



IMPACT OF FIELD INDEPENDENT / DEPENDENT COGNITIVE STYLE ON NUMERICAL SKILL AND VOCABULARY OF FLEDGLING: AN EXPLORATORY APPROACH

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Abstract

Cognitive Styles being stable personality pattern are the distinctive learners' attitude, strategies for information processing, typical mode of thinking and uncovering new concepts. The present inspection investigates the impact of most well-known style field-dependent and field-independent cognitive style on numerical skill and vocabulary. In this venture, 200 college students (including both male and female) were non-randomly selected who responded to Embedded Figures Test for forming groups. The data analysis conducted by using t-test unearthed that field-independent students are significantly better than field-dependent pupils in numerical skill and vocabulary.

Keywords: Cognitive Style, Field Dependent/ Independent Cognitive Style, Numerical Skill, Vocabulary

Introduction

Academic skill can be defined as leading out of the in-born powers and potentialities of an Individual in the society and the acquisition of definite skills, aptitudes and competences necessary for self-realization, self-integration, self-management and coping with life's problems. Those skills, not only expected to acquire knowledge, but utilizing it one can demonstrate those worthwhile qualities, characteristic of educated men. A skilled person demonstrates his knowledge by what he can do visually, verbally or through giving a written document. Embedding academic skill development into general course activities and supportive materials are beneficial. The advantages of embedding activities into the focused course materials are helpful for a large number of students, especially to gain an understanding of the specific discipline concepts. This kind of processing goes hand-in-hand with their academic skills.

The base premise of our approach is that skills are most appropriately viewed as multivariate construct. Among the numerous factors of academic skills, numerical skill and vocabulary have been considered as two of the most important skill.

The term "numeracy" is used in the adult education community to include an array of mathematically related proficiencies that are evident in adults' lives and worthy of attention in adult education settings. It is the ability to reason and to apply simple numerical concepts consists of comprehending fundamental arithmetic like addition, subtraction, multiplication, and division (Brooks, 2010). Along with the mentioned, numeracy also include number sense, operation sense, computation, measurement, geometry, probability and statistics. To create the world-class employees in the imminent years, students need to master the knowledge of Mathematics and Science at its ideal level. Mathematics is a subject that is difficult to learn (Isahak Haron, 2001). Secondary school students are afraid and have negative thought about Mathematics because it is difficult to understand the related concepts and to gain mastery over it (Ng See Ngean (1992). In his study, he found that 50% of the secondary school students hated mathematics because it is difficult and unattractive. Research revealed that one reason for the failure of students in mathematics at a formidable rate other than intelligence and motivation were their cognitive styles (Kim 1996). Students' cognitive styles which do not match with teaching method can lead to students failing (Witkin and Goodenough, 1977; Norlia Abdul Aziz and colleagues, in 2006).

Vocabulary skill is a crude example of crystallized intelligence in Psychology. It reflects a definite set of familiar words in a person's organized knowledge structure. Such skill facilitates both knowledge acquiring as well as communication processes of an individual. Cambridge Advanced Learners Dictionary denotes that vocabularies are "all the words known and used by a particular person". Laufer and others (2004) advocated that vocabulary knowledge is known as knowledge of the word. Eminent researchers in this concern divide, renowned vocabulary knowledge within the scope of its use in either the skills of writing, reading, listening and speaking. Thus, they disunited vocabulary knowledge into productive and receptive vocabulary (Laufer, 1998; Laufer & Paribakht, 1998; Henriksen, 1999; Nation, 2001; Schmitt, 2014). However, Harmer (2001) has hinted that knowledge of vocabulary to the active vocabulary which students can use and call it orally. While a passive vocabulary of words known by learners through recognition, but they cannot call and produced through writing. Henriksen (1999) divided the knowledge of vocabulary into three dimensions, (a) a partial trend towards the right dimensions that reflect the level of meaning and understanding; (b) the depth dimension, such as the construction of the system showing the relationship between words; and (c) receptive-productive dimension that shows the learner control and access to knowledge about the word.

Vocabulary knowledge is a benchmark of proficiency in writing, reading, listening and speaking. In fact, knowledge of vocabulary dominated a student influences the quality of their writing (Engber, 1995; Milton, 2013; Park, 2012; Staehr, 2008) and shows that students need to master the meaning of the word and its use in the context of writing skills (Chen et al. 2012).

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Field Independent Dependent Cognitive Style: Import of Impulsivity and Nature of Family

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Abstract - This is an explorative study that investigated the impact of impulsivity and nature of family on field independent and dependent cognitive style of college students. Initially a pilot study was conducted to adapt certain items of the UPPS Impulsive Behavior Scale following purposive sampling. Other than this Embedded Figure Test was used. In the principal work 200 college students were taken through quota sampling. Research questions were answered using frequency and mean. Hypotheses were test using chi-square and t-test. A significantly higher proportion of field independent students are non-impulsive while on the other hand a higher proportion of field dependent respondents are impulsive. The findings further revealed that nature of family not momentarily contribute to the measures of field independent/ dependent cognitive style.

Keywords: impulsivity, nature of family, field independent/ dependent cognitive style

I. INTRODUCTION

Cognitive style is coined by Bahalola (1989) as the control process or style that is conscious, self-generated, situationally determined, transient activity that a learner uses to organize, receive, regulate, and transmit incoming information. One of the most extensively explored cognitive style construct is Field dependent-independent cognitive style. Witkin & Goodenough (1981) viewed this construct as one of the most significant factors. The concept was first introduced by Witkin and his associates in 1954. According to Witkin and Goodenough (1981), field independent people are able to abstract an element from its context, or background field. Field independents tend approach problems in a more analytical way. Field dependent people, on the other hand, are more likely to be better at recalling social information such as conversation and relationships. Field dependences have a tendency to approach problems in a more global way by perceiving the total picture in a given context. Field independent (FI) individuals are generally follow hypothesis-testing approach during the processing of information. After analysis they impose structure in an inherently chaotic field. Their attention directed on task-relevant information, while ignoring the distracters. Having greater disembedding ability in perceptual functioning, they can extract elements from its complex background. They enjoy better cognitive restructuring than the field dependent individuals (Jones, 1993). They maintain more distance while communicating with others, are less sensitive to social cues, and have been characterized as being demanding, inconsiderate, manipulative, cold and distant in relationship (Witkin & Goodenough, 1981). Field dependent (FD) individuals are generally passive in perceiving information and consider the structure of a field as it really exists. They are less

flexible in their search strategies, and are failure to consider the relevant cues. They require more explicit instructions and feedback under taking problem solving tasks, fond of more detailed descriptions about the instructional goals and objectives and enjoy more external reinforcement than the field independent learners (Witkin et al., 1977).

To the best of our knowledge, there is a dearth of adequate exploration on field independent / dependent cognitive style as a dependent variable and can be influenced by other personality factors like impulsivity. Impulsivity is an important, multi-factorial psychological construct (Evenden, 1999), appears almost every major system of personality. Depue and Collins (1999) note, "impulsivity comprises a heterogeneous cluster of lower-order traits that includes terms such as impulsivity, sensation seeking, risk-taking, novelty seeking, boldness, adventuresome, boredom susceptibility, unreliability and unorderliness." It is also assumed in the present endeavor that the way of processing information can be varied according to the brought up of an individual. Hence, a supposition has also been made on a relatively less explored arena on field independent/ dependent cognitive style as contingent on nature of family. With these reasoning behind, we derive the following empirically testable hypotheses:

H1: There is no effect of impulsivity on Field independent/ dependent cognitive style of the students.

H2: There is no effect of nature of family on field independent/ dependent cognitive style of the students.

II. METHOD

Sample:

Pilot study: A purposive sample of 10 university teachers (having at least 5 years of experiences), from different

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Abstract - Cognitive Style is the way that people see the world around them and interact with it. Like a stable personality pattern is the distinctive learners' attitude, strategies for information processing, typical mode of thinking and uncovering new concepts. The present endeavor explores the impact of most well-known cognitive style field-dependent and field-independent cognitive style on word fluency and writing speed. In this vista of search, 200 college students (including both male and female) were non-randomly selected who responded to Embedded Figures Test for forming groups. The data analysis conducted by using t-test unearthed that field-independent students are significantly better than field-dependent pupils in both word fluency and writing speed.

Keywords: cognitive style, field dependent/ independent cognitive style, word fluency, writing speed.

I. INTRODUCTION

The innate power of youth is the inordinate wealth and strength of a nation. The booming future of a nation erected in the hands of its posterity. Hence the present vista of search viewed on academic skills like word fluency and writing speed of the youth revolves. Word Fluency is the cognitive and neuro-psychologically widely used construct is the ability to use word accurately, quickly, and with proper expression. It is the speed language – not only the speedy delivery of words. Hence, it is a capacity to list words swiftly in specific classifications. The processing of this ability starts at the early childhood stage while a young learns spelling and is closely linked with fluid intelligence (Roca et al., 2012). Researchers hint that regarding verbal fluency, accurate and automatic word recognition processes are involved in this skill. In American Psychometrician Louis Thurstone (1938), while theorized the construct intelligence consists of seven primary mental abilities and word fluency is one of them. He mentioned that it is the ability to find and use words readily in communication. This word generation task is related with frontal and temporal lobe areas. The contribution of the former being more important in the phonemic variant and the latter in the semantic variant (Baldo and others, 2006). Multiple brain regions are critically involved in this task like, fluency performance can be disrupted by lesions in temporal lobe (Corvaci and Upton, 1993) or frontal lobes (Stuss et al., 1998). Again, functional brain imaging studies reveal that both of the above mentioned areas are involved in word fluency task in a together fashion. While one performs fluency task, the individual will typically generate words with in a subcategory, and when this subcategory is exhausted, he or she will switch to a new one. Troyer et al.,

(1997) opines cognitive components as – Clustering (a temporal lobe process, phonemic analysis on phonemic fluency and semantic categorization on semantic fluency), Switching (a frontal lobe process, includes strategic search processes, cognitive flexibility in shifting from one subcategory to another). Verbal Fluency test is a short test of verbal functioning. Such test generally consists of two components, they are: Category fluency (sometimes called semantic fluency; Benton, 1968) and Letter fluency (sometimes called phonemic fluency; Newcombe, 1969).

Writing is a process to convey the meaning which is complicated and requires coordination of various metacognitive skills. To produce a narrative writing, a writer must be able to organize and generate ideas, develop plans for ideas, review and revise what you have written and monitor performance in writing (Olinghouse & Lenard, 2009). Writing is also a behaviour which serves to recall an event in a form that is understandable using letters and words. Through writing, learner's thinking can be highlighted through their preparation, consolidation and development of ideas and seeks a relationship that can help learner's understand their thinking organizations (Marohna, 1999). In college learning the pervasive nature of note taking and note reviewing and the assumption that such activities are a necessary part, experience have encouraged researchers to investigate how students go about taking and reviewing notes and how these activities might be improved (Grabe, 2005). According to Van Meter, Yokoi, and Pressley (1994), college students reported that they believe in the act of taking notes that facilitates attending to the lecture, comprehension of the material to be learned, and the following subsequent recall (Kobayashi, 2005). Slotte and Lonka (1999) found that those who wrote