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Original Research Article

THE INFLUENCE OF DIVERGENT, ANALYTIC AND HOLISTIC COGNITIVE STYLES ON STUDENTS' ACADEMIC PERFORMANCE IN ENGLISH LANGUAGE IN PUBLIC SENIOR SECONDARY SCHOOLS IN RIVERS STATE

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ABSTRACT: This study investigated divergent, analytic and holistic cognitive styles and academic performance in English language among public senior secondary school students in Rivers State. The correlational research design was adopted for the study. Three research questions and three null hypotheses guided the study. The population of the study consisted of 63,846 secondary school one (SSI) students from three hundred and eleven (311) public senior secondary schools in Rivers State. The sample size of the study was 480 senior secondary school one (SS1) students selected through the multistage sampling procedure. Self-structured questionnaires titled 'Divergent, Analytic and Holistic Cognitive Styles Questionnaire (DAHSQ)' and 'English Language Performance Test (ELPT)' was used in data collection. The instruments for data collection (DAHSQ and ELPT) were validated by three experts in Educational Psychology, Measurement and Evaluation, and English Language. The reliability of the DAHSQ was determined using the test-retest method. The reliability of the English Language Performance Test (ELPT) was determined using Kuder-Richardson 20 estimates. The instrument yielded reliability co-efficients for divergent cognitive style sub-scale (.840), analytic cognitive style sub-scale (.781) and holistic cognitive style sub-scale (.761). The English Language Performance Test (ELPT) yielded a reliability co-efficient of .86. Simple regression analysis was used in answering the research questions and testing the corresponding null hypotheses at .05 level of significance. The findings of the study revealed that divergent, analytic and holistic cognitive styles significantly predicted students' academic performance in English language in public senior secondary schools in Rivers State to a high extent. Based on the findings of the study, it was recommended among others that teachers should provide opportunities using divergent, analytic and holistic cognitive styles for learners to engage in activities that allow for thoughtful analysis.

Keywords: Divergent, Analytic, Holistic Cognitive Styles, English Language, Public, Senior Secondary, School, Students, Rivers State, Nigeria.

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INTRODUCTION

Academic performance in English Language continues to be a persistent educational challenge in Nigerian secondary schools, where English functions as the official language of instruction, assessment, and communication. Proficiency in English is not only essential for students' success in external examinations such as the West African Senior School Certificate Examination (WASSCE), which also underpins performance across other subjects and future academic and professional pursuits. In Rivers State, as in many parts of Nigeria, concerns have been raised about the suboptimal outcomes exhibited in students' English Language results, despite ongoing curriculum reforms and instructional interventions. This educational challenge therefore calls for a deeper exploration of learner-related factors that may influence academic outcomes beyond traditional variables such as teacher qualifications, instructional resources, and classroom practices.

One such learner-related construct that has garnered attention in educational psychology is cognitive style. Cognitive style refers to the consistent ways individuals perceive, process, organize, and relate to information. It differs from cognitive ability in that it focuses on the manner of processing information rather than the level of intellectual capacity. Cognitive styles have been shown to be relatively stable and reflective of habitual cognitive processes, potentially impacting how learners engage with instructional materials and how they perform in academic tasks. Riding and Cheema (1991), for instance, conceptualized cognitive style through two independent dimensions (wholist-analytic and verbalizer-imager) with implications for how learners structure information and represent content mentally. The wholist–analytic dimension, which distinguishes global from detail-oriented processing, is particularly relevant for understanding how students approach language tasks, comprehension, and expression.

Research suggests that cognitive styles can influence the learning process and academic outcomes, especially when instructional tasks align or misalign with learners' processing preferences. For example, individuals whose cognitive styles are congruent with the mode of instruction tend to show better learning performance than those whose styles are mismatched. In secondary school contexts, cognitive style has been associated with learning behaviours and subject attainment, confirming that individual differences in information processing may affect academic engagement and outcomes.

In particular, the divergent cognitive style is typically characterized by flexibility in thinking and the generation of multiple perspectives may facilitate activities such as creative writing, comprehension interpretation, and open-ended tasks, which are essential components of English Language learning. Analytic cognitive style, emphasizes systematic and logical processing, may support students in mastering grammatical structures, sentence analysis, and language rules. Holistic cognitive style, involves perceiving overall meaning and integrated information, may be advantageous in understanding contextual and narrative elements of texts. Together, these cognitive approaches reflect individual differences that are likely to shape students' engagement with the multifaceted demands of English Language study.

Empirical studies from Nigerian contexts have also highlighted the relevance of cognitive style to academic achievement. Ifelunni et al. (2022) in a study of the South-East Nigeria found that cognitive styles correlated with pupils' academic achievement, highlighting the need for instructional approaches that consider learners' cognitive dispositions. Similarly, secondary school research reports suggest that cognitive factors such as style and preference can influence students' performance across subjects. These findings underscore the importance of examining

how different cognitive styles vis-à-vis divergent, analytic and holistic relate to academic performance in English Language, particularly in public senior secondary schools in Rivers State, where instructional practices may not always reflect learners' cognitive preferences.

Therefore, this study investigates the influence of divergent, analytic, and holistic cognitive styles on students' academic performance in English Language in public senior secondary schools in Rivers State to provide insights that may enhance instructional strategies and improve learners' outcomes.

Statement of the Problem

Academic performance in English Language has remained a significant concern in Nigerian senior secondary schools, particularly in public schools in Rivers State, where students' results often fall below national expectations. Despite numerous interventions, including curriculum reforms, teacher training and provision of instructional resources, students continue to struggle with comprehension, writing and overall language proficiency. Research has suggested that learner-related factors like divergent, analytic and holistic cognitive styles may partly explain these variations in academic achievement. Cognitive style is defined as an individual's preferred way of perceiving, processing and organizing information, and has been shown to influence learning behaviors, problem-solving strategies, and performance outcomes.

Among the cognitive styles identified in educational psychology, for example, the divergent, analytic and holistic styles are particularly relevant to English Language learning. Divergent learners may excel in creative and open-ended tasks, analytic learners in structured and detail-oriented exercises, and holistic learners in understanding contextual meaning. However, instructional approaches in many public senior secondary schools often do not accommodate these diverse learning preferences, potentially disadvantaging some students. In Rivers State, the extent to which these cognitive styles influence academic performance in English Language remains underexplored. This study, therefore, sought to investigate how divergent, analytic, and holistic cognitive styles affect students' academic outcomes in English Language, providing evidence to inform more learner-centered instructional strategies.

Aim and Objectives of the Study

The major aim of the study was to investigate divergent, analytic and holistic cognitive styles on students' academic in English language among public senior secondary school students in Rivers State. Specifically, the study:

- Investigates the extent to which divergent cognitive style predicts students' academic performance in English language in public senior secondary schools in Rivers State.
- Examines the extent to which analytic cognitive style predicts students' academic performance in English language in public senior secondary schools in Rivers State.
- Determines the extent to which holistic cognitive style predicts students' academic performance in English language in public senior secondary schools in Rivers State.

Research Questions

The following research questions were stated to guide the study:

- To what extent does divergent cognitive style predict students' academic performance in English language in public senior secondary schools in Rivers State?
- To what extent does analytic cognitive style predict students' academic performance in English language in public senior secondary schools in Rivers State?
- To what extent does holistic cognitive style predict students' academic performance in English language in English language in public senior secondary schools in Rivers State?

Hypotheses

The following null hypotheses were stated to give direction to the study testable at 0.05 level of significance:

- Divergent cognitive style does not significantly predict students' academic performance in English language in public senior secondary schools in Rivers State.
- Analytic cognitive style does not significantly predict students' academic performance in English language in public senior secondary schools in Rivers State.
- Holistic cognitive style does not significantly predict students' academic performance in English language in public senior secondary schools in Rivers State.

REVIEW OF RELATED LITERATURE

Academic Performance

Academic performance refers to the extent to which learners achieve the goals set within an educational program, typically assessed through examinations, class tests, assignments, and continuous evaluation. It reflects the learner's ability to acquire, retain, and apply knowledge and skills taught during instruction (Cohen et al., 2018). Academic performance is a key indicator of both individual achievement and the effectiveness of the instructional process. High performance signifies mastery of content, while poor performance may indicate gaps in learning, instructional challenges, or misalignment between teaching and learning strategies. In the context of secondary education, performance in English Language is particularly important because it serves as the medium of instruction and a core subject for progression into higher education (Riding & Cheema, 1991).

The implications of academic performance extend beyond academic achievement to affect learners' self-confidence, motivation, and future opportunities. Students who perform well are more likely to access scholarships, tertiary education, and competitive job markets, whereas poor performance can hinder educational advancement and career prospects (Messick, 1984). Consequently, understanding the factors that influence academic performance is critical for educators and policymakers aiming to enhance student outcomes (Mudrack, 2001).

Dogan (2015) indicated that academic performance is influenced by a combination of learner-related, social, and institutional factors. Learner-related factors include cognitive abilities, motivation, study habits, and cognitive styles, which affect how students process information and approach learning tasks. For instance, cognitive styles such as divergent, analytic, and holistic preferences shape students' engagement with learning materials and their performance in specific subjects (Riding & Cheema, 1991). Divergent learners may excel in

creative and open-ended language tasks, analytic learners in structured exercises such as grammar and syntax, and holistic learners in understanding contextual meanings of texts.

Social and environmental factors, including parental support, socio-economic status, peer influence, and availability of learning resources, also significantly impact academic outcomes (Stake, 1995). At the school level, teacher quality, instructional strategies, classroom climate, and resource availability influence students' comprehension, engagement, and achievement (Cohen et al., 2018). Therefore, academic performance is the product of complex interactions among personal, social, and institutional variables.

Understanding these factors, particularly the role of cognitive styles in shaping learners' performance in English language is essential for designing effective instructional strategies. Thus, aligning teaching approaches with students' cognitive preferences by educators improves engagement, retention and achievement, which thereby enhances the overall academic outcomes of students (Riding & Cheema, 1991; Messick, 1984).

Divergent Cognitive Style

Divergent cognitive style is a creative and exploratory approach to solving problems by generating new ideas and possibilities. Divergent cognitive style is a mode of thinking characterized by the fluent production of a variety of novel ideas relevant to the problem ahead. Divergent cognitive style is the cognitive process of generating multiple creative solutions or ideas by exploring different paths, perspectives or problem-solving contexts (Gupta & Soni, 2023). It involves breaking free from conventional or linear thinking to produce a wide range of novel and diverse concepts. This type of thinking encourages the exploration of various options, without judgement or evaluation, and promotes originality and flexibility in problem-solving.

Divergent cognitive style is open-ended thinking where one may think of several answers to a question or different solutions of a problem in terms of one's own knowledge and experience (Mishra, 2016). Uzoeshi and Iwundu (2014) explained that divergent thinking relates to how a learner can employ different methods to approach a problem. Divergent thinking deals with the capacity to generate responses, to invent new ones, to explore responses, and expand ideas, and in a word, to diverge. Divergent thinking demands fluency and flexibility. Many researchers tend to equate divergent thinking with creativity and convergent thinking with intelligence. Divergent thinking is a thought process used to generate creative ideas by exploring many possible solutions. Divergent thinking is a type of creative process where several solutions and ideas are offered to address a problem. This way of thinking can help increase creativity and innovation in problem-solving. Divergent cognitive style is a process that involves producing diverse responses in order to solve a concrete or abstract problem.

Divergent thinking is a mental process in which an individual generates multiple creative solutions to a single problem or question (Jangra, 2024). This process involves exploring various possibilities, brainstorming and taking unconventional paths to reach novel conclusions. Divergent thinking encourages individuals to think outside the box and come up with multiple ideas and solutions to a problem. It involves exploring all possibilities and considering different perspectives, without worrying about the feasibility or practicality of the ideas generated (Jangra, 2024). Divergent thinking is an essential skill for students looking to enhance their creativity, problem-solving skills and self-confidence (Jangra, 2024). By exploring all possibilities and considering different perspectives without limiting oneself to a specific approach or solution,

individuals can generate unique and innovative ideas that may not have been considered otherwise.

Divergent cognitive style or divergent thinking ability is characterized by four distinctive characteristics and they include: fluency, flexibility, originality and elaboration:

- Fluency: Fluency is the ability to generate a large number of ideas in a short amount of time. It is the ability to produce many ideas for a given task or a problem. The more ideas an individual is able to produce, the higher is his/her ability of fluency. This distinctive characteristic of divergent cognitive style involves brainstorming and generating as many ideas as possible without evaluating their feasibility or practicality (Jangra, 2024).
- Flexibility: Flexibility indicates variety in thinking such as thinking in terms of different uses of a thing, object or different ways of interpreting an idea or solution. Flexibility does not bind the creative thinker to stick to a particular idea or solution only, but to think of several alternatives to find the unique idea or solution. Flexibility is the ability to generate ideas from different perspectives and viewpoints. This aspect of divergent cognitive style involves considering different angles and exploring various possibilities.
- Originality: Originality is an ability to produce rare or unusual ideas or solutions to a problem. It is the ability to generate unique and innovative ideas. This distinctive characteristic of divergent thinking involves breaking away from conventional thinking patterns and exploring new approaches (Jangra, 2024).
- Elaboration: Elaboration is the ability to expand on exiting ideas and develop them further. It enables the thinker to go into the details and work out the implications of novel ideas (Mishra, 2016). This aspect of divergent thinking involves building on initial concepts and exploring potential implications or applications.

Analytic Cognitive Style

Analytic cognitive style is the cognitive process of dissecting intricate problems, data, or situations into smaller components to discern patterns, relationships and underlying principles (Roberts, 2023). Analytic cognitive style entails critical observation, logical reasoning and systematic analysis to arrive at infirmed conclusions or solutions. Analytic thinking is a bedrock of effective problem-solving, enabling students to navigate challenges with precision and adaptability. Analytic cognitive style or analytic cognition involves carefully examining information, breaking it into parts, and grasping the fundamental patterns and connections. Analytic cognition goes beyond just skimming the surface, prompting people to explore the reasons and mechanisms behind a situation. Analytic cognitive style is a cognitive process that involves the ability to look at a complex problem, break it down into its constituent parts, and work out the best way of solving it.

Analytic cognitive style is the cognitive process of breaking down complex pieces of information into smaller and more understandable components or principles (Thaneerananon et al., 2016). At its core, analytic thinking is a problem-solving tool. It empowers students to approach challenges with a systematic mindset, promoting effective and efficient solutions. Analytic thinkers possess a keen sense of critical analysis. They evaluate information objectively, identifying strengths, weaknesses, opportunities, and threats. Being meticulous is a key aspect of thinking analytically. It involves taking into account every bit of information, regardless of its size, within the broader content.

Learners with the analytic cognitive style need to break the processing of information into its component parts (Olagbaju, 2020). Analytic learners work through different parts and bits (before getting the big picture) only bringing them together late in the learning process when absolutely necessary to achieve understanding. Crowl et al., (1997) in Olagbaju (2020) described analytic learners as people who tend to perform better when working in structured situations and they are also efficient when working in formal settings that is under minimal guidance or supervision. The following are the distinctive characteristics of analytic learners:

- Analytic learners tackle problems with logic and analysis.
- They are good at recalling facts, formulas and names.
- They learn in a sequential manner.
- They independently take notes.
- They are naturally reflective and can evaluate themselves and learn from their mistakes.
- They prefer to study alone for long periods without interruption.
- They focus on the parts that make up the big picture.
- They learn think through ideas.

Holistic Cognitive Style

Holistic cognitive style is a cognitive style that involves the ability to see the big picture and the interconnections between different aspects of a problem or a situation. Branson (2022) defined holistic cognitive style as a cognitive style that focuses on the context of a situation and the relationships between the disparate elements of that situation. Holistic cognitive style is the ability to see things as a whole, to understand and predict the many different types of relationships between the many elements in a complex system and also perceive the whole picture through sensing its large-scale patterns. Holistic thinking requires letting the mind explore various solutions and wander through different possibilities (Abdul-Salau & Samiea, 2023). It encompasses a multitude of alternatives and choices, each of which could potentially lead to successful resolution of the problem by carefully selecting the most suitable and accurate solutions. Holistic thinking involves perceiving a situation or problem from various cognitive perspectives, such as critical and creative thinking. Holistic thinking is an ability that students possess, helping them shift from the traditional thinking model to a flexible, comprehensive way of solving problems they encounter (Abul-Salam & Samiea, 2023).

Olagbaju, (2020) observed that holistic or global learners view the task as a whole before proceeding to construct meaning. Pask (1988) in Olagbaju (2020) reported that holistic or global learners tend to adopt a global approach to learning that is, examining interrelationships between several topics early in the learning process and concentrating first on building a broad conceptual overview into which detail could subsequently be fitted. Similarly, Fleming (2005) in Olagbaju (2020) averred that holistic learners like to start with a big idea or concept, then go on to study and understand the parts. Learners in this category may likely seek to read and read but became frustrated, and then, they suddenly arrive at or identify the answers they were looking for. Holistic learners see the big picture first and constantly move between theory and real world right from the start. Holistic learners require lesser structure and fewer instructions to perform well in school tasks because they tend to glaze over material to pursue the big idea and this can be ineffective, especially during test or examination situations because those small details often shown up in test. The following are the distinctive characteristics of Holistic learners:

- Holistic learners dwell on information and make constant mental comparisons when they encounter new material.
- They like to compare new concepts to concepts they already know, even as they read, using mental pictures for smiles.
- Holistic learners are extrinsically motivated.
- Holistic learners are group oriented.

THEORETICAL FRAMEWORK

Liam Hudson's convergent and Divergent Thinking Model (1967)

Liam Hudson introduced two categories of cognitive or thinking styles: convergent cognitive styles and divergent cognitive styles. A person with a convergent cognitive style, termed as a converger, tends to do well with tasks with singular conventionally accepted solutions. A person with a divergent cognitive style, termed as a diverger tends to be able to respond well with tasks that permit multiple equally acceptable solutions (Bhatti & Bart, 2015). The convergent cognitive style is better oriented toward the completion of intelligence tests; whereas, the divergent cognitive style is better oriented toward the completion of open-ended cognitive tests.
The convergent cognitive style depends mainly on the dominant learning capacities of active experimentation and abstract conceptualization. Convergers take abstract ideas and actively experiment to find practical uses for the information by finding solution to the problems. They perceive abstractly and process actively. Students with this cognitive style are often superior in technical tasks and problems and inferior in social and interpersonal matters.

On the other hand, divergent thinking deals with the capacity to generate responses, to invent new ones, to explore and expand ideas. It is flexible thinking that leads toward the generation of many possible solutions with some possibly being novel and unexpected. Divergent cognitive style depends mainly on concrete experience and reflective observation. Divergers perceive concretely and process reflectively. Students with this cognitive style tend to organize concrete situations from different perspectives and to structure their relationships into a meaningful whole; they focus on adaptation by observation instead of by action. They like to use their imagination when solving problems. They are superior in generating alternative hypothesis and ideas. Convergent and divergent thinking styles are two different ways of problem solving. The rationale of this theory is that these cognitive styles help student to process information and to tackle problems differently in class.

METHODOLOGY

This study adopted a correlational research design. The study was conducted in Rivers State, Nigeria. Rivers State is located in the South-South geopolitical zone and is characterized by ethnic diversity, economic vibrancy, and a large population of school-age children. The state has 23 Local Government Areas and 311 public senior secondary schools distributed across riverine and upland communities. The focus of the study was on students in public senior secondary schools, who were considered suitable due to their literacy level and ability to respond accurately to research instruments.

The population of the study comprised 63,846 Senior Secondary School One (SS1) students drawn from 311 public senior secondary schools in Rivers State during the 2022/2023 academic session. The population consisted of 30,440 male and 33,406 female students across the 23 Local Government Areas of the state.

The sample size for the study was 480 SS1 students selected from twelve (12) Local Government Areas across the three senatorial districts of Rivers State. The minimum sample size of 400 was determined using Taro Yamane's formula; however, this was increased to 480 to enhance representativeness and robustness of findings.

A multistage sampling technique was employed. First, the state was stratified into three senatorial districts. Four Local Government Areas were randomly selected from each district. Five public senior secondary schools were then randomly selected from each Local Government Area. Finally, eight SS1 students were randomly selected from each sampled school to make up the study sample.

Two instruments were used for data collection is a self-structured questionnaire titled Divergent, Analytic and Holistic Cognitive Styles Questionnaire (DAHSQ) and the English Language Performance Test (ELPT). The DAHSQ was a self-structured questionnaire designed on a four-point Likert scale ranging from Very High Extent (4) to Very Low Extent (1). DAHSQ and ELPT consisted of 21 items each.

The instruments were validated by experts in Measurement and Evaluation, Educational Psychology, and English Language to ensure face and content validity. Reliability of DAHSQ instrument was established using the test-retest method and Pearson Product Moment Correlation, yielding coefficients ranging from .761 to .840 across sub-scales. The ELPT reliability was determined using Kuder-Richardson Formula 20, yielding a coefficient of .86. These values were considered adequate for the study.

The instruments were administered directly to the respondents with the assistance of teachers and research assistants after obtaining permission from school principals. All 480 copies administered were successfully retrieved. Simple linear regression analysis was used to answer the research questions and test the null hypotheses at the .05 level of significance. Data analysis was carried out using the Statistical Package for Social Sciences (SPSS) version 29.

RESULTS

Research Question One: To what extent does divergent cognitive style predict students' academic performance in English language in public senior secondary schools in Rivers State?

Hypothesis One: Divergent cognitive style does not significantly predict students' academic performance in English language in public senior secondary schools in Rivers State.

Table 1: Summary of Simple Linear Regression Model of Divergent Cognitive Style on Students' Academic Performance in English Language

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**		
1	.612[a]	.375	.370	3.1140		
ANOVA Associated with Simple Regression						
		Sum of Squares	Df	Mean Square	F-value	P-value
Regression		2721.1101	1	2721.110	69.384	.011[b]
Residual		18746.327	81	39.218		
Total		21467.437	82			

a. Dependent Variable: Academic Performance
b. Predictors: (Constant), Divergent Cognitive Style

Table 1 showed the model summary of divergent cognitive style on students' academic performance in English language in public senior secondary schools in Rivers State. The simple linear regression model gave a coefficient of .612, R^2 of .375 and adjusted R^2 of .370. This showed that divergent cognitive style accounted for 36% variation in the students' academic performance in English language in public senior secondary schools in Rivers State. This therefore implied that to a low extent, divergent cognitive style predicted students' academic performance in English language in public senior secondary schools in Rivers State.

The table also revealed the results of ANOVA associated with simple regression which yielded an F-value of 69.384 gotten at degree of freedom between 1 and 81 with its corresponding P-value of .011 which is less than the chosen level of significance ($p < .05$). The null hypothesis is rejected. It therefore, indicated that, divergent cognitive style significantly predicted students' academic performance in English Language in public senior secondary schools in Rivers State.

Research Question Two: To what extent does analytic cognitive style predict students' academic performance in English language in public senior secondary schools in Rivers State?

Hypothesis Two: Analytic cognitive style does not significantly predict students' academic performance in English language in public senior secondary schools in Rivers State.

Table 2: Summary of Simple Linear Regression Model of Analytic Cognitive Style on Students' Academic Performance in English Language

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**		
1	.776[a]	.602	.598	3.1315		
ANOVA Associated with Simple Regression						
		Sum of Squares	Df	Mean Square	F-value	P-value
Regression		2542.245	1	2542.245	83.224	.000[b]
Residual		14601.524	70	30.547		
Total		21467.437	71			

a. Dependent Variable: Academic Performance
b. Predictors: (Constant), Analytic Cognitive Style

Table 2 showed the model summary of analytic cognitive style on students' academic performance in English language in public senior secondary schools in Rivers State. The simple linear regression model gave a coefficient of .776, R^2 of .602 and adjusted R^2 of .598. This showed that analytic cognitive style accounted for 60% variation in the students' academic performance in English language in public senior secondary schools in Rivers State. This therefore implied that to a high extent, analytic cognitive style predicted students' academic performance in English language in public senior secondary schools in Rivers State.

The table also revealed the results of ANOVA associated with simple regression which yielded an F-value of 83.224 gotten at degree of freedom between 1 and 70 with its corresponding P-value of .000 which is less than the chosen level of significance ($p < .05$). The null hypothesis is rejected. It therefore, indicated that, analytic cognitive style significantly

predicted students' academic performance in English Language in public senior secondary schools in Rivers State.

Research Question Three: To what extent does holistic cognitive style predict students' academic performance in English language in public senior secondary schools in Rivers State?

Hypothesis Three: Holistic cognitive style does not significantly predict students' academic performance in English language in public senior secondary schools in Rivers State.

Table 3: Summary of Simple Linear Regression Model of Holistic Cognitive Style on Students' Academic Performance in English Language

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**		
1	.792[a]	.627	.621	3.1657		
ANOVA Associated with Simple Regression						
		Sum of Squares	Df	Mean Square	F-value	P-value
Regression		2981.1273	1	2981.127	84.463	.000[b]
Residual		16871.236	58	35.295		
Total		19852.363	59			

a. Dependent Variable: Academic Performance
b. Predictors: (Constant), Holistic Cognitive Style

Table 3 showed the model summary of holistic cognitive style on students' academic performance in English language in public senior secondary schools in Rivers State. The simple linear regression model gave a coefficient of .792, R^2 of .627 and adjusted R^2 of .621. This showed that holistic cognitive style accounted for 63% variation in the students' academic performance in English language in public senior secondary schools in Rivers State. This therefore indicated that to a high extent, holistic cognitive style predicts students' academic performance in English language in public senior secondary schools in Rivers State.

The table also revealed the results of ANOVA associated with simple regression which yielded an F-value of 84.463 gotten at degree of freedom between 1 and 58 with its corresponding P-value of .000 which is less than the chosen level of significance ($p < .05$). The null hypothesis is rejected. It therefore, shows that, holistic cognitive style significantly predicted students' academic performance in English Language in public senior secondary schools in Rivers State.

DISCUSSION OF FINDINGS

Divergent Cognitive Style and Students' Academic Performance

Table 1 of research question one shows that the extent to which divergent cognitive style predicts students' academic performance in English Language is low in public senior secondary schools in Rivers State; while the result of the corresponding hypothesis indicated that divergent cognitive style significantly predict students' academic performance in English language in public senior secondary schools in Rivers State.

The result of the present finding is in line with the study of Emery (2018) who found that divergent cognitive style was significantly related to academic performance in Biology of high

school students in Finland. This finding could be because the exploratory nature of divergent thinking can lead to difficulties in time management. Divergent students may spend too much time exploring various ideas and possibilities, potentially leading to procrastination and difficulty meeting deadlines.

Brown et al. (2020) supported that divergent cognitive style was significantly related to academic performance in physics of high school students in Turkey. This is probably because the tendency to explore various ideas can make divergent thinkers more prone to distraction. They might find it challenging to stay focused on a single task or topic, which can hinder their ability to complete assignments and study effectively, thereby affecting their over performance.

Okafor (2022) also revealed that divergent cognitive style was significantly related to academic performance in English Language of secondary school students in Abia State. This could be probably because divergent thinkers might focus creative ideas at the expense of details. This can result in careless mistakes or incomplete work, especially in subjects that require meticulous attention to detail.

Analytic Cognitive Style and Students' Academic Performance

Table 2 of research question two shows that, the extent to which analytic cognitive style predicts students' academic performance in English language is high in public senior secondary schools in Rivers State; while the result of the corresponding hypothesis indicated that analytic cognitive style significantly predict students' academic performance in English language in public senior secondary schools in Rivers State.

This finding is in accordance with the study of Amadi and Nnachi (2020) who found that analytic cognitive style was significantly related to academic performance in Biology among secondary school students in Imo State. This result of the present study could be because analytic thinkers often develop effective study habits, such as organizing their study material, creating detailed notes and systematically reviewing content, which in turn leads to overall academic performance of students.

Reuben (2021) also revealed that analytic cognitive style significantly related to academic performance in Mathematics among secondary school students in Abia State. This is because the systematic approach of analytic thinkers leads to consistent academic performance. Their reliance on logic and detailed analysis ensures steady and reliable results across different subjects and assessments. Maduabum (2022) also recorded that analytic cognitive style was significantly related to academic performance in Mathematics among secondary school students in Enugu State. This finding is probably because analytic students are meticulous and pay close attention to details, which can lead to higher accuracy in tasks that require precision.

Holistic Cognitive Style and Students' Academic Performance

Table 3 of research question three shows that the extent in which holistic cognitive style predicts students' academic performance in English language is high in public senior secondary schools in Rivers State; while the result of the corresponding hypothesis indicated that holistic cognitive style significantly predict students' academic performance in English language in public senior secondary schools in Rivers State.

The finding is in agreement with the study of Nwankwo (2018) who revealed that holistic cognitive style significantly influence academic performance among secondary school students

in English Language in Rivers State, which is consistent with the present study. This could be probably because students can integrate knowledge from various fields to form a cohesive understanding, which promotes academic performance of students.

Gravetter and Wallnau (2022) also supported that holistic cognitive style significantly relate to academic performance in Mathematics among high school students in India. This result is because holistic learners often find learning more engaging and motivating when they can see the relevance and interconnections of the material. This intrinsic motivation can lead to deeper engagement and sustained interest in their studies.

Fisher (2022) also collaborated that holistic cognitive style significantly influenced academic performance in Mathematics among high school students in Canada. This could be because holistic thinkers can communicate complex ideas clearly by relating them to broader concepts and making connections that others might overlook. This skill enhances their ability to write comprehensive essays, deliver impactful presentations and engage in meaningful discussions.

CONCLUSION

This study has successfully investigated the influence of divergent, analytic and holistic cognitive styles on students' academic performance in English language in public senior secondary schools in Rivers State. Academic performance in English language remains a critical measure of students' learning outcomes in public senior secondary schools. This study highlighted that learners' cognitive styles vis-à-vis divergent, analytic and holistic play a significant role in shaping how students engage with and process instructional content. Divergent learners tend to excel in creative and open-ended tasks, analytic learners in structured and detail-oriented exercises, and holistic learners in understanding the overall meaning and context of texts. The findings underlined that traditional teaching method, which often emphasizes a single mode of instruction, may not effectively address the diverse cognitive preferences of students, potentially limiting academic achievement.

Therefore, integrating teaching strategies that accommodate multiple cognitive styles can enhance engagement, comprehension and overall performance in English language. Recognizing and leveraging the strengths associated with different cognitive styles is essential for promoting inclusive learning, improving student outcomes, and fostering educational equity in public senior secondary schools.

Recommendations

Based on the findings, discussion and conclusion of this study, the following recommendations are made:

- There should be open-ended questions, creative writing and projects that allow for multiple solutions and innovative approaches that encourage divergent thinkers to think outside the box.
- Teachers should provide detailed and structured learning materials for analytic thinkers. Worksheets, step-by-step guides, and systematic presentations of information can help them understand complex concepts more clearly.

- Holistic approaches such as thematic learning, integrated lesson plans and concept maps should be used by teachers for holistic thinkers. This will help them see the bigger picture and understand how different pieces of information connect.

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