Family Communication Orientation, Psychosocial Adjustment and the Disparity in Science Performance among Urban-Rural Secondary School Cohorts in Owerri Education Zone, Nigeria

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ABSTRACT

Background: In studying the disparity in academic performance between urban and rural student cohorts, especially in science, more attention has always been given to achievement scores, the outcome has always remained the same: On the average, urban students always achieve higher than rural students. Access to technology and infrastructure has always been blamed. These days of widespread of modern technology without respect for boundaries and also given infrastructural interventions in schools by governments and other agencies like Niger Delta Development Commission, in Nigeria, and so on, an alternative explanation for the persistent observation has to be sought. This study was therefore, carried out to compare psychosocial adjustment levels of secondary school adolescents from conformity and conversation orientations in communication styles: Place of domicile, that is rural or urban, was a co-variate. The aim was to seek alternative explanation to the disparity in science performance in urban-rural student cohorts. The study was carried out in Owerri Education Zone, Imo state, Nigeria.

Materials and Methods: The population of the study comprised of 10,180 senior secondary school adolescents. A sample of 480, selected from 16 out of 70 public secondary schools in the area was used. An adapted psychosocial adjustment questionnaire (PAQ) and family communication pattern questionnaire (FCPQ) were used to collect data. Psychosocial adjustment mean scores were used to answer the research questions and t-test was used to test the null hypotheses.

Results: The results revealed that abundance of secondary school adolescents from families of conformity orientation was higher in urban areas while that of conversation orientation was higher in rural areas. The difference mean difference was, however not significant. The results also revealed that secondary school adolescents from families of conversation orientation scored significantly higher mean levels of psychosocial adjustment irrespective of place of domicile, rural or urban. Conformity family communication orientation seems to support the way the teaching and learning of science in secondary schools is carried out: Strict obedience to laid down rules and regulations. Students with higher psychosocial adjustment levels who are from families where members are not regulated to conform, seem to perform comparatively poorer in science. A major recommendation is the call for secondary school science curriculum overhaul to favour creativity and problem solving as well as counseling for parents and teachers to create home and school environments that encourages open conversations.

Keywords: Family; communication; Urban-Rural; Student cohorts; science performance; Psychosocial; secondary school;

INTRODUCTION

This study was carried out on the following assumptions;

I. Urban secondary school students in Nigeria always out perform their rural counterparts in formal education generally and especially in science achievements.

II. The disparity in science achievement between urban-rural secondary school student cohorts has always been seen and accepted by researchers as hinged on unequal access to technology, infrastructure and personnel, hence no further researches to dig deeper for better understanding of the issues are being undertaken.

A major concern of our time and an important one indeed, especially for urban dwellers, is that of limited time parents and children spend together. Families now rarely spend quality time together. Children hardly learn any life's survival skills by doing things together with their parents. Talking together with parents and siblings is now a luxury. Meal times, prayers and other opportunities for the family to gather together, have gradually become personal issues. Family members are increasingly becoming loners. Computer and cell phone age has even made the situation worse. Children, therefore socialize, learn and acquire survival skills from other exposures available to them. According to Perry (2023) with the regular schedules of activities for parents and even with other family members, it becomes increasingly difficult, no matter whatever good intentions, to spend quality time with the family. Family quality time is much more than sharing meals or driving to school together, the author argues. It is rather about building family bonds by given full attention to the family without distractions or interruptions. Quality family time instills values, celebrates success, shares pains and thereby gives a sense of belonging. All family members reap the benefits and each therefore, looks up to spending valuable time together in the family. By looking at Perry's (2023) suggestions of how to build quality time: Creating a tradition, sharing household chores, teaching skills, gathering for prayers, meals, meetings to resolve conflicts, and so on, one begins to appreciate why family time poverty may be more of an urban family setting than rural. Indeed, family members may be more connected in rural settings than in urban.

LITERATURE REVIEW

The family communication theory has been formulated and the four main communication patterns possible within families have been identified (Koerner & Fitzpatrick, 2012,). These include; consensual, pluralistic, protective and laissez-faire. In consensual family communication pattern, open conversation is the prevalent communication pattern. Here, parents are the final decision makers about important matters in this orientation. Children are encouraged to express their feelings, thoughts and activities but must comply with parents' major decisions. Conflicts arise between parents and children out of the desire of the children to exercise control. These conflicts are however, avoidable as the children learn to abide by the family's values and beliefs and assume their necessary roles. Pluralistic family communication pattern presents a different kind of opportunity to family members. Here conversation is common but conformity is often absent. Parents believe that children learn through their own experiences outside the family. Family decisions come from equal inputs, irrespective of whether one is a child or a parent. In this pattern of communication, open conflicts are common and so presents no threats. The children are strong in personal decision making. In the protective family communication pattern, conformity is more prevalent than open conversation. Children are given little or no opportunity to express themselves. Children must obey their parents' decisions irrespective of their own views. Conflicts rarely exist among family members. Children here rarely display self-confidence. While in laissez-faire pattern of family communication, neither conformity nor conversation is easily discernible. Family members are often independent of each other emotionally. There are often no issues to discuss and no orders demanding obedience are issued. There are no specific expectations of parents from their children. Conflicts are almost absent because each one does what one likes. Due to lack of reference points, children grow up to become unsure of their abilities to make decisions.

These four family communication patterns, according to family communication patterns theories, can be merged into two main orientations: Conversation orientation and conformity orientation (Koerner & Fitzpatrick, 2006). While conversation orientation is generally characterized by open conversation, freedom of choice and a high degree of individuality, conformity orientation stresses homogeneity of attitudes, values and believes: Open

conversation may be present to some degree but conformity to family values and believes are expected at all times in this orientation.

Communication, which is the act of sharing information, is a cycle which is completed only when the receiver has understood the sender's message and intent. Communication, therefore is the process of exchanging information in the form of messages, symbols, thoughts, signs and opinions. According to College of Contract Management (2024) there are four main types of communication; Verbal, Non-verbal, Written and Visual. Of all types of communication, verbal communication is very important among family members. Verbal communication includes sounds, words, language and speech. Speaking helps a family member to express his or her emotions, interact and converse with the rest of family members.

Public communication involves one or more people delivering a message to a group. Interpersonal communication generally refers to a two-way exchange that involves both talking and listening. Family communication fits into the interpersonal or small group communication. For instance, the present researcher's 14 years old son, then in Junior Secondary School Class three (JSS3) expressed himself thus during a family interaction time, "I do not know why, except in this family, I find it difficult to express myself. In any other group, especially in the class, whenever I am called upon by my teacher to say something, I find it difficult, even though I know exactly what to say". The dad responded by telling him that he is suffering from stage fright and that it happens to everybody especially during one's developing years. The present researcher, being an Educational Psychologist and the mother of this child, further gave the boy clues on how to overcome stage fright. This is one of the values of communications within families: It helps to clarify issues of psychosocial nature, both for the individual and for the family as a whole. When an individual begins to function fairly normally, where there used to be complexity or confusion, the person's level of psychosocial adjustment could be said to have been enhanced.

Another variable that could affect psychosocial adjustment of the adolescent, especially school children, is place of domicile and in this case, rural and urban locations. According to Paramanik and Mondal (2014), place of residence is a factor that can affect adjustment of secondary school students. This assertion supports the conclusions of Ghorpade and Kamble (2022) that place of domicile has effect on adolescents' social problems. In fact, the authors are of the opinion that more urban adolescents have more communication and social problems while more rural adolescents have scholastic issues. It is therefore, important that the impact of locality on adolescents' psychosocial adjustment be looked into, especially, as its possible influence on the disparity between urban and rural students' performance in science is being considered.

A very important aspect of this study as hinted above, is to review what literature has to say about school performance in urban and rural settings and especially in this study, achievement in science. According to Maas, Amolins and Vitiello (2015), science achievement among urban students is significantly higher than that of rural students in the area their study was carried out, The United States of America. This observation is collaborated with the studies carried out in Nigeria and elsewhere, (Ozuah, 2023, Wood, 2023, Ode & Ogah, 2021, Owoeye & Yara, 2011). This persistent observation notwithstanding, Beatrice-Afonso and Cruz-Jesus (2024) called it a myth that needed closer examination to unravel. In their study, the authors observed that academic background emerged as the strongest driver of this disparity in Portugal, followed by ICT contributions. For Woods (2023) the persistent challenge many countries have to battle in tackling the disparity in urban-rural differences in educational performance is quality of education provided and its accessibility. The author recommended comprehensive strategies that could lead to understanding the root causes, probably in different educational climes, and address them, among other things. In Nigeria, different researchers have made different observations and recommendations too. According to Ode and Ogah (2021) classroom environment has the highest influence in perpetrating this disparity. However, the authors offered no clues on how this is the case. It is surprising that when latent scientific attainments that are not usually examined formally are considered in a Nigerian setting, for instance level of scientific literacy, the disparity in performance between urban and rural students becomes insignificant (Lawan, Ahmed, Abimbola & Adulrahim, 2017)

Given the level of spread of modern technologies in education, examples include use of smart phones to access the internet, google classroom and other social media platforms available for accessing information, though there is no gain saying the fact that these are more predominant among urban than rural students, the gap should be

closing significantly. Agommuoh, Onwukwe and Nwachukwu (2025) observed that governments, states and national as well as other government agencies like Niger Delta Development Commission donate science and laboratory equipment to schools irrespective of locations. Science teachers of similar qualifications, experiences and challenges are teaching science subjects in schools irrespective of locations. Some state governments make accepting to teach in rural schools a condition for employment. What more could be the science achievement drivers in urban-rural secondary school student cohorts as advocated by Beatrice-Afonso and Cruz-Jesus (2024)? The answer for different educational climes may be different. Nigeria, like India and other third world countries, were colonized by the British and may have left the same impacts on their educational curricula over the years. It will therefore, take insight and commitment on governments to study any negative impacts of colonial brand of education on the population and mitigate against them decisively. On the issue of psychosocial problems faced by adolescents, which the present researchers believe may be related to the disparity in urban-rural scholastic performances, Ghorpade and Kamble (2022) concluded that more rural youths have scholastic problems than urban youths while urban youths have more social and communication problems than rural youths in the Songli District of India. How these and other knotty problems that plague one country or the other are related to nonfunctional curricula issues has to be independently studied.

From its inception, formal education in Africa was never meant for mass enlightenment and progress but rather for the cultivation of a subservient elite class that will serve the colonial administration. Dei (2014) underscores this in his work, The Colonial Legacy of Education in Africa, noting that the colonial education was structured to produce clerks, interpreters, and low-level bureaucrats instead of critical thinkers or innovators. This legacy persists today in what I call "the colonial effect", where access to quality education remains restricted to urban elites, while rural populations are left with underfunded and outdated systems. Mandani (2018) expands on this in The Crisis of Higher Education in Africa, where he argued that African universities function as "intellectual outposts" of the West, prioritizing theoretical and cognitive knowledge over practical and locally relevant applications (p. 23). This results is an education system that churns out graduates good in Western theories but incapable of solving African problems, be it in agriculture, healthcare or engineering. Nowhere are the "colonial effects" more evident than in science education. Zeleza (2009), in Why Africa's Science and Technology Policies Fail, highlights how African science curricula remains uncritically tied to Western models, emphasizing rote memorization of foreign concept rather than fostering innovation (p. 45). For example, African students will be taught about Newton's laws but are hardly taught how to apply physics to local challenges like renewable energy. Odora Hoppers (2017), in Decolonizing the African University, takes this further by arguing that the exclusion of indigenous knowledge from science education renders is irrelevant (p. 112). African communities have long-developed sustainable agricultural practices, herbal medicine and ecological conservation methods, yet these are dismissed as "unscientific" in formal education system. By devaluing local knowledge, the education system enforces intellectual dependency, enduring that African scientists seek validation from Western institutions rather than solving local needs.

The consequences of this colonial-elitist education model are so dire. First, it creates brain drain, where African's best minds migrate to Western institutions, seeking environments that value their skills (Zeleza, 2009, p. 51). Secondly, it stifles homegrown innovations, how and why should students invent solutions for African problems when their curricula prioritize foreign case studies? Third, it reinforces economic dependency, as African nations keep importing technology and expertise rather than developing them on their own. Zeleza (2009) noted that despite numerous policy declarations on science and technology, African nations remain consumers rather than producers of knowledge (p. 48). Meanwhile, Mamdani (2018) warns that without radical curriculum reforms, African universities will keep producing "educated illiterates", graduates who can recite European theories but cannot innovate for their own societies (p. 30)

Breaking free from colonial stronghold requires bold reforms:

1. Indigenous Curricula: Science education must integrate African knowledge systems (Odora Hoppers, 2017, p. 115).

2. Democratizing Access: Education must shift from elitist urban institutions to inclusive, community-based learning (Dei, 2014, p. 72)

3. Prioritizing Applied Science: Universities should emphasize innovation hubs, linking research directly to industry and societal needs (Zeleza, 2009, p. 55)

4. Reclaiming intellectual sovereignty: African academics must challenge Eurocentric epistemologies (Mandani, 2018, p. 35)

Africa's education system remains a colonial relic, elitist in access, Eurocentric in content and detrimental to development. As Dei (2014, Odora Hopper (2017) and Mandani (2018) demonstrated, true liberation requires intellectual revolutions. Therefore, until African curricula centers on African realities, the continent will remain a consumer of knowledge rather than a producer.

In Nigeria, however, scholars are beginning to take a closer look at the varied issues plaguing the country and some are tracing all of them to curriculum matters. Ejeagba (2025) in his book, Educated Slaves, has queried the brand of curriculum upon which the education of former British colonies was based. "Colonial education was inherently discriminatory. It separated society into those deemed worthy of education and those relegated to menial labor. Schools were established in urban areas were the colonial presence was strongest, while rural areas were largely neglected. The education provided was rigid, authoritarian, and focused on rote learning …" (Ejeagba, 2025. p.4) The author went on to describe curricula provisions, including science curricula of the Nigerian science education space, as a mere 'Tool of Conformity'. All educational reforms ever undertaken since after independence, including science curricula reforms, had always towed the same line with that handed down by the colonial masters, the author argues: It will always be discriminatory and especially, unfavorable to the rural population. It will always be a tool for conformity even to the urban population.

Statement of The Problem

Considering the unique characteristics of conformity and conversation communication orientations, the researchers are poised to answer the question; which one predominates rural and urban families of secondary school adolescents and how do these adolescents compare in their psychosocial adjustment levels. Could the outcome of the study provide explanation for the consistent disparity in science achievement among rural and urban secondary school students, becomes a novel opening the researchers are exploring.

Objectives

The following research questions were raised to guide the study:

1. Which of conformity and conversation orientation is more prevalent among families of secondary school adolescents in urban and rural locations in Owerri Education Zone, Imo state?

2. What are the mean psychosocial adjustment scores of adolescents from families of conformity and conversation orientations in urban schools?

3. What are the mean psychosocial adjustment scores of adolescents from families of conformity and conversation orientations in rural schools?

Hypotheses

Three hypotheses were tested:

i. There is no significant difference in the prevalence of families of secondary school adolescents with conformity and conversation family communication orientations in urban and rural locations.

ii. There is no significant difference in mean psychosocial adjustment scores of secondary school adolescents from families of conformity and conversation orientations in urban schools.

iii. There is no significant difference in mean psychosocial adjustment scores of secondary school adolescents from families of conformity and conversation orientations in rural schools

METHODOLOGY

The design of this study is survey. This study sought to collect information which when analyzed helped to compare the psychosocial adjustment levels of adolescents from varying family communication patterns in rural and urban secondary schools. This study was carried out in Owerri Education Zone of Imo State, Nigeria. Owerri Education Zone of Imo State is fairly large, with eleven Local Government Education Authorities.

The population of this study consisted of adolescent population, that is, students within the age range of 14 to 19 years. Students in senior secondary school classes 1-3 fall within the range. There are seventy (70) state owned senior secondary schools with a population of ten thousand one hundred and eighty-two (10,182) senior secondary class two (SS2) students (Source: Secondary Schools Enrolment, Imo State Secondary Education Management Board). Four local government areas in the Education Zone that met the criteria of clearly discernible rural-urban dichotomies were selected. In each local government area schools that met the criterion of being co-educational were isolated and two rural and two urban schools were randomly sampled. In each school, equal numbers of male and female SS2 students (15 per gender) were selected. 30 senior secondary school adolescents were, therefore selected per school, giving a sample size of 480.

In this research, two instruments were used. The family communication questionnaire (FCPQ) and psychosocial adjustment questionnaire (PAQ) were adapted by the researchers. The questionnaire was made up of three sections: A, B and C. Section A contained the demographic data. Section B dealt with the Family Communication Pattern. The items were grouped into conversation and conformity orientations. The statements therein depicted the characteristics of the different family communication orientations. The respondents were expected to go through all statements (identified by the researchers with even and odd numbers for different communication orientations) and with a single tick (√) each, select the statements which correctly represented their experiences in their families. The FCPQ as adapted was patterned on a four-point scale ranging from; Strongly Agree (SA) four points, Agree(A) three points, Disagree (D) two points and Strongly Disagree (SD) one point. The responses were scored and separated according to even numbers (conversation orientation) and odd numbers (conformity orientation). A respondent's family communication orientation was the section of his/ her higher score. Section C was the psychosocial adjustment scale. The items in the scale were patterned on a four-point rating, namely: Very High Extent (VHE) four points, High Extent (HE) three points, Low Extent (LE) two points, Very Low extent (VLE) one point, A respondent's psychosocial adjustment level is the total score on the scale. The instruments were validated by experts in the Department of Educational Foundations, Nnamdi Azikiwe University, Awka, The University of Nigeria, Nsukka, Alvan Ikoku Federal College of Education Owerri, all in Nigeria. They critiqued the face validity and using a table of family communication pattern characteristics to judge the adequacy of the items. Their inputs and corrections guided the researchers in the production of final copy used.

The data for reliability of the instrument was gathered in a pilot study. The reliability of the instrument was therefore, established using the Cronbach Alpha Coefficient statistics which measured the internal consistency of the test items. After analysis, the FCPQ had a coefficient alpha of 0.74 while the psychosocial adjustment questionnaire had a coefficient of 0.82.

The researchers employed the services of assistant researchers for the administration of the instrument on the target respondents in their respective schools and classes. Enough time was allowed for them to respond to the items, and they were given adequate instruction to help the respondent be as independent as possible. The researchers and assistants saw to it that the copies of questionnaire distributed were collected back on the spot. These procedures were to ensure that the respondents did not copy the responses of their friends as well as to achieve high retrieval rate of the instrument. Psychosocial adjustment scores as well as summed up points on family communication questionnaire were recorded, and used for statistical analyses.

RESULT.

Psychosocial mean scores were used to answer the research questions while t-test was used to test the hypotheses at 0.05 level of significance.

The results of the data analysis are presented according to the research questions and null hypotheses that guided the study.

Table 1: Prevalence of conformity and conversation orientations in urban and rural settings

FCO	Location	N	%
	Urban	129	53.2
Conformity			
	Rural	112	46.8
	Urban	111	46.4
Conversation			
	Rural	128	53.6

From table 1 above, families of conformity orientation are more prevalent in urban settings while conversation orientation is more prevalent in rural settings.

Table 2: Summary of Chi-square result on the prevalence of conformity and conversation orientation in urban and rural settings

	FCO					
LOCATION	**Conformity**	**Conversation**	χ^2_{cal}	df	χ^2_{tab}	**Decision**
Urban	129	111	2.4082	1	3.84	Not Sig.
Rural	112	128				

Table 2 shows the summary of Chi-square result on the prevalence of conformity and conversation orientation in urban and rural settings. The result revealed that the statement of the hypothesis is accepted; implying that there is no significant difference in the prevalence of conformity and conversation orientation in urban and rural settings. This is because the calculated Chi-square (2.4082) is less than the critical value (3.84) at 0.05 level of significance.

Table 3: Mean psychosocial adjustment scores of urban schools' adolescents based on family communication orientations.

Urban	FCO	N	Mean	SD
	Conformity	129	88.30	10.33
Psychosocial Adjustment				
	Conversation	111	99.54	8.408

Table 4: Mean psychosocial adjustment scores of rural schools' adolescents based on family communication orientations

Rural	FCO	N	Mean	SD
	Conformity	112	82.59	9.431
Psychosocial Adjustment				
	Conversation	128	97.47	7.958

Table 5: t-Test analysis of mean psychosocial adjustment scores of urban schools' adolescents from families of conformity and conversation orientations.

FCO (Urban)	N	Mean	SD	df	t_{cal}	p-value	Decision
Conformity	129	88.30	10.330	238	-9.148	0.000	Reject H_0
Conversation	111	99.54	8.408				

Table 6: t-Test analysis of the mean psycho-social adjustment scores of rural schools' adolescents from families of conformity and conversation orientations.

FCP (Rural)	N	Mean	SD	df	t_{cal}	p-value	Decision
Conformity	112	82.59	9.431	238	-13.254	0.000	Reject H_0
Conversation	128	97.47	7.958				

From the results of the t-Tests the statement of hypotheses 2 and 3 are rejected; implying that there is a significant difference in mean psychosocial adjustment scores of adolescents from families of conformity and conversation orientations in rural and urban schools. This is because the p-value (0.000) is less than the 0.05 level of significance.

SUMMARY OF FINDINGS

The findings of this study show that:

(i.) Conformity family communication orientation was more prevalent among secondary school adolescents in urban settings while those from conversation orientation was more prevalent in rural settings though the difference was not significant.
(ii) There is a significant difference in mean psychosocial adjustment scores (levels) of adolescents from families of conformity and conversation orientations in urban schools in favour of those from conversation orientation.
(iii) There is a significant difference in mean psychosocial adjustment scores (levels) of adolescents from families of conformity and conversation orientations in rural schools in favour of those from conversation orientation.

DISCUSSION OF FINDINGS

According to Paramanik and Mondal (2014) and Ghorpade and Kamble (2022) place of residence has effect on the psychological and social issues secondary school adolescents may be faced with. Secondary school adolescents from the rural areas were found in this study to be more predominantly from families of conversation communication orientation and more psychosocially adjusted than their counterparts from urban areas is therefore, highly supported by literature. According to Koerner and Fitzpatrick, (2006), conversation orientation in families generally produce adolescents characterized by open conversation, freedom of choice and a high degree of individuality, it is also expected that such a young adult will be more psychologically balanced and socially integrated just as this study has shown. This assertion is supported by the conclusions of Ghorpade and Kamble (2022) that place of domicile not only have effect on adolescents' social problems, in fact, that more urban adolescents have more communication and social problems while more rural adolescents have scholastic issues. The fact that conformity orientation stresses homogeneity of attitudes, values and believe as can be seen in the statement: Open conversation may be present to some degree but conformity to family values and believes are expected at all times in this orientation. Conflicts arise between parents and children out of the desire of the children to exercise control (Koerner and Fitzpatrick, 2006). This assertion was found to be true in this study since majority of secondary school adolescents in urban areas are from families of conformity communication orientation and are less psychosocially adjusted.

From the assumptions of this study, which are widely supported by literature, it is puzzling therefore, to explain how a young adult more at peace with his/her social environment, from a family that encourages open mindedness, free expression of thoughts and free choice of problem solving alternative actions, the very nature of true scientific endeavors, will in practice, actually achieve lower than his/her counterpart with the opposite characteristics and opportunities: In fact, the more distressed, confused and bewildered, a young adult is, the very conditions that could hamper scientific attitudes and skills development in a young adult, then the more achieving in science the one is? This observation calls for a closer look at how science is taught and assessed in schools. How can the science curricula that have been in operation be analyzed to explain this lopsidedness?. Could it be that it has always been curricula designed to manipulate and control, instruments of 'conformity' (Ejeagba, 2025) that gives credit to the students that merely regurgitate on their examination answer scripts exactly what they were force to swallow in class? While those who think freely, more expressively and more creative struggle to find expression to the craftily coded questions intended to produce just one response?. This is a puzzle that is begging for explanation.

CONCLUSION

The study concludes that more secondary school adolescents from rural areas are from families of open conversation orientation and are of higher levels of psychosocial adjustments but tend to achieve lower in science while more secondary school adolescents from urban areas are from families of conformity family conversation orientation and tent to achieve higher in science. The expectation that the more a student is at peace with him/herself and the social environment as well as the more opportunity to express him/herself, the more achieving in science he/she should be is put to question by the outcome of this study. Conversely, the outcome of this study that suggests that the more a student is forced into conformity and the less at peace with oneself and the social environment that such a student has a better chance to achieve in science should be subjected to further critical examination. Secondary school science curriculum and the actual classroom practice of science by teachers should be critically looked at again and again with a view to repositioning the practice of science in our school system.

RECOMMENDATIONS

A major recommendation is that counseling sessions should be organized for parents and teachers toward creating home and school environments that encourage open conversations as well as a call for secondary school science curriculum overhaul to favour creativity and problem solving in real natural settings.

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