

Medium of Instruction and PASS Processes: A Study on Higher Secondary Students

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ABSTRACT: The study was carried out with a purpose of examining the effect of medium of instruction at school on the development of PASS (planning, attention, simultaneous and successive) cognitive processes in Higher Secondary students. In order to meet the objective, a group of 100 Higher Secondary students, with 50 students from Odia medium schools and 50, from English medium schools were examined for their competence in PASS processes using the Basic Battery of Cognitive Assessment System (CAS). Odia was the mother tongue, i.e., the first language (L1) and English was the second language (L2) of all the students. Results of group comparison revealed that Odia medium students were superior to the English medium students not only with respect to their overall competence in the processes of planning, attention and simultaneous coding, but also, in their performance on the majority of the tests of these processes. In case of successive coding, on the other hand, Odia medium students showed superior performance in comparison to their English medium counterparts only on one of the tests. With respect to the performance on the other test and the overall competence in this process, the two groups could not be distinguished from each other. Mother tongue (L1) medium of instruction at school appears to have facilitatory effect on the development of cognitive competence of the students in terms of cognitive processes that ultimately may lead to their competence in the second language (L2) and academic excellence at the level of higher education where second language is the medium of instruction.

KEYWORDS: Medium of instruction, First language (L1), Second language (L2), PASS processes, Higher education

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I. INTRODUCTION

For years together researchers are trying to project the effect of bilingual education, that is, education through a language other than the mother tongue of the child, on his/her cognitive development and academic achievement. While the earlier studies reveal the negative impact, (Mohanty, 1989; Mwamwenda, 1996; Pattanayak, 1991) more recent ones speak of positive outcomes in this regard (Comeau, Geneesees & Mendelson, 2007; Diesendruck, 2004; Kirkici, 2004; Patra & Babu, 1999; Siegal, Lozzi & Surian, 2009; Varkuti, 2009). Argument in support of the earlier studies is that, when the learner learns through a language (L2) other than his/her mother tongue (L1), he/she faces three different challenges: 1) understanding the task at hand, 2) developing linguistic competence to learn the task properly and 3) gaining mastery over the content. Lack of proficiency in L2, therefore, gives rise to a feeling of inadequacy that ultimately lowers the confidence level of the child. Children, who learn through their mother tongue, therefore, are in a better position than these children. Command over the first language (L1) or mother tongue language makes way for success in cognitive functioning.

Recent studies, on the other hand, suggest that bilingual children are better at learning new languages, show better cognitive growth as reflected through their mental flexibility, superiority in concept formation, a more diversified set of mental abilities, better working memory and executive functioning (Comeau, Geneesees & Mendelson, 2007; Feng, Bialystok & Diamond, 2009; Hawson, 1997; Patra & Babu, 1999; Roseberry – Mckibbin & Brice, 2000; Siegal, Lozzi & Surian, 2009; Varkuti, 2007; Yoshida, 2008). In fact, it is suggested that learning, and speaking two languages may affect the fundamental aspects of cognitive and neural development influencing the way the cognitive system learns and represents the information (Bialystok, Craik, Klein & Viswanathan, 2004; Bialystok & Martin, 2004; Yoshida, 2008). With such controversies in mind regarding the effect of mother tongue vs. other tongue language as the medium of instruction on the cognitive development of children, an attempt was made in a recent study (Senapati, Patnaik & Dash, 2012) to examine the effect of medium of instruction on the development of PASS (Planning, Attention, Simultaneous & Successive)

processes within the framework of PASS theory of intelligence developed by Naglieri and Das (1988, 1997). The findings not only suggested that the PASS processes are developmentally sensitive, but also revealed higher level competence of English medium school children in all the processes in comparison to their Odia medium counterparts.

The PASS theory is a modern theory of intelligence. Based on the neuropsychological findings of Luria (1973) regarding the functions of human brain, the PASS theory provides an information processing explanation of cognitive functioning. The theory proposes that human cognition is organized in three systems and four processes. The first system is the planning system which is an executive control system responsible for controlling and organizing behaviour, selecting or constructing strategies and monitoring performance, whereas, the attention system is responsible for maintaining the arousal level and alertness and ensures focus on appropriate stimulus information. The coding or the information processing system, on the other hand, employs simultaneous and successive processes to encode, transform and retain information. Simultaneous processing involves organization of information into a quasi-spatial and relational manner. It is used when the relationship between items and their integration into whole units of information is required. Successive processing, on the other hand, is required for organizing separate items in a sequential manner.

Each of the four processes, i.e., planning, attention, simultaneous and successive can occur in three varieties, namely, perceptual, memory and conceptual, which of course, are interdependent, but vary from one another with respect to the degree of abstraction involved in them. Perceptions are closest representations of objects and events; whereas, memory and conceptualization are a bit removed from direct apprehension through sense organs. From this point of view a hierarchy in their arrangement may be assumed with perception at the bottom, conceptualization at the top and memory in between.

The PASS processes, of course, are different from one another, but they occur in close connection with each other and operate on a knowledge base. Moreover, they are carried out in different parts of the brain. Planning is a higher order cognitive process and is controlled by the frontal lobes, especially the prefrontal areas of the cortex. Attention and arousal are combined functions of the frontal lobes and lower parts of the cortex. Simultaneous processing is carried out in the occipito-parietal areas, whereas, successive processing is carried out in the fronto-temporal areas of the cortex. The four processes are measured by a battery of tests known as Cognitive Assessment System (Naglieri&Das,1997).

In India, people in general, are now convinced that English is the language of upward social mobility and economic advancement. But at the same time, it is a matter of great concern that our average college students perform poorly in English language, which is their second language. A number of factors like our educational policy, insufficient reading materials, unfavourable learning environment and above all, lack of exposure to 'language in action', a concept developed by Verma (1994) have been found to be responsible for this. But, we do not know these students' cognitive status in terms of PASS processes that might be influencing their proficiency in English, their second language and the medium of instruction in higher education and thus might be affecting their academic achievement ultimately. An attempt, therefore, has been made in this direction in the present study.

II. OBJECTIVE

The objective of the present study was to examine the effect of Odia (L1) vs. English language (L2) as the medium of instruction at school on the cognitive development of Higher Secondary students in terms of PASS processes.

III. HYPOTHESIS

Considering the findings of previous studies and performance of students in higher education during the last two and half decades, it was hypothesized that students who passed from English medium schools would show higher level competence in the PASS processes than the students who passed from Odia medium schools.

IV. METHOD

4.1. Sample

The sample consisted of 100 Higher Secondary (+2) students selected randomly from among 500 Higher Secondary students covering five colleges of three different districts, namely, Ravenshaw Junior College and J.K.B.K. Junior College, Cuttack, B.J.B. Junior College and Rama Devi Women's College, Bhubaneswar and S.C.S. Junior College, Puri. Out of these 100 students, 50 students passed from Odia medium schools, and the remaining 50, from English medium schools of their respective districts as was reported by them and also indicated by their school final examination certificates. These colleges were chosen because the quality of education and infrastructural facilities provided to students was equal in these colleges. The subjects were from both the sex groups, and were within the age range of 15 – 17 years. The mother tongue of all the subjects was Odia and all of them came from middle socio-economic background.

4.2. Tests

The Basic Battery of Cognitive Assessment System, consisting of eight subtests, two from each of the four PASS processes was used in the present study. These tests, their administration and scoring procedures have been described below.

4.2.1. Planning Tests

Matching Numbers. This subtest consists of three pages, each containing eight rows of numbers. In each row there are found six numbers two of which are identical. The subject is to find and underline these numbers in each page within a time limit. The ratio score on each page is obtained by recording the time taken and number of correct responses which are then combined to obtain the raw score on this subtest.

Planned Codes. This subtest consists of two pages. In each page there is a distinct set of codes arranged in seven rows and eight columns with a legend at the top of the page indicating how letters relate to simple codes. The subject's task is to fill in the correct code below each corresponding letter following some strategy for the same within a time limit. Both time taken and number of correct responses on each page are recorded to obtain the ratio score which are then combined to obtain the raw score on the subtest.

4.2.2. Attention Tests

Expressive Attention. This subtest is similar to Stroop test and consists of 3 pages. On the first page, the subject reads some colour words (i.e., Blue, Yellow, Green, Red) and on the second page, he/ she names these colours printed on it. On the third page, the colour words are printed in different ink colour than the colour the words name (e.g., the word Blue may appear in Green ink) and the subject is to name the colour of the ink while not saying the colour word. The time taken by the subject and the number of correct responses on each page are recorded to obtain the ratio score which are then combined for obtaining the raw score on the subtest.

Number Detection. This subtest consists of two pages on which target numbers are printed along with distracters. The subject's task is to find and underline the target numbers from among the distracters. The ratio score on this subtest is a ratio of accuracy (total number of correct minus the number of false detections) to time taken to complete a page. These ratio scores are then combined to obtain the raw score on the subtest.

4.2.3. Simultaneous Tests

Nonverbal Matrices. This subtest consists of 33 items of different types of shapes and geometric designs that are related to one another through spatial or logical organization with one section missing. The subject is required to choose the missing section from among five possible choices in each item. The subtest is discontinued after four consecutive errors. The raw score is the total number of correct responses on this subtest.

Verbal-spatial Relations. This subtest is composed of 27 items that require the comprehension of logical and grammatical descriptions of spatial relationships. Each item of the subtest consists of six drawings and a printed question at the bottom of a page. The examiner reads out the question and the subject selects the option that matches the verbal description. The subtest is discontinued after four consecutive errors. The raw score is the total number of correct responses on this subtest.

4.2.4. Successive Tests

Word Series. This is essentially a test of memory for word order. The subtest consists of 27 items (word series) that vary in length from two to nine words. The words are single-syllable, high frequency words which the Examiner reads out to the subject at the rate of one word per second. The subject is required to repeat them exactly in the same order. The subtest is discontinued after four consecutive errors. The raw score on this subtest is the total number of items repeated correctly.

Sentence Repetition. This is a test of memory for colour words arranged within a syntactic form. The subject is read aloud the sentences and is asked to repeat each sentence exactly as presented. The subtest is discontinued after four consecutive errors. The raw score on this subtest is the total number of sentences repeated correctly.

In the present study, for the purpose of data analysis, the raw score of each test was converted into its corresponding scaled score which was then converted into its corresponding standard score.

4.3. Procedure

The subjects were tested in their respective colleges with the permission of the principals and cooperation of the teachers of the concerned colleges. Establishing adequate rapport with each subject, the work was carried out in a separate room, free from any kind of external disturbances in each college. The tests and their rules were explained to each subject in both Odia (L1) and English (L2) language so as to enable him/ her to understand the same properly. Each test was administered individually to each subject following practice with few sample items. The subjects fully cooperated with the examiner during test administration and enjoyed the task at hand.

V. RESULTS

Keeping in view the objective of the study, the data were analysed by means of ‘t’ test. These results are presented in the following tables.

Table no 1: Means, Standard Deviations and t Values Showing Group Differences on Tests of Planning (N = 50 in each group)

Test	English Medium Students		Odia Medium Students		t
	Mean	SD	Mean	SD	
Matching Numbers	72.64	7.05	76.74	6.04	3.12**
Planned Codes	113.8	10.62	116.4	7.64	1.41
Planning (Overall)	92.92	7.76	96.22	5.44	2.46*

*p< .05, **p<.01

It may be seen from Table 1 that the mean scores of Odia medium students were higher in both the tests of planning as well as the overall planning process. However, the mean difference was significant in one of the tests, i.e., Matching Numbers and the overall planning process. Planned Code, the other test of planning could not differentiate between the two groups.

Naglieri & Das (1990) suggest that planning process will be involved to a large extent when a person is asked to decide how to perform a task or solve a problem and will be inhibited when strict rules of task performance are imposed. Planned Code demands adaptation of specific strategies or strict rules as how to complete the task successfully and therefore, could not possibly tap planning process and differentiate between the two groups in the present study. Odia medium students, on the other hand, were better at Matching Numbers which demands efficient working memory and strategic search of information on the part of the subject. English and Odia medium students were also tested for their strength in the process of attention, the results of which are presented in Table 2.

Table no 2: Means, Standard Deviations and t Values Showing Group Differences on Tests of Attention (N = 50 in each group)

Test	English Medium Students		Odia Medium Students		t
	Mean	SD	Mean	SD	
Expressive Attention	82.08	5.56	106.84	9.84	15.47**
Number Detection	88.60	3.48	90.88	3.26	3.37**
Attention (Overall)	85.22	3.40	98.86	4.81	16.38**

**p< .01

It may be seen from Table 2 that the mean scores of Odia medium students were higher on both the tests of attention as well as the overall process of attention. All the mean differences were also significant statistically. It may be noted here that while Expressive Attention requires participants to respond to specific stimuli inhibiting the response tendency to the competing stimuli, Number Detection requires the participants to respond to the relevant stimuli to the exclusion of irrelevant ones shifting attention in between them. Mother – tongue (Odia language) education appears to facilitate the development of this skill early in one’s academic life through repeated instruction and supervision for the same during the teaching-learning process. Second language learning is difficult and requires extra effort on the part of the learners to acquire it and understand the subject matter leaving less room for strengthening the attentional process and using it flexibly as per the demands of the situation. This is possible only when one develops a command over the language. Odia and English medium students were further assessed for their competence in the two processes of information coding, i.e., simultaneous and successive processing. These results are presented in Table 3.

Table no 3: Means, Standard Deviations and t Values Showing Group Differences on Tests of Simultaneous & Successive Coding (N = 50 in each group)

Test	English Medium Students		Odia Medium Students		t
	Mean	SD	Mean	SD	
Nonverbal Matrices	109.14	8.38	116.80	7.25	4.88**
Verbal-spatial Relations	105.60	10.38	106.70	10.49	0.56
Simultaneous(Overall)	107.46	7.09	111.98	6.94	3.22**
Word Series	108.96	8.18	122.08	7.66	8.27**
Sentence Repetition	107.24	8.03	104.34	7.41	1.87
Successive (Overall)	108.18	6.18	111.46	13.87	1.53

**p< .01

It may be seen from the above table that the mean scores of Odia medium students were higher on both the measures of simultaneous processing and also in the overall simultaneous process. But ‘t’ value was significant for one of the measures of this process, i.e., Non-verbal Matrices. This simultaneous test measures abstract thinking and reasoning ability of the participants, the development of which appears to be facilitated by the mother-tongue medium of instruction at school. Verbal-spatial Relations, the other simultaneous test which requires logical analysis of verbal items involving spatial relations, on the other hand, could not differentiate between the two groups. But with respect to the overall simultaneous processing, the Odia medium students again were found to be superior to their English medium counterparts.

It is also evident from the above table that in case of successive processing, mean score of Odia medium students was higher on one of the tests, i.e., Word Series. The mean difference was also statistically significant. With respect to the other successive measure, i.e., Sentence Repetition the two groups did not differ significantly from each other. Word Series, as a test of successive processing requires sequential memorization of discrete words on which mother-tongue medium of instruction appears to have a facilitatory effect. Sentence Repetition, the other measure of successive processing requires one to remember some meaningless sentences of colour names and reproduce them for which no effective strategy could be used by the participants of either group. The results, thus, showed no difference between them.

The most striking result, however, is that, there was no significant difference between Odia and English medium students in respect of their overall competence in successive processing. It appears that rote repetition of learning materials which involves successive processing is given more emphasis than logical reasoning and abstract thinking to master the course content in our school system, no matter whatever is the medium of instruction at school. Consequently, the skill is well developed and is established by the time the students get entry into higher education.

VI. DISCUSSION

The present study attempted to examine the role of medium of instruction at school on the development of PASS cognitive processes in Higher Secondary Students. Two different languages of instruction at school i.e., Odia (L1) and English (L2) were taken into consideration for the purpose. Results revealed higher level competence of Odia medium students in overall planning, attention and simultaneous coding processes and higher level performance on majority of the tests measuring these processes. In case of successive processing, on the other hand, Odia medium students were superior to their English medium counterparts only on one of the tests. Moreover, with respect to their overall competence in this process, Odia medium students performed at a level at par with their English medium counterparts. Mother-tongue medium of instruction at school, thus, was proved to be more beneficial in the cognitive development in terms of cognitive processes in Higher Secondary students than the instruction in a language other than this. The hypothesis framed, therefore, could not be supported although the findings of the study added a line of support to some earlier findings in this respect (Namuchwa, 2007, Patra, 2000).

Studies suggest that PASS processes play a vital role in the acquisition of academic skills, especially in reading and mathematics. For example, research findings have made it clear that successive processing plays an important role in word decoding, particularly in earlier grades, while simultaneous processing at any level helps in understanding the logico-grammatical relationship among separate bits of information to understand a sentence and integrate this information into a larger unit so as to comprehend the text. Attention, especially selective attention helps to focus on relevant information, i.e., specific sounds, letters, spellings, words and phrases etc., which is a basic prerequisite to comprehend the text. But over and above these processes what is more important is the process of planning that involves selection and adaptation of appropriate strategies to deal with the task at hand in the most effective manner. Planning, thus, involves executive functioning and decision making as how to complete a task successfully through the application of attention, simultaneous and successive processes in conjunction with the knowledge base (Das, Naglieri & Kirby, 1994; Das, Parrila, & Papadopoulos, 2000; Mahapatra, 2015). Clearly speaking, vocabulary, information coding, and comprehension themselves are of little use unless one is equipped with the skill of adopting the appropriate strategies to utilize them optimally. Therefore, children who exhibit deficits in these processes experience reading difficulties that ultimately affect their academic achievement. On the other hand, children who are high achievers have been found to be performing at a higher level on these processes than the children who are low achievers (Mahapatra, 2015).

Mother tongue education appears to facilitate the development of PASS processes because it is the home language of the child. But, as Mohanty (1994) views, the mismatch between home language and the language of literacy instruction fails to generate a level of identification with the language of literacy instruction in the learner which is necessary for effective learning. In fact, a congruence between the home language and language of instruction at school puts the child in an advantageous position for concept development, information acquisition and development of a strong knowledge base that make way for higher cognitive functions like abstract thinking, logical reasoning and decision making in which PASS processes play a pivotal role. This helps the child to attain mastery in the mother tongue language, facilitates originality in thought and expression and provides rootedness to one's culture (Pattanayak, 1991). A lingua franca cannot be considered to be an adequate substitute for mother tongue. Once the mastery over the first language (L1) is acquired, the child transfers this skill to the acquisition of the second language (L2) like English and gradually gains mastery over the same with repeated practice that may ensure fluency, generalization and adaptation of the skill. In fact, Cummin's (1979) linguistic interdependence theory also states that proficiency in the mother tongue or first language is necessary for adequate development and transfer of concepts from the first language to the second language which ultimately facilitates the development of the skills in the scholastic use of the language, such as reading, comprehending the text and writing. With increasing exposure to such educational experiences the child's strength in PASS processes increases further and helps him to attain success at the level of higher education where the medium of instruction is English. On the other hand, acquiring linguistic competence to follow the educational instruction and mastering the course content in English which is not the mother tongue of a child is a difficult and challenging task for him/her, especially at the beginning stage. PASS processes, of course, play their own role in this situation also, but there may not be enough scope for their proper development, as it appears to be the case in the present study.

To sum up, academic instruction through mother tongue at school facilitates the development of students' cognitive competence in terms of PASS processes that ultimately may lead to their linguistic competence in the second language and academic excellence at the level of higher education where second language is the medium of instruction.

VII. CONCLUSION

The purpose of language is communication. But, when it becomes incommunicable, one fails to receive the information or grasp the idea behind the same. As a result, cognitive skills fail to develop properly. Mother-tongue, education at school, therefore, is barely essential for a child. This makes way for proper development of PASS processes which are the key components of human intelligence. As a result, the child becomes able to transfer the acquired linguistic skills to the acquisition of and mastery over the second language when that is used as the medium of instruction later in one's academic life. Yet, a lot of exposure and extensive practice with that language is also needed for the same. We may capitalize on this and take a judicious decision regarding the education of our children and shape the curriculum as well as the curricular instruction accordingly.

REFERENCES

- [1]. Mohanty, A. K. (1989). Psychological consequences of mother tongue maintenance and the language of literacy for linguistic minorities in India. *Psychology and Developing Societies*, 2(1), 31-51.
- [2]. Mwamwenda, T. S. (1996). Educational psychology: An African perspective. Durban, Butterworths. *The Journal of Pan African Studies*, 2(4), 2008.
- [3]. Pattanayak, D. P. (1991). Language, education, and culture. Mysore: Central Institute of Indian Languages.
- [4]. Comeau, L., Genesee, F., & Mendelson, M. (2007). Bilingual children's repairs of breakdowns in communication. *Journal of Child Language*, 34, 159-174.

- [5]. Diesendruck, G. (2004). Word learning without theory of mind: Possible, but useless. Contribution to the Online Discussion on Coevolution of language and theory of mind. Available at [http:// www.interdisciplines.org](http://www.interdisciplines.org).
- [6]. Kirkici, B. (2004). Foreign language medium instruction and bilingualism: The analysis of a myth, *SosyalBilimlerDergise*, 2, 109 – 121.
- [7]. Patra, S., & Babu, N. (1999). Role of second language as the medium of instruction. In Dash, U. N. & Jain, U (eds.), *Perspectives on Psychology and Social Development*. New Delhi: Concept Publishing Company.
- [8]. Siegal, M., Lozzi, L., & Surian, L. (2009). Bilingualism and conversational understanding. *Cognition*, 110, 115-122.
- [9]. Varkuti, A. (2009). Biology-based analogous reasoning in the target language in Hungarian-English High Schools. *A biologiatanitasa*, XVIII, 3-14.
- [10]. Feng, X., Bialystok, E., & Diamond, A. (2009). Do bilingual children show an advantage in working memory? 1 – 41. http://www.devcogneuro.com/Publications/Feng_Bialystok_Diamond.
- [11]. Hawson, A. (1997). Paying attention to attention allocation in second-language learning: Some insights into the nature of linguistic thresholds. *Bilingual Review*, 22, 31-48.
- [12]. Roseberry-McKibbin, C., & Brice, A. (2000). Acquiring English as a second language, *ASHA Leader*, 5, 4-6.
- [13]. Bialystok, E., Craik, F. I.M., Klein, R., & Viswanathan, M. (2004). Bilingualism, aging, and cognitive control: Evidence from the Simon task. *Psychology and Aging*, 19, 290 – 303.
- [14]. Bialystok, E., & Martin, M. M. (2004). Attention and inhibition in bilingual children: Evidence from the dimensional change card sort task. *Developmental Science*, 7, 325-339.
- [15]. Yoshida, H. (2008). The cognitive consequences of early bilingualism. *Zero to Three*, 29(2), 26-30.
- [16]. Senapati, P., Patnaik, N., & Dash, M. (2012). Role of medium of instruction on the development of cognitive processes. *Journal of Education and Practice*, 3(2), 58-66.
- [17]. Naglieri, J. A., & Das, J. P. (1988). Planning-arousal-simultaneous-successive (PASS): A model of assessment. *Journal of School Psychology*, 26, 35-48.
- [18]. Luria, A. R. (1973). *The working brain*. London: Penguin.
- [19]. Naglieri, J. A., & Das, J. P. (1997). *Cognitive Assessment System: Interpretive Handbook*. Itasca, IL: Revised Publishing.
- [20]. Verma, Manindra K. (1994). English in Indian Education. In R. K. Agnihotri and A. L. Khanna (Eds.), *Second Language Acquisition: Sociocultural and Linguistic Aspects of English in India*. Research in Applied Linguistics, 1, (pp.105 – 129), Sage Publications.
- [21]. Naglieri, J. A., & Das, J. P. (1990). Planning, attention, simultaneous, and successive (PASS) cognitive processes as a model for intelligence. *Journal of Psychoeducational Assessment*, 8, 303-337.
- [22]. Namuchwa, C. E. (2007). Challenges of using English as a medium of instruction in the upper part of primary schools in rural Uganda: A case of one primary school in Mpigi District. Master's thesis.
- [23]. Patra, S. (2000). Role of language of instruction in the multilingual school system of India. Unpublished Ph. D. Dissertation. Utkal University. BHU.
- [24]. Das, J. P., Naglieri, J.A., & Kirby, J.R. (1994). *Assessment of cognitive processes: The PASS theory of intelligence*. Boston, MA: Allyn and Bacon.
- [25]. Das, J.P., Parrila, R.K., & Papadopoulos, T.C. (2000). Cognitive education and reading disability. In A. Kozulin, & Y. Raud (Eds.), *Experience of mediated learning: An impact of Fewrstein's theory in education and psychology* (PP. 274-291). Elmsford, NY: Pergamon.
- [26]. Mahapatra, S. (2015). Attention in Relation to Coding and Planning in Reading. *Journal of Education and Practice*, 6(1), 43-50.
- [27]. Mohanty, A. K. (1994). Bilingualism in a multilingual. Mysore Central Institute of Indian Languages.
- [28]. Pattanayak, D. P. (1991). *Language, education, and culture*. Mysore: Central Institute of Indian Languages.
- [29]. Cummins, J. (1979). Linguistic interdependence and educational development of bilingual children. *Review of educational research*, 49, 222-251.