervision, and personal and institutional factors. Support should therefore be differentiated: undergraduates need stronger time management and distraction control, master's students need help balancing roles, and doctoral students need more comprehensive supervision, research support, and psychological assistance.

Time Management and Distraction Control

As shown in Table 9, time management was the only SRL dimension significantly contributing to mental health in the full sample ($B = 0.301$; $p < 0.001$). Students with better time management tended to have better mental health. Psychologically, time management helps prevent accumulated assignments, avoid pressure near deadlines, maintain study routines, and reduce feeling overwhelmed. It therefore functions as an academic skill and a factor related to psychological calm, order, and balance.

Other dimensions—distraction control, effort regulation, goal setting, self-monitoring, learning strategies, and self-evaluation—did not contribute significantly in the full sample. This does not make them unimportant; rather, when all dimensions were analyzed simultaneously, time management had the most prominent contribution. Other dimensions may still play a role, but their effects may overlap or operate indirectly through broader study habits.

Among undergraduates, the seven SRL dimensions jointly explained 21.3% of the variance in mental health ($R^2 = 0.213$; Adjusted $R^2 = 0.180$; $F = 6.448$; $p < 0.001$), exceeding the 12.8% explained in the full sample. SRL thus had a stronger explanatory role among undergraduates. This may reflect their early stage of developing academic independence. Managing time, maintaining focus, organizing assignments, and controlling distractions are important to whether they meet university demands calmly or experience psychological pressure. Table 11 presents each dimension's contribution.

Among undergraduates, distraction control and time management contributed significantly to mental health. Distraction control had $B = 0.252$ and $p = 0.003$, while time management had $B = 0.210$ and $p = 0.017$. Undergraduate mental health is therefore closely related to maintaining focus and organizing time. Students who control disruptions, particularly digital distractions, and organize study schedules effectively tend to maintain greater psychological calm, reduce anxiety, and avoid pressure from accumulated assignments.

Multiple regression with seven SRL dimensions among master's and doctoral students requires cautious interpretation. The groups comprised only 40 and 15 respondents, respectively. With seven predictors, these relatively small samples may produce unstable models and overfitting. Limited variation in smaller groups also restricts generalizability. The more dependable findings are therefore the overall patterns and those for the undergraduate group, which had a more adequate sample size.

Analytically, these findings indicate a positive association between SRL and Gen Z students' mental health, with SRL dimensions making their strongest contribution among undergraduates. In this group, mental health is particularly related to time management and distraction control. Among master's and doctoral students, it appears to be influenced by more complex factors beyond SRL, including multiple roles, work, family, research pressure, publication, supervision, and study completion.

Interpreting SRL within a Framework of Islamic Values

Beyond psychological analysis, findings on Gen Z students' SRL can be interpreted through Islamic values. This matters because the study positions SRL and mental health as educational psychological phenomena and as processes of personal development with ethical, spiritual, and moral dimensions. From this perspective, SRL includes technical abilities to set goals, manage

time, choose strategies, and evaluate oneself, as well as fulfilling learning responsibilities meaningfully, responsibly, and in accordance with values.

Goal setting had the highest SRL mean (4.04), indicating that Gen Z students are relatively able to establish learning directions and academic targets. Within Islamic values, this dimension corresponds to intention (niyyah), which underpins the orientation of action. The hadith innamā al-a'māl bi al-niyyāt emphasizes that the quality of actions depends on intentions (al-Bukhari, 2002; Muslim, 2007). Goal setting can therefore be enriched through understanding learning as worship, personal development, and scholarly responsibility, beyond earning grades, completing assignments, or meeting academic requirements.

Effort regulation had the second-highest mean (3.94). Psychologically, it reflects persistence despite academic difficulties. Within Islamic values, it overlaps with effort (ikhtiar) and steadfastness (istiqamah). Effort emphasizes earnest striving, consistent with the Quranic teaching that people receive according to what they strive for (Quran, al-Najm 53:39). Steadfastness emphasizes consistency in goodness and long-term commitment. Students with effective effort regulation may thus be understood as persistent learners and as individuals practicing effort and steadfastness in academic life.

Self-evaluation and self-monitoring, with means of 3.66 and 3.65 respectively, can be interpreted through muhasabah. In Islamic tradition, muhasabah involves assessing oneself, examining actions, correcting shortcomings, and improving one's life orientation. Al-Ghazali regards it as important spiritual training for self-awareness and continuous improvement (al-Ghazali, 2021). In SRL, it corresponds to monitoring progress, evaluating strategy effectiveness, and improving learning practices. Self-evaluation thus becomes an academic activity and a process of developing moral and spiritual awareness.

Time management had a mean of 3.54. Although moderate, it was the strongest predictor of mental health in the full sample. Within Islamic values, it relates closely to entrusted responsibility (amanah) and self-discipline. Time is a trust to be managed responsibly. Organizing time, setting priorities, and completing assignments gradually involve both learning skills and fulfilling academic responsibilities. Poor time management, by contrast, may lead to delays, accumulated tasks, guilt, stress, and anxiety. Time management therefore provides an important connection among SRL, mental health, and amanah.

Learning strategies had a mean of 3.53, reflecting the ability to select approaches suited to task demands. Within Islamic values, this can be associated with thoughtful effort: striving that is well-directed, appropriate, and reflective as well as diligent. Learning in Islam requires proper conduct, earnestness, method, and awareness of purpose. Al-Attas (1980) emphasizes adab in education, involving the proper positioning of knowledge, teachers, oneself, and life's purposes. Learning strategies can thus form part of academic adab, as students are expected to select responsible approaches appropriate to the knowledge being studied.

Distraction control had the lowest SRL mean (3.08). This indicates that students' principal challenge involves maintaining focus rather than lacking learning goals. Within Islamic values, distraction control may be associated with patience, steadfastness, and mujahadah al-nafs, or striving to discipline the self. Patience involves endurance in pursuing goodness despite disruptions, beyond merely bearing sadness. Steadfastness sustains consistent study, while mujahadah al-nafs concerns controlling impulses that undermine academic goals. Low distraction control therefore calls for technical improvements, such as limiting device use and organizing study environments, alongside greater awareness of focus as part of learning responsibility.

The following table presents an integrative mapping of SRL dimensions and Islamic values.

Table 12. Interpreting SRL Dimensions through Islamic Values

No	SRL dimension	Empirical finding	Relevant Islamic values	Integrative meaning
1	Goal setting	4.04	Intention	Clarity of learning orientation as a foundation for academic and spiritual action
2	Effort regulation	3.94	Effort, steadfastness	Earnestness and consistency in meeting learning demands
3	Self-evaluation	3.66	Self-reflection	Ability to evaluate learning and improve oneself
4	Self-monitoring	3.65	Self-reflection, entrusted responsibility	Awareness of monitoring progress as academic responsibility
5	Time management	3.54	Entrusted responsibility, discipline	Managing time as a responsibility toward learning
6	Learning strategies	3.53	Effort, scholarly adab	Choosing appropriate, ethical, and responsible study approaches
7	Distraction control	3.08	Patience, steadfastness, self-discipline	Self-control over distractions that undermine focus and learning goals

This mapping suggests substantial scope for dialogue between SRL and Islamic values. Islamic values enrich the meaning of the psychological concept rather than replacing it. While educational

psychology understands SRL as regulating cognition, motivation, behavior, and learning strategies, an Islamic framework also regards it as fulfilling entrusted learning responsibilities. Effective self-regulated learners strive to clarify intention, sustain effort, cultivate steadfastness, practice self-reflection, manage time as a trust, and accept outcomes through trust in Allah after optimal effort, alongside achieving academic effectiveness.

The finding that time management was the only significant SRL dimension for mental health in the full sample reinforces the importance of amanah in learning. Statistically, time management had $B = 0.301$ and $p < 0.001$, indicating that better time management was associated with better mental health. In Islam, time is an entrusted responsibility rather than simply a technical resource. Students who manage time are more likely to prevent accumulated tasks, reduce pressure near deadlines, and maintain stable study routines. Poor time management may lead to procrastination, stress, guilt, and anxiety. Time management thus connects SRL skills, mental health, and amanah.

Among undergraduates, SRL dimensions jointly explained 21.3% of the variance in mental health, with distraction control and time management significant. This indicates a need for practical, concrete self-regulation support. Students need abilities to maintain focus and organize time alongside motivation and goals. Within Islamic values, these can be strengthened through intention before studying, mujahadah al-nafs to control distractions, steadfastness in study schedules, and patience with academic difficulties. Undergraduate SRL interventions therefore require scheduling skills together with reflection on maintaining focus and managing time as scholarly responsibilities.

Among master's and doctoral students, the SRL–mental health relationship was not statistically significant or insufficiently strong to be declared significant. This may reflect more complex postgraduate pressures. Master's students often occupy roles as students, employees, educators, spouses, or parents. Doctoral students face research, publication, supervision, revision, and dissertation demands. Patience, trust in Allah, self-reflection, and scholarly responsibility can serve as resources for psychological endurance in these contexts. Patience supports persistence through long processes; self-reflection supports evaluation without becoming overwhelmed by failure; trust in Allah supports acceptance after optimal effort; and scholarly responsibility sustains academic integrity.

Interpreting Islamic values thus broadens understanding of the empirical findings. The positive SRL–mental health association indicates that students who regulate learning tend to be psychologically healthier and that learning regulation can be enriched through meaning. Muslim students need effective strategies and values that make learning meaningful. When learning is understood as an entrusted responsibility, assignments become more than burdens. When striving is understood through ikhtiar, failure need not be an endpoint. When evaluation is understood as muhasabah, students can improve without destructive guilt. When outcomes are understood through trust in Allah, students can maintain calm after doing their best.

This interpretation implies that strengthening Gen Z students' SRL should encompass ethical and spiritual dimensions alongside psychological techniques. Mentoring programs can combine goal setting with reflection on intention, time management with amanah, effort regulation with effort and steadfastness, self-evaluation with muhasabah, and endurance under academic pressure with patience and trust in Allah. SRL can thereby connect psychological skills, mental health, and meaningful development of academic character.

Theoretically, this interpretation enriches SRL scholarship by integrating educational psychology with Islamic values. Practically, it suggests that universities, particularly Islamic Religious Education programs and Islamic higher education institutions, can develop mentoring that teaches effective learning and cultivates academic character grounded in intention, effort, steadfastness, patience, self-reflection, trust in Allah, and scholarly responsibility. Student mental health can thus be supported through reducing academic pressure and strengthening meaning, orientation, and spiritual endurance in learning.

CONCLUSION

The study of 230 Gen Z students found mean SRL and mental health scores of 3.64 and 3.39, respectively. According to the descriptive table's categories, both were moderate, with SRL approaching the high category. The Kruskal–Wallis test indicated significant differences in SRL and mental health across study levels. Specific pairs of differing groups, however, cannot be identified because post hoc tests were not reported.

SRL was significantly and positively associated with mental health in the full sample and among undergraduates. Simple linear regression explained 8.0% of the variance in the full sample and 14.6% among undergraduates. Neither correlations nor simple linear regression were significant

among master's or doctoral students. These findings do not establish causality or indicate that SRL is unimportant at postgraduate levels.

In multiple regression for the full sample, the seven SRL dimensions explained 12.8% of the variance in mental health, with time management the only significant predictor. Among undergraduates, they explained 21.3%, with distraction control and time management significant. Interviews provided context concerning academic adjustment and digital distraction among undergraduates, multiple roles among master's students, and management of research and supervision among doctoral students.

Intention, effort, steadfastness, patience, self-reflection, trust in Allah, and scholarly responsibility may provide a conceptual framework for enriching interpretations of SRL. These connections constitute an interpretive reading rather than empirical evidence that Islamic values mediate the relationship between SRL and mental health or that interventions based on these values have proven effective.

LIMITATION AND RECOMMENDATION

Study Limitations

The respondent composition was unbalanced: 175 undergraduates, 40 master's students, and 15 doctoral students. Limited postgraduate group sizes reduce estimation precision and statistical power, particularly in regression with seven predictors. Nonsignificant postgraduate findings therefore require cautious interpretation, and differences in significance between groups do not in themselves demonstrate differences in association strength.

The reported correlation and regression analyses do not establish temporal order or causality. Other factors, including social support, economic circumstances, employment, family, sleep, and supervision quality, were not included in the models. Scale data are self-reported and cannot establish clinical diagnoses. Some SRL items had relatively low item–total correlations and require further evaluation.

The source manuscript does not detail study location and timing, the operational definition of Gen Z, recruitment, instrument sources and adaptation, score ranges and direction, category thresholds, interview procedures, participant consent, ethical review, or regression assumption checks. These details should be completed based on the actual conduct of the study. Post hoc

Kruskal–Wallis results were also not reported. Islamic values served as an interpretive lens and were not tested as measured variables.

Recommendations

Undergraduate mentoring may prioritize time management, prioritization, digital distraction control, and monitoring learning progress. Master's students need support for managing roles and balancing study and life, while doctoral students need research support, supervisory communication, academic writing assistance, and access to mental health services. Reflection on intention, entrusted responsibility, effort, steadfastness, self-reflection, patience, and trust in Allah may be considered in Islamic higher education mentoring, with program effectiveness evaluated empirically.

Further research should use larger and more balanced groups, particularly at master's and doctoral levels, and directly test contextual factors and differences in associations across study levels. Longitudinal designs can clarify relationship direction, while intervention studies can examine the benefits of strengthening SRL. Instruments should be refined, and measurement procedures, assumption checks, post hoc tests, and ethical governance fully reported.

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