



Enhancing Mapping Skills- Problems and Possibilities

KEYWORDS

map, map reading skill, spatial thinking, wall map

Dr. Tannu Malik

Department of Education in Social Sciences (DESS), National Council of Educational Research and Training (NCERT), Sri Aurobindo Marg, New Delhi

ABSTRACT *Map is a tool which is frequently used in social science textbooks for a variety of descriptions. At school level the basic components of map are taught in geography which is one of the disciplines of social sciences introduced at upper primary stage with an aim to develop basic skills of map reading. Present study is based on field observation which aimed to highlight lack of interest and understanding of basic map elements among learners at upper primary stage. The study analyse that the geographic knowledge of students leaves much room for improvement. In spite of the geography curriculum stressing on imparting the spatial thinking skills, many of our children are not able to read maps, identify places or important physical features. They fail at interpreting information at geographical scales.*

Introduction

Social science is one of the compulsory subjects taught at school level where it has been a part of 'Environmental Studies' before the upper primary stage and emerge as a separate subject at upper primary stage. The social sciences encompass diverse concerns of society and include a wide range of content drawn from the disciplines of history, geography, political science, economics, and sociology (Position Paper National Focus Group on Teaching of Social Sciences, 2005, p.1). Geography is an integral component of social science and introduced as one of the discipline under the umbrella of social sciences. At the upper primary stage learners are introduced to the basic concepts necessary for understanding the world in which they live (Syllabus for Classes at the Elementary Level, 2005, p.173). The subject teaches different skills, major being map skill. The spatial thinking skills enhance the ability of the students to understand and explore occurrences related to spaces around them. It provides students with the knowledge of events such as; the earth sciences; the place of their state among others and, the socio-economic processes taking place or having taken place at a location (Yuri A.,1998).

Though map reading is primarily taught in Geography but map is a tool which is used by other disciplines also. Ample maps have been used in textbooks but unless learners know how to read a map and has a basic knowledge about various states of India they will not be able to understand what is being taught to them. Moreover, lifelong learners will come across the variety of maps in their daily life while reading books, newspaper, magazines, watching television or visiting any new place etc. Hence it becomes the responsibility of a social science teacher to teach the basic concepts of map reading to the learners in their foundation years.

Purpose of the Study

Geography education has changed significantly from the teacher-directed geography, focusing on memorizing facts to emphasis on *doing* geography following the constructivist ideas. There is a need to look into the classroom practice and student learning, especially with respect to the geographical skills attained. The present study intends to find out the understanding of maps by learners at the upper primary stage. Maps, being part of teaching learning

in social sciences at all stages, it is important for the learner to have a clear understanding of the basics of maps.

Geography being one of the disciplines in social science is taught by trained graduate teacher (TGT) till secondary stage whose discipline may or may not be geography. In Indian schools, a social science teacher may have studied (for B.A. or M.A.) only one or two subjects out of history, geography, economics, political science, sociology and psychology (George, Alex M., Madan Amman, 2009, p. 80). In situation of a 'non' geography teacher teaching the subject, they may be not equipped to effectively teach map reading skills and basic components of map. Hence, there is a possibility of students losing out the map reading skills. This study looks into the skills attained by the learner with respect to map reading-drawing, spatial thinking etc, attempts to tryout different ways to generate learner's interest and trace out ways of teaching basics of maps with the minimum resources available.

Methodology

The present study was carried out in a Government Middle School in rural Haryana where the researcher was attached for field study for a period of three months. In order to better understand the realization levels at foundation stage, the research was carried out on class VII students who as per the curriculum were already exposed to basic components of maps at their earlier class and seen various maps in their social sciences textbooks. The study relied on qualitative data, based on participant observation method, interaction with teachers and students, analysis of student's answers etc. The study also made use of pre-test and post-test to find out the ability of learners to read maps and their spatial knowledge before and after intervention. These provided insight into the inherent problems in geographic learning. Initially the researcher interacted with the students and teacher informally to get a general idea of the ground realities. Then a pre-test was administered following which, available resources in the school were put in use and students were observed in various periods during the school hours along with slowly introducing them to map work in the classroom. This intervention and the findings, the study comes up with suggestions and recommendations for enhancing map skills. Observations were maintained in a diary which was analyzed after the

conduct of post-test.

Results and Discussion

Map is a tool which is frequently used in social science textbooks for a variety of descriptions. Map reading skills need to be nurtured in all students as it enhances a learner's ability of thinking process and spatial imagination. Present study is field observation where it was found that learners lacked interest and basic understanding of map and an attempt was made to develop basic map reading skills among the learners at upper primary stage.

During teaching-learning it was observed that students were unaware about the states of India and had no understanding how to read a map though concept of map is taught in the beginning of upper primary stage i.e. class VI and various maps have been used in social science textbooks. Learners had not seen a globe or any map except the ones drawn in their textbooks. National Curriculum Framework states that teaching should utilise greater resources of audio-visual materials, including photographs, charts and maps, and replicas of archaeological and material cultures (National Curriculum Framework (NCF) 2005, p.54). While discussing with the learners it was found that the teacher had not done any map related activity with them. In previous class for a chapter on 'Map' learners had copied the answers from the help book and never understood the components of map or their relevance. When it was discussed with the teachers, one teacher said that he has recently been promoted as TGT and hence does not know map work and another teacher mentioned that understanding of maps is needed only in class X as ten marks question comes in the social science exam.

Intervention and Tryout

Before the intervention of researcher a pre-test was conducted to find out the map reading skills of the students and how much learners knew about their country India and its states. This understanding of the existing abilities would help in the outcome evaluation after the intervention. The pre-test results showed that the learners were lacking in map reading skills and could not even identify more than three states or tell the basic components of map.

The researcher after the introductory class and analyzing the pre-test results, framed out a plan for imparting the necessary mapping skills. It was required to explain them everything from the scratch and generate an interest in maps. Discussions with the headmistress and a senior teacher revealed that wall maps are provided by state government. Some wall maps along with a globe in sealed box were found in a locked room. Students were shown the globe and its features were explained and simultaneously in the next classes, maps were also shown and its features were explained. Two wall maps namely political map of world and India were put on the wall.

Discussions on India and its states were abstained for the moment. The researcher wanted the learners to find out certain things for themselves and started observing them. When the researcher left the classroom, all students gathered in front of the maps and started exploring it on their own. Even during lunch break, many of them quickly finished the lunch and preferred to explore maps. It was observed that there was always a group of students examining the map on the wall particularly political map of India. Since most of the students were from different states of India namely Uttar Pradesh, West Bengal, Assam, Jharkhand, Bihar, Madhya Pradesh and Rajasthan and had travelled by

train till Delhi, they were busy exploring the route and familiar names given on the wall map. Studies have shown that students having difficulty in understanding nested geographical relationships (e.g., local community within the state, the region, the nation, the hemisphere), can learn those relationships through exposure to map-based instruction (Harwood, D., & McShane, J., 1996).

Over the days, students were taught about the basic components of maps namely scale, direction, grid (latitudes and longitudes) with the help of simple activities using paper, pencil, stick etc. Students enjoyed doing the activities and gradually grasped the concepts and their relevance. It was observed that children enjoyed discussing among themselves. Many of them who were still shy to open up in front of a new teacher and reluctant to clear their doubt from her were more comfortable in asking their peer group. A child constructs her/his knowledge while engaged in the process of learning. Allowing children to ask questions that require them to relate what they are learning in school to things happening outside, encouraging children to answer in their own words and from their own experiences, rather than simply memorising and getting answers right in just one way — all these are small but important steps in helping children develop their understanding (NCF, 2005, p 17).

Gradually they were taught about the states on a political outline map of India. By now, many had become familiar with the states they and their peer group belonged as in their free time they were trying to explore their native places. Though the political map is given in their textbook but they did not take interest in looking at them as they were unable to understand it without any guidance. Wall maps fascinated them as the name of the stations which appear on their train journey were visible only on the large wall map of India. As a classroom activity, identification of states on an outline map was done. Initially their native states were done and in one day not more than six states were identified. Explaining about all the states in one go would have burdened the students with lot of information and might have taken away the charm of learning them. It was ensured to narrate some interesting information about every new state which was identified. For a week, around ten to fifteen minutes every day were devoted for map work. Students were asked to find out the capitals of states on their own and everyone completed this exercise. Finally when they all submitted their map for assessment, almost everyone had marked states with different colours and had neatly labelled all the states.

Developing pupils' ability to map is a key ingredient in an effective geographical education. Creating opportunities for pupils to represent their understanding spatially is essential. (Geographical Association, 2015) Another map related activity was performed where students were divided in seven groups of five students each. Students working in groups were able to justify and support their thinking and hence were in a better situation while constructing their own maps (Leinhardt, G., Stainton, C., & Merriman Bausmith, J., 1998). Students were given transparencies of outline political map of India and photocopies of map of major rivers of India. They were asked to choose any three rivers and identify any three states from which those rivers flow. They enjoyed learning about rivers of India and revising states of India while doing this activity and wanted to do more similar ones. Hence, they were given maps of national parks, natural vegetation and major crops namely wheat and rice grown in India and identify the states. With

little motivation and appreciation from a teacher, students were found doing these activities on their own in their study hour. As teachers we know that if our students are motivated to learn, our work becomes a pleasure (Mukunda V, Kamala, 2009).

Outcome evaluation

The post test results, showed stark contrast from the pre-test results. Fifty seven percent had marked all the states and everyone had marked atleast nineteen states. This revealed that the learners could learn the map reading skills provided they were taught in a way that created interest and with clarity. The drive to learn is a part of children's nature; our job is to encourage them and to strengthen their urge to be active (Syllabus for Classes at the Elementary Level, 2005, p.iii).

Conclusion

Even while the dispute regarding the content to be taught in geography education continues, there is general consensus about the necessity to teach about maps and globes and the skills required to use them meaningfully (Gregg, M, & Leinhardt, G.,1994). The study showed that the students who lack basic skills of map reading, after the intervention could learn and improve their map reading skills. Map are the visual representation of the world in which we live and hence they are needed to understand the space, various events and phenomenon and map reading can be taught by making learners understand the basic map elements like, scale, symbol, projection etc. and relating it to the places and regions they know. Classrooms need to be equipped with wall maps of the world, India and the state where the school exists. Transparency of political map of India may be provided to the learners in their textbooks or supplementary reading material which they can use to correlate with rest of the maps given in their textbooks.

There is a need to equip the teachers and encourage them to use creative approaches to teaching geography. They need to make use of various activities and games involving identifying places on a map, indicating directions etc. The integrating of geographical concepts with other subjects can enhance students' learning and see the world around them in a holistic manner. Teachers with limited geographical background need to be given training for improving their knowledge and skills. Even though there is commonality in the teaching methods of social science, the problem is serious. It needs to be addressed by teacher training institutions as part of their regular courses, or through refresher programmes (George, Alex M., Madan Amman, 2009, p.80).

REFERENCE

1. George, Alex M., Madan Amman (2009), Teaching Social Science in Schools: NCERT's new textbook initiative, SAGE Publications, p.80 | 2. Gregg, M, & Leinhardt, G.(1994), Mapping out geography: An example of epistemology and education. Review of Educational Research, 64(2), 311-361 | 3. Harwood, D., & McShane, J.(1996), Young children's understanding of nested hierarchies of place relationships. International Research in Geographic and Environmental Education, 5, 3-29 | 4. Leinhardt, G., Stainton, C., & Merriman Bausmith, J.(1998), Constructing maps collaboratively. Journal of Geography, 97(1), 19-30 | 5. Mukunda V, Kamala (2009), What did you ask at school today? A Handbook of child learning, Harper Collins Publisher | 6. National Curriculum Framework (2005), National Council for Educational Research and Training, New Delhi | 7. Position Paper National Focus Group on Teaching of Social Sciences (2005), National Council for Educational Research and Training, New Delhi | 8. Syllabus for Classes at the Elementary Level (2005), National Council for Educational Research and Training, New Delhi | 9. Yuri A. (1998), Problems in Cartography for Children in Russia, Joint Seminar on Maps for Special Users, Warsaw (Poland), June 2-4, 1998 | 10. Geographical Association (2015), Retrieved March 03, 2015, from <http://www.geography.org.uk/projects/valuingsplaces/cpdunits/thinkmaps> |