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The Dynamics of Self-Regulated Learning of Students from Rural Area: Study on the Impact of Ecological Changes

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Abstract. This study examines the Self-Regulated Learning (SRL) of Wewewa students from Southwest Sumba, who are studying in Kupang, focusing on their adaptation to ecological changes. Using a mixed-methods approach, it combines qualitative phenomenological analysis and quantitative Likert scale surveys. Results show that most students prefer studying at night due to a quieter atmosphere and cooler temperatures. As many as 80% have at least intermediate-level technological skills, which facilitates access to digital learning resources. The dominant stress management strategies are exercise (65%), meditation (25%), and social support (10%). Findings indicate that urban ecological factors influence students' SRL and academic adaptation. This study highlights the need for institutional support programs to help rural students adapt to urban environments and provides insights into the relationship between environmental changes, learning strategies, and students' psychological well-being.

Keywords: *Ecology, Self-Regulated Learning, Students.*

Abstrak. Penelitian ini mengeksplorasi *Self-Regulated Learning* (SRL) mahasiswa Wewewa, Sumba Barat Daya, yang berkuliah di Kota Kupang, dengan fokus pada adaptasi terhadap perubahan ekologis. Menggunakan pendekatan mixed-methods, penelitian ini mengombinasikan analisis fenomenologis kualitatif dan survei kuantitatif skala Likert. Hasil menunjukkan sebagian besar mahasiswa lebih memilih belajar pada malam hari karena suasana lebih tenang dan suhu lebih sejuk. Sebanyak 80% memiliki keterampilan teknologi minimal tingkat menengah, membantu akses sumber belajar digital. Strategi manajemen stres utama adalah olahraga (65%), meditasi (25%), dan dukungan sosial (10%). Temuan ini menunjukkan bahwa faktor ekologis perkotaan memengaruhi SRL dan adaptasi akademik mahasiswa. Studi ini menekankan perlunya dukungan institusional bagi mahasiswa pedesaan dalam beradaptasi dengan lingkungan perkotaan serta memberikan wawasan tentang hubungan lingkungan, strategi pembelajaran, dan kesejahteraan psikologis.

Kata kunci: Ekologi, *Self-Regulated Learning*, Mahasiswa

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Introduction

Higher education today faces the challenge of producing graduates who are not only academically competent but also able to self-regulate and learn independently. In this context, the concept of Self-Regulated Learning (SRL) has become increasingly important because it highlights students' ability to manage their own learning process, including monitoring, evaluating, and adjusting their learning strategies as needed. Recent scientific developments in SRL indicate that both internal factors, such as motivation, self-confidence, and cognitive skills, as well as external factors like social support and the environment, play crucial roles in the success of SRL (Zimmerman & Barry, 2018). Additionally, recent research has shown that SRL is highly contextualized, based on students' cultural backgrounds, social environments, and personal experiences (Schunk & Greene, 2018).

However, while SRL has been widely studied, most research has focused on students in urban areas. Studies on SRL among students from rural areas who experience significant ecological environment changes are still limited. This research gap hightlights an urgent need to understand how students from rural backgrounds, accustomed to calmer, more natural environments, adapt to the changes they encounter in urban areas. These changes include not only physical alterations, such as temperature and noise, but also social and cultural shifts that affect their learning behavior. The researchers argue that filling this gap is crucial to exploring the experiences of rural students, such as those from Wewewa, Southwest Sumba, who face significant changes when adjusting to city life.

The stressors faced by students from rural areas when adapting to urban environments are pretty significant. Students from rural areas like Wewewa, Southwest Sumba, are typically accustomed to quieter, cooler, and more natural

surroundings, far from air pollution and city noise. However, upon moving to Kupang City, they are confronted with the fast-paced urban life, hotter temperatures, traffic noise, and higher air pollution. These changes can impact their quality of life, disturbing their comfort and concentration in studying. The stress caused by differences in temperature, population density, and air pollution can increase anxiety and tension for students who are adjusting.

Moreover, rural students are often also faced with significant social and cultural changes. Differences in lifestyle, social interaction patterns, and variations in values and norms between urban and rural environments can contribute to the psychological burden. This stress may increase feelings of isolation and difficulty adjusting to the new environment. Research by Dabone et al. (2015) shows that urban environmental stressors can affect students' ability to regulate their study time and impact their overall psychological well-being. Ongoing stress can disrupt SRL processes, such as students' ability to manage study time effectively and plan optimal learning strategies.

Thus, it is crucial to explore in more depth how students from rural areas, such as Wewewa, Southwest Sumba, adapt to urban environments. This study will fill the existing gap by understanding how ecological environmental factors influence students' SRL. By identifying the challenges and strategies employed by students from rural areas in adapting to environmental changes, we can gain a deeper understanding of the factors that impact their academic success and psychological well-being. This research aims to provide further insight into how students from rural areas manage stress and develop their learning strategies in the face of significant environmental changes.

The goal of this study is to explore the dynamics of SRL among students from Wewewa, Southwest Sumba, who study in Kupang City, and how they manage ecological environmental changes that affect their learning process. This research aims to contribute to a deeper understanding of the factors influencing the success of SRL in students from rural areas, as well as to provide a clearer picture of the impact

of ecological environmental changes on their adaptation process in academic life. The implications of the findings are expected to assist higher education institutions in designing learning programs that are more sensitive and responsive to the needs of students who experience significant ecological environmental transitions, as well as support them in managing stress and developing pratical SRL skills in urban environments.

Method

This study employs a mixed-methods approach, combining qualitative and quantitative methods**.** This approach was chosen to explore data in-depth while also obtaining generalizable findings. The research subjects comprise 20 students from the rural area of Wewewa, Southwest Sumba, who are currently studying at Artha Wacana Christian University in Kupang. Participants were selected purposively to ensure diversity in study programs, semester levels, and learning experiences in Kupang.

The qualitative approach in this study utilizes a phenomenological method to understand students' subjective experiences regarding environmental changes and their impact on Self-Regulated Learning (SRL). Qualitative data were collected through in-depth interviews, which were recorded and transcribed for further analysis.

The quantitative approach uses a Likert scale to measure students' attitudes toward SRL, with five rating scales:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Data were collected using three main techniques. First, in-depth interviews were conducted to explore students' experiences related to environmental changes

and their SRL. Second, a Likert-scale-based survey was used to measure students' perceptions of various SRL aspects, such as time management, stress management, and independent learning strategies. Third, observations were conducted to examine students' study habits in the urban environment, including social interactions and the use of learning technologies.

Qualitative data analysis was performed using a thematic approach to identify patterns in students' experiences. Quantitative data from the survey were analyzed descriptively, including frequency counts and averages, to identify trends in students' attitudes toward SRL. The Likert Scale formula was used to calculate the average score:

$$P = \frac{\sum fx}{N}$$

Where:

P = Average score

f = Response frequency

x = Weighted value of each response category

N = Total respondents

Through this mixed-methods approach, this study aims to provide a more comprehensive understanding of the SRL dynamics of students from Wewewa as they adapt to environmental changes in Kupang.

Result

A total of 20 students from Wewewa, currently studying in Kupang, participated in this study. The participants' ages ranged from 19 to 25 years, with 12 males and 8 females. They come from various study programs at the Artha Wacana Christian University Kupang. The following are the results of the survey on students' SRL, measured using a Likert Scale from 1 (Never) to 5 (Very Often).

Table 1.
Study Time Patterns

Time of the Day	Number of Students	Percentage (%)
Morning	3	15
Afternoon	5	25
Night	12	60

This table presents the students' study time patterns by time of day. The data shows that the majority of students (60%) tend to study at night, followed by the afternoon (25%), with a smaller percentage studying in the morning (15%). This indicates that most students prefer studying at night. The reason for this preference is that night is quieter, cooler, and more conducive to concentration compared to the hot and noisy afternoons.

Table 2.
Technology Skill Level

Skill Level	Number of Students	Percentage (%)
Low	4	20
Medium	8	40
High	8	40

This table depicts the students' technology skill levels. The data shows an equal distribution of students with medium and high technology skills (40% each), while 20% have low technology skills. This demonstrates a variation in technological proficiency among the students.

Table 3.
Stress Management Strategies Used by Students

Stress Management Strategy	Number of Students	Percentage (%)
Exercise	13	65

Meditation	5	25
Sharing with Friends	2	10

This table shows the stress management strategies employed by the students. The data reveals that exercise is the most commonly used stress management strategy (65%), followed by meditation (25%) and sharing with friends (10%).

Students faced challenges in adapting to the urban environment, particularly in terms of noise and air pollution. However, most were able to adjust by enhancing their time management skills and avoiding external distractions.

The use of technology, such as laptops and smartphones, has become increasingly important in students' learning processes. They access online learning materials and communicate with professors and peers through digital platforms.

Some students mentioned that they use exercise as a way to release emotions and tension accumulated during their studies. Other students who practice meditation shared their experiences of finding inner peace and mental balance through this practice. A few students who prefer sharing with friends as a stress management strategy expressed the importance of social support in coping with academic pressures. They emphasized how talking to their friends helped them feel heard, understood, and supported in facing learning challenges.

Discussion

The findings of this study provide insights into the dynamics of Self-Regulated Learning (SRL) among students from Wewewa studying in Kupang, particularly in relation to environmental adaptation, study time patterns, technological proficiency, and stress management strategies. These findings are analyzed critically and compared with previous research to highlight their significance and contribution to the existing body of knowledge.

The study found that students faced challenges in adapting to the urban environment in Kupang, particularly in terms of noise and air pollution. This finding

aligns with Tambunan et al. (2020), who emphasized that environmental factors significantly influence students' learning processes, especially in terms of concentration and stress management. Noise, in particular, can disrupt cognitive focus and decrease learning efficiency. However, in contrast to Tambunan et al.'s findings, this study observed that most students developed adequate coping mechanisms, particularly through improved time management. This supports Zimmerman's (2015) self-regulation theory, which posits that effective time management is essential for overcoming external barriers in SRL. The students' ability to adjust suggests that, despite the challenges of a new environment, they can develop strategies to maintain their academic performance.

One of the key findings was that most students preferred studying at night (60%) rather than in the morning or afternoon. This is consistent with the research by Sadeghi et al. (2019), which found that students in urban environments often opt for nighttime study due to the quieter atmosphere that enhances concentration. However, unlike Sadeghi et al., who attributed this preference solely to noise reduction, this study found that students also preferred nighttime study due to cooler temperatures. This suggests that environmental factors, such as temperature and noise, jointly influence students' decisions about when to study.

Regarding technological proficiency, this study found that 80% of students had medium to high levels of technological skills, demonstrating their ability to adapt to digital learning tools. This finding aligns with Zubair et al. (2020), who emphasized that strong technological skills enhance SRL by enabling students to access digital learning resources and communicate effectively with professors and peers. However, this study differs from Zubair et al. in that it highlights the variability in technological skills among students, with 20% reporting low proficiency. This suggests that while digital adaptation is widespread, disparities in technological skills may still exist, requiring targeted interventions to ensure equal access to digital learning opportunities.

The study also found that 65% of students used exercise as a primary stress management strategy, followed by meditation (25%) and sharing with friends (10%). This finding is consistent with Jaha & Ate (2024), who found that physical exercise significantly reduces anxiety and improves mental well-being by stimulating endorphin production. Additionally, the use of meditation aligns with Jaha et al. (2024), who emphasized that mindfulness techniques can help students achieve mental balance for effective learning. However, this study found that sharing with friends was the least preferred stress management strategy, differing from previous research that emphasized the role of social support in academic coping mechanisms. This discrepancy may reflect cultural differences or personal comfort levels in accessing peer support.

The contribution of this study to the field of SRL lies in its examination of how students from rural areas adapt to urban learning environments. While prior research has extensively discussed environmental and technological influences on learning (Tambunan et al., 2020; Zubair et al., 2020), this study offers new insights into how students from rural backgrounds navigate these challenges. The findings underscore the importance of adaptive strategies, including enhanced time management and targeted study scheduling, in mitigating environmental stressors. Additionally, the study highlights disparities in technological proficiency and varying preferences for stress management, offering practical implications for educators and policymakers in designing targeted support programs.

Overall, this study reaffirms existing research on the importance of environmental and technological factors in SRL, while providing novel insights into the adaptive strategies employed by students from rural backgrounds. The findings enhance our understanding of the challenges faced by these students and suggest strategies to support their academic success in urban settings. Future research could explore interventions to bridge technological skill gaps and examine the cultural influences on stress management preferences, thereby further enriching the SRL literature.

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Conclusion

This study aimed to explore the impact of ecological changes on the Self-Regulated Learning (SRL) process of students from Wewewa, Sumba Barat Daya, who are studying in Kupang. The findings reveal that the students faced significant challenges in adapting to the urban environment, particularly in terms of noise and air pollution. However, through effective time management strategies, students were able to overcome these environmental stressors, demonstrating the importance of SRL in adapting to new circumstances. A majority of students preferred studying at night, which reflects their need for a quieter and more conducive learning environment, further emphasizing the influence of environmental factors on their learning preferences.

In terms of technological adaptation, students exhibited varying levels of technological skills, with most being competent in using digital tools for learning purposes. This finding aligns with the growing importance of technology in the academic context, as students are increasingly relying on digital resources to facilitate their learning. Moreover, stress management strategies were found to be crucial for maintaining mental well-being, with exercise being the most commonly used method among students. This highlights the connection between physical and mental health in supporting SRL and coping with academic pressure.

The findings of this research contribute to the understanding of how students from rural areas adjust to urban environments, particularly in the context of SRL. While prior studies have identified the role of environmental factors and technological skills in learning, this research adds a new perspective by focusing on the specific challenges faced by students from rural regions and how they develop adaptive strategies to cope with these challenges. By shedding light on the relationship between ecological changes, stress management, and SRL, this study provides valuable insights that can inform the development of support programs for students in similar contexts. In doing so, it contributes to the advancement of psychology, particularly in the areas of learning, stress management, and the effects of environmental changes on academic performance.

Suggestion

Based on the findings of this study, it is recommended that universities, especially those in urban settings, offer tailored support programs to help students from rural areas adapt to new ecological environments. These programs should focus on enhancing time management skills, promoting stress management techniques such as exercise or meditation, and providing resources to improve technological skills. Additionally, creating quieter, more conducive study spaces could help students who struggle with noise and environmental distractions. Further research is needed to explore the long-term effects of ecological changes on students' learning processes and well-being. By addressing these factors, universities can better support students in adjusting to their new environments, ultimately fostering academic success and overall well-being.

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