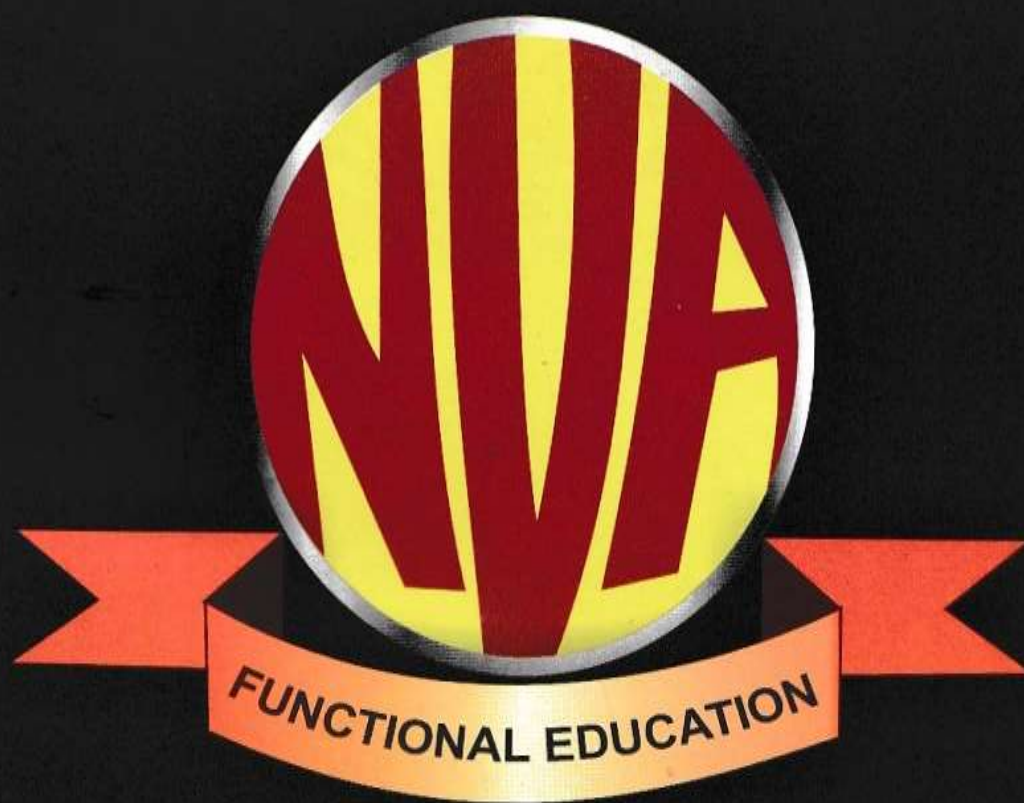


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# COGNITIVE STYLES AND CAREER DEVELOPMENT IN PREPRIMARY AND PRIMARY SCHOOLS

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## Abstract

*This paper focuses on cognitive styles and learning outcomes in vocational education in Creative Arts in primary schools in Owerri Municipal. It explains the concept of career and vocational education in primary schools. Theoretical foundation of career development in primary schools was explained, the concept of cognitive styles was also highlighted, three hypothesis were formulated and a sample of 98 pupils were drawn through random sampling and cluster technique from 1000 pupils in five schools in Owerri Municipal. Three standardized instruments were used for the study the Hemisphere Dominance Inventory Test, (HDIT), the Matching Familiar Figure Test (MFFT) and the Torrance Test of Creative Thinking (TTCT), these instruments were re-evaluated and found to be valid. They were also found to have a reliable coefficient of 0.61, 0.72 and 0.75 respectively. Data collected were analyzed using Pearson product moment correlation analysis. The result revealed that pupils with Right hemisphere dominance cognitive style perform best in career /vocational development in Creative Arts. The result showed no significant gender influence on pupils' vocational achievement in Creative Arts, given the pupils cognitive style status. Conclusion and recommendation were made based on the findings. Among the recommendations made were that formulation and implementation of effective vocational education curriculum in pre-primary and primary education and the provision of professional technical and vocational guidance counseling service in pre-primary and primary schools.*

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## Introduction

Children of the 21<sup>st</sup> will be seeking careers in an environment characterized by change, chance and uncertainty. Preparation of young children to contribute to a complex technologically advanced and quickly changing society must commence in the early years. While the early years are not an appropriate time to encourage pupils to identify in any way with a specific career, it is a time when schools and teachers can start painting the pictures of productive and satisfying work in the future. In particular, it is a time when the vision of the world of work

can be created, when foundation for work related values, interest, competence, generic employment related skills and career perceptions can be formed and nurtured. Researchers have suggested that the critical period or the sensitive period or age at which individuals narrow their occupational alternatives is between six and eight and once these limits are set, individuals will rarely consider broader alternatives (Mc Mahon, Carroll & Gillies, 2001). Super (1980) identified the age before 14 years as the tentative period in which children start thinking about careers and themselves.

Ginzberg (1996) has stated that children in the early school years use fantasy in their play to act out a variety of adult roles without risk and have fun doing it. Between age 9 and 13 children enter into a second phase of circumscription, in which they begin to rule out occupations requiring effort beyond their general ability level (Gottfredson, 2002)

### **The Concept of Career**

The concept of career, vocation and occupation was used interchangeably and synonymously by Parson (1909) to mean a variety of occupational roles which an individual will undertake throughout life. It involve both paid and unpaid self employment; the different occupation which a person may have to undertake over the years and period of unemployment. Super (1976) defined career as the sequence of major positions occupied by a person throughout his pre-occupational, occupational and post occupational life.. Alternative terms like working lives, work histories are used to denote sequence of job experiences. Career development is one aspect of continuing process of growth and learning. Maturity in a vocational sense involve coping with the developmental tasks of a given life stage. Bright (2006) suggested that the age at which individual come to maturity and narrow their occupational alternatives is between six and eight years and once these limit are set, the child will rarely consider broader alternatives Super,(1990) conceptualized vocational education as a dynamic and continuous process that begins in childhood, and intensified during adolescence and changed throughout adulthood. Many researchers have found correlation between cognitive styles and vocational preferences. Holland (1997) has suggested that people who showed different aptitudes, beliefs, interests, abilities and competences have different cognitive styles that reflect the choice of occupation and career decision and motivation. Choices of career are conceptualized as an expression of the individual's cognitive styles and self concept. Vocational success and satisfaction is

determined by the individual's effort to implement the match between cognitive style and self concept. Many researchers have suggested that individuals prefer to choose from occupations which allow them to process information in their most preferred mode of solving problems and to implement their self concept and develop their personalities. This implies that the decision of what occupation one may decide to choose depends on his list of interests, abilities, values, beliefs, competences, which are major components of the self concepts. Many studies have revealed relationships between cognitive styles and the process of implementation, adjustment, job awareness, explorations, preparation and placement on vocational choices. Children whose initial academic choices or vocational choice were congruent with their cognitive style and self concept tend to have matured job adjustment and career satisfaction. For this children, dropping out and changing vocations were significantly lower than those who made inconsistent choices. This suggests that a cognitive style was a better predictor of career choice and vocational interests.

Super (1990) theory view career development as a lifelong process encompassing developmental tasks for the child as he negotiates the personal construction of self and the self in relation to the world of work (Herr and Cramer, 2004). Super posited that children progresses through life stages of career development; growth, exploration, maintenance and disengagement.. Super (1990) maintained that the choice of career is influenced by the by the conditions that emerge in one's early life. According to super, career choice and development is essentially a process of developing and implementing a person self concept. Self-concept is a major factor influencing career choice and development in the pre-primary and primary schools. It is the underlying force that energizes, direct and sustains behavior. It is a stable generalized or average view of self. It is composed of sets of images, schemes and prototypes the child hold of himself which

motivate his job behavior. Sears (1995) has suggested that development of efficient knowledge, skills, and attitudes could be achieved through a planned program of learning, experiences and activities in primary education and training settings which will assist pupils to make informed decisions about work options and enable effective participation in working life. Career development in pre-primary and primary schools provide a constellation of psychological, sociological, educational, physical, economic and chance factors that when combined will help shape the child career behavior in future (Herr, 2001). Career development in pre-primary and primary schools will help align and match the child subjective needs, characteristics with the needs and demands of organizations, it involves matching the interest, needs, aspirations and circumstances and roles of both the individual child and the organization (Richardson, 1993). The child undergo a series of lifelong process aimed at preparing and getting him ready to choose, choosing and typically continuing to make choices from among the many occupation available in the society. The major purpose of pre-primary and primary school career training is to involve children in career decision making beginning from childhood, providing experiences which will facilitate the broad goals of vocational maturity.

The Federal Republic of Nigeria (2004) defined Technical and Vocational education as a comprehensive term referring to those aspects of educational process involving in addition the general education and study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic and social life. Technical and vocational education is further understood to be

- (a) An integral part of general education
- (b) A means of preparing for occupational fields and for effective participation in the world of work

- (c) An aspect of lifelong learning and preparation for responsible citizenship
- (d) An instrument for promoting environmentally sound sustainable development
- (e) A method of alleviating poverty

The rationale for vocational education in elementary schools is the growing unemployment among better educated segment of the society and the cry among young people for education that has personal relevance. This has caused the re-examination of the role of vocational education in the pre-primary and primary schools to adequately assist young people with career planning and decision making.

Pre-vocational and Technical preparatory training are therefore aimed at

- (a) Introducing the child into the world of technology and appreciation of interest and choice of vocation.
- (b) Acquiring vocational and technical skills
- (c) Exposing children to career awareness by exploring options in the world of work.
- (d) Enabling the child to have an intelligent understanding of the increasing complexity of vocation in science and trade

Cognitive style is an individual factor that affect vocational decision making. Career decision or choice a child make may be determined by the information processing style of the child. This also is important in determining the academic achievement in Creative Arts. Cognitive style is referred to as the child's most preferred consistent mode of perceiving and processing. Information over time in intellectual, effective and physical function (Hayes and Allinson, 1994) there are several individual differences in cognitive styles that may relate to achievement in vocational education in Creative Arts. One of such differences is differences between the right-left hemisphere dominance cognitive styles. Sperry (as cited in Agulanna and Nwachukwu, 2001) posited in his split-brain model of intelligence that the brain is divided

into two hemisphere, each with different specialized intellectual functions. Torrance (1982) defined hemisphere dominance as a cognitive style dimension of how one processes information based on the differential capabilities of the right and left (cerebral) hemisphere of the brain. Hemisphere dominance is the tendency for a child to rely more on one hemisphere more than the other in processing of information and solving of problems. It also refers to as preferred mode of cognitive processing in which the predominant activity was either processed from the right or left brain. Hemisphere lateralization commonly called right brain-left brain is the specification of intellectual function between the right and left brain. The left brain hemisphere pupils are those whose right neurological learning style is significantly weaker than their left hemisphere. Left brain hemisphere pupils are those who significantly scored very strong on left brain vocational preference test in Creative Arts, who have a weak score on the right hemisphere preference test on Creative Arts. While the right hemisphere dominants are those pupils whose left neurological processing style is significantly weaker than their right psychological style, they are those who significantly scored very strong on a right brain vocational preference test on Creative Arts, who have a weak score on the left hemisphere vocational preference test in Creative Arts ( Favor, 2013).

### **Statement of the Problem**

Teaching and learning in the preprimary and primary school level does not reflect career awareness were children experiences and learn about themselves and what they enjoy doing most (interest), what they can do practically well (abilities) and learn what is important to them (value). Children in the preprimary and primary schools are not exposed to learn about the world of work, what job are available in the community, job parents and significant others do, what tasks are inherent in these different types of job, the tools, materials and activities associated with particular type of job

and how it is related to their cognitive styles. Children are not given the opportunity to explore and investigate the different types of careers that are of interest to them, learn the skills that are required of a career and how to develop the knowledge , skills , abilities and attitudes to enter specific career field that appeal to their information processing style. Children are not given the career preparation in the preprimary and primary school that enable them gather information and knowledge that would be needed in succeeding in future career, refine their job competences, attitudes , abilities values.

### **Purpose of the Study**

The purpose of this study is to investigate the relationship between cognitive style and vocational development in Creative Arts among primary five pupils in Owerri Municipal Local Government Area of Imo State.

Specifically, the study is designed to:

1. Determine the relationship between right hemispheric dominance cognitive style and career achievement of pupils in Creative Arts.
2. Examine the relationship between left hemispheric dominance cognitive style and career achievement of pupils in Creative Arts.
3. Examine the relationship between impulsive cognitive style and career achievement of pupils in Creative Arts.

### **Research Hypothesis**

1. There is no significant relationship between right hemisphere dominance cognitive style and pupils' career achievement in Creative Arts.
2. There is no significant relationship between left hemisphere dominance cognitive style and pupils' career achievement in Creative Arts
3. There is no significant relationship between impulsivity cognitive style and pupils' career achievements in Creative Arts

**Methodology**

The research design adopted for this study is Expost Facto design. A total 98 pupils were randomly drawn from 1000 pupils from five private primary schools in Oweerri Municipal of Imo State. Three instruments were used for this study. All the instruments used in this study were standardized instrument, but were reevaluated to ascertain their construct and content validity in accordance with the procedure set out in the technical manual to make sure that the instruments measure what they intended to measure. The Hemisphere Dominance Inventory Test (HDIT) was used to determine the scores of the right hemisphere and the left hemisphere dominance pupils, while the Matching Familiar Figure Test (MFFT) was used to determine the impulsive

pupils. The Torrance Test of Creative Thinking was used to determine the achievement scores of the three group. A test-retest method was used to determine the reliability of the three instrument, and they were found to have a reliability coefficient of 0.61, for the HDIT, 0.72 for the MFFT, and 0.75 for the TTCT. The data were analyzed using Pearson product moment correlation analysis.

**Results**

**Null Hypothesis One**

There is no significant relationship between right hemisphere dominance cognitive style and pupils’ career achievement in Creative Arts.

**Table 1:** Pearson Product Moment Correlation Analysis Between Right Hemisphere Cognitive Style and Achievement of pupils in Creative Arts

(n=98)

Variables	n	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r cal	r cri	Decision
Right hemisphere	38	2429	32617	96276	0.61	0.16	*
Achievement		7141	299063				
Left hemisphere	35	2206	28396	74058	-0.43	0.16	*
Achievement		5941	223151				
Impulsivity	25	787	4821	15303	-0.15	0.16	*
Achievement		3337	83215				

Significant at .05: df 95; critical r =0.16

As shown in Table 1, the calculated correlation value (r) between the right hemisphere and academic achievement in Creative Art is (0.61) greater than the critical correlation value (0.16). Therefore, the null hypothesis is rejected. This implies that there exists a significant relationship between the scores of pupils with right hemisphere cognitive style and their achievement scores in Creative Arts. This also suggests that there is a direct relationship between right hemispheres

cognitive style and achievement in Creative Arts, and as the scores on right hemisphere increases, achievements in Creative Arts increases.

**Null Hypotheses Two**

There is no significant relationship between left hemisphere dominance cognitive style and pupils’ career achievement in Creative Arts

**Table 2:** Pearson Product Moment Correlation Analysis between Right Hemisphere Cognitive Style and Achievement of pupils in Creative Arts

(n=98)

Variables	n	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r cal	r cri	Decision
Right hemisphere	38	2429	32617	96276	0.61	0.16	*
Achievement		7141	299063				
Left hemisphere	35	2206	28396	74058	-0.43	0.16	*
Achievement		5941	223151				
Impulsivity	25	787	4821	15303	-0.15	0.16	*
Achievement		3337	83215				

Significant at .05: df 95; critical r =0.16

Table 2 shows a calculated correlation value (-0.043) between the left hemisphere cognitive style and achievement in Creative Arts, greater than the critical correlation value (0.16). Therefore, the null hypothesis is rejected. This suggests that there is a significant inverse relationship between left hemisphere dominance cognitive style and achievement in

Creative Arts, and as the scores on the left hemisphere cognitive style increases, achievement in Creative Arts decreases.

**Null Hypothesis Three**

There is no significant relationship between impulsivity cognitive style and pupils' career achievements in Creative Arts

**Table 3:** Pearson Product Moment Correlation Analysis Between Right Hemisphere Cognitive Style and Achievement of pupils in Creative Arts

(n=98)

Variables	n	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r cal	r cri	Decision
Right hemisphere	38	2429	32617	96276	0.61	0.16	*
Achievement		7141	299063				
Left hemisphere	35	2206	28396	74058	-0.43	0.16	*
Achievement		5941	223151				
Impulsivity	25	787	4821	15303	-0.15	0.16	*
Achievement		3337	83215				

Significant at .05: df 95; critical r =0.16

Table 3 reveals that the calculated correlation value between impulsivity and pupils achievement in Creative Arts (-0.15), this is less than the critical correlation value (0.16). Therefore, the null hypothesis cannot be

rejected but accepted. This implies that there is no significant relationship between the scores of pupils with impulsivity cognitive style and their achievement in Creative Arts. This also suggests that as the scores on impulsivity

decreases. achievement in Creative Arts also decreases.

### **Discussion of Findings**

As shown in Table 1, the calculated correlation value ( $r$ ) between the right hemisphere and academic achievement in Creative Art is (0.61) greater than the critical correlation value (0.16). Therefore, the null hypothesis is rejected. This implies that there exists a significant relationship between the scores of pupils with right hemisphere cognitive style and their achievement scores in Creative Arts. These results have been supported by Agulanna & Nwachukwu (2001) who explained that right brain dominance child is associated with expressive and creative abilities. Such a child tended to perform better in creativity, visual spatial tasks, tasks involving images, intuitions, color, face and object recognitions, expression of emotion and body language. Such a child characteristically processes information holistically from whole to part. He tends to see the big picture first rather than in details. Such a child also has the tendency to process information randomly and can move from one task to another. He is color sensitive and tends to benefit more from making list, schedules and reading graphical directions.

Another explanation for this result is that provided by Baddely and Hitch (1974) who suggested that pupils with right hemisphere dominant cognitive style tend to progress successfully on careers that require attitudes, interest, values, talents, and competent that make use of the visual-spatial sketchpad, the component of the working memory that is responsible for processing visual information. The right brain hemisphere is the centre of the brain where every visual information is been directed and processed. A child with right brain hemisphere is very superior at processing visual information than a child with left hemisphere. The visual-spatial sketchpad is referred to as the mind's eye. It controls mental and visual images and imaginations, create visual and mental images of objects and

events. A right hemisphere dominance child would be at advantage in using the visual-spatial sketchpad to imagine possible configurations or structures of an object, and to anticipate possible features of the visual objects. The organization of the visual information is done here in the visual-spatial sketchpad.

Gallahue and Ozmun, (2006), and Ewelusor (2008) have stated that movement control skills of the fine motor may significantly inhibit or enhance the academic achievement of pupils in primary schools. A child who is constrained or restricted by motor movement due to hemisphere dominance tends to have difficulty performing primary motor tasks, and this may affect achievement in Creative Arts. Steinberg (2005) explained that the right side of the brain is superior when it comes to control of movement skills. This has direct relationships with drawing in Creative Arts. According to Jensen (2008), a right hemisphere dominant child tends to excel in visual-perceptual tasks. According to Jensen, perceptual motor tasks requires adaptive control of fine motor activities that involves psychological processes like perception, planning, decision making, memory, intention, motivation and goal, Such adaptive skills are connected with physical growth and development of the fine motors. Clark (2007) has stated that motor actions are always embedded and embodied in the right hemisphere of the brain. Moore and Persaud (1993) concluded that academic achievement in Creative Arts may be dependent on the hemisphere dominance capabilities of the child. According to these researchers, size, shapes, mass, compliance, strengths, flexibility and coordination of the various parts of the body and movement patterns of the fine and gross motors can be a facilitator or a constrain to academic achievement. This constraint on the left hemisphere proved a challenge on motoristic tasks. Contemporary researchers in perceptual motor development have stated that right hemisphere dominants have the capacity for eye-hand coordination and can guide the



movement of the fine and gross motor prospectively and adaptively ( Adolph and Berger, 2005 ). This biomechanical constraint on motor action affect the forces required to produce the desired outcome in Creative Arts. Children must perceive objects visual-spatially, manipulate such objects with their fine motor graphically in drawing.. This inter-reliance between perception and fine motor action is so important for the effective and efficient drawing in the Torrance Test of Creative Thinking (TICT) (Bertenthal and Clifton, 2007)

Table 2 shows a calculated correlation value (-0.043) between the left hemisphere cognitive style and achievement in Creative Arts, greater than the critical correlation value (0.16). Therefore, the null hypothesis is rejected. One major explanation for this result is the one given by Ewelusor (2008) that a child with left hemisphere dominance brain have easy control of logical and analytical operations while the right brain hemisphere controls holistic intuitive and pictorial activities. Cognitive style is thus aimed to be a style dimension on a scale from extreme right-brain to extreme left brain depending on which intellectual, affective and physical associated behavior dominates in the individual and by how much, a left hemisphere dominance child tends to be adept at tasks involving logic, language and analytical thinking. He has the tendency to perform better in tasks involving numbers, algebra, logic, language and reasoning. Characteristically, he processes information in linear manner and tend to work from part to whole. He has the capacity to arrange information in logical and sequential order and has no difficulty in following verbal description and direction and processing of symbols. He tends to effectively and efficiently memorize vocabulary and formulas, and perform better in linguistic and mathematical tasks. Left hemisphere dominance child tend to process information logically, step- by- step and use information piece by piece to get at the right answer and make sure he explain how he arrives at the

answer to a problem. He has the capacity to make decisions and conclusion based on logical proof. Left hemisphere dominance tend to have the capacity for deductive reasoning and can engage in propositional thinking. Baddeley and Hitch (1974) have further stated that the phonological loop is that part of the working memory that is used to keep and process verbal information. The left brain hemisphere is the centre where every verbal or auditory information are directed and processed. A left brain hemisphere dominance child is superior at processing verbal information, or anything spoken language. Such a child is highly language oriented than the right hemisphere dominance child. The phonological loop has two parts; the inner ear and the inner voice. The two parts are directly concerned with the perception and processing of verbal information. It is here that verbal information are rehearsed, sustained and organized in the working memory. A left hemisphere dominance child has the capacity to repeat certain names, object, formulas, rules, names of places or thing and events. Such a child has the tendency to retain auditory information effectively and efficiently in the short-term memory. While the inner voice repeats the words or the name of objectives, events of things the inner ear hears and retain them. This loop helps the child to rehearse, organize and chunk verbal information for recall.

Table 3 reveals that the calculated correlation value between impulsivity and pupils achievement in Creative Arts (-0.15), this is less than the critical correlation value (0.16). Therefore, the null hypothesis cannot be rejected but accepted. The reason for this result has been given by Favor (2013) who explained that the impulsive pupils are those with shorter latency who makes much mistakes. These children have the tendency to act with urgency, lack of premeditations, perseverance and sensation or thrill- seeking. They erratically and poorly, control their behavior. An impulsive child has the tendency to act on a whim, with little or no forethought,

reflection, or considerations of consequences which occurs in response to a perceived immediate gain or benefit. Such a child poorly conceives, prematurely expresses his reactions to problems situations, this is unduly risky, and may be inappropriate to the situation that often result in an undesirable consequences, which endanger long term goals and strategies for success. An impulsive child is characterized by inability to attend, process, store and manipulate information, to plan and assess different options and the incapacity to translate thought into action. An impulsive child tends to respond impulsively to a situation without sufficient foresight and is quick to offer solutions to problems, without sufficiently considering the probable accuracy of the outcome of the solution. An impulsive child have the tendency to select smaller immediate gains in preference to a larger delayed gains, he has the tendency to select a larger delayed penalties in presence to smaller immediate penalties. An impulsive child would take a smaller immediate available reward instead of a greater but not immediately available reward. An impulse child tends to have decrease sensitivity to negative consequences with rapid, unplanned reactions to stimuli before information process is completed. He lacks regard for long-term consequences. An impulsive child tends to have the inability to resist impulses, drive or temptation to perform an act that may be harmful to the child or others. An impulsive child is full of adventure, risky life, and quick in decision making.

### **Recommendations**

Based on the findings of the study, the following recommendation are made

1. Parents should provide positive career models that are compatible with the child cognitive style and should provide play materials that facilitate the behavioral traits, attitudes and values and competence of their children, they should be keen to discuss the career development issues with their children

2. Preprimary and Primary School curriculums Planners should base their vocational development goals and objectives on the theories of career awareness, exploration and preparation.
3. Preprimary and Primary Schools should employ and train professional vocational and career counselors .They should also provide career library and concrete materials for children exploration and preparation for future career
4. Schools should organize annual career exhibitions for pre-primary and primary schools, where various occupational groups, civil servants as well as industries and private firms will be encouraged to showcase or exhibits their function. Resource persons should be invited to clarify certain issues about a particular career.. Schools should also periodically organize career visits and excursions to many firms and industries.
5. Preprimary and primary school teacher or care givers should adopt teaching method delivery that will accommodate the diverse cognitive styles in the classroom. Teaching methods and instructional materials should be designed to accommodate the visual and the auditory learner
6. The left hemisphere of the brain is where the academic activities occur, and the teaching methods employed include lecture, demonstration and textbook narrative which are only minimally impacting on the right brain and learning. The frequent use of such instructional strategies in the classroom often challenges the right brain dominance. Teachers should make adequate accommodation for the right brain children by making available teaching method that match with their cognitive style.

### **Conclusion**

Based on the findings of the study it can be concluded that cognitive styles have important influence on the career choice of the child. The right hemisphere dominance cognitive style performed best in Creative Arts; pupils with left hemisphere dominance cognitive style are

adept at language and logical thinking. Children cognitive style be identified and encouraged in the primary school, their interest, abilities, values and areas of competences should be strengthened in the primary schools

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