



Learning School Geography by Visually Impaired Learners: Problems and Prospects

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Abstract: Geography has a long tradition of being an important subject in the school curriculum. Geography has a long tradition of representing its findings in terms of maps, graphs, charts, images and diagrams. Hence, the visual sense is given utmost priority in Geography and this trend has limited the scope for the visually impaired learners in Geography. The present study seeks to explore the learning attitude of the visually impaired learners towards Geography with respect to their gender, residence and level of education by using an attitude scale encompassing three dimensions of classroom transaction, preferability and difficulty in learning Geography. The sample size for visually impaired learners is 374 (class VI to X) with their age varying from 11-18 years. Samples were collected from nine districts of West Bengal. The findings noted significant differences in the learning attitude of the students according to their level of education.

Keywords: Geography, Visually Impaired Learners, Classroom Transaction, Preferability, Difficulty.

Introduction

In school education, though every child is introduced to some compulsory subjects up to class X or secondary education but some subjects posed as rather challenging for the learners with one or other type of impairment. Different studies have found that the visually impaired learners face more challenges in learning subjects which encompass field experiences or laboratory based practical.

Geography is subject which has a long tradition of being an important subject in the school curriculum as school Geography gives a learner greater understanding of the world he/she lives in and such knowledge is necessary to know one's own environment and to fit better into it. Geography has a long tradition of representing its findings in terms of maps, graphs, charts, images and diagrams. Hence, it can be said that visual sense is given utmost priority in Geography. But most significantly, Geography is a spatial science and the spatial knowledge should not be limited only to the sighted population. Geography is important for all the people (whether sighted or not) to know about the places where they live and to interact with the

environment successfully (Golledge, 1993). Geography is very essential for the visually impaired pupils because it provides them the ability to understand and collect information about the surrounding environment, to have the direction to find out a location. Hence, effective Geography teaching-learning is necessary for the visually impaired pupils to form their concepts regarding space, landform, location and to make them aware of their surrounding environment.

Objectives

The objectives of the study are as follows-

O₁ - To compare visually impaired learners' attitude towards learning Geography (Across the three dimensions namely classroom transaction, preferability and difficulty) with respect to gender.

O₂ - To compare visually impaired learners' attitude towards learning Geography (Across the three dimensions namely classroom transaction, preferability and difficulty) with respect to residence.

O₃ - To compare visually impaired learners' attitude towards learning Geography (Across the three dimensions namely classroom transaction, preferability and difficulty) with respect to levels of education.

Hypotheses

According to **O₁**, the following null hypotheses have been formulated –

H_{01.1} - There is no significant difference in the mean rank of attitude of the male and female visually impaired learners towards learning Geography.

H_{01.2} - There is no significant difference in the mean rank of attitude of the male and female visually impaired learners towards learning Geography regarding classroom transaction.

H_{01.3} - There is no significant difference in the mean rank of attitude of the male and female visually impaired learners towards learning Geography regarding preferability.

H_{01.4} - There is no significant difference in the mean rank of attitude of the male and female visually impaired learners towards learning Geography regarding difficulty.

According to **O₂**, following null hypotheses have been framed –

H_{02.1} - There is no significant difference in the mean rank of attitude of the rural and urban visually impaired learners towards learning Geography.

H_{02.2} - There is no significant difference in the mean rank of attitude of the rural and urban visually impaired learners towards learning Geography regarding classroom transaction.

H₀2.3 - There is no significant difference in the mean rank of attitude of the rural and urban visually impaired learners towards learning Geography regarding preferability.

H₀2.4 - There is no significant difference in the mean rank of attitude of the rural and urban visually impaired learners towards learning Geography regarding difficulty.

According to **O₃**, the following null hypotheses have been formulated –

H₀3.1 - There is no significant difference in the mean rank of attitude of the upper primary level and secondary level visually impaired learners towards learning Geography.

H₀3.2 - There is no significant difference in the mean rank of attitude of the upper primary level and secondary level visually impaired learners towards learning Geography regarding classroom transaction.

H₀3.3 - There is no significant difference in the mean rank of attitude of the upper primary level and secondary level visually impaired learners towards learning Geography regarding preferability.

H₀3.4 - There is no significant difference in the mean rank of attitude of the upper primary level and secondary level visually impaired learners towards learning Geography regarding difficulty.

Review of Relted Literature

For this particular research article, different articles related to the teaching-learning of the visually impaired learners were studied. **Butler (1994)** established that visually impaired people gain spatial knowledge from the collation of all other senses. According to the author, the visually impaired individuals face constraints to navigate not so due to the lack of spatial understanding but more so due to lack of spatial information in tactile format. **Tobin et al. (1997)** discussed about different technological aids which are used in the teaching-learning process of the visually impaired like braille and moon. **Kitchin, Blades & Golledge (1997)** studied different research works intensively to know about visually impaired individuals' understanding of the world at geographic scale. **Hall, Healey & Harrison (2002)** concluded that the visual representation of fieldwork in prospectuses and promotional materials are predominantly masculine with able-bodied men.

Sample and Sampling Procedure

For the present study, samples have been collected from 15 special (blind) schools distributed over 9 districts of West Bengal namely, Kolkata, Howrah, Hooghly, North 24 Parganas, South 24 Parganas, Malda, Murshidabad, Nadia and Purba Bardhaman. The special (blind) schools were chosen through purposive sampling and the samples were also chosen by using purposive sampling technique. The sample size for visually impaired learners is 374 (class VI to X) with their age varying from 11-18 years.

Tools

- (a) A General Information Schedule (GIS) was employed to collect demographic (age, gender) and education-related information (upper-primary/ secondary).
- (b) A 5 point attitude scale comprising 24 items was prepared to collect data. The scale was divided into three dimensions namely classroom transaction, preferability and difficulty. The attitude scale was validated by a panel of experts for content validity and the reliability was measured to be 0.83 in Cronbach's Alpha.

Data Collection and Analysis

Data were collected from the month of May, 2019 to January, 2020. Data were analysed with the help of Microsoft Excel Office 2019 and SPSS software (20.0 version).

Definition of Operational Terms

Learning- Learning can be considered as the process of acquiring new knowledge or skill or behaviour or transforming the existing one.

Geography- Geography is the study of the earth's surface and the surrounding atmosphere.

Visually Impaired Learners- According to Right of Persons with Disabilities Act (2016) visually impaired learners mean those learners who either have blindness or low vision.

Classroom Transaction- *Classroom transaction* implies the daily transaction of a particular subject in classroom situation. *Classroom transaction* encompasses both the attitude of the teachers as well as the learners. It is broadly defined as the teachers' attitude towards teaching as well as the learners' attitude towards learning.

Preferability- Preferability simply means the desirability of some object or something over others. In this context, it refers to the preference of the visually impaired learners towards Geography over other subjects.

Difficulty- Difficulty means the state of being challenging or tough to deal with or to comprehend. The dimension of difficulty unfolds the challenges of learning Geography.

Results and Interpretation

The results focused separately on Geography learning attitude of the visually impaired learners based on the three categorical variables of gender (male and female), residence (rural and urban) and level of education (upper primary and secondary).

Testing of Null Hypotheses

All the null hypotheses have been tested through independent samples Mann-Whitney U test. The test result is conducted at 0.05 level of significance.

Table 1: Learning Attitude towards Geography according to Gender

Hypotheses	Dimensions	Gender	Mean Rank	Mann-Whitney U	Asymp. Sig. (2-tailed)
H₀1.1	Learning Geography	Male	198.37	16234.500	0.534
		Female	187.31		
H₀1.2	Classroom Transaction	Male	190.37	16234.500	0.531
		Female	183.31		
H₀1.3	Preferability	Male	203.90	13230.500	0.000*
		Female	163.54		
H₀1.4	Difficulty	Male	191.42	16002.000	0.389
		Female	181.78		

*= Significant at 0.05 level

Table 1 represents visually impaired learners' learning attitude towards Geography according to their gender. For H₀1.1, the p value is 0.534 ($p > 0.05$). Hence, it can be concluded that the male visually impaired learners do not differ significantly in their attitude towards learning Geography from that of the female visually impaired learners. For H₀1.2 (p value is 0.531; $p > 0.05$), it can be inferred that male and female visually impaired learners do not differ significantly regarding classroom transaction of Geography. For H₀1.3, the p value is 0.000 ($p < 0.05$) and the null hypothesis is rejected. It implies that the male visually impaired learners do possess significantly different attitude than that of the female visually impaired learners regarding preferability towards Geography. For H₀1.4, the p value is 0.389 ($p > 0.05$), hence, it can be concluded that there is also no significant difference in the attitude of the male and female visually impaired learners regarding difficulty in studying Geography.

Table 2: Learning Attitude towards Geography according to Residence

Hypotheses	Dimensions	Residence	Mean Rank	Mann-Whitney U	Asymp. Sig. (2-tailed)
H₀2.1	Learning Geography	Rural	181.88	11782.000	0.086
		Urban	203.77		
H₀2.2	Classroom Transaction	Rural	185.39	12756.500	0.517
		Urban	193.62		
H₀2.3	Preferability	Rural	185.99	12925.500	0.642
		Urban	191.86		
H₀2.4	Difficulty	Rural	187.92	13227.000	0.896
		Urban	186.28		

Table 2 represents the learning attitude of the visually impaired learners towards Geography according to their residence. For $H_{02.1}$, the p value is 0.086 ($p > 0.05$). Hence, it can be concluded that there remains no significant difference between the rural and urban visually impaired learners in their attitude towards learning Geography. As the p value for $H_{02.2}$ is 0.517 ($p > 0.05$), hence, the null hypothesis is accepted. For $H_{02.3}$, the p value is 0.642 ($p > 0.05$). Therefore, it can be inferred that there is no significant difference in the attitude of rural and urban visually impaired learners regarding preferability towards Geography. For $H_{02.4}$, the p value is 0.896 ($p > 0.05$). Therefore, it can be concluded that there is no significant difference in the attitude of the rural and urban visually impaired learners regarding difficulty in studying Geography.

Table 3: Learning Attitude towards Geography according to Level of Education

Hypotheses	Dimensions	Level of Education	Mean Rank	Mann-Whitney U	Asymp. Sig. (2-tailed)
H_{03.1}	Learning Geography	Upper Primary	167.49	7212.500	0.000
		Secondary	249.74		
H_{03.2}	Classroom Transaction	Upper Primary	159.84	5048.500	0.000
		Secondary	273.52		
H_{03.3}	Preferability	Upper Primary	182.13	11357.000	0.085
		Secondary	204.20		
H_{03.4}	Difficulty	Upper Primary	195.19	10701.500	0.014
		Secondary	163.60		

Table 3 represents learning attitude of the visually impaired learners towards Geography according to their level of education. For $H_{03.1}$ and $H_{03.2}$, the p value is 0.000 ($p < 0.05$). Hence, it can be concluded that upper primary and secondary level visually impaired learners differ significantly regarding their overall learning attitude and also classroom transaction of Geography. For $H_{03.3}$, the p value is 0.085 ($p > 0.05$). Therefore, it can be inferred that the upper primary level visually impaired learners do not possess significantly different attitude than that of the secondary level visually impaired learners regarding preferability towards Geography. For $H_{03.4}$, the p value is 0.014 ($p < 0.05$). Consequently, it can be concluded that the upper primary level visually impaired learners do possess significantly different attitude from that of the secondary level visually impaired learners regarding difficulty in studying Geography.

Discussions

In the present study, by testing null hypotheses, it has been concluded that with reference to gender, the visually impaired learners do not differ significantly regarding their learning attitude, classroom transaction and difficulty in studying Geography. The present finding is in accordance with the findings of **Orhun (2007)**, **Sarwar, Bashir & Alam (2010)**, **Suri & Sharma (2013)**, **Noah, Schroeder & Adesope (2015)** and **Tondeur et al. (2016)**. On the other hand, it has been inferred that the male visually impaired learners do possess significantly different attitude than that of the female visually impaired learners regarding preferability towards Geography. The reasons are elaborated such as, firstly, field-work has a pivotal role in Geography and that is why the subject is often imagined as a subject for the able-bodied man (**Hall, Healy & Harrison, 2002**). Secondly, in regular schools also gender biasness can be found during educational excursions especially in high altitudinal areas. Parental reluctance, lack of support and enthusiasm from the teachers are the most dominant reasons among others. The female visually impaired learners face two-fold discriminations – firstly, due to disability and secondly, due to their gender role (**Reddy & Sree, 2015**).

In the present study, by testing null hypotheses, it has been resolved that with reference to residence, the visually impaired learners do not possess significantly different attitude regarding overall learning attitude, classroom transaction, preferability and difficulty in Geography. This present finding of the study is in consonance with the studies of **Yusuf & Adigun (2010)** and **Sarfo et al. (2011)**. The probable reason for such a finding is that most of the visually impaired learners get admission in the special (blind) schools at an early age and become a part of the residential schools, therefore, cultural difference, family environment etc. which are potent factors in developing learning attitude among the students, cannot play their roles justifiably to develop learning attitude based on their home environment or residence (**Kember & Gow, 1990**). Thus, school environment becomes the most potent factor in developing their learning attitude towards any subject.

In the present study, by testing null hypotheses, it has been concluded that with reference to level of education, the visually impaired learners possess significantly different attitude regarding learning Geography, classroom transaction and difficulty in studying Geography. The research findings by **Bovee, Voogt & Meelissen (2005)** also supported this conclusion. Similarly, **Lau (2010)** found that students' level of motivation towards learning differs according to their class. Besides, it should also be mentioned that the process of concept formation is a while delayed for the visually impaired pupils (**Dick & Kubiak, 1997**). According to **Garry & Ascarelli (1960)**, **Golledge (1993)**, **Dick & Kubiak (1997)**, the visually impaired learners face problems regarding the understanding of space organization which included various aspects like orientation (concepts of location, direction, distance, direction, perimeter and shape, spatial pattern, spatial and temporal sequences) and object perception (concept of lines, straightness, horizontality). Therefore, they require special efforts as well as tactile experience to augment their concept formation. Thus, it is quite obvious that with ascending grades the visually impaired learners become acclimatized with the tactile learning process and can grasp the concepts with ease. The upper primary level visually impaired learners do not possess significantly different attitude than that of the secondary level visually impaired learners regarding preferability towards Geography. The most probable reason for such a finding in the present study

is that the visually impaired learners of upper primary and secondary levels take part in different scholastic and co-scholastic activities together. The students of different grades participate in geographical exhibitions, quizzes and excursions concertedly. Most importantly, annual excursion is an inevitable part in the school curriculum of these special (blind) schools and participation of all the learners is compulsory.

Conclusion

In the contemporary world, technology has truly revolutionized the teaching-learning process and can remove the barriers and mitigate the challenges faced by the visually impaired learners during classroom teaching-learning. Therefore, all the teachers, parents, teacher educators, administrators, researchers and policy makers have huge responsibilities in acknowledging modern technological advancements in the field of education and use them for the benefit of the visually impaired learners. With new perspective, innovative methods and modern technology, the problems faced by the visually impaired learners can be removed and human kind can advance one step forward towards the long-term goal of an inclusive society.

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