

# Mastery Motivation in Early Childhood

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## ABSTRACT

Early childhood is crucial in the lives of children for development of highly important competencies. The required motivation for this is obtained from the environment, in order to easily grasp such competencies. The best motivation comes from within the child, which is called mastery motivation: it spurs them to engage in tasks that help them obtain this competencies. The aim of this study is to determine the level of mastery motivation present in children. This is a quantitative research and the data is collected through surveys. The study sample totaled 417 children (211 males and 206 females), within an average age of 5 years and 9 months. The results were analyzed using a one-way ANOVA mean comparison test along with an independent t-test using SPSS. The analytical results showed that the level of mastery motivation in children is good. The one-way ANOVA test showed mean differences in mastery motivation dimensions, precisely the low mean score of social persistence compared with those of gross motor, cognitive, mastery pleasure, and social persistence each in adults. However, there are significant differences in the mean scores in male and female children present in only mastery pleasure dimensions, and absent in the others.

## CCS CONCEPTS

• General and reference~Document types~General conference proceedings

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## KEYWORDS

developmental task, mastery motivation, early childhood

## 1. Introduction

Growth and development of children at an early age is rapid. Early childhood is an essential period, because there are various capabilities, such as in the cognitive, physical motor, emotional and social persistence's, which are important for development need to be mastered. Although, their attainment requires support from close individuals, like their parents, teachers and peers, the child plays the most important role, through what is referred to as mastery motivation.

Mastery motivation can be described as a psychological drive that stimulates an individual to become independent, persistent, solve problems and master a skill or task that is quite challenging for them (Morgan et al, 1990). Furthermore, Dichter-Blancher et al (1997) stated that it is an internal drive that guide individuals in understanding their environments and solving challenging tasks. This type of motivation doesn't require external rewards since it originates from oneself (Busch-Rossnagel and Morgan, 2013; Morgan, Józsa, and Liao, 2017).

Mastery motivation may be grouped into instrumental and expressive aspects (Barrett & Morgan, 1995). The instrumental aspect motivates individuals to act in a more focused and persistent, solve a problem and master a skill or task which is quite challenging for them (Morgan et al, 1990), while the expressive aspect produces affective reactions when an individual is working on a task or has successfully completed a task. This affective attitude may not be expressed openly but vary according to each child's expression (Barrett & Morgan, 1995). This aspect involves both positive and negative emotions that contributes to a sustainable mastery motivation. It also includes emotions that promote attitudes of withdrawal and surrender, such as sadness and shame due to lack of success in mastering the task . (Jozsa & Barret, 2018).

Regarding the instrumental and expressive aspects, Jozsa and Morgan (2015) stated that mastery motivation are classified based on the dimensions of cognitive, gross motor, and social persistence. Adult and social persistence and peers are grouped under instrumental aspects, while mastery pleasure dimension is

under the expressive aspect. Cognitive persistence is defined as the process whereby children persevere in carrying out cognitive tasks, such as (1) Repeating a new skill until perfection is achieved, (2) Tries to complete a task, even if it takes a long time, (3) Tries to complete toys like puzzles, (4) Works long to do something challenging, and (5) Will work a long time to put something together. Gross motor is the process whereby children are determined in carrying out tasks according to their gross motor abilities. It includes (1) Trying to do well at motor activities, (2) Trying to do well in physical activities, (3) Repeating a particular skill until been good at it, (4) Becoming better at physical skills, and (5) Trying hard to improve when throwing or kicking something.

The dimensions of social persistence with adults and peers are meant to ascertain the efforts children put in mastering their social environments through interactions with various individuals. Social interaction is very important for social and cognitive development, therefore the need to interact with others is an important component of mastery motivation (Busch-Rossnagel, 1995; Morgan et al, 2014). Mastery motivation is different from social interaction, because this motivation begins from starting, continuing and forming social interactions which arises from an individual's internal drive without coercion or pressure (Morgan et al, 2014). Examples of dimensions that exist in social persistence with adults can be seen when an individual: (1) Keeps a conversation with an adult, (2) Makes an adult interested in playing, (3) Tries hard to make an adult understand, (4) Figures out what an adult likes, and (5) Make people understand their feelings. Dimensions of social persistence with peers can be found in statement items, such as (1) Doing things to keep other children interested, (2) Understanding other children, (3) Been friends with other kids, (4) Get involved when other kids are playing, and (5) Tries to keep on playing with other kids.

Morgan et al (2014) defined mastery pleasure dimension as smiling, laughing or other positive affective behavioral indicators while either performing a task or after completing one. This dimension consists of statements, such as (1) Smiles broadly after finishing something, (2) Shows excitement after performing a successful task, (3) Gets excited after discovering something, (4) Been pleased after solving a challenging problem, and (5) Smiles when makes something happen. Mastery motivation has a complex nature (Barrett & Morgan, 1995), due to the fact that it is likely to occur in different contexts and domains (Jozsa et al., 2017). A child may have very good mastery motivation on the cognitive dimension but not on the gross motor dimension, which isn't good.

The development of mastery motivation begins when the child is born. Barrett and Morgan (1995) explained that the development of mastery motivation in children includes three stages. The first begins from when the child is born, up until the age of 8-9 months. The mastery motivation condition is made evident through an awareness between actions and responses, a preference for new things, and using a familiar way to master the task. The second stage starts at the age of 8-9 months and ends at 17-22 months. It marks the ability to control success. Furthermore, the third stage starts at the age of 22-36 months. The characteristics of mastery motivation at this stage are persistent on challenging

tasks, planned efforts to master multistage tasks, and preferences for tasks expected to be completed.

According to Wang et al (2011), and Huang and Lay (2017) mastery motivation in children tends to be stable. This stability helps children gain the required skills during the period of learning. (Igoe et al, 2011). The presence of mastery motivation is important in the developmental stage of a child, as it aids the development competencies. The condition of mastery motivation in children needs to be known if their success in fulfilling development tasks is to be estimated. This research was conducted in order to have an overview of the conditions of mastery motivation possessed during early childhood. The description of mastery motivation is needed to help children achieve optimal competencies.

## 2. Methods

This is a quantitative research and the data is collected through surveys. The sample used in this study were kindergarten children within the age of 5-7 years (on average 5 years 9 months). The sample had a total of 417 children consisting of 211 males and 206 females. This research was conducted in one district which consists of 12 sub-districts. Sampling was done using multiple random sampling techniques so that the sample could represent all sub-districts. Data was collected using the Dimensions of Mastery Questionnaire 18 (DMQ18) method that was developed by Józsa and Morgan (2015). This questionnaire uses assessment based on maternal reports. Mastery motivation assessment were performed by mothers. The five dimensions in DMQ 18 are cognitive, gross motor, mastery pleasure, and social persistence with adults and peers. Each dimension are made up of five statement items, bringing the total number of items to 25. DMQ 18 makes use of a five-point system assessment that has a score ranging from 1 (not at all like this child) to 5 (exactly like this child). A high score signifies the best form of mastery motivation in children. The results were analyzed using a one-way ANOVA mean comparison test along with an independent t-test with the help of SPSS.

## 3. Results And Discussion

Data were arranged according to the various forms of mastery motivation conditions in children. According to the descriptive statistical analysis using an empirical data, a minimum, maximum, and mean scores along with standard deviation were obtained on each dimensions of mastery motivation. The calculated results can be seen in table 1.

Table 1 Descriptive Data of Research Results

Dimension	N	Empirical Data			
		Mean	Score		Std. Dev
			Min	Max	
cognitive persistence	417	3.01	1	5	.92
grossmotor persistence	417	3.11	1	5	1.03
social persistence with adults	417	3.00	1	5	1.05
social persistence with peers	417	2.87	1	5	.99
mastery pleasure	417	3.11	1	4	.92

Based on table 1, the descriptive data of the research results revealed the dimensions of mastery motivation with the highest mean score to the lowest. They include, mastery pleasure, gross motor and cognitive persistence, along with social persistence with adults and peers. To determine the presence or absence of significant differences in the mean score between the dimensions of mastery motivation, the one way ANOVA test with F test statistic was used. This assessment criterion is based on alpha ( $\alpha$ ) 5%. So if the Sig. of F count is smaller than the alpha value of 0.05, it indicates there is a minimum of 1 dimension that is different from the other dimensions. The calculated results can be seen in table 2.

Based on table 2, Sig. of F-count = 0.002 of which is lesser than the alpha value of 0.05. Therefore, one can conclude that there is a minimum of 1 dimension that is significantly different from the others. Subsequently, the need to determine the different level of dimensions can be calculated, using the Post Hoc test to know the Least Significant Differences (LSD). The calculated results can be seen in table 3.

Table 2 Significance Test Results

	Sum of square	df	Mean Square	F	Sig.
between groups	16.295	4	4.074	4.202	.002
within groups	2016.600	2080	.970		
Total	2032.895	2084			

Based on table 3, there are significant differences in the following dimensions because the Sig. mean difference is less than the alpha value of 0.05. This includes:

- Mastery Pleasure - Social persistence with peers has a mean difference of .240. This means the mean score of Mastery pleasure is greater than Social persistence with peers.
- Social persistence with peers - Social persistence with adults has a mean difference of -.132. This means the mean score of Social persistence with peers is less than social persistence with adults.

Table 3 Mean Difference Test Results Between Mastery Motivation Dimensions

No	Dimension (D1)	Dimension (D2)	Mean Difference (D1-D2)	Sig.	Conclusion
1	mastery pleasure	social persistence with peers	.240*	.000	significantly different
2	mastery pleasure	social persistence with adults	.108	.114	not significantly different
3	mastery pleasure	grossmotor persistence	.000	1.000	not significantly different
4	mastery pleasure	cognitive persistence	.101	.140	not significantly different
5	social persistence with peers	social persistence with adults	-.132*	.053	significantly different
6	social persistence with peers	grossmotor persistence	-.240*	.000	significantly different
7	social persistence with peers	cognitive persistence	-.139*	.042	significantly different
8	social persistence with adults	grossmotor persistence	-.108	.114	not significantly different
9	social persistence with adults	cognitive persistence	-.007	.916	not significantly different
10	grossmotor persistence	cognitive persistence	.101	.140	not significantly different

- Social persistence with peers - Gross motor persistence has a mean difference of -.240. This means the mean score of Social persistence with peers is less than gross motor persistence.
- Social persistence with peers - Cognitive persistence has a negative mean difference of -.139. This means the mean score of Social persistence with peers is less than cognitive persistence.

Furthermore, there are no significant differences in the following dimensions since their Sig. mean difference is greater than the alpha value of 0.05, including:

- Mastery Pleasure--Social persistence with adults
- Mastery Pleasure--Gross motor persistence
- Mastery Pleasure--Cognitive persistence
- Social persistence with adults--Gross motor persistence
- Social persistence with adults--Cognitive persistence
- Gross motor persistence--Cognitive persistence

The results gotten from the mean difference test, showed the dimensions of mastery motivation with the lowest mean score to the highest. They include social persistence with peers and adults, cognitive and gross motor persistence, along with mastery pleasure. The figure below shows the order of mean scores.

The results from the analysis carried out, shows the needful conditions of mastery motivation in children. Majority of the children had the mean score required for each dimension. Social persistence with peers had the lowest mean score compared to other dimensions. This dimension shows the child's effort in mastering the social environment through interaction with peers. In other for children to establish a successful relationship with their peers, they need the ability to start forming social interactions without coercion or pressure (Morgan et al, 2014). Social persistence with peers had the lowest mean score because children still have difficulty in maintaining interaction with peers when they are involved in shared games. Interactions between children and their peers is not quite easy, because such relationships between peers are parallel. Parallel conditions make each child feel superior, therefore when there is misunderstanding in a game with their peers, one of them is likely to budge. Furthermore, problems that occur can't be solved by children.

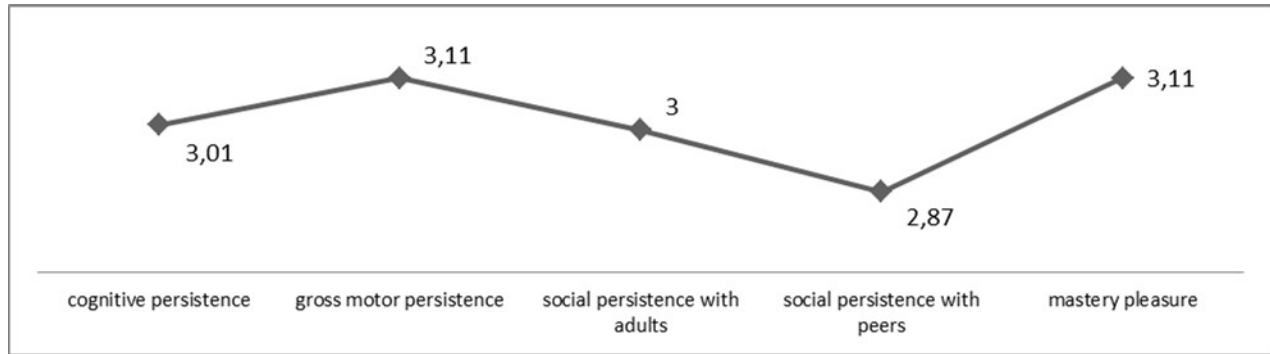


Figure 1 The Mean Score of Mastery Motivation Dimensions

The dimension of social persistence with adults is the effort children puts in mastering their social environment through interaction with adults. The mean score of this dimension is quite good. This condition indicates that children have been able to establish relationships with adults. They do not experience awkwardness when interacting with adults, in an effort to master their social environment. Achievement of social persistence with adult supersedes social persistence with peers, because of the free flow of communication when interacting with an adult. Communication between children and adults is smoother compared to peers, because such relationships appear vertical. Adults often act as protectors who are able to provide guidance to children.

Cognitive persistence had quite good mean score. This dimension shows the efforts of children in doing tasks relating to their cognitive abilities. It also reveals the challenges children experience in performing cognitive tasks, for example they are able to complete tasks such as assembling toys or solving puzzles.

The gross motor persistence dimension reflects the efforts children put in mastering tasks related to gross and fine motor

physical abilities. The mean score in this dimension was very good. This condition proves children are persistent when trying to master the physical skills needed to improve their abilities. They have the endurance to try and repeat motor physical activities until it works perfectly without any failure.

The mastery pleasure dimension had the highest mean score. Morgan et al (2014) stated that mastery pleasure is a reflection of positive affective behaviors during the process of performing a task. The high mean score on the mastery motivation dimension indicates that children really enjoy the process of performing a task. Children feel joy when making an effort to achieve this tasks. The excitement they experience when performing a task makes them more focused and persistent. This excitement will increase after they have successfully completed the task.

A more detailed description relating to the mastery motivation dimensions is carried out using the t-independent test to compare the mean scores between male and female children. The calculated results can be seen in table 4.

Table 4 Mean Difference Test Results Between Mastery Motivation Dimensions

Dimension (D1)	Gender	Mean	Std. deviation	t-statistic	Conclusion	Interpretation
cognitive persistence	female	3.02	.932	-.878	Not significantly different	Balanced
	Male	3.00	.902			
grossmotor persistence	female	3.06	1.105	-.878	Not significantly different	Balanced
	Male	3.16	.957			
social persistence with adults	female	2.96	1.068	-.839	Not significantly different	Balanced
	Male	3.05	1.032			
social persistence with peers	female	2.86	1.027	-.179	Not significantly different	Balanced
	Male	2.88	.961			
mastery pleasure	female	3.01	.965	-2.151	Significantly different	The male is higher
	Male	3.21	.875			

Based on table 4, the following figure can be made

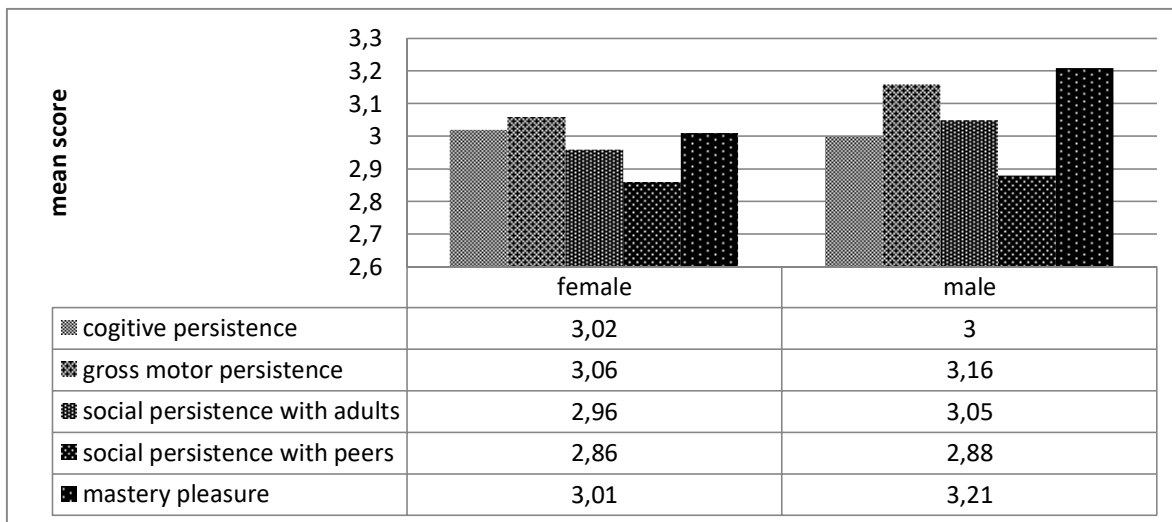


Figure 2 The Mean Score of Mastery Motivation Dimensions

Based on Figure 2, there are no significant difference between male and female children in the dimensions of cognitive and gross motor persistence, along with social persistence with adults and peers. This condition shows that male and female children have the persistence to do the same task in these dimensions. The will to focus on this task would continue since they have the same development tasks that need to be completed at an early age.

Significant differences between male and female children are normally seen in the mastery pleasure dimension. Mastery pleasure is the process of expressing a positive affective behavior while performing a task (Morgan et al, 2014). Examples of positive affective behavior common in children are smiling, laughing or other positive indicators. Barrett and Morgan (1995) stated that the positive affective attitudes possessed by children may not be expressed openly but may differ according to various expressions in each child.

Mastery pleasure in male children from this research is higher than female, most likely due to cultural influences (Matsumoto et al, 2008). This research was conducted on children who came from the Javanese tribe. Kurniawan and Hasanat (2007) stated that there is no difference in emotional expression across generations of Javanese tribe. This condition means that the emotional expression at various ages of the Javanese tribe is similar. Further research related to the emotional expression of Javanese tribe conducted by Suciati and Agung (2016) shows that there are differences in emotional expression between male and female children, when inside or outside the home. Female children look more expressive in showing emotions when they are in the house, compared to male children.

Related to the results of this research, the condition of high mastery pleasure in male children when compared to female can occur because male children display emotional expressions in accordance with the conditions they actually feel both at home and outside the home. When outside the home, male children have no barriers to expressing their emotions. They can laugh out loud

or clap their hands loudly. This condition does not occur in female children, who are less able to express the emotions they feel when they are outside the home.

#### 4. Conclusion

This study as an overview of mastery motivation possessed by 5-7 year old children. The mastery motivational condition for each child is good, since the majority have fulfilled the mean score for each dimension. Male children have higher mean score than female children in the mastery pleasure, though the difference doesn't apply to other dimensions. Mastery motivation is needed to facilitate children's efforts in achieving important competencies according to the development task involved. Therefore, mastery motivation in children needs to be improved. This improvement is made possible through the provision of support from close people around the child, such as parents, teachers and peers.

#### REFERENCES

- [1] Barret, K. C. & Morgan, G. A. (1995). Continuities and discontinuities in mastery motivation during infancy and toddlerhood: A conceptualization and review. In R. H. MacTurk & G. A. Morgan (Eds.), *Mastery Motivation: Origins, Conceptualizations, and Applications* (pp. 57-94). New Jersey, NJ: Ablex Publishing Corporation.
- [2] Busch-Rossnagel, N. A., Knauf-Jensen, D. E., & DesRosiers, F. S. (1995). Mothers and others: The role of the socializing environment in the development of mastery motivation. In R. H. MacTurk, & G. A. Morgan (Eds.), *Mastery motivation: Origins, conceptualizations, and applications* (pp. 117-145). Norwood, NJ: Ablex Publishing Corporation.
- [3] Busch-Rossnagel, N. A., & Morgan, G. A. (2013). Introduction to the mastery motivation and self-regulation section. In K. C. Barrett, N. A. Fox, G. A. Morgan, D. J. Fidler, L. A. Daunhauer (Eds.), *Handbook on self-regulatory processes in development: New directions and international perspectives* (pp. 247-264). Routledge-Taylor & Francis.
- [4] Dichter-Blancher, T.B., Busch-Rossnagel, N.A., & Knauf-Jensen, D.E. (1997). Mastery motivation: Appropriate tasks for toddlers. *Infant Behavior and Development*, 20(4), 545-548.
- [5] Huang, S. & Lay, K. (2017). Mastery motivation in infancy and early childhood: The consistency and variation of its stability and predictability of general competence. *Hungarian Educational Research Journal*. 7(2) 15-31. <http://dx.doi.org/10.14413/HERJ/7/2>

- [6] Igoe, D., Peralta, C., Jean, L., Vo, S., Yep, L.N., Zabjek, K. & Wright, F.V. (2011). A pilot evaluation of the test-retest score reliability of the dimensions of mastery questionnaire in preschool-aged children. *Infants & Young Children*, 24(3), 280–291.
- [7] Józsa, K., & Morgan, G. A. (2015). An improved measure of mastery motivation; Reliability and validity of the Dimensions of Mastery Questionnaire (DMQ 18) for preschool children: *Hungarian Educational Research Journal*, 5(4), 1-22.
- [8] Józsa, K., Barrett, K.C. & Morgan, G.A. (2017). Game-like tablet assessment of approaches to learning: assessing mastery motivation and executive functions. *Electronic Journal of Research in Educational Psychology*, 15(3), 665- 695. <http://dx.doi.org/10.14204/ejrep.43.17026>
- [9] Józsa, K., & Barrett, K.C. (2018). Affective and social mastery motivation in preschool as predictors of early school success: A longitudinal study. *Early Child. Res. Q.* 45 (4), 81-92.
- [10] Morgan, G.A., Harmon, R.J., & Maslin-Cole. C.A., (1990). Mastery motivation: definition and measurement. *Early Education and Development*, 1(5), 318-339. [https://doi.org/10.1207/s15566935eed0105\\_1](https://doi.org/10.1207/s15566935eed0105_1).
- [11] Morgan, G.A., Busch-Rossnagel, N.A., Barrett, K.C. & Wang, J. (2014). *The Dimensions of Mastery Questionnaire (DMQ 17): A manual about its development, psychometrics, and use*.
- [12] Morgan, G. A., Józsa, K., & Liao, H. –F. (2017). Introduction to the Special Issue on Mastery Motivation: Measures and results across cultures and ages. *Hung. Educ. Res. J.*, 7(2), 5-14. <https://doi.org/10.14413/HERJ/7/2/1>
- [13] Wang, P., Hwang, A., Liao, H., Chen, P. & Hsieh, W. (2011). The stability of mastery motivation and its relationship with home environment in infants and toddlers. *Infant Behavior & Development*. 34. 434– 442
- [14] Matsumoto, D; Yoo, H. Seung & Fontaine, Johnny. (2008). Mapping Expressive Differences Around the World: The Relationship Between Emotional Display Rules and Individualism Versus Collectivism. *Journal of Cross-Cultural Psychology*. 39; 55.
- [15] Kurniawan, P. Aditya & Hasanat, Ul. Nida. (2007). Perbedaan Ekspresi Emosi Pada Beberapa Tingkat generasi Suku Jawa di Jogjakarta. *Jurnal psikologi*. 34(1). 1 – 17.
- [16] Suciati, R. & Agung. I.M. (2016). Perbedaan Ekspresi Emosi pada orang Batak, Jawa, Melayu dan Minangkabau. *Jurnal Psikologi*, 12(2). 99-108.