International Journal of Application on Social Science and Humanities
Vol. 3, No. 3, August 2025: pp 95-103 ISSN-L 2987-8241 (Electronic Version)

DRAMA AS A COGNITIVE BOOSTER: INVESTIGATING MOTIVATION'S ROLE IN WORKING MEMORY PERFORMANCE

Ayesha Desfitrianie[1], Sri Tiatri[2], Margareta[3], Mellisa[4], Jap Tji Beng[5]

[1]Psychology Undergraduate Program, Universitas Tarumanagara, Jakarta, Indonesia
Email: ayesha.705210243@stu.untar.ac.id
[2]Faculty of Psychology, Universitas Tarumanagara, Jakarta, Indonesia
Email: sri.tiatri@untar.ac.id
[3]Psychology Undergraduate Program, Universitas Tarumanagara, Jakarta, Indonesia
Email: margareta.705210239@stu.untar.ac.id
[4]Undergraduate Study Program in Psychology, Universitas Tarumanagara, Jakarta
Email: mellisa.705210033@stu.untar.ac.id
[5]Faculty of Information Technology, Universitas Tarumanagara, Jakarta, Indonesia
Email: t.jap@untar.ac.id

ABSTRACT

Drama is one of the important elements in theater. In the context of education, drama has been integrated into the cultural arts curriculum at the senior high school level. However, the implementation of drama learning in Indonesia is still quite unsatisfactory. Drama is not only an artistic activity, but it can also improve students' cognitive abilities. The cognitive ability that can be improved through drama is working memory. Working memory is a cognitive system that functions to manage and manipulate information in a short period of time. In drama practice, working memory is used to remember dialogue and movements on stage. During the rehearsal process, motivation is needed so that the performance can go well. Motivation can increase if a reward/praise is given. This study aims to analyze the role of motivation on working memory in students who take part in extracurricular drama. This study used a quantitative method with purposive sampling method. This study involved 66 high school students who were active in extracurricular drama. The measuring instruments used in this study were Digit Span and Sport Motivation Scale-II. The results of the analysis show that there is a positive relationship between motivation and working memory. The contribution of motivation to working memory in this study was 10%. The findings emphasize the importance of motivation enhancement strategies in drama education to improve students' cognitive performance. This study can be used as a reference regarding motivation and working memory in extracurricular drama students.

Keywords: *drama, working memory, motivation, high school*

1. PREFACE

Drama is one of the important aspects of a theater performance. Drama collaborates with many areas of art that are bound up in theater. For example, drama collaborates with props, dance, and music (Zakopoulos et al., 2023). In the 2013 curriculum, drama has been included in cultural arts subjects for senior high school students (SMA). However, in practical implementation, drama education in Indonesia is still far from becoming a satisfactory level (Ratna Dewi M, 2019).

Through the phenomenon that occurred, extracurricular drama or commonly known as theater was formed in several schools. Referring to the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 62 of 2014 (2014), explains that extracurricular activities have the aim of developing students' talents, interests and abilities. Students who take part in extracurricular activities are expected to be able to compete in displaying their respective skills. In Jakarta, there is a special competition for theater at the high school / equivalent level. The competition is under the sponsorship of the Jakarta Provincial Cultural Office and collaborates with the Theater Committee of the Jakarta Arts Council and five Theater Associations in Jakarta (Faizi, 2024).

The competition is called the Festival Teater Pelajar (FTP). FTP is held annually to provide a forum for students who take part in extracurricular theater to showcase their abilities. This competition also provides an opportunity for them to compete with extracurricular theater from various schools in Jakarta. The purpose of this competition is to develop students' talents and interests through theater which includes many aspects such as music, costumes, and makeup (Pasaribu, 2023).

Two extracurricular theaters that participated in the FTP at the West Jakarta level were participants in this study. They were qualified to proceed to the final stage representing West Jakarta (Dinamikapos.com, 2024). They prepared quite a lot of preparations, they studied the set of stage properties, costumes, makeup, and the drama that would be performed. Drama is not only a performing art but can also develop students' cognitive abilities (Elpus, 2020). The cognitive ability that can be developed is working memory.

Working memory is a cognitive system that works to store and manipulate information temporarily (Baddeley, 2003). In the context of drama, working memory is very important to remember a dialog, and blocking that may always change during the rehearsal process. In addition to storing information, working memory is also useful for directing a goal and solving a problem (Pennington & Ozonoff, 1996). Therefore, working memory has a complex role in individual activities every day.

Baddeley and hitch (1974) explained that there are four components in working memory, these components consist of phonological loops that function to store and manipulate verbal and audio information. Furthermore, the visuospatial sketchpad which functions to store information visually and spatially. These two components are continued to a system that is limited to controlling the flow of information or what is commonly known as the central executive. This system functions for planning, decision making, and problem solving. As well as a component known as the multi dimensional storage system or episodic buffer that serves to connect information from each component (Baddeley, 2003).

Research that discusses drama and working memory is still difficult to find. However, research conducted by Frydman (2017) explains that drama therapy can affect working memory. Drama affects multi-sensory abilities and also the demands in drama therapy overload working memory and affect the way the individual remembers and processes information. The same thing was also found in a study conducted by O'Rourke (2016) which explained that drama therapy can be used as a treatment for Alzheimer's disease and dementia. In these therapies, working memory plays an important role in information processing and word recall.

Based on an interview with one of the students, they needed to prepare for the competition for approximately 4 months. Rehearsals are continuously conducted so that the performance can be interesting. Continuous practice will lead to a sense of being bored (Wati & Jannah, 2021). Therefore, a motivation is needed that supports an activity so that when doing the activity it does not feel bored.

Motivation is a process that encourages one to focus on a goal (Schunk & DiBenedetto, 2020). Motivation is also the result of thinking about personal goals in each individual's self-concept (Eccles & Wigfield, 2020). Based on this description, it can be concluded that motivation is not only driven by desire, but also influenced by how individuals can collaborate themselves with the desires they want to achieve. To achieve success, high motivation is very essential (Dariyo,

https://doi.org/10.24912/ijassh.v3i3.35100

2004). Motivation in the context of drama is needed to perform bravely on the performance stage. Individuals who have strong motivation will carry out all activities with dedication and enthusiasm (Deantono & Dariyo, 2012).

Based on Self Determination Theory, motivation consists of two types, namely extrinsic and intrinsic motivation. Extrinsic motivation is a behavior that is not driven by its own satisfaction (Ryan & Deci, 2020). Extrinsic motivation has 4 subtypes, namely external, introjection, identified, and integrated. The most autonomous subtype is integrated motivation, where individuals not only recognize and identify with activities, but also find them in accordance with their interests (Ryan & Deci, 2020).

Intrinsic motivation is behavior performed for its own satisfaction (Pelletier et al., 1995). Individuals who have high levels of intrinsic motivation tend to be flexible, have high curiosity, and are open to making decisions (Hon, 2012; Hon & Leung, 2011). intrinsic motivation has 3 needs, namely the need for achievement, need for power, and need for affiliation (McClleland, 1985). These three needs will refer to the desire to develop and establish good working relationships with other individuals (Kim et al., 2020).

This research needs to be investigated because there is no research that specifically discusses motivation and working memory in high school students who take part in extracurricular drama. Previous research conducted by Lee et al. (2017) also showed that motivation can affect working memory. In addition, research conducted by Martin and Cutler (2002) shows that motivation can improve individual performance in drama performances because there is a drive to get a sense of satisfaction and be appreciated for their performance. Therefore, this research needs to be conducted to provide a more in-depth understanding of the role of motivation on working memory in high school students who take part in extracurricular drama.

2. RESEARCH METHOD

Samples

This study uses a quantitative method with a purposive sampling method. The criteria for participants in this study were high school students aged 14-19 years. In addition, they were male or female and participated in extracurricular drama. This study does not limit the race, religion, and culture of the participants who take part in this study. This study involved 66 drama extracurricular students at the high school level. Participants in this study were categorized into four groups consisting of gender, age, and class.

Based on gender, participants consisted of 66 students. There were 14 male students (21.2%) and 52 female students (78.8%). After that, based on age there are 6 categories. In the first category, 14-year-old students amounted to 1 student (1.5%), 15-year-old students amounted to 15 students (22.7%), 16-year-old students amounted to 28 students (42.4%), 17-year-old students amounted to 18 students (27.3%), 18-year-old students amounted to 3 students (4.5%), and 19-year-old students amounted to 1 student (1.5%).

In addition to grouping by gender and age, there is also grouping by class. Participants in grade 10 amounted to 41 students (62.1%), in grade 11 amounted to 22 students (33.3%) and in grade 12 amounted to 3 students (4.5%).More complete data can be seen in Table 1.

Table 1

Participants Characteristic

No	*Aspects*		*Total Participants*	*Percentage*
1.	Gender	Male	14	21.2
		Female	52	78.8
		Total	**66**	**100**
2.	Age	14 years	1	1.5
		15 years	15	22.7
		16 years	28	42.4
		17 years	18	27.3
		18 years	3	4.5
		19 years	1	1.5
		Total	**66**	**100**
3.	Class	10 grade	41	62.1
		11 grade	22	33.3
		12 grade	3	4.5
		Total	**66**	**100**

Measurement

The measuring instruments used in this study are Digit Span and Sport Motivation Scale-II (SMS-II). Digit span is a standardized cognitive assessment tool specifically designed to evaluate an individual working memory capacity. This measuring tool to originally developed by Jensen and Osborne (1979). This measuring tool was adapted by Tirtha et al. (2023) and this adapted version was used for this study. The way to use Digit Span is presenting a sequence of numbers to participants, after which they are required to accurately repeat the numbers either in the same order (forward) or in reverse order (backward). This process effectively measures the participants short-term memory, attentional control, and cognitive processing ability. The question items on this measuring instrument consist of 12 items. Each item progessively increasing in difficulty to further assess the limits of working memory capacity. Reliability on this measuring instrument is .676. The reliability indicating an acceptable level of internal consistency. More complete data can be seen in Table 2.

Table 2

Digit Span Scale Reliability

Measurement	*Cronbach's Alpha*
Digit Span	.676

The SMS-II measuring instrument is a measuring instrument to measure the level of motivation of athletes towards participation in sports activities. This measuring instrument was adapted by the researcher and has been tested on high school students who take part in extracurricular drama. SMS-II was developed by Pelletier et al. (2013) and uses a Likert scale of 7. The higher the number chosen will indicate that the higher the athlete's motivation level. The question items on this measuring instrument consist of 18 items and there are 6 dimensions with each containing 3 questions. These dimensions include, intrinsic, integrated, identified, introjected, external, and motivated. However, when researchers conducted the reliability and validity test process, there were 2 items that were not reliable. Therefore, this measuring instrument only consists of 16 items. More complete data can be seen in Table 3.

https://doi.org/10.24912/ijassh.v3i3.35100

Table 3
SMS-II Scale Reliability

Dimensions	*Cronbach's Alpha*
Intrinsic	.794
Integrated	.861
Identified	.789
Introjected	.681
External	.762
Amotivated	.859

Data Collection And Analysis

Data collection was carried out by providing questionnaires via Google Form to all students who participated in extracurricular drama at two schools in West Jakarta. The distribution of questionnaires was given by researchers visiting students who were doing extracurricular drama activities. All measuring instruments used have passed the rigorous evaluation prosess, including expert judgment to confirm their appropriateness for the research objectives. Also reliability and validity tests to ensure their accuracy and consistency in measuring the intended variables. After obtaining the target number of participants, data processing was carried out. Data processing was carried out using SPPS version 25 to analyze the data.

3. RESULTS AND DISCUSSIONS

Overview Of Working Memory And Motivation

The working memory variable uses a Likert scale of 1 to 5 which has a hypothetical mean of 3. Meanwhile, the empirical mean obtained is 3.96. on the motivation variable using a Likert scale of 1 to 7 which has a hypothetical mean of 4. Meanwhile, the empirical mean obtained is 5.45. Based on the results of the analysis of these two variables, it can be interpreted that the empirical mean is greater than the hypothetical mean. This finding implies that students involved in extracurricular drama activities tend to have well-developed levels of retention and cognitive abilities, as well as high motivation in their participation. More complete data can be seen in Table 4.

Table 4
Overview of Working Memory and Motivation

No	*Variable*	*Hypothetical Mean*	*Empirical Mean*
1	Working Memory	3	3.96
2	Motivation	4	5.45

Normality Test Between Variable

The normality test is an essential statistical procedure used to assess whether the data collected in a study follows a normal distribution or deviates significantly from it, which would indicate an abnormal distribution. The normality test is carried out with Unstandardized Residual data. The normality test in this study used the One-Sample Kolmogorov-Smirnov Test. Based on the tests that have been carried out, the results show that the data is normally distributed because the results are at a p value > .05. More complete data can be seen in Table 5.

Table 5
Normality Test for Working Memory and Motivation

	Unstandardized Residual	*Category*
Asymp. Sig (2-tailed)	.200	Normal Distributed

Linearity Test Between Variable

The linearity test is a statistical procedure used to assess whether there is a consistent and proportional relationship between two variables. This test is crucial in determining whether parametric analysis, such as a regression test. In this study, the linearity test was conducted to evaluate the extent to which the working memory and motivation variables are linearly related to one another. Based on the tests that have been carried out, the results show that the significance value of Deviation from Linearity is .919, $p > .05$. These results can be interpreted that there is a linear and significant relationship between working memory and motivation. More complete data can be seen in Table 6.

Table 6

Linearity Test for Working Memory and Motivation

		Sum of Squares	***df***	***Mean Square***	***F***	***Sig.***
Between Groups	(Combined)	5.689	52	.109	.655	.861
	Linearity	.787	1	.787	4.712	.049
	Deviation From Linearity	4.902	51	.096	.575	.919

Regression Test Between Motivation And Working Memory

Regression tests were used to find the role between motivation and working memory. The regression test was conducted using simple linear regression. Based on the testing that has been done, the results show that the value of $r(N-2) = .316$, $P < .05$. These results can be interpreted that there is a positive relationship between motivation and working memory. In addition, the results show that there is a 10% contribution of motivation to working memory and the rest is influenced by other factors.

Moreover, the value of $F = 7.122$, $p < .05$ was obtained. These results can be interpreted that there is a role of motivation in working memory. These results are obtained from the standardized coefficients (Beta) value of .316 or greater than .05 which means that motivation has a positive role on working memory. More complete data can be seen in Table 7.

Table 7

Regression Test Between Motivation and Working Memory

Variable	***F***	***P***	***B***	***R^2***	***%***
Motivation	7.122	.010	.316	.100	10%

4. CONCLUSIONS AND SUGGESTIONS

Based on the data analysis that has been conducted, it shows that motivation has a positive role on working memory. The results of this study are in line with research conducted by Sanada et al. (2013). In the research conducted by Sanada et al. (2013), it was stated that motivation can improve working memory because Motivation can increase memory capacity. Participants in this study consisted of 66 high school students who participated in extracurricular drama and came from two different schools. Students who take part in extracurricular theater have an average of moderate motivation and the most influential is intrinsic motivation.

Suggestions for future researchers are to expand the literature related to working memory and motivation in the context of drama arts. In this study, intrinsic motivation played a fairly good

https://doi.org/10.24912/ijassh.v3i3.35100

role for working memory, therefore it is hoped that this finding can be used as further research. In addition, it is expected that further research in data collection methods using experimental methods will probably get much more specific results than non-experimental methods. Lastly, it is hoped that future research can further explore all aspects of theater such as makeup, costumes, and so on.

Acknowledgment
The researcher would like to thank all participants who helped in the process of this research so that it can be completed properly. Also, the researcher would like to thank the researcher's colleagues, such as Shalsa, Anisa, Fira, Tasya, and Mia who have been support, and willing to assist. Their encouragement, valuable discussions, and shared experiences have played a significant role in enhancing the researcher's motivation and ensuring the smooth progress of this study.

REFERENCES

Baddeley, A. D., & Hitch, G. (1974). Working memory. *Psychology of Learning and Motivation, 8,* 47–89. https://doi.org/10.1016/S0079-7421(08)60452-1

Baddeley, A. (2003). Working memory and language: An overview. *Journal of Communication Disorders, 36*(3), 189–208. https://doi.org/10.1016/S0021-9924(03)00019-4

Dariyo, A. (2016). Hubungan antara persepsi siswa terhadap keterlibatan orangtua dan motivasi belajar dengan prestasi belajar matematika pada siswa sekolah dasar. *Jurnal Psikogenesis, 4*(1).

Deantono, Y., Dariyo, A., Putu, D., & Suyasa, T. Y. S. (2012). Gaya mengajar dan motivasi berprestasi siswa sekolah menengah atas (SMA). *Provitae Jurnal Psikologi Pendidikan, 5*(1).

Dinamikapos.com. (2024, August 19). *Festival Teater Pelajar 2024: Panggung kebebasan belajar dan ekspresi seni remaja Jakarta.* https://dinamikapos.com/2024/08/18/festival-teater-pelajar-2024-panggung-kebebasan-belajar-dan-ekspresi-seni-remaja-jakarta/

Eccles, J. S., & Wigfield, A. (2020). From expectancy-value theory to situated expectancy-value theory: A developmental, social cognitive, and sociocultural perspective on motivation. *Contemporary Educational Psychology, 61,* 101859. https://doi.org/10.1016/j.cedpsych.2020.101859

Elpus, K. (2022). Access to arts education in America: The availability of visual art, music, dance, and theater courses in US high schools. *Arts Education Policy Review, 123*(2), 50–69. https://doi.org/10.1080/10632913.2020.1773365

Faizi, M. (2024, August 19). *Festival Teater Pelajar 2024: Rayakan ekspresi dan kebebasan belajar remaja di Jakarta.* Serikatnews.com. https://serikatnews.com/festival-teater-pelajar-2024-rayakan-ekspresi-dan-kebebasan-belajar-remaja-di-jakarta

Frydman, J. S. (2017). Select models of cognition in developmental transformations: A theoretical integration. *The Arts in Psychotherapy, 56,* 111–116. https://doi.org/10.1016/j.aip.2017.07.003

Hon, A. H. Y. (2012). Shaping environments conducive to creativity: The role of intrinsic motivation. *Cornell Hospitality Quarterly, 53*(1), 53–64. https://doi.org/10.1177/1938965511424725

Hon, A. H. Y., & Leung, A. S. M. (2011). Employee creativity and motivation in the Chinese context: The moderating role of organizational culture. *Cornell Hospitality Quarterly, 52*(2), 125–134. https://doi.org/10.1177/1938965511403921

Jensen, A. R., & Osborne, R. T. (1979). *Forward and backward digit span interaction with race and IQ: A longitudinal developmental comparison.* University of California. (ERIC Document Reproduction Service No. ED173384)

Kim, S. H., Kim, M., & Holland, S. (2020). Effects of intrinsic motivation on organizational citizenship behaviors of hospitality employees: The mediating roles of reciprocity and organizational commitment. *Journal of Human Resources in Hospitality & Tourism, 19*(2), 168–195. https://doi.org/10.1080/15332845.2020.1702866

Lee, K., Ning, F., & Goh, H. C. (2017). Interaction between cognitive and noncognitive factors: The influences of academic goal orientation and working memory on mathematical performance. In S. Karabenick & T. Urdan (Eds.), *Noncognitive psychological processes and academic achievement* (pp. 83–101). Routledge. https://doi.org/10.1080/01443410.2013.836158

McClelland, D. C. (1985). *Human motivation.* Scott, Foresman.

Martin, J. J., & Cutler, K. (2002). An exploratory study of flow and motivation in theater actors. *Journal of Applied Sport Psychology, 14*(4), 344–352. https://doi.org/10.1080/10413200290103608

O'Rourke, P. M. (2016). *The potential role of drama therapy in the prevention and delay of Alzheimer's disease and dementia: A bibliographical research paper* (Master's thesis). Concordia University, Canada.

Pasaribu, A. (2023, November 3). *Karakter kreatif siswa bisa dibentuk lewat Festival Teater Pelajar.* Antaranews.com. https://www.antaranews.com/berita/3806646/karakter-kreatif-siswa-bisa-dibentuk-lewat-festival-teater-pelajar

Pelletier, L. G., Rocchi, M. A., Vallerand, R. J., Deci, E. L., & Ryan, R. M. (2013). Validation of the revised sport motivation scale (SMS-II). *Psychology of Sport and Exercise, 14*(3), 329–341. https://doi.org/10.1016/j.psychsport.2012.12.002

Pelletier, L. G., Tuson, K. M., Fortier, M. S., Vallerand, R. J., Brikre, N. M., & Blais, M. R. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of Sport & Exercise Psychology, 17*(1), 35–53. https://doi.org/10.1123/jsep.17.1.35

Pennington, B. F., & Ozonoff, S. (1996). Executive functions and developmental psychopathology. *Journal of Child Psychology and Psychiatry, 37*(1), 51–87. https://doi.org/10.1111/j.1469-7610.1996.tb01380.x

Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 62 Tahun 2014. (2014). https://jdih.kemdikbud.go.id/sjdih/siperpu/dokumen/salinan/Permendikbud%20Nomor%2062%20Tahun%202014.pdf

Ratna Dewi, M. (2019). Pengembangan bahan ajar bermain drama dengan model pembelajaran SAVI pada siswa SMA. *Jurnal Semantika, 1*(1).

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54–67. https://doi.org/10.1006/ceps.1999.1020

Sanada, M., Ikeda, K., Kimura, K., & Hasegawa, T. (2013). Motivation enhances visual working memory capacity through the modulation of central cognitive processes. *Psychophysiology, 50*(9), 864–871. https://doi.org/10.1111/psyp.12077

Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary Educational Psychology, 60,* 101830. https://doi.org/10.1016/j.cedpsych.2019.101830

https://doi.org/10.24912/ijassh.v3i3.35100

Tirtha, I. B. A. V., Beng, J. T., Salsabila, T. M., & Tiatri, S. (2023). Handwriting training: Does it improve working memory in elementary school students? *International Journal of Application on Social Science and Humanities, 1*(4), 238–243.

Wati, K. A., & Jannah, M. (2021). Hubungan antara kejenuhan dengan motivasi berprestasi pada atlet sepak bola. *Character: Jurnal Penelitian Psikologi, 8*(1).

Zakopoulos, V., Makri, A., Ntanos, S., & Tampakis, S. (2023). Drama/theatre performance in education through the use of digital technologies for enhancing students' sustainability awareness: A literature review. *Sustainability, 15*(18), 13387. https://doi.org/10.3390/su151813387