

Introspection on Cartography Course in the Universities

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Abstract

University curricula in cartography are in the throes of transformation and are generally lost in a maze of problems. Unable to grapple with the problems and with a lack of vision, the courses generate a zig-zag puzzle, with no goal in sight. The root causes are apparent- a search for modernization, an inability to distinguish between the chaff and the cream and the desire to hold on to the old and known. The student is rendered a beast of burden, unable to cope up with the load, and invariably ends in frustration considering cartography an avoidable waste. Clearly something has gone wrong to a hopeless extent, and this calls for a deep introspection and brainstorming debates. All is not lost in the battle to make cartography a practically useful course program, offering attractive job opportunities.

The present paper, hence, raise issues for debate:

- (a) Cartography has outgrown from the status of an art to a science to a technology to a medium of communication. What are the priority areas to be included in the course, and what can be left to a student for self-learning?
- (b) Cartography today is a tool package, computer aided. No doubt, computer literacy is warranted, but is it necessary for a cartographer to 'know all' in computer? What are the aims and objectives in this learning process for a cartographer?
- (c) Computer maps have not obviated the need to learn the essential of conventional and manual cartography. Computerisation does not provide the cartographic intelligence for decision making. What is computer mapping without the solid foundation of the concepts and principles developed over decades by experimentation? What will be its worth as graphic designs without purpose.

These and other related issues need much debate before a reasonable course structure is designed. The INCA has hitherto failed to take the initiative in this regard. Has not this organization a moral responsibility?

Cartography in Indian university curricula has been riding piggy-back on courses of geography in the last sixty years or thereabouts. No other discipline has concerned itself with cartography, though many of them occasionally seek to use maps, without a proper appreciation of the cartographic principles and concepts. The course

structure in cartography is a jumbled assortment of many related theme areas such as aspects of surveying, map projections, map composition, design and layout, range of thematic maps, map reading and interpretation of large scale maps and the like, without seeking at any stage to integrate and build a package of principles and concepts. Also, map production aspects are generally ignored. There is always the ritual of a cartography practical, neither relished by the student nor the teacher! While such a compulsory course in cartography within the framework of geography does at best a lip service, leaving the student more confused than ever, some universities like Aligarh, Calcutta and Madras in the past used to offer specializations in *mathematical cartography*, a course which has died a natural death, because geography students are weak in mathematics.

In the recent decades, framers of courses of cartography have an unenviable task to incorporate recent advances in cartography, such as remote sensing applications and G.I.S. technology. Lest the student becomes a reluctant beast of burden, it becomes imperative to 'drop' some thing, to facilitate picking up something anew. This is done most irrationally by most university systems, the UGC adding confusion to the confounded. One university drops surveying, yet another projections, others map analysis and so on. Thematic mapping is also losing its moorings! In order to get into the band wagon of modern cartography, many universities have added splashes of the jargons of remote sensing and/or GIS. The current university scenario is a ludicrous ridicule of cartography. There is a dire need to overhaul the cartography courses and ask the first questions first before moving on to the next.

There is yet another side to the story. University cartographers find no place in professional cartographic institutions, on the ground that they do not possess professional expertise! On the other hand, in the last decade or two, the so-called cartography professionals in mapping institutions, especially those indulging in GIS propagation, with little or no background of cartographic expertise, run amuck in producing cartographic products of dubious values and standards. Computer aided cartography is like the elephant perceived by six blind men! A visually attractive, computer output of a map in hues and tones may look beautiful to the uninitiated but is not necessarily accurate and cartographically valid and acceptable, when it ignores the cartographic standards of layout, design and composition. Any graphic communication is not cartography. There is no sanity in claiming that present day cartography is a technology of

information communication if it does not communicate in the right direction and information is mauled!

A few years back, it was at this same venue, in the annual meet of INCA, I had raised an issue of debate regarding the nature and perception of cartography in Indian scene. The question raised was whether there are different types of Indian cartography—institutional cartography, academic/ university cartography, cartography of SOI, NATMO, NRSA and the like. The issue remains largely unanswered! This is because INCA has by and large ignored its basic objectives and aims of promotion of cartography at all levels. In fact, the gaps have widened. Before it is too late, it is time that INCA devotes some time to structure an academic course in cartography that is practically useful and job opportunistic. Brain-storming discussions at regional and national levels are warranted before an appropriate course in cartography theory and practice is worked out at a number of levels.

Such a discussion will have to focus attention on:

1. The objective of the course structure: What is it – acquaintance knowledge, awareness wisdom, basic cartographic working ability, professional competence, theory of cartography?
2. Basic attainment level in cartography at the start of the course- i.e. the school level knowledge. This is in recognition of the fact that no superstructure can be built without a proper foundation.
3. Dependent on the objectives defined, what ought to form the course content to present a coherent, integrated perspective? This will call for deliberations on the essential core contents as distinct from the peripherals.
4. What is time capsule available for effective teaching of the different components of the course, both in terms of theory and practice? No course should overshoot the time capsule, lest it becomes a ritualistic mockery.
5. Richard Hartshorne in his 'Perspectives on the Nature of Geography' argues that cartography demands the status of an independent discipline, however much 'map is the tool of the geographer' and cartographic wisdom is indispensable to the understanding of spatial organization analysis. This raises a fine point for discussion and debate, namely professional competence in cartography needs a much fuller and rigorous training schedule than what exists today. A broad understanding of cartographic principles, concepts and practice, as generally

prevalent in geography courses, is just not adequate to build professional skills.

6. Has conventional cartography lost relevance in the context of computer mapping? Has computer mapping got all the answers? Have the traits of cartography as an art lost their value because cartography is fast turning into a technology? Cannot the techno-traits provide a scientific back-up to tone up the artistic aesthetics of a map? Art and technology need not be mutually exclusive.
7. What is the cartography subject content in terms of principles and concepts that is an essential minimum need for computer-mapping, who ever be the expert-computer scientist, engineer, physicist or any other? How is this wisdom to be delivered to the concerned – through in service training or special instruction courses? This training would tremendously help in improving the quality standards of quick mapping without ignoring the cartographic demands and incidentally on distinguishing between the undesirable and desirables.
8. What is the needed competence and attainment level of a teacher of cartography? What is the modus operandi for keeping the teacher continuously updated?
9. What is the minimum technical infrastructure requirement at the level of the institution to be insisted upon for purposeful teaching of cartography optimally at different levels?
10. What is the role of mapping institutions, GIS industry and the like in generating professionally competent cartographers who can be directly absorbed in job opportunities? Should they have a role in research and development in cartography and if they do have, what should be the mechanism for productive interaction between the academic world, mapping institutions and GIS industry?
11. Is there no need to delve into aspects of theory of cartography so that the gap between conventional, conceptual cartographies and recent advances in the area, to serve the communication world better and to give the cartography concepts a refined and sharper edge?

These and other related issues need national level deliberations and meaningful recommendations. The INCA has a national duty to perform. The vital question is whether the INCA will rise to the challenge. What can it do?