

PRESCHOOL TEACHERS' PERSONALITY TRAITS AS PREDICTORS OF PUPILS' LITERACY AND NUMERACY SKILLS IN DISTRICT II AREA OF LAGOS STATE, NIGERIA

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Abstract

At the centre of philosophy of early childhood education as stipulated in the National Policy on Education, is the care, protection, stimulation and learning (literacy and numeracy) promoted among preschoolers aged 0 to 4 years in a crèche or nursery. Therefore, the characteristics of preschool teachers to pursue these goals become a major concern. This study examined preschool teachers' personality traits as predictors of pupils' literacy and numeracy skills in District II Area of Lagos State. Five research questions were raised and four hypotheses were postulated to guide the study. The study adopted a correlational survey design. Multi-stage sampling technique was used to select One hundred and fifty (150) preschoolers and thirty (30) preschool teachers, who constituted the study's sample. Three research instruments were used to collect data for the study. They include: Preschool Teachers Personality Rating Scale (PTPRS), Pre-schoolers Literacy Skill Test (PLST) and Pre-schoolers Numeracy Skill Test (PNST). The instruments were scrutinized by research experts. The data were collected by the researcher and some trained research assistants. Data collected were analysed using descriptive statistics of frequency counts, percentage, mean, and standard deviation for the research questions, while inferential statistics of multiple regression and correlational matrix were used to test the hypotheses at 0.05 level of significance. Findings from the study revealed that the extent to which preschool teachers demonstrate personality traits of openness, conscientiousness, extraversion, agreeableness, and neuroticism when teaching pre-schoolers is high. Again, the hypotheses revealed that the joint contributions of the personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) to pupils' literacy and numeracy skills are 15.7% and 30.5% respectively. Based on the findings of this study, it was recommended among others that the federal and state government of Nigeria and other critical stakeholders should put in place practicable measures to always assess teachers' personality traits before employment and also ensure they exhibit positive traits that can promote meaningful learning of relevant skills in literacy and numeracy at the preschool level.

Keywords: *Preschool teachers, Personality traits, Predictors, Pupils, Literacy, Numeracy skills*

Background

The growth, development and the overall success of any nation depends essentially on the functionality of the education system. This proposition explains why some countries have adopted sound education as an enduring tool for societal reformation, technological and scientific

advancement. Education in this context is not restricted only to the primary, secondary and higher education. It extends to preschool education which focuses mainly on early years education. Akinrotimi and Olowe (2016) opined that early years in life are widely accepted as the

most important period during which children experience cognitive, language, perceptual, socio-emotional and psychomotor development which they will need for future achievements and social functioning. It is on this basis that early childhood practitioners are always very meticulous in handling the preschoolers at this age. In the words of Etse (2004), early years is a remarkable period of growth and development in the life of children. Years of experiences have shown that there exist some individuals who are generally comfortable and always at peace with children. These individuals who may not necessarily be trained preschool teachers, are fond of children and always ready to cope with their weakness, excesses, naughtiness and other unpleasant behaviours associated with children. Meanwhile, some persons are exactly with the opposite traits. Bauer (2008), noted that most adults do remember their earliest childhood time and their favourite preschool teachers, either for good reason or on the negative side. The teachers who used to comfort them when they were bruised out of rough play, wipe their tears, taught them the concept of right and wrong, and established a very strong emotional attachment. This occasional remembrance of preschool teachers could be traced to the personality traits exhibited by such teachers. While some teachers are welcoming, caring and very friendly, others are hostile and very difficult to cope with.

It is instructive to note that Nigeria is a signatory to the Jomtien Declaration on Education for All (EFA) in 1990. Undoubtedly, this declaration by the Nigerian Government has taken the practice of Early Childhood Education (ECE) to a significant level as evident in the numbers of early childhood institutions and practitioners that are getting certifications from

the state government and higher institution of learning (Ajayi, 2008).

However, what is yet to gain significant attention of critical stakeholder is the quality of practitioners in the field. This observation is similar to the position of Ajayi (2008) who opined that teacher factor should be taken seriously to prevent the repeat of past experiences on the collapse of laudable educational initiatives. In recognition of this fact, the current UBE guidelines have taken up the challenge of raising the level of teacher education. This underscores why the early years need to be handled with all special and detailed attention. Estes (2004) has described the early years as a remarkable period of growth and development in the lives of children. In their submission, Oduolowu and Olowe (2011) noted that the early years of children are years of extreme vulnerability and tremendous potentials, during which adequate protection, care and motivation are essential to provide the foundation for well-being and development. In providing this foundation during the early years, Early Childhood Education (ECE) becomes a key actor.

Children start learning numeracy skills from the time they are born. This learning happens from watching and experiencing numeracy in action, especially in everyday play and activities, (Davis-Kean, 2022). For instance, it happens when children hear you counting their fingers and toes, begin to recognise numbers and shapes on objects like clocks and phones or in books, decides how many slices of apple they want etc. This learning actually begins from home and move to the school where the preschool teachers are expected to receive the young learners and develop them accordingly. It becomes imperative therefore, to find out the type of personalities that have been handling the

preschool children. These children are considered vulnerable because they are at the mercy of their preschool teachers who have the capacity to make or mar their learning. Many teachers today strayed into the teaching profession without interest or passion which can propel them to excel in the field. Some took up the noble profession out of frustration with hunger and joblessness. If teaching and care giving at the preschool level will provide the desired daily food, they are quick to consider the job without having the prerequisites.

According to Kenni (2020), personality is a dynamic organization of psychophysical systems inside an individual that produces their distinctive cognition, behaviour, and emotional patterns. This can also be related to that property of an individual which have a consistent layout of feelings, considerations and conduct. Traits, on the other hand, can be portrayed as persevering or continuous dimensions of characteristics which separate one individual from another. Meanwhile, Daminabo (2008) posited that trait is a continuous dimension on which person contrasts may be arranged quantitatively in terms of the number of characteristics the person has. On the whole, personality traits allude to the overall steady characteristics of an individual over distinctive time and circumstances which make him or her one of a kind or distinct from others (Ikpi et al., 2014). There are several personality models which described the characteristics of human in general and teachers in particular. Prominent among these models is the big five personality trait. The five traits include openness, conscientiousness, extraversion, agreeableness and neuroticism

In the review of literature conducted on some scientists, Amusa and Ayanwale (2020)

posited that physicists are always careful (conscientiousness), controlled, inhibited and unsociable (introversion) irrespective of their gender. While such traits may suit scientific work, preschool teachers must instead be highly sociable, lively, affectionate and energetic to effectively nurture preschoolers whose survival, emotional security and learning depend heavily on teacher–child interaction (Yu et al., 2025; Ayanwoye et al., 2024). Early childhood education, as outlined in the National Policy on Education (FRN, 2013), provides care, supervision and moral guidance while preparing children for primary schooling through foundational literacy and numeracy skills; however, research shows that these foundational competencies are increasingly weak and unproductive (Džumhur et al., 2022; Tella, 2008). Prior studies further reveal that teachers' personality traits influence instructional quality (Eryilmaz & Kara, 2017), teaching and learning success, student motivation (Tan et al., 2019), and academic achievement (Fuertes et al., 2020), raising concerns about current teaching practices in preschool settings. Experiences from preschool supervision and parent interactions also indicate that children often resist school due to the unprofessional, harsh, or unfriendly behaviours of some teachers, issues frequently highlighted on social media but scarcely documented in research. Augustine et al. (2023) and Olajide and Adebayo (2018) similarly stressed that poor literacy and numeracy outcomes and the declining attractiveness of school environments demand urgent attention. Without systematic research to address these issues, achieving the goals of early childhood education may become unrealistic, and despite existing studies linking personality traits to academic achievement, there remains no

known investigation focusing specifically on preschool teachers' personality traits and their relationship with preschoolers' literacy and numeracy skills in Lagos State. This study therefore seeks to fill that gap by examining the connection between preschool teachers' personality traits and the literacy and numeracy development of preschool children.

Research Hypotheses

H01a: There is no significant composite contribution of the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism) to pupils' literacy skills.

H01b: There is no significant relative contribution of the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism) to pupils' literacy skills.

H02a: There is no significant composite contribution of the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism) to pupils' numeracy skills.

H02b: There is no significant relative contribution of the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism) to pupils' numeracy skills.

Personality and individual trait research in particular are often explained by Psychoanalytic, Humanistic, Biological, Behavioural, Social Learning, Cognitive, and Trait theories, and often increased support is lent by researchers to trait theories due to its strength and explanatory

powers (Myers, 2003). Though its tenets were questioned, two theories emerged to date, including Eysenck's PEN theories, founded on classical conditioning and arousal theories, and assessing neuroticism, introversion-extraversion, and psychoticism as its dimensions in people's personality profiles (Eysenck, 1967), and then came the emergence of Five Factor Models, or FFM, and nicknamed Big Five Personality Traits, which has transformed research by proposing its findings regarding five dimensions, including neuroticism, extraversion, open, conscientious, and agreeableness in people's personality profiles, with its first three dimensions defined by Goldberg's works, including neuroticism, extraversion, and open, and last two defined by (Grohol, 2019), works, including conscientious and agreeableness, thereby providing a comprehensive measurement regarding people's personality, with its research adopted by this thesis due to its proposed comprehensive measurement of all aspects of an individual's personality, including conscientiousness that measures self-control, impulse, and regulation, and agrees with Fehringer's tenets that proposed five aspects are found in individual's personality, including agreeableness, which measures one's cooperation and trust in people, and its opposite, introverts; and then came those with extraversion, which measures one's assertiveness and friendliness, and its opposite, introverts, with its opposite including those with quiet and reserved personalities, and then came those with open, which measures one's creativity, and its opposite, those preferring routine and structured (Ackerman, 2017).

Methods

The study adopted a correlational survey design. The target population for this study comprised all

the Pre-schoolers and Preschool Teachers in Education District II of Lagos State. District II is made up of three Local Government Areas. They are Kosofe, Somolu and Ikorodu Local Government Area. The essence of this design is to ensure representativeness. The sample size was selected through the multi-stage random sampling techniques. The first stage featured the selection of Ikorodu Local Government Area out of the three Local Government that made up Education District II through simple random sampling technique. The second stage featured another random sampling technique in the selection of five schools from each of the six Local Council Development Area (LCDA). Five Nursery and Primary schools were purposely selected from each of the LCDAs. The major criterion used for the selection is that the schools were registered with the Lagos Ministry of Education for over five years. Selected schools were far apart from one another. On the whole, a total of 30 different schools were selected for the study. Consequently, 30 preschool teachers were engaged for the study. The data used for the study were gathered through the researcher's developed questionnaire for the preschool teachers and skill assessment test for the preschoolers. The three instruments deployed for the study are - Preschool Teachers Personality Rating Scale (PTP-RS), Pre-schoolers Literacy Skill Test (PRESLIST) and Pre-schoolers Numeracy Skill Test (PRESNUST). The instrument on preschool teachers' personality trait was adapted from Jensen (2015) and Amusa and Ayanwale (2020),

while the literacy and numeracy skill tests were developed by the researcher based on the experiences gathered over the years. Beside the face and content validation that was carried out by five research experts in early childhood education, specifically, those handling preschool classes, and three specialists in Measurement and Evaluation, the instruments were earlier administered to preschoolers who did not participate in the main study. Faulty items were identified in the process and removed.

The reliability coefficient of Pre-schoolers Literacy Skill Test (PRESLIST) was ascertained by using Kuder-Richardson formula-20 to determine the internal consistency of the instrument. It yielded a coefficient of 0.80. Similarly, Pre-schoolers Numeracy Skill Test (PRESNUST) was also subjected to similar reliability check. A coefficient of 0.88 was computed.

The Preschool Teachers Personality Rating Scale (PTP-RS) (Questionnaire) was subjected to reliability check using Ordinal Alpha. A reliability coefficient of 0.78 was computed. This implied that the questionnaire was reliable for data collection. Data were analysed using descriptive statistic of frequency counts, percentage, mean, and standard deviation for the research questions while inferential statistics and multiple regression was used to test the hypotheses at 0.05 level of significance.

Results and Discussion

Hypotheses Testing

Ho^{1a}: There is no significant composite contribution of the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils' literacy skills

Table 4.1: *Multiple Regression showing Joint Contribution of Teachers' Personality Traits of Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism to Pupils' Literacy Skills*

Model Summary						
R = .430 R Square = .185 Adjusted R Square = .157 Sd. Error of Estimate = 7.91103						
ANALYSIS OF VARIANCE						
Model	Sum of Squares	df	Mean Square	F	Sig.	Remark
Regression	2045.185	5	409.037			
Residual	9012.148	144		6.536	.000 ^b	
Total	11057.333	149	62.584			Significant
Dependent Variable: <i>Pupils' Literacy Skills</i>						

Predictors: *Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism*

Table 4.1 shows the joint contribution of openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils' literacy skills. The model summaries revealed that the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism) when combined, have positive relationship with pupils' literacy skills ($R = 0.430$). This is an indication that the five independent variables are good predictors of pupils' literacy skills. Also, the adjusted R square value in the model summaries indicates that the independent variables jointly explained 15.7% of the total variance in the dependent variable ($\text{Adjusted } R^2 \times 100 = 15.7\%$). This implies that the remaining 84.3% are due to other factors not examined in this study. Furthermore, the F value in the ANOVA indicates the fact that the joint contribution of openness, conscientiousness, extraversion, agreeableness, and neuroticism is statistically significant on pupils' literacy skills ($F_{(5,144)} = 6.536$; $p < 0.05$). Hence, the joint contribution of openness, conscientiousness, extraversion, agreeableness, and neuroticism is statistically significant on pupils' literacy skills is 15.7%. This result implies that openness, conscientiousness, extraversion, agreeableness, and neuroticism accounted for 15.7% of the

total variance of the pupils’ literacy skills examined in the study. This is an indication that there are other critical factors that also contribute significantly to development of pupils’ literacy skills.

Ho1b: There is no significant relative contribution of the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils’ literacy skills

Table 4.2

Relative Contribution of Teachers’ Personality Traits of Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism to Pupils’ Literacy Skills

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta (β)		
(Constant)	75.797	8.403		9.020	.000
Openness	1.240	.457	.291	2.714	.007
Conscientiousness	.954	.451	.192	2.7114	.036
Extraversion	-.084	.389	-.019	-.219	.827
Agreeableness	-.379	.249	-.315	-1.517	.131
Neuroticism	-1.041	.297	.297	-3.499	.001

Dependent Variable: *Pupils’ Literacy Skills*

Table 4.2 shows the relative contribution of openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils’ literacy skills. The table shows that agreeableness had the highest non-significant relative contribution to pupils’ literacy skills ($\beta = -.315$; $t = 1.517$; $p > 0.05$), it is followed by neuroticism with a statistically significant relative contribution to pupils’ literacy skills ($\beta = .297$; $t = -3.499$; $p < 0.05$), followed by openness with a significant relative contribution to pupils’ literacy skills ($\beta = .291$; $t = 2.714$; $p < 0.05$). Consequently, the table reveals that conscientiousness had significant relative contribution to pupils’ literacy skills ($\beta = .192$; $t = 2.7114$; $p < 0.05$), and finally, extraversion had the least non-significant relative contribution to pupils’ literacy skills ($\beta = -.019$; $t = -.219$; $p > 0.05$). Based on the results from this table, it can be inferred that the relative contribution of neuroticism, openness, and conscientiousness to pupils’ literacy skills is significant while extraversion and agreeableness do not have significant relative contribution to pupils’ literacy skills.

Ho2a: There is no significant composite contribution of the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils' numeracy skills

Table 4.3: *Multiple Regression showing Joint Contribution of Teachers' Personality Traits of Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism to Pupils' Numeracy Skills*

Model Summary						
R = .573 R Square = .328 Adjusted R Square = .305 Sd. Error of Estimate = 6.66695						
ANALYSIS OF VARIANCE						
Model	Sum of Squares	df	Mean Square	F	Sig.	Remark
Regression	3126.790	5	625.358			
Residual	6400.543	144		14.069	.000 ^b	
Total	9527.333	149	44.448			Significant

Dependent Variable: *Pupils' Numeracy Skills*

Predictors: *Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism*

Table 4.3 shows the joint contribution of openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils' numeracy skills. The model summaries revealed that the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism) when combined, have positive relationship with pupils' numeracy skills ($R = .573$). This is an indication that the five independent variables are good predictors of pupils' numeracy skills. Also, the adjusted R square value in the model summaries indicates that the independent variables jointly explained 30.5% of the total variance in the dependent variable ($\text{Adjusted } R^2 \times 100 = 30.5\%$). This implies that the remaining 69.5% are due to other factors not examined in this study. Furthermore, the F value in the ANOVA indicates the fact that the joint contribution of openness, conscientiousness, extraversion, agreeableness, and neuroticism is statistically significant on pupils' numeracy skills ($F_{(5,144)} = 14.069$; $p < 0.05$). Hence, the joint contribution of openness, conscientiousness, extraversion, agreeableness, and neuroticism is statistically significant on pupils' literacy skills is 30.5%. This result implies that openness, conscientiousness, extraversion, agreeableness, and neuroticism accounted for 15.7% of the total variance of the pupils' numeracy skills examined in the study. This is an indication that there are other critical factors that also contribute significantly to development of pupils' numeracy skills.

Ho2b: There is no significant relative contribution of the independent variables (openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils’ numeracy skills

Table 4.4: *Relative Contribution of Teachers’ Personality Traits of Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism to Pupils’ Numeracy Skills*

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta (β)	t	
(Constant)	69.310	7.082		9.787	.000
Openness	.074	.385	.019	.192	.848
Conscientiousness	-1.004	.380	-.218	-2.640	.009
Extraversion	.275	.328	.066	.839	.403
Agreeableness	1.430	.210	.611	6.801	.000
Neuroticism	.178	.251	.058	.710	.479

Dependent Variable: *Pupils’ Numeracy Skills*

Table 4.4 shows the relative contribution of openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils’ numeracy skills. The table shows that agreeableness had the highest significant relative contribution to pupils’ numeracy skills ($\beta = .611$; $t = 6.801$; $p < 0.05$), it is followed by conscientiousness with a statistically significant relative contribution to pupils’ numeracy skills ($\beta = -.218$; $t = -2.640$; $p < 0.05$), followed by extraversion with a non-significant relative contribution to pupils’ numeracy skills ($\beta = .066$; $t = .839$; $p > 0.05$), followed by neuroticism with a non-significant relative contribution to pupils’ numeracy skills ($\beta = .058$; $t = .710$; $p > 0.05$). Finally, openness had the least non-significant relative contribution to pupils’ numeracy skills ($\beta = .019$; $t = .129$; $p > 0.05$). Based on the results from this table, it can be inferred that the relative contribution of agreeableness and conscientiousness to pupils’ numeracy skills is significant while extraversion, neuroticism and

openness do not have significant relative contribution to pupils’ numeracy skills.

Discussion of Findings

The hypotheses revealed that the joint contributions of personality trait of openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils’ literacy and numeracy skills are 15.7% and 30.5% respectively. This implies that the remaining 84.3% of the predictor factors of the pupils’ literacy skills and 69.5% of the predictor factors of the pupils’ numeracy skills were due to other factors not examined in this study. This implies that the level of influence of the teachers’ personality traits on the pupils’ literacy and numeracy skills is considered small. However, it is imperative to establish that the study has provided empirical evidence on the level of the composite and relative contributions of the teachers’ personality trait of openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils’ literacy and numeracy skills, which would be a fact for future

researchers to justify their studies. Children begin learning how to use numbers. Mathematical skills are best learned through observing and participating in real-world situations, particularly in play and daily activities (Davis-Kean, 2022). It occurs, for instance, when children hear you count their fingers and toes, when they begin to recognise numbers and shapes on objects like clocks and phones or in books, when they decide how many apple slices they want, etc. Rather than starting at school, this learning actually begins at home. It becomes imperative therefore, to find out the type of personalities that have been handling the preschoolers.

The various traits that set one person apart from another are summed up as one's personality (Daminabo, 2008). This may also be connected to a person's ability to exhibit a consistent pattern of emotions, considerations, and behaviour. On the other hand, traits might be seen as persistent or continuous dimensions of features that distinguish one person from another. Theorizing that "trait is a continuous dimension on which person contrasts may be arranged quantitatively in terms of the amount of characteristics the person has," Daminabo (2008) stated that this is possible. Overall, personality traits refer to an individual's consistent traits over various periods of time and conditions that set him or her apart from others (Ikpi et al., 2014). This is an indication that more strategic attention needs to be paid to the issue of teachers' personality trait. Beyond the above results, it is pertinent to reiterate that the systemic issues in Nigeria's early childhood education system must be addressed. Although hiring and ongoing training of qualified and emotionally stable teachers is emphasised in the UBE and ECCE policy frameworks, there is still a disconnect between the two. The reason is because many preschools continue to use

inexperienced teachers who are not trained in personality awareness and how it affects learning, particularly in rural areas. In the light of the above, policy making stakeholders such as UBEC and state SUBEBs should thus make sure that policies are strictly enforced, incorporate personality development into teacher training programs, and encourage the fair deployment of teachers.

Conclusion

In the light of the findings, this study concludes that preschool teachers' personality traits, especially conscientiousness, agreeableness, extraversion, and openness greatly influenced the literacy and numeracy skills of their pupils. Precisely, the findings showed that teachers' personal dispositions jointly explained 15.7% of the variance in students' literacy skills and 30.5% of the variance in their numeracy skills. In particular, agreeableness and conscientiousness significantly predicted numeracy performance, whereas openness, conscientiousness, and neuroticism had significant relative effects on literacy.

Recommendations

1. The Federal Ministry of Education, working with State Universal Basic Education Boards (SUBEBs), should periodically host capacity-building workshops and in-service training for preschool teachers in accordance with the UBE Commission's mandate to guarantee high-quality teacher preparation and ongoing professional development under the ECCE component. This kind of training sessions should focus on the development of teachers' emotional intelligence, classroom temperament management, and personality adjustment techniques in order to foster

positive teacher-student interactions and enhance literacy and numeracy results.

2. The federal and state government stakeholders should make it a formal practice to evaluate teachers' personality traits as part of the hiring conditions, onboarding, and evaluation procedures in both public and private preschools. In order to guarantee that only educators with good and caring personalities are assigned to ECCE classrooms, the Teachers Registration Council of Nigeria (TRCN) should incorporate personality profiling and socio-emotional competence assessment into the certification and revalidation processes for teachers.
3. Preschool teachers should take personal responsibility for ongoing self-development by participating in professional global learning communities, mentorship programs, and self-assessment exercises that aim to improve qualities like conscientiousness, agreeableness, and openness. This is in line with the UBE policy on teacher professionalism and reflective practice.

Contributions to Knowledge

This study has bridged the gap in research that was left uncovered by previous researchers. Ultimately, it has been able to provide empirical results regarding issues of teachers' personality traits and the level of the composite and relative contributions of the teachers' personality trait of openness, conscientiousness, extraversion, agreeableness, and neuroticism to pupils' literacy and numeracy skills.

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