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# Learning style of secondary school students: A study

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**Abstract**
Learning styles are cognitive, affective and physiological traits that serve as relatively stable indicators of how learners perceive, interact with and respond to their learning environments (Frick & Mariism, 1994). The study aims at investigating the effect of gender, habitat and their interaction in different dimensions of learning style namely- independent, dedicated, collaborative, competitive and participative to evaluate the learning styles of the students of class IX. The researchers have constructed and standardized a tool on Learning Style Scales following Grasha and Reichmann in their Learning Style Scales in 1974 for this study. The scale was administered on 700 students of class IX of Bengali medium schools under West Bengal Board of Secondary Education. The study has revealed that (1) boys & girls, (2) urban boys & urban girls significantly differ in respect of their learning styles, but there is no significant difference among urban and rural students or rural boys and girls.

**Keywords:** learning styles**,** learning environment, academic performance, blue print for learning

## Introduction

Learning is a continuous process. Academic success in life depends upon so many factors: cognitive, affective and psychomotor abilities. Dunn (1992) [18] said that "Everyone has a learning style, but each person is different - like our fingerprints which come from each person's five fingers and look similar in many ways". So, there are diversities and problems in learning style. All the students follow one or more learning styles in different degrees at the time of their learning. The dedication for learning, collaborativeness, competitive attitude and participative eagerness of the students has been divided according to gender and habitat. In school life the success is very often related to intelligence, aptitude, attitude, persistent efforts and skills. Over the years, so many researchers have reported that students who have positive attitude and positive styles towards learning can have a significant achievement.

According to Wilson (1998) the learning style is the manner in which a learner perceives, interacts with, and responds to the learning environment. Dunn and Dunn (1992) [18] said, Learning Style Model is based on five different stimuli: (i)Environmental, (ii) Emotional, (iii) Sociological, (iv) Physiological, and (v)Psychological. Components of learning style are the cognitive, affective and physiological elements, all of which might be strongly influenced by a student's cultural background and teachers' teaching style.

The learning style of students may differ gender -wise and habitat -wise. Pizzo (1990), Greb (1999) [27] showed that males and females learn differently from each other. Males tend to be more kinesthetic, tactual, and visual, and need more mobility in a more informal environment than females. Males also are more nonconforming and peer motivated than their female classmates. In group, males tend to learn less by listening. Females, more than males, tend to be auditory, authority oriented, and better able to sit passively at conventional classroom desks and chairs than males. On the contrary, a female's world focuses on intimacy, consensus, sometimes and independence as well. Bada and Okan (2000) [6] found that for students to achieve effective learning, teachers must give special consideration to the skills and assumptions of learners and to their individual learning preferences. Contradictory results were reported by Gates (1961) [27], where gender differences in reading achievement were found favoring females. Gates found a female advantage on three measures of reading, speed, reading vocabulary, level of comprehension. It is much clear that there are so many links as gender and habitat- wise learning style with these study. During the problem solving, which we often face at the English lessons, there are clear differences between boys and girls (Dorval, 1990) [27]. Another research reported that males do better on tasks connected with logic, solving problem situations (Petrovskiy, 1999, McMahan, 2002) [28]. The authors share the point of view of Gustafsson & Undheim (1996), Elley (2004) [28], who believe that the students' approach to document reading is based on a psychometric theory of cognitive abilities and contextual dimensions, which in turn have various degrees of generality. Verma (1995) [19] studied academic achievement of girl students in relation to their rural, urban background and found that IX grade rural students scored higher than urban students though they had lower level of aspiration and low intelligence quotient. Aruna and Usha (2006) conducted a study on the influence of cognitive style, intelligence and classroom climate on process outcomes in science. The study found that there is significant relationship between cognitive skills and process outcomes in science. Dunn and Dunn (1979) strongly believe that both achievement and motivation improve when learning and teaching styles are matched. Ross, Drysdale and Schulz (2001) in a study found that learning styles influence the types of learning experiences that students find effective, comfortable and growth promoting. They also found that the effect of learning style on academic performance was significant in student performance with

sequential learners performing significantly better than did random learners in two computer science courses. Mathema and Bista (2006), there is regional difference in the academic performance of students. Mathematics is a compulsory subject up to secondary level (Grade IX and X) in school education. Though the school curriculum in Nepal aims to provide quality of education and the teachers have been trained, it has been challenging for mathematics teachers because of low scores of students, large number of students in the classroom and public concept of taking mathematics as a difficult subject. Verma (1996) found that adolescents studying in convent public schools differed significantly from adolescents studying in government schools with regard to their learning styles.

Learning styles are simply different approaches or ways of learning. It refers to students' preferences for some kinds of learning activities. Attention to learning styles and learners' diversity in the classroom has also been shown to increase students' interest and motivation to learn. It might lead to enhanced learning. Students who understand their own style are likely to be better learners, achieve higher grades, have more positive attitudes about their studies, self-confidence and exhibit more skill in applying their knowledge in every aspect. While elementary students are yet to settle their learning styles, it is worthwhile to find the learning styles of the secondary students. So, a study is needed to find out the learning styles of the secondary school students in the context of present scenario of education.

**Variables**

**A) Major**

Learning Styles of the secondary school students

**B) Categorical variables**

i) Habitat (urban-rural)

ii) Gender (boys-girls)

**Operational Definition**

**Learning Style**

Learning styles are the procedure or systems of learning. Keefe (1982) defined learning styles as "cognitive, affective, and physiological traits that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment. Dunn & Dunn (1992) [19] defined that-learning style is the way in which individuals begin to concentrate on, process, internalize and retain new and difficult academic information. Grasha and Reichmann in their Learning Style Scales in 1974 mentioned several factors of which the most important.

**Delimitation of the Study**

The study was delimited to the Secondary school students, from the selected district of West Bengal.

**Area:** Students of WB, in the district of North 24 Parganas, Nadia and Hooghly. The schools of the concerned districts were selected randomly.

**Class**-IX (boys and girls both)

**Medium** of Instruction- Bengali. (As there is a scarcity of English, Hindi or Urdu medium schools in the areas of survey)

**Education Board** - WB Board of Secondary Education.

**Sampling Technique**-Cluster Sampling

**Sample Size**-700 (Boys 354+Girls 346)

**No. of schools**-22 (Boys 11+Girls 11)

**Stratification**

**Table 1:** Students & habitat

| Gender | Habitat | | Total |
|---|---|---|---|
| | Urban | Rural | |
| Boys | 176 | 178 | 354 |
| Girls | 171 | 175 | 346 |
| Total | 347 | 353 | 700 |

**Objectives of the Study**

i) To find out if there is any significant difference of learning style between the groups of students gender-wise.

ii) To find out if there is any significant difference of learning style between the groups of students habitat-wise.

iii) To find out if there is any significant difference of learning style among the groups of students due to interaction of gender and habitat.

**Hypotheses**

The following null hypotheses are to be tested:

**$H_{01}$:** The boys and girls do not differ significantly in the mean scores on learning style.

**$H_{02}$:** The urban and rural students do not differ significantly in the mean scores on learning style.

**$H_{03}$:** The urban boys and urban girls do not differ significantly in the mean scores on learning style.

**$H_{04}$:** The rural boys and rural girls do not differ significantly in the mean scores on learning style.

**$H_{05}$:** The urban boys and rural boys do not differ significantly in the mean scores on learning style.

**$H_{06}$:** The urban girls and rural girls do not differ significantly in the mean scores on learning style.

**Methodology**

Seven hundred students between the age group 14-15 (class-IX) years formed the sample of the study.

**Tools:** For the present study the researchers have prepared and standardized a tool on *Learning Style Scales*. They developed the items following the dimensions (seven only) put forward by Grasha and Reichmann in their Learning Style Scales in 1974. Researchers finally adapted five major dimensions out of seven, which are: (1) Independent, (2) Dedicated (3) Collaborative, (4) Competitive (5) Participative

**Definition of Dimensions**

**1) Independent:** According to Grasha and Reichmann (1974), Independent Learning is learning that is self-directed. It is organized and completed by the learner. Educators (experts) may act as facilitators or guides. When an individual is able to think, act and pursue their own studies autonomously, without the support of tutor, instructor or a teacher at school.

**2) Dedicated:** Dedication means extreme devotion or admiration to the education or learning things. When the learners devote wholly and earnestly to acquire knowledge or some special purpose, it's called dedication.

**3) Collaborative:** Collaborative learning is a situation in which two or more people learn or attempt to learn something together. It is an umbrella term for a variety of educational approaches involving joint intellectual effort by students, or students and teachers together. More

specifically, collaborative learning is based on the model that knowledge can be created within a population where members actively interact by sharing experiences.

4) **Competitive:** Competitive learning exists when one student achieves a goal; all other students fail to reach that goal (Johnson & Johnson, 1991). Competitive learning can be interpersonal (between individuals), or intergroup.
5) **Participative:** Participatory learning is an active learning, defined as the extent to which students are involved in experiences. Active participation constructs new knowledge and new understanding. Barab *et al.* (2001) defined participatory learning environments as systems that engage the students in the construction of products collaboratively.

**Tools**

**Preparation of Items**

Initially total no. of items in the test was 36 including both the positive and negative statements each having 3 options - Agree, Don't know, Don't agree. The scores of the each item were 3, 2, 1 respectively for the options for a positive statement and 1, 2, 3 for negative statement respectively.

**Item Analysis**

For internal consistency and face validity of the test, it was verified by the experts in the field of psychology and education. 3 (three) items had to be excluded as the raters (experts) could not agree on those items.

**Expert Rating**

**Table 2:** (Inter raters' agreement ratio)

| Raters agreed on no. of items | | | Agreement ratio for raters1,2 | Agreement ratio for raters 2,3 | Agreement ratio for raters1,3 | Mean Inter Raters' Agreement Ratio |
|---|---|---|---|---|---|---|
| 1st & 2nd raters | 2nd & 3rd Raters | 1st& 3rd raters | | | | |
| 34 | 32 | 33 | 34/36 | 32/36 | 33/36 | 33/36=0.916 |

After rejecting the unsuitable items under the advice of experts, the discrimination indices of 33 items were found out with t – tests(by finding the difference of means of upper and lower 27% achievers. t's were significant (at 0.05 level with df=234) for thirty items and hence three other items of low discrimination were rejected.

30 items were administered on 236 students of class IX. Using Cronbach's Alpha (CA) the reliability of the test (in terms of internal consistency of the items) was estimated by SPSS. The values of C A were calculated for each of the 30items. The CA for the test was 0.606. This value indicates the moderate internal consistency of the items. Time allotted for the final test was 20 minutes. Directions for answering the test were given in the test booklet and were also verbally communicated to the students before starting the administration of the test.

**Table 3:** Dimensions of test-questions

| S. No | Dimensions of test-questions | Number of items |
|---|---|---|
| 1 | Independent | 6 |
| 2 | Dedicated | 6 |
| 3 | Collaborative | 6 |
| 4 | Competitive | 6 |
| 5 | Participative | 6 |
| Total | | 30 |

**Test retest reliability**

The size of the sample of the test was 700.The test in its final form was used to find the test retest coefficient of correlation over 150 students and its value was 0.827 –for df=148 which is significant at 0.05 level. So the test has significant stability index in the form of test- retest coefficient of correlation.

**Validity**

Construct validity of the test was found out by Factor Analysis. 10 factors were identified all having Eigen value >1.The 10 factors and distribution of items over them are shown below:

| Factors | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 8 | 7 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |

Only three factors are on the vertical side of the Scree plots having Eigen values 2.931, 2.631 &1.711 respectively, covering 18 items out of a total 30 ( thirty).

**Table 4:** Inter Correlation among the dimensions of LS.

| | Independent | Dedicated | Collaborative | Competitive | Participative | LS test |
|---|---|---|---|---|---|---|
| Independent | 1.000 | .190 | .186 | .107 | .100 | .510 |
| Dedicated | - | 1.000 | .196 | .217 | .210 | .616 |
| Collaborative | - | - | 1.000 | .313 | .176 | .652 |
| Competitive | - | - | - | 1.000 | .172 | .596 |
| Participative | - | - | - | - | 1.000 | .568 |

Table no. 4, shows that the pairs: Dedicated &Participative; Collaborative &Competitive have significantly high correlations. So each pair may be represented by a factor. The dimension Independent remains isolated claiming another factor. The dimensions and three factors may be represented as follows:

1st factor: dedicated & participative; 2nd factor: Collaborative &competitive; 3rd factor: Independent. This 'three factors' corroborates the three factors obtained from Factor Analysis of LS.

**Administration of Test**

The final form of the test was administered on 700 students selected by cluster sampling method for 20 minutes. The papers were scored. Maximum scores for the test= 90 & minimum score=0.

**Presentation of Data**

**Table 5:** Freq. distribution

| **Scores** | 13-17 | 18-22 | 23-27 | 28-32 | 33-37 | 38-42 | 43-47 | 48-52 | 53-57 | 58-62 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Freq (f)** | 00 | 02 | 06 | 58 | 117 | 228 | 181 | 94 | 14 | 0 |

**Table 6:** The descriptive statistics sex-wise and strata-wise

| **Pupils** | **Total** | **Boys** | **Girls** | **Urban** | **Rural** | **U.boys** | **U.girls** | **R.boys** | **R.girls** |
|---|---|---|---|---|---|---|---|---|---|
| No. | 700 | 354 | 346 | 347 | 353 | 176 | 171 | 178 | 175 |
| Mean | 41.007 | 39.943 | 42.095 | 41.072 | 40.943 | 39.897 | 42.280 | 39.988 | 41.914 |
| Median | 41.000 | 40.000 | 43.000 | 41.000 | 41.000 | 40.000 | 43.000 | 40.000 | 43.000 |
| SD | 6.0733 | 6.0331 | 5.9280 | 5.998 | 6.1535 | 5.9234 | 5.8503 | 6.1561 | 6.0142 |
| SKWN | -.199 | .107 | -.531 | -.139 | -.253 | .066 | -.363 | .141 | -.682 |
| KRTS | -.223 | -.401 | .436 | -.349 | -.107 | -.467 | .112 | -.333 | .717 |

The mean (41.007) and median (41.000) of the total sample are very close to each other. The distribution seems to be almost normal.

**Data Analysis**

For testing the null hypotheses, 2x2 ANOVA and t-tests have been used. To find the main effect of Sex and Habitat ANOVA has been used. To find the interaction of sex and habitat explicitly t-tests have been used. For ANOVA 4(four) cells have been used as Urban Boys(UB), Urban Girls(UG), Rural Boys(RB), Rural Girls(RG).For each cell 50 LS scores have been randomly selected from the total number of the corresponding cell. The descriptive statistics of the LS scores of those 200 students have been tabulated below sex and habitat-wise.

**Table 7:** Mean and SD of the 4 cells of ANOVA

| **Categories** | **N** | **Mean** | **SD** |
|---|---|---|---|
| U.BOYS(UB) | 50 | 40.0800 | 6.62660 |
| U.GIRLS(UG) | 50 | 43.6600 | 6.02921 |
| R.BOYS(RB) | 50 | 41.5600 | 6.66444 |
| R.GIRLS(RG) | 50 | 42.8200 | 6.91845 |

**Table 8:** 2x2ANOVA for LS scores

| **Sources** | **df** | **ss** | **Mean ss** | **F** | **sig** | **P** | **Remarks** |
|---|---|---|---|---|---|---|---|
| Sex | 1 | 292.820 | 292.820 | 6.788 | .010 | P<0.05 | **S** |
| Habitat | 1 | 5.120 | 5.120 | .119 | .731 | P>0.05 | **NS** |
| Sex x Habitat | 1 | 67.280 | 67.280 | 1.560 | .213 | P>0.05 | **NS** |
| ERROR | 196 | 8454.600 | 43.136 | | | | |

**Interpretation**

Table shows that only significant difference of LS exists (at 0.05 level) sex-wise. So, (i) Boys and Girls significantly differ in their mean LS scores. Hence the null hypothesis $H_{01}$ is rejected. (ii) Urban and Rural students do not significantly differ in their mean LS scores. Hence null hypothesis $H_{02}$ is retained.

Since F is significant here at least for one level (sex), t-test is inevitable to find any significant difference in any other subsidiary level(s).

**Table 9:** t- test. **(**as Sex-wise difference is significant**)**

| **Strata** | **Mean** | **SD** | **$SE_D$** | **df** | **t-value** | **Sig. (2tailed)** |
|---|---|---|---|---|---|---|
| UB vs UG | 39.2800 vs 43.6000 | 6.12136 vs 4.51302 | .86569 vs .63824 | 49 | 4.070 | .000,S |
| RB vs RG | 40.7400 vs 42.2800 | 6.37537 vs 5.42120 | .90161 vs .76667 | 49 | 1.156 | .253,NS |
| UB vs RB | 39.2800 vs 40.7400 | 6.12136 Vs 6.37537 | .86569 vs .90161 | 49 | 1.280 | .206,NS |
| UG vs RG | 43.6000 vs 42.2800 | 4.51302 vs 5.42120 | .63824 vs .76667 | 49 | 1.314 | .196,NS |

**Interpretation of t-tests**

**UB vs UG**

From the analysis of table 9, t value for the difference of mean learning style scores between urban boys(UB) and urban girls(UG) is 4.070 ($p<0.05$). Hence, t- is significant at 0.05 level. So UB & UG differ significantly in mean scores on LS. Hence, $H_{03}$ is rejected.

**RB vs RG; UB vs RB & UG vs RG**

t- values for each of the above pairs are not significant at 0.05 level. Hence, differences of mean learning styles scores for each of the above pairs are not significant at 0.05 level.

So $H_{04}$, $H_{05}$ & $H_{06}$ are retained.

**Findings**

The results in this study show that there is a significant difference of mean scores on LS only between (1)boys(B) &girls (G); (2) urban boys(UB)& urban girls(UG).

**Limitation of the study**

The present study suffered from several limitations which were as:

1) The personality based learning style is relatively new field and all the relevant literature was not readily available.

2) Sample could not be always collected strictly in accordance with rule of cluster sampling due to administrative compulsions of some of the the schools.
3) Schools were selected randomly only from five districts (North 24 Parganas, Nadia, Hooghly, Purulia & Malda) of West Bengal.
4) The sample of this study was only selected from the Govt. aided schools (Bengali Medium) under WBBSE.
5) LS has not been tested in the backdrop of achievement of the students.

**Discussion**

The researches on Learning Styles (LS) in the bygone days were concentrated mainly in physiological bases-visual, auditory, tactile, kinesthetic etc. But at present the LS is viewed psychologically as in the present study. Learning Style of the secondary school students is integrally associated with the progress of education. The Learning Style model of Dunn and Dunn (1992) [19] is multi-dimensional and it examines the environmental, emotional, sociological, perceptual, physiological and psychological elements in each student. Moreover, it can provide access to education regardless of time and geographical barriers. It can help to enhance the quality of education with advanced practice methods, improve learning outcomes and enable reform or better management of education systems. In the present study the emotional, perceptual & physiological study were left out while delimiting the study. Nevertheless, the present study presents a pattern of different modes of LS for the entire sample as shown below:

**Table 10:** Pattern of different modes of LS among the entire sample of students.

| Learning Style | (Collaborative) LS-3 | (Competitive) LS-4 | (Dedicated ) L S-2 | (Participative) LS-5 | (Independent) LS-1 |
|---|---|---|---|---|---|
| Mean | 9.5943 | 8.8314 | 8.2414 | 7.7686 | 6.5729 |

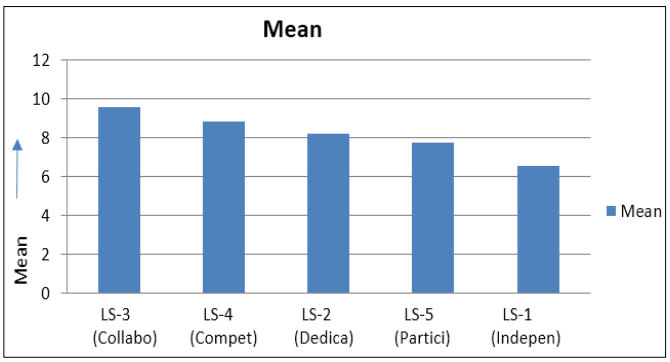


**Fig 1:** pattern of L.S. of students

The L Styles most & least emphasized are respectively Collaborative& Independent. Without collaboration, it is difficult to master the multifarious & multidimensional knowledge of the world now-a- days. Up to 1980's text books and teachers were the fountain heads of knowledge. Thereafter the sources of learning have been multifarious. So Collaboration in learning is an essential part of LS today.

In the present study Urban girls outweigh Urban boys in LS. The girls adopt different learning styles adequately to upgrade themselves. This statement is equally applicable to rural girls but however they do not command significant differences from boys.

**Educational implications of the study**

(i) The school should provide better environment to improve the study habits with the help of different kinds of learning styles. When proper infrastructural facilities of LS would be available in WB, only then enrichment of study habits is possible. (ii) The students must be motivated in the field of academics to modernize their learning style. (iii) Better e-library, digital library facilities should be provided for students to spend more time in reading and preparing for cognitive development. They will get many references by sharing internet. E-learning systems, video conference, e-mailing and e-tuitions can help the students and provide more and more knowledge to the learners through LS. (iv) So teachers should often point out the importance of LS and techniques of their use in the class room or out of classroom. It is important to compare the pattern of LS (i.e. distribution of means over the five dimensions of LS) of different categories of students though it was left out in the present study.

**Suggestions for further studies**

According to findings of this study on LS, there are already indications of change towards the improvement of learning awareness. A study on the subject may be extended by (I)including students of different socio economic status, castes, age groups, grade level, management of school, school boards and characteristics of habitats and also on the basis of psychological differences. (II) Developing a test including a few more components of LS. (III) Determining learning pattern of different categories of pupils & (IV) Relating LS and achievement of the students.

**Conclusion**

Almost there is no significant difference in learning styles among the different categories of pupils considered in the study except Urban Boys & Urban Girls. The better scores of the Urban Girls show that Urban Girls might adopt different learning styles for betterment of their achievement.

**References**

1. Brandt, R. On learning styles: A conversation with Pat Guild, Educational Leadership. 1990; 48(2):10-13.
2. Dunn, R. Learning styles: Link between individual differences and effective instruction. North Carolina Educational Leadership. 1986; 2(1):4-22.
3. De Bello T.C. Comparison of eleven major learning style models. 1990; 6:203-222.
4. Dunn, R. Understanding the Dunn and Dunn learning styles model and the need for individual diagnosis and prescription. Reading, Writing and Learning Disabilities. 1990; 6:223-247.
5. Dunn, R, Bruno J, Sklar RI, Beaudry J. Effects of matching and mismatching minority developmental college students' hemispheric preferences on mathematics scores. Journal of Educational Research. 1990; 83(5):283-288.

6. Dunn, R., and Dunn K. (1993), Review of related literature, Chapter, Studies on Learning Style. 1993;(56, 60)
7. Felder RM, Silverman LK. Learning and teaching styles in engineering education. Engineering Education. 1988; 78(7):674-681.
8. Gordon R.B. Doctoral dissertation, University of LaVerne. Dissertation Abstracts International. 1993; 55(1).
9. Hein TL, Zollman DA. Investigating student understanding and the role that learning style plays in that process. AAPT Announcer (Addendum). 1997; 26(4):3.
10. Kolb, DA. Experiential Learning: Experience as the Source of Learning and Development. Englewood Cliffs: Prentice Hall, 1984.
11. Lemmon, P. A school where learning style makes a difference. Principal. 1985; 64(4):26-28.
12. Meyers, C, Jones TB. Promoting active learning: Strategies for the college classroom. San Francisco: Jossey-Bass Publishers, 1993.
13. Oregon School Council Study Bulletin. Overview of theories and findings on learning styles, 1987, 30(9).
14. Phillips, G, Santoro G. Teaching group discussion via computer-mediated communication. Communication Education. 1997, 38.
15. Sternburg, RJ. Thinking styles: Keys to understanding student performance. Phi Delta Kappan. 1990; 71(5):366-371.
16. Terregrossa, R, Englander F, Englander V. The Impact of Learning Styles on Achievement in Principles of Microeconomics: A Natural Experiment, 2009.
17. Tatarinceva, A. Influence of the gender factor on a student's learning style and achievements in language learning, 2009.
18. Teresa, L.L. Learning style in the classroom: A Research-Guide Approach, p-2-3, 2003, ICECE.
19. Verma, J. Review of related literature, Chapter, Studies on Learning Style. 1995;(56)
20. Khanal, K. Learning Strategies Used by Urban and Rural School Studentsin Mathematics ISSN 2455–2526; Vol.04, Issue 03 (2016)
21. Wilson, V. Learning How They Learn: A Review of the Literature on Learning Styles. Retrieved from ERIC database, 1998
22. www.ilsa-learning-styles.com (dt.-3/7/16)
23. www.acdowddesigns.com/sfsu_860_11/LS_OverView.pd (dt.5/7/16)
24. www.scirp.org/journal**,** ID=37523 (dt.15/7/16)
25. Chapter ii review of related literature, p-70, 2002.
26. Venkataraman's Style of learning and thinking (NPC, Agra, India) with dimensions: verbal, content preference, class preference, learning preference and interest (2010).
27. The Influence of the Gender Factor to the Learning Styles of Secondary Students in the Process of Language Learning. ISSN 1648-2824 KALBŲ STUDIJOS. 2002. NR. 2, P-65-66
28. Tatarinceva, A. Influence of the gender factor on a student's learning style and achievements in language learning. 2012; P-67-68.
29. shodhganga.inflibnet.ac.in/bitstream, p-60