

# Visual Maps for Collaborative Spoken Tutorial Development

<sup>a</sup>Pranita Gopal, <sup>b</sup>Nancy Varkey, <sup>c</sup>Kannan M. Moudgalya  
IDP Educational Technology, IIT Bombay, Powai, Mumbai 400 076, India.  
email: <sup>a</sup>erankikiran@iitb.ac.in, <sup>b</sup>kannan@iitb.ac.in

**Abstract**—Spoken Tutorials are interactive, multimedia based, multilingual learning aids for IT skills and bridging the digital divide. With low entry barriers, this tool is proving to be a tool that helps learners across India breaking the barriers of time, pace, speed. The creation of this low-cost teaching-learning aid is a lengthy process due to stringent quality control measures. This paper puts forth a strategy of using Visual Maps as a precursor activity for creating Spoken Tutorials as a collaborative development process without compromising on the quality of the tutorials and by speeding up the process of creation.

**Index Terms**—Collaborative Development Process, Digital Divide, Educational Technology, Spoken Tutorials, Survey, Visual Maps.

*Spoken Tutorials:* Spoken tutorials are multimedia (audio-video) based, multi-lingual supported e-learning modules that help a learner learn either software or activities, like, buying a train e-ticket at their own pace and independently. The target group for these tutorials are Indians sitting in remote corners of India with a multimedia computer and an Internet connection, without access to experts to guide. Moudgalya [1], [2] summarize the benefits of using Spoken Tutorial, with low infrastructure requirement and low entry barriers apart from being free of cost. Moudgalya [3] cites how using Spoken Tutorials is an effective pedagogical option to teach software through educational technology. The ongoing attempts to provide an effective environment for creators and users of spoken tutorials are described in [4] and [5]. In this article, we focus our attention on the creation of spoken tutorials. It is a highly regimented process that ensures that no compromise is there in terms of quality of content and that is why there are fewer number of Spoken Tutorials as one would desire. One way to speed up the process of developing Spoken Tutorials is to get the community of learners collaborate with experts in the field so as to create tutorials that are of high quality in terms of content, pedagogical style and can be dubbed into various languages.

*Need for Collaboration in Developing Spoken Tutorials:* One of the ubiquitous characteristics of teaching and learning is collaboration. For the Spoken Tutorial Movement, collaboration in the development phase spells the following advantages: Larger number of tutorials on various FOSS software are created Content validation is faster and accurate Scripts for the FOSS software are written in various Indian uages Allows for both novices and experts to contribute to knowledge development Quality of self-

learning materials is maintained Quality of audio- video material is maintained

Although collaborative efforts in developing Spoken Tutorials has many advantages, but there lies an inherent problem with collaboration: there are very few experts who wish to devote time to this project and the novices who have time to devote time to this project lack conceptual clarity that forms the backbone of a well written script that can be used for translating Spoken Tutorials into various languages. This paper suggests that use of visual maps can help experts collaborate with novices in developing Spoken Tutorials.

*Visual Maps:* For the purpose of this paper, we define visual maps as any graphical method by which an individual is able to represent her content knowledge. The graphical methods could include flow charts, mind-maps, concept maps, organizational charts, spider webs or any other kind of graphical organizer that helps represent the content visually. As early as 1963, [6] laid emphasis on how knowledge representation aided in learning and put forth the concept of an Advanced Organizer. Research done by [7], [8] and [9] are a few to mention, that have documented how various visual maps have been useful in knowledge representation, collaboration and augmenting the learning of students in various academic disciplines.

*How visual maps can help Spoken Tutorial Development scenario:* The experts from the community create the visual map for the content for which the Spoken Tutorials are to be developed. Novices review and provide valuable feedback which helps in improvising the visual map and hence the content so that the learner who is learning via the self learning mode is able to gain from the Spoken Tutorial. Using the visual map as a starting point, novices also begin the process of developing the script and even record the video based on the refined script. Housewives, school/college going students, retired people contribute to this effort by translating the developed script into various Indian languages. They also help dub these tutorials into various Indian languages.

*Tools to develop visual maps:* Visual maps can be created either using paper and coloured pens/ pencils or using computer software. We believe using software would allow the visual maps to be shared and edited easily by the reviewers and the various developers themselves. A few softwares that can be used for the process are Compendium,

Freemind, Docear, XMind and VUE-all these software are freely downloadable and cross platform complaint. They may or may not be FOSS based.

*Research Purpose:* The paper aims to present the idea of developing visual maps as a precursor activity for the Spoken Tutorial development process. Did the various Spoken Tutorial Developers actually create any kind of visual map before they began writing the script?

*Methodology:* An online survey of open-ended questions formed the basis of the survey for Spoken Tutorial Developers. 18 spoken tutorial developers (Male 12; Female - 6) were our sample. These participants had a minimum qualification of a Bachelors degree and developed more than sixty modules of Spoken Tutorial. The fewer number of developers and reviewers itself is an indicator as to why collaboration is required to ensure the speedy creation of Spoken Tutorials without compromising on quality.

Seven Spoken Tutorial Reviewers (Male -06, Female - 01) took an online rating scale that dealt with issues like, the ease of the reviewing process; the use of visual maps before the script writing stage to know the conceptual clarity of Spoken Tutorial developers; the experts developing the visual maps that the novices could use for developing Spoken Tutorials, etc was given to the reviewers. Apart from rating a particular statement, it was expected of the reviewer to comment as to why she rated the statement as she did.

*Results and interpretation:* Of the 18 Spoken Tutorial Developers, only 1 developer was unsure about the utility of visual maps before the script was finally written. This developer felt that if the topic is crystal clear for the creator, then the mind map is nothing but the script itself. The rest 17 developers felt that making visual maps before the script is actually written would focus the script writing part and would help them remember and connect the concepts/topics in hand well. The developers used metaphors, like, tracking progress; blueprint of tutorial, clear cut image of tutorial; visual cue to the tutorial; to describe how the visual maps would augment learning with Spoken Tutorials. Spoken Tutorial Reviewers were divided over the ease of the reviewing process but when asked if the visual map is developed by an expert, and the Spoken Tutorial be developed by a novice or semi-expert, the reviewers felt would create better spoken tutorials as the experts can map the theory behind better than novices.

The interesting point of difference of opinion between the reviewers and the Spoken Tutorial Developers was on the issue of using the visual maps in the Spoken Tutorials. While the developers felt that using the visual maps before viewing the Spoken Tutorials would help the learners, the reviewers felt that it may have no value addition for the learner, as it is useful for the script writer and the reviewer as the visual map was made in perspective of creating the Spoken Tutorial.

*Discussion and conclusion:* The purpose of Spoken Tutorials is twofold: one to equip the learner (across age and disciplines) with various IT skills either in the absence

or presence of competent faculty, in a manner that is independent of time, place and pace and second is to break the barrier of dependency on English to learn IT skills.

The success story of Spoken Tutorials needs to be strengthened by providing Spoken Tutorials in as many domain areas that learners require. This means that the number of Spoken Tutorials produced needs more without the compromise on content quality and content clarity. This is a mammoth task, especially because of the number of users involved. It is not within the capacity of an individual or a group of individuals to carry out this task successfully, instead the need of the hour is the involvement of the community to contribute in any form to this development movement. With this idea in mind, the present paper tried to initiate a precursor activity for the development of Spoken Tutorial process in the form of creation of visual maps of the Spoken Tutorials.

With the National Mission on Education in ICT entering its next phase, the Right to Education becoming a fundamental right and the availability of Tablet PC at affordable costs, providing the Indian learner with resources to gain access to knowledge is a prime responsibility of the academic body. Spoken Tutorials is one such form that would help the Indian learner gain not only vocational IT skills in their native language, but also help bridge the digital divide and share knowledge.

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