E-ISSN 2621-3796

JOURNAL OF LANGUAGE EDUCATION DEVELOPMENT
Vol. 7 No. 2 (2025)

THE INVESTIGATING STUDENTS' STRESS MODEL OF THE COGNITIVE LOAD IN UNDERGRADUATE ENGLISH THESIS WRITING

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ABSTRAK

Penelitian ini yang berjudul Investigasi Model Stres Mahasiswa terhadap Beban Kognitif dalam Penulisan Skripsi Bahasa Inggris. Tujuan dari penelitian ini adalah untuk mengeksplorasi bagaimana pengalaman mahasiswa tingkat akhir yang menulis tesis bahasa Inggris sambil bekerja paruh waktu mengalami stres dalam kaitannya dengan beban kognitif intrinsik, ekstrinsik, dan germane, dengan menggunakan tiga pendekatan model stres: model stres stimulus, respons, dan transaksional.Penelitian ini menggunakan metode kualitatif dengan pendekatan studi kasus. Subjek penelitian ini adalah empat mahasiswa Pendidikan Bahasa Inggris Universitas Muhammadiyah Muara Bungo yang bekerja paruh waktu. Data diperoleh melalui wawancara mendalam dan dianalisis secara tematik menggunakan Maxqda.Hasil penelitian menunjukkan bahwa mahasiswa mengalami stres yang berkaitan dengan tiga jenis beban kognitif: beban intrinsik, seperti kesulitan memahami teori, kosa kata terbatas, struktur kalimat, dan penerjemahan; beban ekstrinsik, seperti revisi dosen yang membingungkan, tekanan keluarga, beban kerja, dan keterbatasan sumber daya; serta beban germane, yang meskipun menimbulkan tekanan, justru mendorong motivasi, pengembangan strategi coping, dan pemahaman akademik lebih dalam. Ketiga beban ini dialami melalui model stres stimulus (tekanan dari luar), response (reaksi emosional dan fisik), dan transactional (penilaian individu serta strategi adaptif) yang berbeda-beda pada setiap mahasiswa.

Kata kunci: beban kognitif, stres akademik, model stres, tesis bahasa Inggris, mahasiswa pekerja paruh waktu.

ABSTRACT

This research title is The Investigating Students' Stress Model of the Cognitive Load in Undergraduate English Thesis Writing. The purpose of this research is to explore how final-year students who write their English theses while working part-time experience stress in relation to intrinsic, extraneous, and germane cognitive loads, using three stress model approaches: stimulus, response, and transactional stress models.This research uses a qualitative method with a case study approach.

E-ISSN 2621-3796

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The subjects of this study were four English Education students of Universitas Muhammadiyah Muara Bungo who work part-time. Data were obtained through in-depth interviews and analyzed thematically using Maxqda.
The results showed that the students experienced stress related to three types of cognitive load: intrinsic cognitive load, such as difficulty understanding theory, limited vocabulary, sentence structure, and translation; extranouse cognitive load, such as confusing lecturer revisions, family pressure, workload, and limited resources; and germane load, which although stressful, encourages motivation, development of coping strategies, and deeper academic understanding. These three load are experienced through stimulus (external pressure), response (emotional and physical reactions), and transactional (individual judgment and adaptive strategies) stress models that vary from student to student.

Keywords: cognitive load, academic stress, stress model, English thesis, part-time working students

INTRODUCTION

Thesis is a scientific work that must be prepared by students as the final prerequisite in completing undergraduate education. Thesis discusses problems or phenomena in certain fields of science in accordance with applicable academic provisions (Al Musafiri & Umroh, 2022). In the context of higher education in Indonesia, thesis also reflects students' academic competence in carrying out research independently (Kurniawati & Setyaningsih, 2020).

However, in reality, a large number of students experience difficulties such as understanding the material, compiling the background of the problem, and limitations in understanding the theory and research methods. This is a major obstacle in preparing a systematic and structured thesis (Subagyo & Ip, 2020). When the academic load increases towards the deadline, students are at risk of experiencing stress which can lead to procrastination, loss of motivation, and even mental distress (Wakhyudin & Putri, 2020). In these situations, some students even show signs of severe stress such as dietary problems or a tendency to drift away (Syarofi & Muniroh, 2020).

Stress experienced by students can be interpreted as an individual's reaction to pressure or threats that exceed the capacity to deal with the situation (Nur & Mugi, 2021). This reaction can come from external factors such as academic pressure or internal factors such as excessive fear or

anxiety (Andriyani, 2019). This tension can produce emotional and physical effects such as anxiety, fear, and mental fatigue (Muhbar & Rochmawati, 2017).

One type of stress that is often experienced by students is academic stress, which is pressure that arises due to the mismatch between the demands of the learning environment and the ability of students to fulfill them (Efrianti, 2021). This includes excessive workload, expectations from supervisors, and social problems in the college environment (Barseli et al., 2017).

This phenomenon becomes more complicated in writing a thesis in English. Students majoring in English Education must be able to understand complex theories, formulate scientific arguments logically, write well in a foreign language, and complete assignments according to deadlines. These difficulties are often heightened for individuals who work part-time due to time constraints and divided attention (Ahmad et al., 2021). Studies show that working students usually experience higher stress when compared to regular students (Nurcahyani & Prastuti, 2020).

In addition, students who work part-time face increased stress due to limited time and divided attention. These concurrent academic and non-academic tasks increase the likelihood of significant cognitive strain and mental fatigue. The heartbreaking incident of a student at IAIN Madura in 2024, who committed suicide due to thesis-related stress, highlights the severity of unaddressed academic stress.

This study specifically examines the link between the stress model and students' cognitive load in preparing an English thesis. The stress model applied refers to Bartlett's (1998) theory, which is a stress model that focuses on stimulus, response, and transactional. On the other hand, cognitive load refers to Sweller's (1988) classification, which divides it into intrinsic load (complexity of the material), extraneous load (outside distractions), and germane load (attempts to create meaningful understanding).

Unfortunately, most previous studies have only discussed academic stress or cognitive load separately, without combining the two in the context of thesis writing. Meanwhile, combining the two is crucial to comprehensively understand the psychological stress experienced by students,

especially those who work while completing their final studies.

Based on this context, the research questions in this study are:

1. How do the students experience stress model on intrinsic cognitive load of writing a thesis?
2. How do the students experience stress model on extraneous load of writing a thesis?
3. How do the students experience stress model on germane load of writing a thesis?

METHOD

This study applied a qualitative approach with a phenomenological design to investigate students' experiences of dealing with stress and cognitive demands during the English thesis writing process. This approach was chosen because it can explore the subjective meaning of personal experiences in depth (Creswell & Zhang, 2009). The participants in this study consisted of four final year students of English Education Study Program at Universitas Muhammadiyah Muara Bungo who were working on their thesis while working part-time. The selection of participants was done through purposive sampling with the criterion that they had a double burden that could lead to higher stress.

Data were collected through semi-structured interviews, both face-to-face and online, with a Interview protocol created based on indicators of cognitive load (intrinsic, extranouse, germane) and stress models (stimulus-based, response-based, transactional). Interviews were conducted in Bahasa Indonesia and accompanied by non-verbal observations to enrich the information.

The data were analyzed using thematic analysis based on Braun and Clarke (2006), which includes six steps: data familiarization, initial coding, determining themes, checking themes, naming themes, and reporting results. The coding process was supported by Maxqda software to improve the accuracy and regularity of the analysis. Procedurally, this research went through the stages of planning (tool development and validation), data collection (interviews and documentation), data analysis (thematic), and presentation of results.

All stages were carried out with due regard to the principles of research ethics, including maintaining confidentiality of

E-ISSN 2621-3796

JOURNAL OF LANGUAGE EDUCATION DEVELOPMENT
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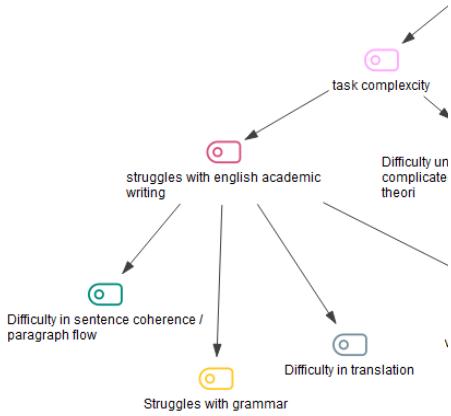
identity and the right of participants to withdraw at any time. Through this approach, the research is expected to provide deep insight into how students understand and manage stress due to cognitive load in writing an English thesis.

RESULTS AND DISCUSSION

Based on the data representation obtained from Maxqda coding, the intrinsic cognitive load,Extranouse cognitive load and Germane cognitive load felt by students when writing a thesis in especially for those who work while completing their thesis.

1. The Students' Experience Stress model on Intrinsic Cognitive Load



The results show that students experience stress due to intrinsic cognitive load when writing a thesis in English, especially in understanding complex theories and research methods. Difficulties in distinguishing between types of methods, understanding academic terms, as well as constructing relevant theoretical frameworks exacerbated the mental stress. This challenge is consistent with the stimulus-based theory and transactional stress model, where external academic pressures and an individual's assessment of self-efficacy can trigger stress. Difficulties in academic writing such as limited vocabulary, sentence structure, grammar, and translating ideas into formal English add to the mental burden. These obstacles lead to low self-confidence and the emergence of stress symptoms such as confusion, fatigue and loss of motivation.

In addition, the lack of clarity of revisions from supervisors also exacerbated the intrinsic cognitive load. Many participants were confused by terms such as "research gap" and "less coherent", so they tended to revise at random. Another major challenge lies in data analysis, both qualitative and quantitative,

where students find it difficult to draw conclusions, use SPSS, or write interview results in academic English. All this shows that the intrinsic cognitive load in thesis writing greatly affects students' psychological conditions, and can even cause excessive stress if not handled with appropriate coping strategies.

Translated with DeepL.com (free version)Students often experience considerable pressure when trying to understand theory, research techniques such as SPSS and qualitative methods, and academic writing."The method I used was quantitative, but honestly I don't really understand how to analyze spps. I don't know if the data is valid or not." (P3)

As explained by Sweller (1988), intrinsic cognitive load is related to the level of difficulty of the material and the relationship between elements that must be processed simultaneously. This is in line with the research of Zahwa & Hanif (2024), which shows that students often feel stressed due to complicated assignments and increasing deadlines. In addition, Daniel & Taneo (2019) reported that difficulties in expressing ideas scientifically also add to this level of difficulty.

The unclear feedback from the supervisor exacerbates the cognitive load experienced. Feedback that reads “fix this part” without additional explanation only adds to the burden. This finding is consistent with the transactional stress model described by Lazarus & Folkman (1984), in which stress arises when a person feels the demands are heavier than their abilities. Pratiwi (2019) also emphasized that unclear task communication further exacerbates academic stress conditions.

E-ISSN 2621-3796

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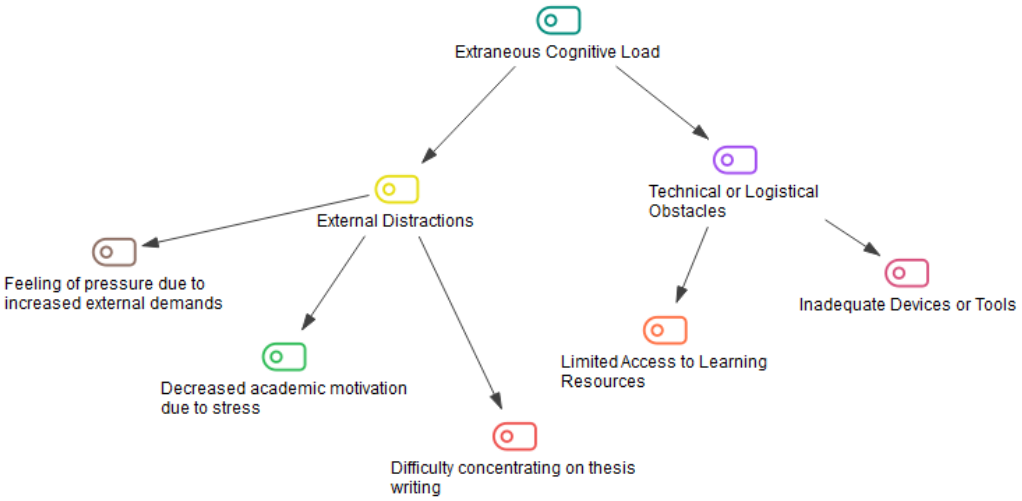
2. The Students' Experience Stress model on Extranouse



Cognitive Load

Students experience high extraneous cognitive load due to external distractions such as part-time jobs, family demands, and overlapping academic pressures. Physical and emotional exhaustion leads to decreased motivation, difficulty focusing, and even the urge to give up. This environmental pressure creates additional stress that worsens thinking ability and academic consistency, as explained in the stimulus-based stress model and extraneous load theory by Sweller.

In addition to emotional disturbances, students also face technical obstacles such as limited access to journals, poor internet connection, and inadequate devices. These obstacles disrupt the process of finding references and academic guidance, thus increasing frustration. In the view of the transactional stress model, when students feel that the situation is out of control or exceeds their capacity, stress increases and has an impact on thesis delay.

External cognitive load arises from disturbances that occur outside the individual, such as work demands, unsupportive environmental conditions (for example, crowded cafes), and limitations in access to information and references. Sweller (2010) satament by participant 4 "The beginning of working on a thesis while running a café feels really stressful, the demands of

lecturers, family expectations and work pressures all come together."(P4) states this load can hinder one's ability to process academic information. This point is supported by Metanfanuan (2023), who points out that excessive external stimulation can cause fatigue both physically and mentally. Kurniawati & Setyaningsih (2022) also emphasized pressure from family and educational institutions as additional factors that add to the load.

Students who experience difficulties in accessing journals or have poor signal connections tend to experience decreased academic motivation. Silinda (2019) explained that seeing obstacles as a threat can actually increase stress, especially for graduate students. This suggests that technical support and a conducive learning environment are important to reduce external burdens.

Stimulus response explains that stress is a physiological, psychological and behavioral response from humans who try to adapt and regulate both internal and external pressures (stressors) (Tudiho, 2014). Such as superior pressure, family requirements, and workload were incentives to induce a stress response to students. Students showed symptoms such as physical and mental fatigue, reduced academic motivation. This suggests that excessive external stimulation can trigger a critical stress response. Overloading can result in stress, such as physical and mental fatigue, reduced immunity, and emotional fluctuations (Metanfanuan, 2023).

The transactional stress model developed by (Lazarus & Folkman, 1984). Students in this study considered writing tasks as beyond-resource tasks, especially when access to learning resources and technical support was limited. This assessment led to increased stress and a desire to improve. A study by (Silinda, 2019) supports these findings, suggesting that the perception of stressors as obstacles can increase stress levels in graduate students. Stimulus response and transactional stress models explain how students respond to and assess the stressors they express

E-ISSN 2621-3796

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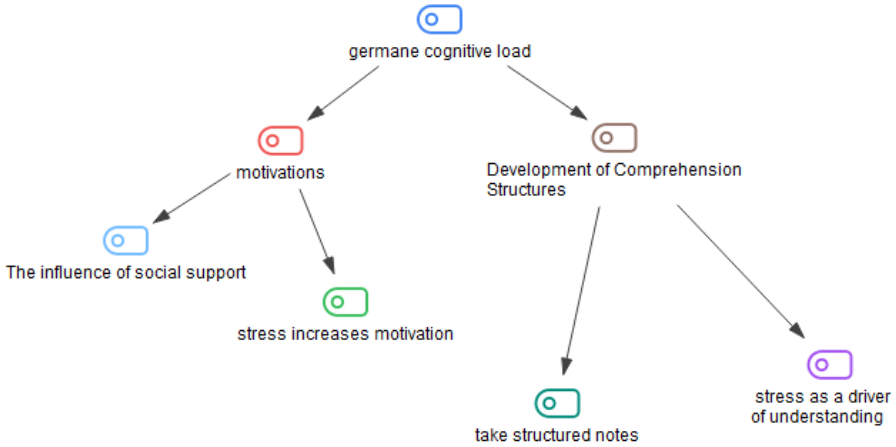
3. The Students' Experience

In addition to motivation,



Stress model on Extranouse Cognitive Load

Students experience stress which actually encourages internal motivation to complete the thesis. The pressure from the dual role as a worker and student is interpreted as a challenge, not an obstacle. Many participants felt that they wanted to make their families proud and did not want to give up after struggling so far. Social support from parents, friends, and the surrounding environment became an emotional buffer that helped them stay motivated. This suggests that when stress is managed positively, it can increase resilience and academic productivity.

stress also triggers the development of more reflective and structured learning strategies. Students began to organize small stages, reorganize their writing, and actively discuss with their supervisors. Coping strategies such as phased planning, relaxation, and emotional support strengthen germane cognitive load, which is the ability to focus on understanding the material. Based on the Transactional Stress Model, stress handled in an adaptive way can improve students' concentration, scientific understanding, and self-regulation, so that the thesis is not only technically completed but also forms academic resilience and personal character.

Unlike the previous two types of load, relevant cognitive

load has a positive impact on the formation of understanding and academic thinking. (Hanham, 2023) noted that combining cognitive load theory with self-study can increase the effectiveness of the learning process. In this study, a number of students managed to turn pressure into constructive motivation (eustress), such as the desire to set a positive example to students and make their parents proud. (Puspitasari & Widyastuti, 2023) found that academic-related stress can spur higher cognitive management.

Support from family, friends, and mentors are instrumental in this process. (Ardiana & Soetjiningsih, 2024) revealed that coping strategies such as relaxation and social support are effective in stabilizing reactions to stress. In addition, techniques such as re-noting revisions, setting important milestones, and comparing theses with the work of seniors show progress in self-regulated learning (SRL). SRL allows students to manage academic pressure in a structured and efficient manner, as described by Sweller et al. (1998).

The stimulus-based model of stress (Holmes & Lage) outlines that stress arises from external pressures such as learning tasks, tight schedules, demands from teachers, and the expected quality of education. These pressures can affect the way students think when they are preparing their thesis (Puspitasari & Widyastuti, 2023). On the other hand, the response-based model (Selye) views stress as a biological as well as psychological reaction, visible through symptoms such as fatigue, anxiety, and disturbed sleep. However, students also apply adaptive strategies such as emotion regulation and time management to mitigate its effects (Ardiana & Soetjiningsih, 2024). Within the framework of the transactional model (Lazarus & Folkman), stress is understood as the result of a cognitive evaluation of the balance between demands and available resources. Students who are able to see stress as a challenge generally show more adaptive coping skills and better resilience, so they can manage cognitive load more efficiently (Silinda, 2019).

CONCLUSSION

1. Students' Experience Stress model on Intrinsic Cognitive Load

Final-year students experience high stress due to internal cognitive load, especially in understanding theory, methodology, academic writing, and data analysis. When basic knowledge and skills are insufficient, the task at hand becomes very difficult and triggers stress in various ways - either as external pressure (stimulus-based), emotional and physical reactions (response-based), or a mismatch between demands and capacities (transactional). Lack of support in understanding complex concepts exacerbates this situation.

2. Students' Experience Stress model on extranouse Cognitive Load

Students who are working while writing a thesis feel the cognitive load caused by external disturbances such as noise, unclear lecturer directions, pressure from family, and infrastructure limitations. These distractions cause stress through physical and mental reactions (response-based), and make students feel that they have insufficient resources to complete the task (transactional), thus disrupting concentration and reducing academic motivation.

3. Students' Experience Stress model on Germane Cognitive Load

In the face of germane load, students are required to build understanding, formulate logical arguments, and relate theory to data. Those who can cope with stress show positive coping strategies such as emotion regulation, time management, and social support (response-based). In a transactional perspective, those who view stress as a challenge can more effectively maintain focus and develop cognitive schemas during the thesis writing process. recommendations for future intrincic cognitive load: Students should build academic understanding gradually, applying organized learning methods to avoid feeling overwhelmed, especially for those who also work while studying extranouse cognitive load: Lecturers should provide clearer guidance and institutions should provide tools and technical support for students who face external challenges. germane cognitive load: It is important to develop self-regulation skills, encouragement and emotional support so that students can stay focused. It is expected that workshops and

counseling services are provided. For Future Research: It is recommended to further investigate the effectiveness of certain coping methods in dealing with cognitive load when preparing a thesis.

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