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Investigation of Educational Psychology Systems, Self-Efficacy, and Student Performance: Thematic Content Analysis

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ABSTRACT

Teachers' education has been examined in the literature on educational psychology. Educational psychology is a component of theories, research, and applications of pieces of knowledge. We investigated whether the predictions of previous studies regarding the relationship between educational psychology and student performance, particularly performance and working memory, could be confirmed. Through a thorough literature review, we compiled scientific publications from Science Direct, Google Scholar, and Emerald, as well as books written by education and psychology experts. Using a systematic literature research strategy, we collected scientific papers from selection to analysis. Our research articles were analyzed using content analysis. Because our research is qualitative, the final result is a hypothesis based on the results of previous studies. We conducted research starting with the conceptualization of educational psychology and student work performance. After that, we investigated the relationship between educational psychology systems, self-efficacy, and student performance. We investigated the relationship between educational psychology, self-efficacy, student work performance, and working memory.

Keywords: Educational Psychology System, Self-Efficacy, Student Performance, Thematic Content Analysis, Working Memory

JEL : D91, E71, I22

INTRODUCTION

Education is a means of increasing human capital in the acquisition and application of new information and knowledge, as well as the acquisition and application of experience in the workplace (Puspaningtyas & Harnani, 2021; Rusmingsih, Widarni, & Bawono, 2021). Because of its distinctive contribution to the student and the teaching and learning process, psychological education is often regarded as an essential component of teacher training (Lai-Yeung, 2011; Kuron, Sumual, & Tuerah, 2022).

Teachers' education has been examined in the literature on educational psychology. For many non-teacher education programs, educational psychology is perceived as a necessary component of the theory, research, and application of pieces of knowledge about learning, teaching, and the learning process because of its distinctive contribution (Jones, et al., 2010; Plucker & Makel, 2021).

Despite the fact that school and educational psychology are worldwide subjects, there is a little study assessing foreign scholarship published in these publications. Overall, the data show that, despite the fact that school psychology is practiced in over 80 countries, most scholarships in the publications studied are for participants and writers from North America or Western Europe. Data explanations were reviewed as a result, and numerous suggestions were offered that, if implemented, may increase the internationalization and regional representation of the school and educational psychology scholarships (Begeny et al., 2018).

According to Keklik (2011), the most widely utilized developmental psychology parts of educational psychology textbooks are politically acceptable language, epistemological style, breadth/depth of material, scope and exploitation of current knowledge. The findings reveal that present textbooks give much less attention to non-discriminatory/politically acceptable language; they are a place in dualism, and the material typically provides the fundamental ideas and theories of classical development.

LITERATURE REVIEW

In educational research, self-efficacy beliefs have gotten much attention, notably in studying academic motivation and self-regulation. Self-efficacy researchers have concentrated their efforts in three areas (Matthews & López, 2020). The first study examined the relationship between effectiveness beliefs and college major and employment choice, particularly in science and mathematics. Because the findings provide light on young men's and women's professional development and may be used to design career intervention approaches, this field of research has significant implications for counseling and occupational psychology methods and techniques (Darolia, 2014; Turetsky, Sinclair, Starc, & Shelton, 2021).

A similar finding was found in studies on the relationship between high school student's ability to control their attention, working memory, and subsequent academic success. According to the data, male and female students' academic performance seems to be unaffected by interference management and working memory. This finding suggests that cognitive control measures cannot account for gender disparities in academic achievement. Our findings also suggest that interference control and working memory are only tangentially associated with academic performance and that these correlations are ineffective at predicting academic performance variance over a three-year period (Dubuc, Leheudre, & Karelis, 2020; Pluck, Villagomez-Pacheco, Karolys, Montaño-Córdova, & Almeida-Meza, 2019).

Working memory refers to the part of the brain that stores and alters information on-the-fly. For ordinary cognitive activities, it serves as a mental workspace that may be used in several ways (Ishak et al., 2012; Pavlov, & Kotchoubey, 2022). Depending on the theoretical paradigm, stress may affect working memory in a number of ways. Previous research has examined the influence of stress on women's working memory, but there is little information on the emotional side of things. There was a strong correlation between AWM performance and stress, which might help us better understand the mechanisms involved in memory storage and retrieval (Khayyer, Azad, Arani, & Harandi, 2021; Martens et al., 2019).

RESEARCH METHOD

Data Source and Collection

We wanted to see if the predictions of past studies regarding the relationship between educational psychology and student performance, particularly performance and working memory, could be confirmed. Through a thorough literature review, we collected scientific publications from Science Direct, Google Scholar, and Emerald, as well as books written by specialists in education and psychology. Using a systematic literature research strategy, we collected scientific papers sequentially, from selection to analysis. Our research articles were analyzed using content analysis. Since our study is qualitative, the final results are hypotheses based on the results of previous studies.

Thematic Analysis

We conducted the research starting with the conceptualization of educational psychology and student work performance. Subsequently, we investigated the relationship between the educational psychology system, self-efficacy, and student performance. We highlighted four important topics from our preliminary research to better understand their relevance to educational psychology: educational psychology, self-efficacy, student work performance, and working memory. Each topic we developed is based on our assessment of thousands of research publications found through Science Direct, Emerald, and Google Scholar.

We analyzed the themes and connections between topics to form a conceptual picture of the relationships between variables. We adopted the analysis system from Bengtsson (2016) with the steps as illustrated in Fibure 1.

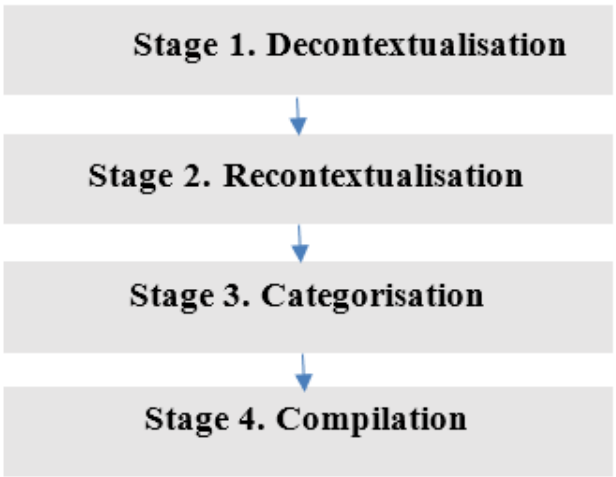

Figure 1. Content Analysis Stage Diagram

Here we use the following content analysis stages:
Stage 1: Decontextualization through identifying the underlying idea or concept.

Stage 2: Recontextualization: the gap between "content" and "junk" must be reduced.
Stage 3: Categorization: Identification of groupings of people with similar characteristics detected by investigators through various methods.
Stage 4: Compilation: Compilation of interesting findings that make sense.

Table 1 and Figure 2 provide interpretations of the report based on the audit investigations conducted by our committee members and associates.

RESULTS

This approach builds a relationship between psychological education, self-efficacy, student work performance, and working memory.

Report Interpretation

The result of content analysis based on our theme is presented in Table 1.

Tabel 1. Content Analysis

Theme	Content Analysis
Educational Psychology	The specialty of educational psychology to study how teaching and learning might be better understood in educational settings
Self Efficacy	Self-efficacy is one's belief to carry out certain tasks or achieve certain goals.
Student Work Performance	Student work performance is a measure of student performance in doing or completing a job.
Working Memory	Working memory is the ability to store information for a moment and manipulate information briefly obtained during cognitive performance.

We identified four significant themes in our research, and we discovered them by using different triangulation and refining the data, as shown in Table 1. Then, using the flowchart in Figure 1, we attempt to connect the flow of relationships between topics as shown in Figure 2.

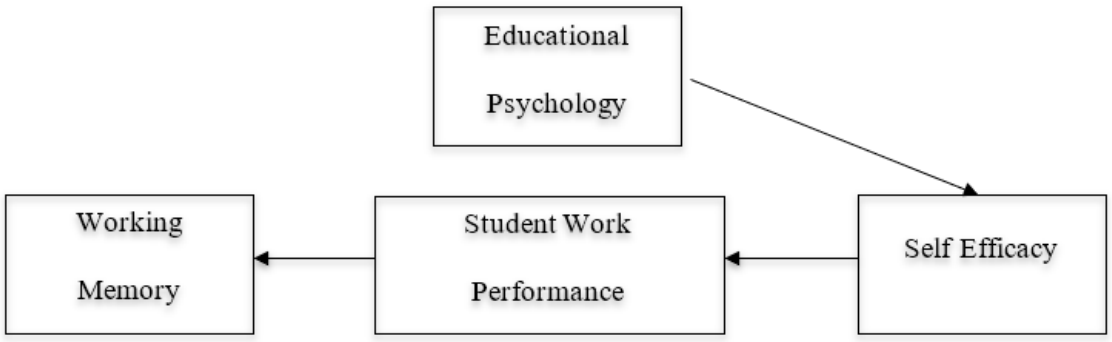

Figure 2. Content Analysis Diagram

Educational Psychology

According to Lai-Yeung (2011), psychological education is often included in teacher development programs because of its special value for students and the teaching and learning process. Teacher education has been investigated in research on the role of educational psychology in teacher education. According to Jones et al. (2010), teaching and non-teaching educational programs usually include educational psychology as a compulsory subject because of the field's special contribution to the theory, research, and application of psychology regarding students and teaching and learning processes.

Bailey and Rutledge (2017) investigated how a meaning network theoretical viewpoint might assist professionals in structuring their practice in a school context. The study's goal is to contribute to the development of practical knowledge. The Meaning Network's discussion of practical and theoretical views indicates that educational psychology is present at all levels of schoolwork: pedagogical, administrative, and political. Furthermore, the theory's comprehensive approach to human development gives insight into educational psychologists' overall function in schools. As a result, Ferreira, Amorim, Mäkinen, and Moura (2016) believed the Meaning Network method to be an essential framework for debating, describing, and using educational psychology in the school context.

Self Efficacy

Students' self-efficacy beliefs are becoming more important in academic motivation and self-regulation research. Three primary areas of self-efficacy research have been studied in this area (Klassen & Klassen, 2018; Matthews & López, 2020). The findings of this study will be beneficial to counseling and vocational psychology theory and practice since they provide insight into the career development of young men and women (Turetsky, Sinclair, Starc, & Shelton, 2021).

According to our findings, gender had no influence on pre-service teachers' self-efficacy in our favorable setting. Their view of the course itself is no exception. Another substantial variation exists between their views of educational psychology courses, similar to their judgments of self-efficacy. Based on the association between self-efficacy and courses, it can be inferred that students with a higher average self-efficacy have a higher average perception of courses. Students, on the other side, had the lowest grade point average in their evaluation of the course. Students from various grade levels tend to have higher self-efficacy ratings than those from other grades, however, this is not always the case in classes (Özcan, 2010).

Student Work Performance

Student capacity to manage their attention, working memory, and their future academic achievement are linked in many ways. Interference management and working memory seem to have little effect on the academic achievement of either male or female pupils. This finding suggests that cognitive control measures cannot account for gender disparities in academic achievement. Our findings also suggest that interference control and working memory are only tangentially associated with academic performance and that these correlations are ineffective at predicting academic performance variance over a three-year period (Dubuc et al., 2020).

Music has been proven to have a deleterious influence on a number of cognitive activities, including academically important ones in previous studies. However, there are numerous inconsistencies in the literature, including some occasions when there was no musical impact. Working memory capacity moderates the negative effects of music on academic performance, according to a novel theory. Before completing a series of working memory capacity evaluations, undergraduate students practice reading comprehension and arithmetic activities in the presence of music and quiet. Despite the fact that music reduced overall performance, working memory capacity attenuated this impact on reading comprehension tests. These results show that those who can better manage their attention (as measured by working memory capacity) are less likely to be distracted by music when performing specific kinds of academic assignments (Christopher & Shelton, 2017; Frith & Loprinzi, 2018).

Memory Working

The brain mechanism responsible for temporarily storing and altering information is referred to as working memory. Working memory is generally thought to have a finite

capacity. Minor distractions, such as unrelated ideas or other people's diversions, will almost certainly result in the loss of stored data (Ishak et al., 2012).

Stress may impact working memory in various ways, according to the theoretical framework. Previous studies have looked at the impact of stress on women's working memory; however, there is not much evidence on the emotional side. The findings back up the theory that stress impacts AWM performance based on emotional arousal, which might help us better understand the processes behind memory processing (Khayyer, Azad, Arani, & Harandi, 2021).

Arjmandnia, Kakabaraee, and Afrooz (2012) compared non-dyslexic students' working memory performance and determined the influence of rehearsal on dyslexic children's working memory performance. Consequently, normal students outperformed dyslexic kids on the working memory test. Exercises have no discernible impact on working memory performance.

According to Kundey et al. (2013), it is important to test the structure of the abstract sequential pattern without violating the pattern structure, and the working memory is checked in the first test. Also, it is beneficial to test whether the proper pattern performance requires working memory after studying the pattern with and without pattern structure violation in depth. Working memory is needed to abstract the pattern structure's rules for both patterns that violate the overall pattern structure and those that do not. As soon as the pattern has been adequately examined and memorized, working memory is only required for correctly executing the pattern, including any structural violations. The next test is to determine whether it hinders or aids the capacity to keep track of one's place sequentially while they are performing the task. According to the results, individuals are unable to learn the rules that describe the sequence due to the use of their working memory.

DISCUSSION

Several people have discussed how educational psychology can help people learn how to be teachers. As educational psychology makes a unique contribution to the theory, research, and application of psychological knowledge about learners and teaching and learning processes, it is often thought to be an essential part of both teacher preparation programs and non-teacher education programs.

A growing body of academic motivation and self-regulation research emphasizes the significance of student conviction in their abilities to succeed. Researchers in the field of self-efficacy have looked at three different aspects of this phenomenon. There has been much research on the relationship between self-efficacy and college degrees and jobs, especially in science and math. this study's findings have significant implications for counseling and vocational psychology because they reveal new insights into how young men and women make professional decisions and may be used to impact their lives.

Since self-efficacy and courses are linked, it can be said that students with a better average view of courses also have a better average self-efficacy. Students, on the other hand, had the worst grade point average when they thought about the class. Even though students from different grade levels have very different self-efficacy scores, this is not always the case for their courses. There is not a big difference in how students think about the class based on their ages or grade levels. As they move up the grades, they become more confident in their abilities as teachers.

In light of the increasing prevalence of part-time and full-time students working while attending school, we decided to examine the consequences of this situation on various categories of individuals. Full-time students completed fewer credits each semester when they worked a few more hours. Nevertheless, there was no indication that grades were damaged. Female and male students both found that self-control over distractions and working memory were critical to their schoolwork in high school. Interference management and working memory do not seem to be the primary predictors of academic success in how we assess it for both males and females. These findings indicate that the use of cognitive control measures cannot account for the fact that men and women achieve better in school. As far as it can be determined over a three-year period, there seems to be a minimal correlation between academic accomplishment and interference control and working memory.

CONCLUSION

Working memory is a term used to describe the part of the brain that stores and manipulates information for short periods of time. It is a mental space that can be used in a variety of ways to help with everyday cognitive tasks. These tasks need to be done at the same time as storing and processing information. It is very likely that small distractions like unrelated thoughts coming to mind or distractions by other people will cause the loss of stored information.

Working memory also affects how well students learn sequential patterns and how well they do on computer tasks that use the sequential multiple-choice paradigm. When we look into whether working memory is needed to abstract the sequential pattern structure both when the pattern structure is broken and when it is not broken. After they had studied both patterns that broke the pattern structure and those that did not, they looked into whether working memory was needed for them to be able to perform the patterns correctly. When there are problems with the overall pattern structure in a pattern, working memory is needed to make sense of the rules that make up this whole thing, even when there are no problems. Once the pattern has been well-studied, working memory is only needed to ensure that the pattern with the pattern structure violation is made correctly. Subsequently, we checked to see if occupying working memory made it hard for people to keep track of where they were in the sequence while they were doing it or if it made it hard for them to forget the rules that made the sequence work. Results showed that taking up working memory made it hard for people to learn the rules that describe the sequence.

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We declare no potential conflicts of interest concerning the study, authorship, and/or publication of this article.

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