

Perceptions of School Administrators and Teachers on Impact of Preschool Education on the Academic Performance of Primary School Pupils in Nigeria

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Abstract

This study aimed to examine the impact of preschool education on the academic performance of primary school pupils in Nigeria. Six research questions were asked and answered. The study population was drawn from public primary school teachers in Delta and Edo States of Nigeria. The study sample comprised of 860 primary school teachers selected through the purposive sampling technique from public primary schools in Edo and Delta States of Nigeria during the 2019/2020 academic year. Data gathering was done using interviews and structured questionnaires. The items were structured along a four-point scoring scale of Strongly Agree, Agree, Disagree and Strongly Disagree. Data were analysed using mean and standard deviation, percent and bar chart to answer the research questions. The principal results from data analysis showed that preschool education positively impacted the cognitive abilities, psychomotor abilities and social interaction abilities of pupils in many areas. There was a significant difference between the academic performance of pupils exposed to preschool (kindergarten) education and pupils not exposed to preschool education opportunities in the examined three subjects. The study concludes that preschool education positively impacted pupils' social interaction abilities, cognitive and psychomotor abilities and hence pupils exposed to it performed better in mathematics, English and General Paper than pupils not exposed to preschool education. The study contributes by establishing the usefulness and significance of preschool or kindergarten education as this could trigger Nigerian government action by establishing the law on compulsory preschool education for children.

Keywords: Cognitive abilities, primary school pupils, preschool education, social interaction abilities, psychomotor skills.

INTRODUCTION

All over the world, early childhood/preschool education has been recognised as necessary for the child's good academic advancement or development. Preschool education, also known as early childhood education in Nigeria, is children's education from age 0 to 5 years. It is the education given to children in the formal school system before primary education. In the

colonial period/era, preschool education in Nigeria was in the form of a sub-standard infant school run by adults who gathered children of age 3-7 years. The sub-standard infant school aimed to teach children the rudiments of numbers and alphabets. Such schools were practised under shades of trees or uncompleted buildings. The unhealthy environment in which the substandard schools were practised made parents complain bitterly,

afraid that their children may contract diseases or be bitten by snakes or scorpions in such schools. This placed increased pressure on parents amidst increased demand for preschool education from the government of Nigeria. As a result, official recognition of preschool education was given by the government in 1977. Consequently, there has been an unprecedented expansion in child care provision and preschool educational institutions in Nigeria. Even in every local government headquarter in Nigeria, the government established one preschool institution.

The policy statements backing up preschool education as highlighted by the Federal Government of Nigeria (2014), is that preschool education is to:

- Provide a smooth or effortless switch from the home to the school;
- Set up the child for the lower basic level of education;
- Take sufficient care and supervision for children while their parents/guardians are at work;
- Instil the spirit of innovation and inquiry in the child through the probing and investigation of nature and the local/immediate environment, playing with toys, engaging in musical and artistic activities;
- Teach the basics of letters, forms, colours, numbers, shapes, and so forth using play and
- Instil in children accepted practices and social norms.

The Nigeria preschool education objectives are quite enterprising and clearly reflect the significance of preschool education opportunities in the academic advancement of children. From the objectives, it is clear that the Nigerian government is committed to providing children with good preschool education. Unfortunately, however, none of these policies has been vigorously pursued by the Nigerian government.

Research evidence from across the universe indicates that preschool or kindergarten education positively impacts children's educational development or advancement. For example, Barnett (2006) noted that investing in preschool or early childhood (nursery) education can yield high returns. A child's innate potentials and curiosity can be fully developed through preschool education. Early childhood/kindergarten education has a significant impact on children, giving them a solid foundation in primary/lower basic school and positively influencing their academic achievement later in life (Eskishimal, 2016; Feeney, Moravcik, Christensen, 2014; Eweniyi, 2012; Heckman, Pinto, Savelyev, 2013; Hagglund, Pramling-Samneisson, 2009). The inadequate exposure to preschool education at the early stage of life can be disastrous for a child's academic growth and development as the child who missed the opportunities for early or preschool learning can be hant throughout life, retarding his/her school and workplace success in later life. The study explores the impact of preschool education on the learning outcome (academic) development of primary school pupils in Nigeria.

Statement of the Problem

In all countries, the government has recognised the prominence of preschool education for her citizenry. Although the government has shown some level of commitment in Nigeria, none of the government policy on preschool education has been vigorously pursued by the government. There are limited studies that studied the impact/effect of preschool or kindergarten education on children in Nigeria. Earlier study Osakwe (2009) covered primary schools in only Delta State. This study endeavours to fill the gap by examining primary schools in Delta and Edo States of Nigeria. Besides, this study compares the academic performance of pupils exposed and not exposed to preschool education using three subjects.

Purpose of Study

This study is focused on the impact of preschool education opportunities on academic performance of primary school pupils. Specifically, the study examined:

1. impact of preschool education opportunities on the cognitive development of children;
2. effect of preschool education on the psychomotor development of children.
3. effect of preschool education on the social development of children;
4. if a statistically significant difference between the academic performance of pupils exposed to preschool education opportunities and pupils not exposed to preschool education opportunities in Mathematics?
5. if a statistically significant difference between the academic performance of pupils exposed to preschool education opportunities and those not exposed to preschool education opportunities in General Paper?
6. if there a statistically significant difference between the academic performance of pupils exposed to preschool education opportunities and pupils not exposed to preschool education opportunities in English Language?

Research Questions

The study provides answers to six questions as follows:

1. What are the perceived impacts of preschool education on the cognitive development of primary school pupils?
2. What are the perceived impacts of preschool education on the psychomotor development of primary school pupils?
3. What are the perceived impacts of preschool education on the social development of primary school pupils?
4. Is there any significant difference between the academic performance of pupils exposed to preschool education opportunities and pupils not exposed to

preschool education opportunities in Mathematics?

5. Is there a statistically significant difference between the academic performance of pupils exposed to preschool education opportunities and pupils not exposed to preschool education opportunities in General paper?

6. Is there a statistically significant difference between the academic performance of pupils exposed to preschool education opportunities and pupils not exposed to preschool education opportunities in English Language?

Literature Review

Previous reviews on preschool education, for example, Barnard (2004), indicate that later or future life is affected positively by early childhood education and participation in education by schools. He stressed that those children who neglect or fail to secure early education might experience social, emotional, physical and intellectual pain truly in the event that they are trusted into the primary (lower basic) school without a workable early childhood education exposure that will provide them with a solid and genuine foundation in primary (lower basic) school. Preschool education contributes to a child's emotional, social, intellectual and physical development. Studies have associated early childhood/kindergarten education with children cognitive skills development (Lazari & Vandebroek, 2013; Camalli, Vargas, Ryan & Barnett, 2010; Burger, 2010). Early childhood education shows to be very significant and imminent for valuable and resourceful unlocking of a child's latent/dormant attitude, capacities, and other positive behaviour and values to the child's society (Osakwe, (2009; Elango, Garcia, Heckman & Hojman, 2016). Preschool education opportunities are significant or vital for a child if he/she is to actualise his/her destiny later in life. Preschool education is linked with children well-being, cognitive attainment and bridging the inequality and poverty gap between children of

disadvantaged families and those from affluent families (Melhuish, 2014).

Scientists uphold that the capacity of the brain to absorb new learning peaks at the age of three. At this time, the human brain develops the vast majority of its neurons and is most receptive to learning in its lifetime. Imbibing new information is vital to forming active neural paths (Shonkoff & Philips, 2000). Appropriate preschool education helps a child's brain develop and contribute to physical, social and emotional development and school readiness.

In America (USA), it has been observed that every dollar spent on quality and sustainable preschool education yield 7-10% return on investment as graduates begin to make contributions to the economy (Heckman & Obama, 2013). According to Van Rockel, Obama (2013), tackling the concern of equity should start with early childhood or preschool education. Buttressing the significance of preschool/kindergarten education, Shonkoff (2011) contends that when children have positive experiences, the brain builds strong healthy circuitry and when they either do not have the kind of experiences they need or when they face significant adversity can disrupt that circuit. Attending a high-quality preschool educational programme increases the child willingness and preparedness for nursery school or kindergarten and leads to positive/progressive long-term development and enhancement of the child's academic and social outcomes. Early childhood education can help to prepare children adequately for primary education (Wu, 2014; Faas, Wu, & Geiger, 2017; Cheng & Wu, 2013). Earlychildhood/preschool education has been established to be imperative in facilitating children development of cooperation skills, interpersonal skills and self-regulation through play activities (Bodrova & Leong 2010; Nicolopoulou, 2010). It has been established also, that exposure to early childhood or kindergarten education fosters children's understanding of numbers and numeric relationships, thereby enhancing their acquisition of mathematics skills in later life and their question asking, reasoning, and

critical thinking skills through elementary science (Bybee, & Kenedy, 2005). Early childhood education can help children development of improved hygiene habits (Litjens & Taguma). Studies have shown that early childhood or preschool education help boost skills development (Elango, Garcia, Heckman, Hojman,2016; Duncan, Magnuson, 2013). Early childhood education is beneficial for children academic or school success and beyond (Gomez, 2016). Early childhood education is also positively connected with better adult health (Campbell, Gonti, Heckman, Moon, Pinto, Pungello, & Pan, 2014). Preschool education contributes significantly to the holistic development of the child (Cheng & Wu, 2013). Most of this study reviewed literature, the majority of them were studies conducted in foreign countries. In Nigeria, there are few studies on the impact of preschool education on academic performance of primary (lower basic) school children.

Methodology

This study adopted the survey research design, experimental and ex-post facto research design. The experimental design was deemed fit because the study involves comparing the performance of pupils who were exposed to preschool education and pupils without exposure to preschool education. Interview and questionnaires were used to gather for the study. The utilisation of interview was to make certain that an in-depth study was conducted. Besides, the respondents felt relaxed and were able to express themselves about the phenomena under investigation. Forty private schools were randomly selected from Delta and Edo States of Nigeria to constitute the study sample. Through the purposive sampling technique, all the primary teachers of primary 1 to 5 who had been teaching for five years and above were carefully chosen from the primary schools. They were 120 teachers. With the help of the teachers, the researchers were able to check the statistics of pupils who attended preschool school before being admitted into primary/lower basic school and pupils not exposed to preschool education. Pupils who

had preschool education were $n=80$, while pupils not exposed to preschool education opportunities were $n=80$. Data concerning pupils' performance were gathered from the schools' terminal reports in three subject areas such as English Language, Mathematics and General Paper. The questionnaire for teachers contained 14 items entitled "Impact of Preschool Education Opportunities on the Academic Performance of Primary School Pupils Questionnaire IPEOAPPSPQ." It was structured along a four-point scoring scale of Strongly Agree (SA) 4, Agree (A) 3, Disagree (D) 2, and Strongly Disagree (SD) 1. The researchers administered the questionnaire with the aid of two research assistants trained by them. A total of 120 questionnaires were administered; however, 108 were validly returned and were analysed using descriptive statistics such as mean and standard deviation, percent and bar charts were utilised to show the comparative performance of pupils exposed to preschool education opportunities and pupils not exposed to preschool education opportunities in answer to the research questions.

Results

Summary of interview reports

Interview report indicates that school isolation and difficulty in adjusting to school were common with pupils not exposed to preschool education opportunities. A particular primary one teacher noted that children without preschool education spend most of the term trying to adjust while some even cry, saying that they do not want to come to school. Another teacher observed that while pupils with preschool education feel excited being at school, those pupils without preschool education frown at school and are most often dull-looking in class. From another teacher, "pupils who are exposed to preschool education work more independently and they exhibit more positive values" And another teacher said that children with preschool education exposure develop critical thinking, written, verbal and problem-solving skills

faster than children who lack preschool education. Furthermore, a teacher responded that pupils exposed to preschool education are happier in the classroom and take the classroom problem as theirs.

Table 1: *Preschool education opportunities and cognitive abilities of pupils*

S/ N	Items on cognitive abilities		PEPSEO		PNEPSEO	
			Mean	SD	Mean	SD
1	Comprehension of facts	of	3.80	0.48	2.46	1.11
2	Interpretation of information	of	2.88	0.66	2.63	0.90
3	Recalling facts learnt		2.95	0.72	2.52	0.88
4	Expression of self		3.70	0.42	2.34	1.24
5	Adjusting to school activities		3.74	0.88	2.00	1.09
6	Ability to recite poems		3.67	0.56	1.96	1.15
7	Ability to communicate	to	3.40	0.91	2.18	0.82
Grand Mean			3.45	0.66	2.62	1.03

From Table 1, the weighted mean score of PEPSEO (3.45) is greater than that for PNEPSEO (2.62). The implication is that pupils who had preschool education opportunities outperformed pupils without preschool education opportunities in cognitive abilities.

Table 2: *Preschool education opportunities and psychomotor abilities of pupils*

S/N	Items on psychomotor abilities		PEPSEO		PNEPSEO	
			Mean	SD	Mean	SD
1	Drawing		2.94	0.77	2.60	0.80
2	Copying notes		3.26	0.66	2.48	0.94
3	Colouring of pictures	of	2.30	0.74	2.43	0.50
4	Playing musical instruments		2.98	0.57	2.56	0.63
5	Crafts activities		2.88	0.37	2.42	1.15q
Grand Mean			2.87	0.62	2.49	0.80

Data in table 2 indicates that the weighted mean score of PEPSEO (2.87) is greater than that of PNEPSEO (2.49). The implication is that pupils who had preschool education opportunities outperformed pupils without preschool education opportunities in psychomotor abilities.

Table 3: *Preschool education opportunities and social interaction abilities of pupils*

S/ N	Items on social interaction abilities	PEPSEO		PNEPSEO	
		Mean	SD	Mean	SD
1	Relating with peers more freely	3.73	0.80	2.67	0.83
2	Relating with teachers more easily	3.40	0.52	2.28	1.25
3	Expressing self better	3.38	0.46	2.49	1.00
4	Feeling of belonging in the classroom	3.84	0.36	3.00	0.91
5	Working collaboratively with peers	3.85	0.73	2.50	1.12
6	Emotional attachment in the classroom	2.94	0.61	2.35	1.11
Grand Mean		3.52	0.58	2.55	1.04

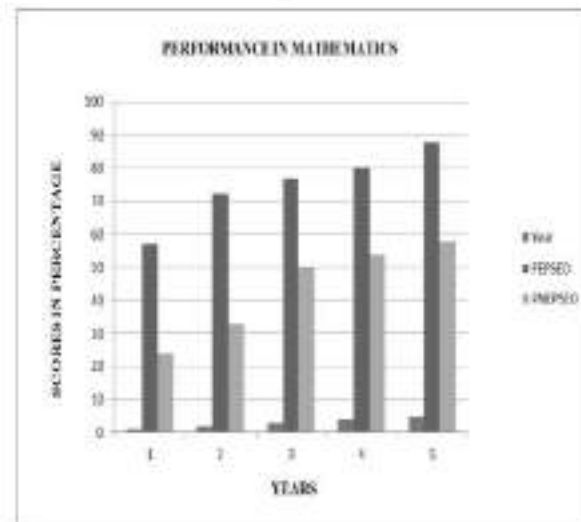
From table 3, the weighted mean score of PEPSEO (3.52) is greater than that for PNEPSEO (2.55). The implication is that pupils who had preschool education opportunities outperformed pupils without preschool education opportunities in social interaction abilities.

Table 4: *Percentage Scores of performance of PEPSEO and PNEPSEO in Mathematics for Five years*

YEARS	1	2	3	4	5
PEPSEO	57	72	77	80	88
PNEPSEO	24	33	50	54	58

From Table 4, the percentage score of pupils exposed to preschool education in mathematics for five years increases gradually from 57% in year 1 to 72%, 77%, 80% and 88% in years 2, 3, 4 and 5, respectively. The percentage score of pupils not exposed to preschool education in mathematics for five years is 24%, 33%, 50%, 54% and 58% from the first year to the fifth year. Thus, in each year, the performance of pupils who were exposed to preschool education are better than that of pupils not exposed to preschool education.

Fig 1: *Bar Chart showing performance of PEPSEO and PNEPSEO in Mathematics for Five years*



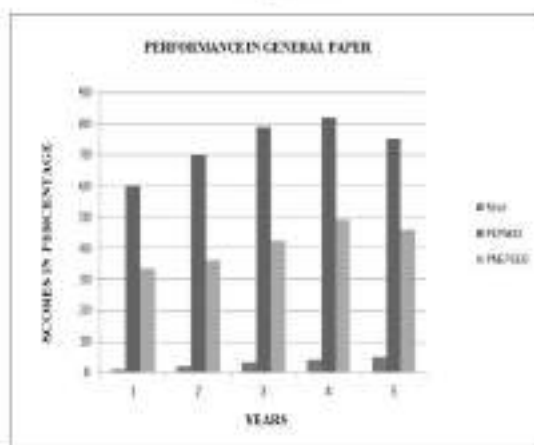
From the data in fig 1, the percentage of pupils who scored up to 50% of the pass grade for pupils exposed to preschool education opportunities is consistently high, ranging from 57% in year one to 88% in year five. While the percentage of pupils not exposed to preschool education opportunities who scored up to 50%, the passing grade ranged from 24% in year one to 58% in year five.

Table 5: *Percentage scores showing performance of PEPSEO and PNEPSEO in General paper for five years*

YEARS	1	2	3	4	5
PEPSEO	60	70	79	82	75
PNEPSEO	33.4	36	42.3	49.3	46

From Table 5, the percentage score of pupils exposed to preschool education in general paper for five years are 60, 70, 79, 82 and 75, whereas pupils not exposed to preschool education scored 33.4, 36%, 42.3%, 49.3% and 46% from year 1 to year 5 respectively. It is clear that pupils exposed to preschool education outperformed their counterparts with no preschool education exposure in general paper for the five years.

Fig 2: Column Chart showing performance of PEPSEO and PNEPSEO in General Paper for Five years



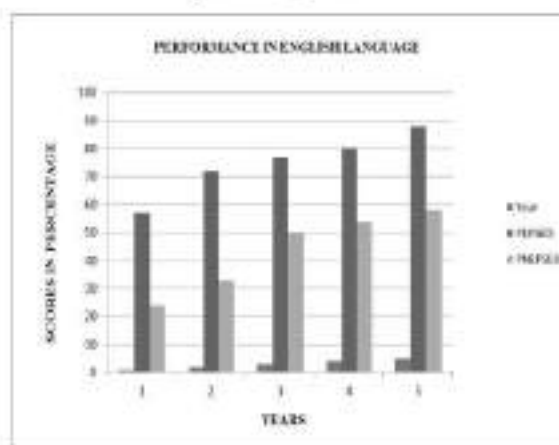
Data in fig 2 showed that the percentage of pupils who scored up to 50% is the pass grade in pupils exposed to preschool education ranging from its lowest score of 60% in the first year to its highest score of 82% in the fourth year. The percentage of scores for pupils not exposed to preschool education opportunities ranged from its lowest 33.4% to its highest 49.3% in the fourth year. The poor performance of pupils not exposed to preschool education in general paper is very glaring from the data in fig 2.

Table 6: Percentage scores showing performance of PEPSEO and PNEPSEO in English Language for five years

YEARS	1	2	3	4	5
PEPSEO	67	72	70	65	84
PNEPSEO	23	31.4	36.4	59	44.2

From Table 6, the percentage score of pupils exposed to preschool education in English language for five years is 67%, 72%, 70%, 65% and 84%, whereas pupils not exposed to preschool education scored 23%, 31.4%, 36.4%, 59%, and 44.2% from year 1 to year 5 respectively. It is clear that pupils with preschool education outperformed their counterparts without preschool education exposure in English language for the five years.

Fig 3: Column Chart showing performance of PEPSEO and PNEPSEO in English Language for Five years



Data in fig 3 shows that the percentage of pupils exposed to preschool education opportunities who scored up to 50% is above average, from its lowest 67% in year one to its highest score of 84% in the fifth year. The percentage of pupils not exposed to preschool education opportunities who scored 50% ranged from its lowest 23% in the first year to its highest score of 59% in the fourth year, a little above average score. This reflects poor performance, indicating that admission of majority of the pupils into public secondary schools would be difficult, the English Language being a very important subject.

Discussion

The study's finding for research question one specifies that the mean scores of Pupils Exposed to Preschool Education Opportunities (PEPSEO) exceeded the mean scores of Pupils Not Exposed to Preschool Education Opportunities (PNEPSEO) for all the items. It is clear that pupils exposed to preschool education opportunities are better in cognitive abilities such as comprehension of facts, interpretation of information, recalling facts learnt, expression of self, adjusting to school activities, poem recitation and communication abilities than pupils not exposed to preschool education opportunities. This finding lends credence to (Gornley, Ted, Philips & Dawson, 2005; Campbell & Ramey, 1995; Burger, 2010;

Camalli, Vargas, Ryan & Barnet, 2010). They found that early school education had a significant impact on children's communication skills, cognitive skills, and development.

For research question two, the mean scores of PEPSEO for all the items except item 3 exceeded the mean scores of PNEPSEO, implying that pupils exposed to preschool education opportunities are better in psychomotor abilities such as drawing, copying notes, playing a musical instrument and craft activities than pupils not exposed to preschool education opportunities. When pupils are put through or exposed to appropriate preschool education, they are involved in myriad constructive play during which their caregivers guide them to play constructively, and hence they develop critical thinking and reasoning abilities and skills. Through such play activities, children learn positive values and practice social skills. This finding corroborates with Faas, Wu & Geiger (2017) that their early childhood education positively influenced children development of cognitive, reasoning and psychomotor skills.

The finding of the study for research question three indicates that mean scores for all the items of PEPSEO (3.52) is greater than that for PNEPSEO (2.55) for all the items in social interaction abilities of pupils in areas such as relating with peers more freely, relating with teachers more easily, expressing self better, feeling of belonging, working collaboratively with mates/peers and emotional attachment in the classroom. Obviously, attending school at the early phase of life is crucial for a child's education and social skills. Children not given such early childhood or preschool education opportunities are both academically (learning outcomes) and socially disadvantaged. They have the tendency to lose out on vital or critical stages/phases of development and interactions with their peers (mates) and equally minimise the possibility of academic and educational successes and progress. This can trigger concerns of social isolation, depression and low self-esteem. This finding lends credence with that of Enemuoh (2020) who found that pupils exposed to early childhood or preschool education were more coordinated, expressive

and confident, composed and creative in the classroom than their counterparts who had no early childhood education experience. The finding also agrees with Mellish, (2014) that early childhood education and care contribute significantly to children's linguistic and social skills and well-being.

The findings for research question four indicate a significant difference between the academic performance of pupils exposed to preschool education and those not exposed to preschool education in Mathematics. This finding corroborates Garcia, Heckman, Leaf, & Prados (2020) who found that children's exposure to preschool improves their thinking skills and cognitive abilities. For research question five, the finding indicates a significant difference between the academic performance of pupils exposed to preschool education and those not exposed to preschool education in the General paper. For research question six, the findings indicate a significant difference between the academic performance of pupils exposed to preschool education and those not exposed to preschool education in English Language. The proportion of pupils who scored 50% and above was higher for pupils exposed to preschool education than pupils not exposed to preschool education opportunities in Mathematics, general paper, and English language. This finding lends credence to Sacks & Ruzzi (2006). They upheld that a high-quality early childhood/preschool programme attendance increases children willingness, readiness, and the ability for kindergarten (nursery school) and bring about long-term positive improvements in children school outcomes and social interaction/relationship. The finding also supports Faas, Wu & Geiger (2017) that preschool education is beneficial in students learning outcomes in later school.

Conclusion

This study's findings clearly show that pupils exposed to preschool education opportunities have better cognitive, psychomotor and social interaction abilities than pupils not exposed to preschool education. The findings also

indicated that pupils exposed to preschool education opportunities performed better in academics in Mathematics, English Language, and General paper than pupils not exposed to preschool education. Thus, this study has established exposure of children to preschool education to have a significant impact on pupils' academic performance in mathematics, general paper, and English language. Hence exposing a child to preschool education is beneficial to his/her academic development.

Recommendations

Based on the findings of this study, the following recommendations were proffered:

1. Parents should ensure that they take the preschool education of their children as very important and seriously invest in it
2. All stakeholders in the education industry should invest in preschool education by building quality preschools for children
3. Nigerian government should enact law of compulsory preschool education for children.
4. Government should continue to create more awareness and enlightenment of the general Nigerian public of the need to ensure preschool education for children.

Contributions to Knowledge

The study has made significant contributions to the existing body of knowledge by providing empirical evidence of the impact of preschool/kindergarten education on the improvement of primary school pupils' cognitive abilities, psychomotor skills and social interaction abilities. The study further demonstrated that the academic achievement of pupils who were exposed to preschool education were better than their counterparts who had no preschool education exposure in the three subjects examined. These contributions will help provide guidance for effective school administration.

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