

CARTOGRAPHIC KNOWLEDGE GAINED BY RURAL AND URBAN CHILDREN OF SRI LANKA THROUGH FORMAL AND NON-FORMAL EDUCATION

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Sri Lanka is an island situated in the Indian Ocean to the west of Bay of Bengal. It is separated from the Indian peninsula by a strip of sea about 22 miles wide. Land extent of the island is 25,332 sq. mls. The topography of the island is such that the highland is situated in the middle surrounded by a plain traversed by several rivers. This plain is divided into two sections viz. the wet-zone and the dry-zone on the basis of the rainfall. The wet-zone comprises the southwest quadrant of the island and the rest of the plain is dry-zone.

Population distribution of the island is not even; 60 percent of population being concentrated in the wet-zone which covers only 23 percent of the land area of the island. In fact 75 per cent of the island's urban population resides in this zone. Of the nine districts (ie. Colombo, Gampaha, Kalutara, Galle, Matara, Ratnapura, Kegalle, Kandy, Nuwara Eliya) which comprise the wet-zone, Colombo district is the most urbanized. Leading state and international schools and also private schools with very good educational facilities (eg. well equipped libraries, laboratories) are located in this district. Colombo which was the capital city for nearly 175 years (upto 1982) and the primate city of the island boasts of the best urban facilities of the country. On the other hand Badulla district situated nearly 100 miles east of Colombo has a majority of rural population viz. 92 percent. For the entire district, there are seven urban centres. The rural population in the district can be categorized into two on the basis of accessibility to an urban centre viz. those who live close to an urban centre and those who do not. Those who live close to

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an urban centre enjoy the urban facilities thereof while those who live in so remote areas that urban centres are almost inaccessible, live in near isolation. Almost all the needs of the villagers are met within the village and communication with outside world is negligible. Whatever communication carried out is done by elders of the village mostly, thus confining the children to the village environment.

For the present study 75 children (12- 16 years of age) studying in two leading schools and one international school in Colombo were selected randomly. As for the rural sector, 50 students were selected randomly from a school in the economically backward area, Dambana where the aborigines of Sri Lanka live and two other schools situated 10 miles and 8 miles away respectively from the closest town of Mahiyangana.

Data collection for the study was carried out through formal and informal interviews, structured questionnaires and observation. In addition , the students were requested to draw maps based on environments familiar to them. For instance, the routes students take either to go to school, church or kovil were mapped. For urban students however, an additional method was used which was carried out on the basis of an oral questionnaire for which only the best students were chosen. This measure was taken to find out the highest level of Cartographic knowledge attained by the best students of leading schools in Colombo which can be considered an indication of the highest level of Cartographic knowledge among children in the island. The principals of the respective schools were forwarded a questionnaire which dealt mainly with details of educational facilities available and extra curricular activities carried out in the schools. Although it was intended to interview the teachers of social sciences (under which falls Geography) it was not possible because investigations were carried out during a week-end when teachers were not available. It was planned to survey the male and female students seperately; however, this too was not possible as attendance of rural students was not as anticipated.

The findings of the survey are presented in the following paragraphs mainly on a comparative basis.

The knowledge of World Geography of rural students was somewhat imbalanced in a number of respects. Only 30 percent of the students surveyed knew the spherical nature of the earth. It appears that majority

of the rural children were not familiar with the concept of the 'shape' of the earth. This was evident from some of the answers provided for the question on as to what a globe was. Some wrote that a globe is the earth, some wrote the globe to be all the names of countries in the world, some stated that globe is circular while some mentioned that globe is all what the world has. This hazy picture majority had in a way is to be expected given the background they come from and the poor educational facilities available in those schools. In fact, no material was available in their schools depicting the earth or the planetary system in three dimensional form for the children to grasp at least the idea unlike in urban areas where even television programmes are shown to students, describing the planetary system, the galaxies and so on. However, it was heartening to note that at least a few (8 percent) of rural students' knew the meaning of a globe as some went to the extent of describing a globe as a sphere on which all the continents, mountains and rivers are marked. On the other hand, more than 95 percent of urban students' image of the earth was quite clear. One answer given states that a globe is a model of the earth on which features on the earth along with the hypothetical lines are marked for the use of educational purposes. Through the word 'model' it is obvious that the student is aware of the fact that the globe is constructed to a scale. However, the image some of the students of the international school had in this regard were surprising. A student who has been abroad nine times seems to be ignorant of what a globe is.

As for the knowledge of what an atlas was, majority of the rural students seem to be clueless on this. One student states that an atlas is a book where exercises in Cartography are given, another had written that an atlas is a book where world activities are depicted and a yet another had stated that an atlas is the earth. In fact, of the rural students surveyed, only 14 percent knew what an atlas was. This could be due to the fact that only one atlas was available for each rural school surveyed for the use of all the students. This fact was pronounced by principals of the respective schools. On the other hand, each student of urban schools owned an atlas and hence was quite aware of not only what an atlas was but also how and for what purposes it could be used.

Knowledge of terminology used in Cartography and the concept of scale were investigated among students for which they were requested to describe terms like the continent, ocean, sea, island, north pole, south pole, equator and the scale. It was discouraging to note that majority of

rural students were ignorant of these terms except the term island which they had described correctly. In defining the term country, most of the students had defined it as Sri Lanka. Except for a few students who gave correct answers, others seem to have only a vague or wrong understanding of the meaning of these terms which is a clear indication of formal education being at a low ebb in the area. Scale which is a basic element in Cartography seems to be not clear to majority of rural students. It is quite possible that since they are not exposed to other environments, their image, of the country (Sri Lanka) is limited and hence their notion of distance and area is hazy. In fact, of the students surveyed, more than 78 percent had not even visited Colombo- the capital of the island for nearly 175years. To the question on the most memorable feature seen on their longest journey in the country, some students' answers were the sea beach, sea waves, vehicles, the botanical gardens, the zoo and the ruins. On the other hand, the urban students' knowledge of terminology used in Cartography was much higher and much clearer. They not only knew the meaning of scale but also knew how to use it in various situations not only in relation to maps.

The knowledge of Geography of Sri lanka was investigated with the aim of finding out if they could draw a map of Sri lanka correctly showing given features. About 80 percent of rural students knew the correct number of districts of the island. However, their knowledge of the respective locations on the map was low which is a clear indication of the level of map use. It was disturbing to learn that, though few in number, some students from Dambana, an area of aborigines of Sri Lanka, did not know the name of the country in which they live. When a map of Sri Lanka was shown too, some could not recognize it. As for the urban students, not only could more than 80 percent of them give the number and names of provinces and districts but they could also give correct locations on the map.

The ability of drawing maps was tested through various measures. First, students were requested to draw a map of Sri Lanka with certain given rivers and towns. The rural childrens maps though somewhat crude had the correct shape of the island. In two cases, the maps were drawn out of proportion; the northern area being too narrow and the south being too wide. It was however clear that they were knowledgeable of at least the shape of the island. In marking the north direction, some rural students had marked it with an arrow pointing towards the north while some had

written the word north on the top of the map. In still another instance, one student had depicted the north by a dot and written the word north by the side. This certainly is another indication of their being not familiar with finer details of maps. The manner in which towns and rivers were marked differed considerably among rural students. Some had written the names of towns and rivers without symbolizing them while some had symbolized towns and rivers both with the same symbol which fact indicates their poor knowledge of the importance of using different symbols for different features. It was heartening to know that some students wrote the names of rivers along the river courses while of course some wrote the names of the rivers in such a way that a part of the name fell outside the outline of the map(ie. in the sea area). However, judging on an overall basis, drawing of a map and marking of features thereon by rural students was good. Secondly, the students were requested to draw on paper the routes they take to go to school, temple, kovil and so on, depicting the features they see on the way. Through this exercise it was intended to extract their knowledge of how to use symbols and colours in depicting various features familiar to them. Though symbols used by rural students were mostly pictorial in nature there were students who did select cartographically appropriate symbols. However, an ambiguous case was detected where three symbols presented in a 'bunch' depicted just one feature. Another interesting point was that in certain cases symbols used by rural students were arbitrary and had no relation whatsoever to the feature being depicted. For instance, a student had symbolized a boutique by a flower. A forest infested with elephants was depicted by 'green coloured trees' dotted with 'black coloured elephants'. Spatial distributions were thus symbolized on maps in their own way. It was encouraging to note that some students had attempted to map roads and footpaths through lines of different widths thus indicating their ability to express levels of importance of features on a map correctly. Wells were also classified and symbolized in a similar manner. On enquiring on this somewhat unusual capability of students, it was learnt that these students came from villages that are being developed through an institution which 'uses' maps as a tool of promoting awareness of rural resources among villagers. The field officers concerned get the villagers to 'draw' maps on the ground and using freely available materials like leaves and flowers of trees to depict features (roads, houses etc.) in the village including the resource base of the village also. This practice has been carried out for the past four years in the area. Its healthy influence on the children has thus

certainly nourished their knowledge of map in an indirect manner. Discussions with the relevant officers of this institution reveal that children are better map makers than their elders who have had relatively little exposure to maps. As for the colours used in maps, all the rural students had used green for vegetation and blue for water bodies. In the case of urban students, it was apparent that their maps were less detailed than those of rural students. Another distinguishing feature was that their maps showed features in large sizes unlike in the case of rural students. As a result their, maps contained relatively less details. Although the rural and urban students were given the same sized paper -83cm x 58cm - for drawing the maps, the rural students were able to 'squeeze in' much detail into it (not to scale) while the urban students found it difficult to do so (several complaints were made with regard to the size of the paper given, for the purpose). This entire exercise gives an indication of their power of observation, memory capacity and also their ability to map them suitably on any area provided in relation to urban students. It is possible that details of the only environment rural students become familiar with throughout their lives have got firmly registered in their minds and and thus are in a better footing than the urban students in this particular respect (a clear example of the result of non-formal education).

In the case of urban students, their varied activities, experiences and exposures have nourished their knowledge of Cartography which situation resulted in their drawing good maps. However, it was noted that a student from a leading school that had mapped two rivers touching each other- a very basic element of Cartography being wrongly depicted. It should be stressed that maps drawn by urban students were neat and orderly.

The power of observation of students was tested through questions such as, as to what they remembered of the size of letters on maps, colours used to depict water bodies, contours, vegetation on maps. The rural as well as urban students did remember the relevant colours correctly. The memory of the size of letters on maps was poor in both rural and urban students.

The students' ability to read maps was tested through two diagrams- in the first diagram a symbolized cart track was drawn going over a symbolized water line and in the second instance, the cart track going under the water line. These diagrams were interpreted in various incorrect

ways (except for one student) by rural students while all the urban students were able to interpret them correctly. The students' ability to select appropriate symbols for maps was tested by giving several symbols for the same feature and requesting them to select, in their opinion, the most suitable symbol to depict the particular feature; reasons for their choice was also to be given. It was encouraging to note that rural and urban students selected symbols appropriately based on good reasons.

It is opportune finally to present the background of the rural and urban students surveyed. Villages surveyed were remote from the urban centres; as such, their needs were almost met within the village. This situation has led to limited communication with 'outside world' thereby 'confining' children to the village. The survey revealed that only 22 per cent of rural students had visited Colombo city - an indication of their limited exposure to other parts of the island. In fact, nearly 25 per cent of students surveyed did not recognize the picture of a telephone - some recognized it as a clock probably because the digits were given in circular form. As for the economic background, all parents of rural students surveyed were farmers their low and fluctuating income did affect the childrens' education adversely. According to the school principals there are students who keep off from school due mainly to economic reasons. Facilities in schools are limited. One school has only three maps and one atlas for the use of all the students (508 in number). The rugged paths in mountainous areas the students have to traverse in getting to school obviously make them exhausted on reaching the school and home on return. There are days when children cannot go to school for fear of elephants being on the way. On the other hand students of urban areas had numerous opportunities to broaden their knowledge and also experience different cultural and physical environments. 95 percent of the students surveyed had a television at home, 90 percent of them were members of libraries and using them regularly. Considerable number of students, specially from the international school, had been abroad and were exposed to different cultures too. Economically, urban students did not encounter any financial problems what so ever. 95 percent of them travelled to school either by hired or private vehicles. Unlike rural students whose leisure time is spent on attending to household chores such as bringing water from wells and fetching firewood for the house, the urban student engaged in sports, listening to music, watching the television or reading books and the like during their leisure time. One salient feature among urban students was that they spent as much as Rs. 7000.00 as tuition fees monthly whereas the rural children got help in studies either from the father, elder sister or brother.