

# Development, Acceptability and Effectiveness of Supplementary Worksheets in Teaching Kindergarten Learners

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**Publication history:** Received: February 3, 2026; Revised: February 5, 2026; Accepted: February 13, 2026

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## Abstract

This study aimed to develop, determine the acceptability, and evaluate the effectiveness of supplementary worksheets in teaching Kindergarten learners in selected public elementary schools in the Jala-jala District, Schools Division Office of Rizal, during the School Year 2025–2026. The study employed developmental, descriptive, and experimental methods of research. The developmental method was utilized in the preparation of the supplementary worksheets aligned with the Five-Year-Old Competencies for Kindergarten Learners and the MATATAG Kindergarten Curriculum Guide. The descriptive-evaluative design was used to assess the level of acceptability of the worksheets in terms of objectives, content, organization and presentation, language and style, and usefulness and relevance. The experimental method, specifically the single-group pretest-posttest design, was applied to determine the effectiveness of the worksheets. The respondents included 30 Kindergarten teachers from eight public elementary schools in Jala-jala District and 21 Kindergarten learners from Pagkalinawan Elementary School. A researcher-made questionnaire-checklist was used to gather data on the level of acceptability, while parallel forms of a 10-item pretest and posttest were administered to measure learners' performance before and after exposure to the worksheets. Findings revealed that the developed supplementary worksheets were rated very much acceptable in all evaluated criteria. There was no significant difference in the teachers' evaluation of the worksheets when grouped according to profile variables. Moreover, results showed a significant improvement in learners' performance, from satisfactory in the pretest to outstanding in the posttest, indicating the effectiveness of the developed materials. The study concluded that supplementary worksheets are effective instructional tools that enhance Kindergarten learners' performance. It is recommended that school heads support their utilization and that teachers integrate these materials regularly to enrich classroom instruction.

**Keywords:** supplementary worksheets, kindergarten education, instructional materials development, acceptability, effectiveness, pretest-posttest design,

## 1. Introduction

Education is a dynamic process of promoting learning through which individuals acquire knowledge, skills, attitudes, and values essential for holistic development. It fosters the physical, social, emotional, and intellectual growth of learners, beginning with foundational competencies such as letter recognition, number sense, communication skills, and social interaction. These early competencies serve as the building blocks for lifelong learning and responsible citizenship. In the Philippine context, the State recognizes education as a fundamental right and a primary instrument for national development. Article XIV, Section 2 of the 1987 Philippine Constitution mandates the State to establish, maintain, and support a complete, adequate, and integrated system of education relevant to the needs of the people and society. This provision underscores the necessity of aligning instructional practices, learning resources, and curriculum implementation with learners' developmental needs.

In response to this constitutional mandate, the Department of Education continues to refine policies and programs to strengthen early childhood education. DepEd Order No. 15, s. 2025, or the Omnibus Policy on Kindergarten Education, emphasizes the provision of continuing professional development for teachers to better support young learners. Likewise, the Revised K to 12 Curriculum and the MATATAG Curriculum highlight the importance of producing holistically developed Filipino learners equipped with foundational and 21st-century skills. These reforms recognize Kindergarten as the first formal stage of schooling, where developmentally appropriate instructional materials play a crucial role in shaping learners' academic readiness and engagement. Research affirms the importance of well-designed instructional materials in enhancing learning outcomes. Smidt (2020) emphasized that structured and scaffolded activities positively influence children's cognitive engagement and task orientation. Edoho (2020) highlighted that instructional materials facilitate better understanding by engaging learners' senses and sustaining interest. Similarly, Twizeyimana (2021) found that locally

developed instructional materials significantly improved students' academic performance compared to conventional resources. These studies suggest that carefully prepared learning materials contribute meaningfully to learners' comprehension and retention. Local studies further support these findings. Givera (2023) reported significant improvement in students' performance after exposure to contextualized supplementary worksheets. Baybayon (2020) and Arabit (2025) found that developed instructional materials for young learners were highly acceptable to teachers and significantly enhanced learners' posttest performance. Sambayon (2020) and Ayado and Berame (2022) likewise demonstrated that supplementary materials positively affected academic achievement across grade levels. These findings collectively affirm that supplementary and teacher-made materials are effective in improving learning outcomes.

Despite the abundance of studies on instructional material development, most existing research focuses on upper elementary, secondary, or technology-based interventions. Limited studies concentrate specifically on the systematic development, acceptability, and effectiveness of printed supplementary worksheets tailored for Kindergarten learners and aligned with the Five-Year-Old Competencies and the MATATAG Curriculum. Furthermore, few investigations examine teachers' evaluation of such materials alongside experimental evidence of learners' performance gains within the same study. This gap highlights the need for research that integrates material development, teacher acceptability assessment, and empirical testing of effectiveness in the Kindergarten context. In view of these gaps, the present study was undertaken to develop, determine the acceptability, and evaluate the effectiveness of supplementary worksheets in teaching Kindergarten learners. By addressing both instructional quality and measurable learning outcomes, the study aims to contribute to the enhancement of developmentally appropriate instructional resources and support the continuous improvement of early childhood education.

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## **2. Materials and methods**

### **2.1 Research Design**

This study employed developmental, descriptive and experimental research methods of research. Descriptive evaluative research design was applied since the level of acceptability of the developed supplementary worksheets in teaching kindergarten learners was evaluated with respect to objectives, contents, organization and presentation, language and style and usefulness and relevance. Experimental research utilizing single group design was applied to determine the level of performance of kindergarten learners before and after exposure to the developed supplementary worksheets.

### **2.2 Research Setting**

The study focused on the development, acceptability and effectiveness of supplementary worksheets in teaching Kindergarten learners in public elementary schools in Jalajala District, Schools Division Office of Rizal during the School Year 2025-2026. These schools include Bagumbong Elementary School, Bayugo Elementary School, Jalajala Elementary School, Lubo Elementary School, Pagkalinawan Elementary School, Palaypalay Elementary School, Punta Elementary School, and Sipsipin Elementary School.

### **2.3 Respondents**

The respondents of the study were the total population of kindergarten teachers in the said schools. This consists of 30 teachers. They were described in terms of age, civil status, educational attainment, position title, length of service, and in-service trainings attended. They were asked to evaluate the level of acceptability of the developed supplementary worksheets for kindergarten learners. Meanwhile, 21 kindergarten learners from Pagkalinawan Elementary School were considered as subjects of the study.

### **2.4 Research Instruments**

A researcher-made questionnaire-checklist was used. Experimental research utilizing single group design was applied to determine the level of performance of kindergarten learners before and after exposure to the developed supplementary worksheets. Parallel forms of pretest and posttest were used as instruments to determine the performance of kindergarten learners. The test consists of 10 items which focused on the skills in five-year old competencies for kindergarten learners and MATATAG Kindergarten Curriculum Guide.

### **2.5 Data Collection**

The conduct of the study followed a systematic process guided by a Gantt Chart of activities. After the thesis proposal presentation, the researcher revised and finalized the proposal based on the recommendations of the panel evaluators. The research instruments were constructed and validated prior to data collection. Necessary permits to conduct the study were secured, and all procedures complied with the provisions of the Data Privacy Act of 2012. The researcher developed the supplementary worksheets for Kindergarten learners aligned with the prescribed competencies. These materials were presented to Kindergarten teachers for evaluation of their level of acceptability using a validated questionnaire-checklist. For the experimental phase, one section of Kindergarten learners was administered a pretest to determine their initial level of performance. The learners were then exposed to the developed supplementary worksheets.

during instruction. After the intervention, a posttest was administered to measure any improvement in performance. All collected data were encoded, tabulated, and analyzed using the Statistical Package for Social Sciences SPSS. The results were interpreted according to the sub-problems of the study. Based on the findings, conclusions and recommendations were formulated. Following the oral defense, the manuscript was revised in accordance with the comments of the Oral Examination Committee. The study underwent an anti-plagiarism check, and upon completion and final approval, hardbound copies were submitted to the Graduate Studies Program and other concerned offices.

## 2.6 Data Analysis

Different statistical tools were used to analyze the data gathered in the study. Qualitative discussion was applied to describe the development of the supplementary worksheets. Frequency, percentage, and rank were used to present the profile of the teacher-respondents. Weighted mean was utilized to determine the level of acceptability of the developed worksheets based on teachers' evaluation. One-way Analysis of Variance was applied to test the significant difference in teachers' evaluation when grouped according to their profile variables. For the performance of Kindergarten learners, frequency, mean, and standard deviation were used to describe the pretest and posttest results. The independent t-test was employed to determine if there was a significant difference between the learners' pretest and posttest scores after exposure to the developed supplementary worksheets.

## 2.7 Ethical Considerations

The study ensured the protection of the rights and welfare of all respondents. Participation was voluntary, and respondents were informed about the purpose of the study. Confidentiality and anonymity of all information provided were strictly maintained, and data were used solely for research purposes. The researcher ensured that the respondents were treated with respect and that no harm, whether physical, emotional, or psychological, would result from their participation in the study..

## 3. Results and Discussion

### 3.1. Development of Supplementary Worksheets for Kindergarten Learners

The developed supplementary worksheets for kindergarten learners were created following the Revised K to 12 Curriculum competencies, ensuring its alignment to the national learning standards. It was intentionally designed to help teachers track the progress and development of the kindergarten learners while also providing insights into learners' individual needs and areas for improvement. It was designed to reinforce the lesson taught to help learners engage actively during the discussion. The layout ensure that the learners can finish the task with minimal guidance. The worksheets served as instructional guides that helped teachers adjust strategies and interventions based on observed learner responses and performance. The activities encouraged active participation, allowing learners to engage meaningfully with the lessons rather than passively receive information. The layout and presentation of the worksheets were developmentally appropriate, promoting independence by enabling learners to complete tasks with minimal teacher assistance. This design feature not only fostered confidence and self-directed learning but also reflected the effectiveness of the worksheets as supportive learning tools in early childhood education.

### 3.2. Profile of the Teacher-Respondents in Terms of the Selected Variables

As shown in the table, out of 30 teachers, 40 % are 31-40 years old and 33.3% are 41-50 years old and the rest are 21-30 years old and 51-60 years old respectively. The majority of teachers are married (80.0%). A small percentage are single (6.7%) or separated (6.7%). In terms of educational attainment, most of them are still in their baccalaureate degree (63.3%), some teachers have a master's degree (20.0%) and 16.7% have MA units. As to their position title, majority of teachers are Teacher I (60.0%), some teachers are Teacher II (26.7%) while Teacher III (13.3%). With regard to their length of service, most of the teachers have 6-10 years of service (50.0%). Some teachers have 11-20 years of service (23.3%) while (20.0%) have been in the service for 5 years and below. In terms of in-service trainings attended, majority of teachers have attended trainings at the Division level (30.0%), some teachers have attended trainings at the National and Regional level with 26.7% and 20% respectively.

*Table 2: Profile of the Teacher-Respondents in Terms of the Selected Variables*

| Age                 | f  | %    | rank |
|---------------------|----|------|------|
| 51 – 60 years old   | 4  | 13.3 | 3.5  |
| 41 – 50 years old   | 10 | 33.3 | 2    |
| 31 – 40 years old   | 12 | 40.0 | 1    |
| 21 - 30 years old   | 4  | 13.3 | 3.5  |
| Total               | 30 | 100  |      |
| <b>Civil Status</b> |    |      |      |
| Single              | 2  | 6.7  | 2.5  |

|                                      |    |      |     |
|--------------------------------------|----|------|-----|
| Married                              | 24 | 80.0 | 1   |
| Separated                            | 2  | 6.7  | 2.5 |
| Total                                | 30 | 100  |     |
| <b>Educational Attainment</b>        |    |      |     |
| Master's degree                      | 6  | 20.0 | 2   |
| with MA units                        | 5  | 16.7 | 3   |
| Baccalaureate Degree                 | 19 | 63.3 | 1   |
| Total                                | 30 | 100  |     |
| <b>Position Title</b>                |    |      |     |
| Teacher III                          | 4  | 13.3 | 3   |
| Teacher II                           | 8  | 26.7 | 2   |
| Teacher I                            | 18 | 60.0 | 1   |
| Total                                | 30 | 100  |     |
| <b>Length of Service</b>             |    |      |     |
| 21 years and more                    | 2  | 6.7  | 4   |
| 11-20 years                          | 7  | 23.3 | 2   |
| 6-10 years                           | 15 | 50.0 | 1   |
| 5 years and Below                    | 6  | 20.0 | 3   |
| Total                                | 30 | 100  |     |
| <b>In-Service Trainings Attended</b> |    |      |     |
| National                             | 8  | 26.7 | 2   |
| Regional                             | 6  | 20.0 | 3   |
| Division                             | 9  | 30.0 | 1   |
| District                             | 5  | 16.7 | 4   |
| School                               | 2  | 6.7  | 5   |
| Total                                | 30 | 100  |     |

### 3.3. Level of Acceptability of the Developed Supplementary Worksheets for Kindergarten Learners as Evaluated by the Teacher-Respondents with Respect to the Different Aspects

As shown in the table the composite weighted mean for the level of acceptability of the developed supplementary worksheets 4.75 interpreted very Much Acceptable. The aspects "Objectives" and "Language and Style" are both first in rank with over all weighted mean of 4.77 both interpreted Very Much Acceptable. All the other aspects are interpreted Very Much Acceptable with last in rank is the aspect Organization and Presentation with an overall weighted mean of 4.69. It could be deduced from the results that as evaluated by teachers, the developed supplementary worksheets are very much acceptable and have attained the learning objectives for kindergarten learners. It uses appropriate language and style and include contents which are relevant to the needs of the learners. It is very much acceptable with regard to usefulness and organization and presentation.

This implies that the developed supplementary worksheets aim to enhance learning, improve learning outcomes, or provide support in specific areas, and their development involves careful consideration of content, design, and user experience. Findings further imply that the use of supplementary worksheets can enhance understanding and mastery of lessons.

This is aligned with the statements of Lukman (2021) that utilization of instructional materials is a powerful strategy to bring about effective teaching and learning. The importance of quality and adequate instructional materials in teaching and learning can occur through their effective utilization during classroom teaching. Proper use of instructional materials supports learner engagement, improves understanding of concepts, and contributes to more meaningful and productive classroom experiences.

Table 3: Level of Acceptability of the Developed Supplementary Worksheets for Kindergarten Learners as Evaluated by the Teacher-Respondents with Respect to the Different Aspects

| Aspects                                | WX          | VI                   | Rank |
|----------------------------------------|-------------|----------------------|------|
| Objectives                             | 4.77        | Very Much Acceptable | 1.5  |
| Contents                               | 4.76        | Very Much Acceptable | 3    |
| Organization and Presentation          | 4.69        | Very Much Acceptable | 5    |
| Language and Style                     | 4.77        | Very Much Acceptable | 1.5  |
| Usefulness and Relevance               | 4.74        | Very Much Acceptable | 4    |
| <b>Composite W<math>\bar{X}</math></b> | <b>4.75</b> | Very Much Acceptable |      |

### 3.4. Significant Difference on the Evaluation of the Teacher-Respondents on the Level of Acceptability of the Developed Supplementary Worksheets for Kindergarten Learners with Respect to the Different Aspects in Terms of Their Profile

As gleaned from the table, with respect to the different aspects, in terms of the different personal variables of the teacher-respondents, the F-test results show probability values greater than .05. This fails to reject the null hypothesis stating that there is no significant difference on the evaluation of the teacher-respondents on the level of acceptability of the developed supplementary worksheets for kindergarten learners with respect to the different aspects in terms of their profile. Findings indicate that age, civil status, educational attainment, length of service, position title and in-service trainings attended are not significant on the evaluation of the teachers on the level of acceptability of the developed supplementary worksheets for kindergarten learners. Findings imply that the developed supplementary worksheet is very much acceptable as evaluated by the teacher respondents regardless of their personal variables. This further implies that teachers' age, civil status, educational attainment, length of service, position title and in-service trainings attended have nothing to do with their evaluation. This is similar with the findings of Arabit (2025) which revealed that age, sex, civil status, educational attainment, length of service, position title and in-service trainings attended are not contributory on the teachers' evaluation on the level of acceptability of the developed technology-based material in reading and literacy for grade one pupils.

Table 4: *Significant Difference on the Evaluation of the Teacher-Respondents on the Level of Acceptability of the Developed Supplementary Worksheets for Kindergarten Learners with Respect to the Different Aspects in Terms of Their Profile*

| Variables/ Aspects                  | F-comp | p-values | Ho       | VI              |
|-------------------------------------|--------|----------|----------|-----------------|
| <b>Age</b>                          |        |          |          |                 |
| Objectives                          | 2.309  | .100     | Accepted | Not Significant |
| Contents                            | 2.163  | .117     | Accepted | Not Significant |
| Organization and Presentation       | 1.463  | .248     | Accepted | Not Significant |
| Language and Style                  | 1.992  | .140     | Accepted | Not Significant |
| Usefulness and Relevance            | 2.095  | .125     | Accepted | Not Significant |
| <b>Civil Status</b>                 |        |          |          |                 |
| Objectives                          | .047   | .955     | Accepted | Not Significant |
| Contents                            | .009   | .991     | Accepted | Not Significant |
| Organization and Presentation       | 2.338  | .116     | Accepted | Not Significant |
| Language and Style                  | 1.389  | .267     | Accepted | Not Significant |
| Usefulness and Relevance            | 1.236  | .306     | Accepted | Not Significant |
| <b>Educational Attainment</b>       |        |          |          |                 |
| Objectives                          | .114   | .893     | Accepted | Not Significant |
| Contents                            | .752   | .481     | Accepted | Not Significant |
| Organization and Presentation       | .529   | .595     | Accepted | Not Significant |
| Language and Style                  | .691   | .510     | Accepted | Not Significant |
| Usefulness and Relevance            | .415   | .664     | Accepted | Not Significant |
| <b>Length of Service</b>            |        |          |          |                 |
| Objectives                          | .526   | .668     | Accepted | Not Significant |
| Contents                            | .573   | .838     | Accepted | Not Significant |
| Organization and Presentation       | .258   | .855     | Accepted | Not Significant |
| Language and Style                  | .702   | .559     | Accepted | Not Significant |
| Usefulness and Relevance            | .314   | .815     | Accepted | Not Significant |
| <b>Position Title</b>               |        |          |          |                 |
| Objectives                          | .486   | .620     | Accepted | Not Significant |
| Contents                            | 1.850  | .177     | Accepted | Not Significant |
| Organization and Presentation       | 2.071  | .146     | Accepted | Not Significant |
| Language and Style                  | 2.325  | .117     | Accepted | Not Significant |
| Usefulness and Relevance            | 1.635  | .214     | Accepted | Not Significant |
| <b>In-Service Training Attended</b> |        |          |          |                 |
| Objectives                          | .698   | .600     | Accepted | Not Significant |
| Contents                            | .597   | .668     | Accepted | Not Significant |
| Organization and Presentation       | .381   | .820     | Accepted | Not Significant |
| Language and Style                  | .802   | .535     | Accepted | Not Significant |
| Usefulness and Relevance            | .575   | .684     | Accepted | Not Significant |

### 3.5. Level of Performance of Kindergarten Learners Before and After Exposure to the Developed Supplementary Worksheets as Revealed in the Pretest and Posttest Results

As gleaned from the table, the pretest results show that out of 21 kindergarten learners 38.1% have Very Satisfactory performance, 28.6% have satisfactory performance, and 19.1 % obtained fairly satisfactory performance. The overall mean score is 5.62 interpreted Satisfactory. Meanwhile, the results of the posttest indicate a mean score of 9.00 interpreted Outstanding with 61.9% obtaining score of 9-10, and 38.1 % obtained scores of 7-8. Results indicate that the performance of kindergarten learners improved after exposure to the developed supplementary worksheets. This means that the use of the developed worksheets contributed to developing the competencies of learners. The computed standard deviations also indicate that the scores of the pupils are less dispersed which indicate the homogeneous ability of the kindergarten learners. Findings imply that the utilization of the developed supplementary worksheets enhance the performance of kindergarten learners. This further implies that the developed supplementary worksheets are an effective instructional tool in improving competencies and performance of learners. This is parallel with the findings of the study of Baybayon (2020) which found out that performance of the learners improved after exposure to the developed e-learning materials. The developed e-learning materials are effective supplementary materials in enhancing the competencies of kindergarten learners.

Table 5: Significant Difference on the Evaluation of the Teacher-Respondents on the Level of Acceptability of the Developed Supplementary Worksheets for Kindergarten Learners with Respect to the Different Aspects in Terms of Their Profile

| Performance           |                          | Pretest                   |            | Posttest                |            |
|-----------------------|--------------------------|---------------------------|------------|-------------------------|------------|
| Scores                | Level                    | Frequency                 | Percent    | Frequency               | Percent    |
| 9-10                  | Outstanding              | 2                         | 9.5        | 13                      | 61.9       |
| 7-8                   | Very Satisfactory        | 8                         | 38.1       | 8                       | 38.1       |
| 5-6                   | Satisfactory             | 6                         | 28.6       |                         |            |
| 3-4                   | Fairly Satisfactory      | 1                         | 4.7        |                         |            |
| 0-2                   | Did Not Meet Expectation | 4                         | 19.1       |                         |            |
| <b>Total</b>          |                          | <b>21</b>                 | <b>100</b> | <b>21</b>               | <b>100</b> |
| <b>Mean</b>           |                          | <b>5.62 -Satisfactory</b> |            | <b>9.00-Outstanding</b> |            |
| <b>Highest</b>        |                          | <b>9</b>                  |            | <b>10</b>               |            |
| <b>Lowest</b>         |                          | <b>1</b>                  |            | <b>7</b>                |            |
| <b>Std. Deviation</b> |                          | <b>2.562</b>              |            | <b>1.095</b>            |            |

### 3.6. Significant Difference on the Level of Performance of the Kindergarten Learners Before and After Exposure to the Developed Supplementary Worksheets as Revealed in the Pretest and Posttest Results

As shown in the table, the result of the t-test revealed a t-value of 5.576 and a probability value of .000. This rejects the null hypothesis stating that there is no significant difference on the level of performance of the kindergarten learners before and after exposure to the developed supplementary worksheets as revealed in the pretest and posttest results.

Findings indicate that there was a marked improvement on the performance of kindergarten learners after exposure to the developed supplementary worksheets. This means that the said material helped in developing the competencies of kindergarten learners.

Findings imply that the developed supplementary worksheet is an effective instructional material in enhancing the competencies of learners. Findings further imply that worksheets are excellent tools to foster children's intellectual curiosity. They assist in increasing the attention span of children while also helping them develop their problem-solving skills.

This is similar with the findings of the study of Givera (2023) which revealed that pretest and post-test results show improvement in the performance of students after the utilization of the developed supplementary worksheets. The result of the t-test revealed that there is a significant difference between pre-test and post-test scores of grades 8 students in English before and after the utilization of the worksheets. These results underscore the value of well-designed instructional materials in reinforcing learning, providing additional practice, and addressing learners' individual needs. Moreover, they suggest that incorporating supplementary worksheets into classroom instruction can enhance student engagement, promote active learning, and contribute to measurable academic gains, emphasizing the importance of careful design, organization, and implementation of such educational resources.

Table 6: Significant Difference on the Level of Performance of the Kindergarten Learners Before and After Exposure to the Developed Supplementary Worksheets as Revealed in the Pretest and Posttest Results

| Test     | N  | Mean | SD    | t-value | p-value | Ho       | Verbal Interpretation |
|----------|----|------|-------|---------|---------|----------|-----------------------|
| Pretest  | 21 | 5.62 | 2.562 | 5.576   | 0.000   | Rejected | Significant           |
| Posttest | 21 | 9.00 | 1.095 |         |         |          |                       |

#### 4. Conclusion & Recommendations

Based on the findings of the study, it was concluded that the profile variables of the teachers such as age, civil status, educational attainment, length of service, position title, and in-service trainings attended do not significantly influence their evaluation of the acceptability of the developed supplementary worksheets. Furthermore, the results confirmed that supplementary worksheets are effective instructional tools in improving the performance of Kindergarten learners.

In view of these conclusions, it is recommended that school heads support the implementation of supplementary worksheets by providing adequate resources and relevant training for teachers. Teachers are encouraged to regularly integrate the developed worksheets into their instruction to enhance learner engagement. The reproduction and wider utilization of the materials are also suggested, along with the conduct of similar studies that may explore other related variables.

#### Compliance with ethical standards

The authors declare no conflict of interest. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. This study was self-funded. The authors thank the participating university and the nursing students for their contributions

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