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Design and Development of a System-Based Application for Reading and Learning Ayurveda Sutras

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Abstract: ***The main objective of this application is to provide the user with better understanding and learning the ayurvedic sutras. Because most of the ayurvedic sutras are based on sanskrit. It is difficult for everyone to learn and understand the same. So, with this application user can understand the sutras and implement it. The basic idea of this application is to provide the user with audio of the sutra and the context of that particular sutra.***
Keywords: Ayurveda Sutra, Ayurveda shloka, meaning, sandhi, sandhi splitter.

I. INTRODUCTION

Sanskrit (5000 years old) is the oldest language in the world. The meaning of the ayurvedic concepts is deeply rooted in the language. Ayurveda lives within the language of gods. It is nearly impossible to learn ayurveda without the usage of sanskrit, once we understand the root words we can decipher and recognize many terms with more visibility. The one with more basic knowledge of sanskrit will face difficulty in understanding the language.

Sanskrit literature mainly comprises contents which are composed in the primitive ancient India known as vedic sanskrit. Vedic sanskrit is the language of the liturgical works of the vedic religion. There are four vedas which are solely comprised in sanskrit. These vedas are not only used in rituals but also have more scientific values in the field of medicine. The language of ayurveda is sanskrit. This is from the prominent charak Samhita. “Ayur” means an ancient system of life and “Veda” means knowledge. Ayurveda basically analyses life and all its layers.

Charak Samhita is ayurveda’s exposition. It is the most referenced data by students, scholars, physicians, researchers and teachers in the field of ayurveda and in medical field. Charak Samhita is the only data which is available worldwide on restorative science. It mainly focuses on the development of health and prevention of diseases. Charak Samhita is thought to have arising in the first centuary C.E. Charaka dwelled into all the areas of medicine including logic and philosophy.

Our project mainly comprises of a audiobook which has been in use by teachers, students etc. Audiobook has proven successful in its own unique way but not widely in use. An Audiobook is a voice over of the particular data read out aloud. There are many applications which are developed from the idea of audiobook. Even though Sanskrit is the oldest language in the world, it is strenuous to understand. The words and sentences contain unique meanings. The grammar in the sanskrit is boundless, it is nearly impossible to simply learn sanskrit.

The distinctiveness of our application is the voice over of the sutras in sanskrit described with the denotation of the same. The basic idea of this project is to collect the audio context of the sutras and the description below which enables the user to listen the audio and the description at the same pace. This helps user to listen and view the sutras with that particular description. This application helps the user to understand, study the sutra and rewind it as many times.

II. OBJECTIVE OF THE PROJECT

A. To develop an application to read and learn Ayurveda Sutras.
B. To collect the required data (Ayurveda sutras, meaning of the sutras, sandhi).
C. To collect audio of the Ayurveda Sutras.
D. Sync the Ayurveda Sutras with the audio.

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III. LITERATURE REVIEW

The first issue implies the study of audiobooks and its uses in education. The second issue describes the involvement of the instructional strategy, assisted reading, and how audiobooks have been applied to this long-standing educational practice. The third issue examines research related to the importance of fluency and metrics in reading, and the relationship between audiobooks and these two elements. The fourth issue inspects research that involves reading comprehension and audiobooks. While the fifth issue regards the research awning the impact audiobooks have on reading enjoyment. Lastly, there is a discussion on audiobooks and differentiated instruction, and how audiobooks can stage content for students at different skill levels. This study focuses on the user, there is little research focusing on the struggling adult reader and audiobooks. Further, there were only minor studies involving sanskrit Language Learner adults and their utilization of audiobook technology. This lack of investigation about audiobooks causes an effect on the user which is a limitation of the current research. But is also an acknowledgment that more research is needed for this application.

IV. SUBJECT SET LITERATURE:

1) *Audiobooks:* Audiobooks should factor into any comprehensive reading program. Some Educators do not value the advantages of this technology, sing audiobook technology in the institution has been a feasible peacemaker for users. The availability and usage of the audiobook has popularly grown in the past years**,** and audiobook application has become a billion-dollar industry. Harris and Casbergue in 1996 researched that there is a intensified awareness of the usage that audiobooks provide. Written text is originated from oral storytelling, so it follows that audiobooks are capturing the enthusiasm of an old tradition. With this kind of technology, educators wish that every language must have this unique old tradition that has been brought to practice again. In the past, audiobook titles mainly focused on the domain of picture books for beginning readers, Especially story books for children. Now there are many audio versions of classic and contemporary books available. Digital devices that hold the capacity to carry audiobooks are also expanding, and it is available worldwide. This allows more options for institutions to get the technology into the hands of the user. To institutions, this is an exciting prospect as more choices lend them the ability to find more exciting and relevant books to motivate students. Further, real benefits from audiobooks are provided as Hett (2012) found that audiobooks offer more time for adolescents to read, model verbal fluency, and provide motivation to reluctant readers.
2) *Prior Research:* The primary method used in this study was non-experimental and action research based. Which was done by Serarini in 2004 and Whittingham et al in 2012. Each of the primary sources used in mixed method approach of quantitative & qualitative data was utilized for each of the primary source. The researchers then gathered the data in order to obtain a more reliable result. The main limitation of this research is that the sample sizes are very small. Since there is no clarity regarding this application , therefore there is no pure experimental study in the whole of the literature. These studies also utilized a pre and post test approach that collected the quantitative data, the qualitative data is gathered through the use of surveys and observation. The majority of the studies regarding design and implementation, utilized audiobooks and an accompanying text. It is found most constructive when user can listen, follow the text and read, while matching sounds to unfamiliar words
3) *Assisted reading with Audiobooks:* Audio based reading have a long history, first with an informational strategy known as assisted reading. Assisted reading includes a fluent model in the form of a mentor and an audio recording. The process of assisted reading first starts with a user listening to an audio recording of a text selection while also reading a text- based version. Following this, the mentor reads the selection, and the user follows along with a text version. Finally, the user reads the selection individually without the use an audio version. The assisted reading strategy is designed immensely as an intervention rather than a primary mode of literacy. The process has changed throughout the years from human-only delivery to audiotape, to compact disc, and finally, to digital downloads. However the medium has been deployed and great gains in reading skill have been noted by Esteves & Whitten, 2011; Whittingham et al., 2012. Wolfson in 2008 has found that this strategy of assisted reading with the use of audiobooks is akin to reading aloud, stating “the reading process develops through oral language, and audiobooks in an assisted reading program provide another opportunity to increase the understanding and appreciation of the written word” to the user. Another study by Gilbert, Williams & McLaughlin in 1996 noted that assisted reading has been successfully implemented with children having learning disabilities and non native language English speakers. They also extended the study to pronunciation and found that assisted reading programs increased the number of words read correctly in a passage.

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4) *Fluency and Metrics:* Literacy researches have long found that the single most important activity for developing reading skills is reading aloud. Audiobooks basically adapt to imitate the read aloud function and provide a articulate model of a suitable reader. From illiterate user to literates to more proficient users, audiobooks expose each of these subsets to a articulate model that the users would not be able to access individually or in a class of struggling readers. An articulate model is the cornerstone of literacy instruction. Students who exhibit metrics reading shows higher reading and comprehension skills. Audiobooks and professional narrators utilize these melodic and expressive traits while reading, and allow users to see the markers in the text where a writer is expressing the comedic or sarcastic effect. Further, a consistent voice, smooth rhythm and a vocal emphasis that demonstrates proper punctuation the important factors of effective reading. A competent articulate model also improves vocabulary. The importance of increased vocabulary cannot be understated as it is necessary for the reader to be able to understand more complex texts. In a study done by Elley in 1989, the author found that reading aloud increased a child's vocabulary at a statistically prominent level. In second language learning, reading and listening to text is widely accepted as a useful strategy to promote comprehension. Another aspect of fluency includes the speed that one reads a text. A study by Chang (2011), discovered that reading and listening to text simultaneously can be very helpful in enhancing reading speed because it deters students from reading in a word-by-word style. Instead, it allows students to learn how to use contextual clues and segment text into meaningful units. The strategy of listening while reading also emulates a fluent style of reading by ensuring the student does not consciously worry about the mechanics of decoding. Rather, the student focuses on comprehension. Chang's study (2011) showed a statistically significant improvement for English Language Learners (ELLs) who engage in listening while reading rather than reading only. The treatment group in this study showed higher vocabulary learning rates, higher levels of comprehension, as well as a higher interest in the stories than that of the control group.

A. *Reading Comprehension and Audiobooks*

The ultimate goal of reading a text is to gain meaning from that text. Reading comprehension skill and interest in the subject matter are essential for learning. Students with a high level of skill in text comprehension are more apt to become expert learners. This ideology is used in all content areas. Serafini describes the act of reading as one that permits students to learn new vocabulary and concepts. The new vocabulary and concept material can then be applied to a variety of different reading materials and subject areas that can continue to expand a learner's academic prowess.

Reading skill develops through oral language experiences. So, audiobooks can benefit struggling users by increasing understandability of the text. The Whittingham study discovered a major increase in the comprehension ability of participants following an audiobook instructional program according to a pre- and post-test study. Beers in 1998 also found that for many struggling readers to increase comprehension they have to see words and hear them simultaneously.

The process of reading is a intense one. Tankersley in 2014 describes the brain as a hierarchy of lower level decoding with phonological, skills, high-level comprehension and discourse analysis skills. Both of these systems must work together and have great efficiency if a student is to read quickly and gain meaning from text. Wolfson in 2008 discovers that audiobooks help to remove the difficulty in decoding and that difficulty can be overcomed by users through "gaining skills in recalling details, understanding sequence, making predictions, drawing conclusions, and making inferences," and that more proficient peers can, "develop skills and strategies in critical and creative thinking."

B. *Current Best Practices*

Technology is a tool. When implementing a particular technology into the classroom, an educator needs to know what outcome they are fulfilling by integrating the technology into the lesson this was proposed by Holum & Gahala in 2010. In a perusal lesson, audiobook technology can attain a specific outcome if utilized in a specific way. For example, outcomes that relate to student's vocabulary, comprehension skills, and syntactic development can be targeted as there has been proven growth in each of these areas (Lane & Wright, 2007).

Audiobook technology is most effective when used in conjunction along with the written text. The technology improves normal reading instruction. the user can listen to the audiobook and follow along with the printed text. As they are finishing this activity, they learn to match the sounds that each written word makes. Similar to linguistic instruction, the matching of symbols is one of the basics of reading instruction and is improved by audiobook technology.

A primary focus of reading instruction is the discussion of a story or other textual elements. Reading programs that integrate audiobooks should be no different. Multiple studies integrating audiobooks into the program held a discussion of the story's ideas at its core. A compelling format for discussion is semiotic reading.

This type of reading is based on several principles. First, the user or a student should be an active learner during the reading of a text. Next, teachers should provide feedback and model sophisticated language. Finally, the teacher should challenge the student's knowledge by raising the degree of the conversation. Particular strategies to accomplish these items include the use of prompts, such as completion prompts, recall prompts, open-ended prompts and distancing prompts (Lane & Wright, 2007).

Finally, it is important that the technical quality of the audiobook should be considered. Casbergue and Harris on 1996 states that a "recording should entice, not alienate. Recordings should be free of errors and users should not only speak with clarity but must be able to feel voices to various characters."

When selecting quality audiobooks, the main items to account for are sound quality and reading style of the narrator. Educators should pay particular attention to what the narrator sounds like for certain book and analyse whether the narrator captures the soul of the book's style. Dramatic narration, for example, can make a book seemingly alive and place an audience under an imaginative spell. This type of engaging experience is very important for developing a joy of reading for the user.

Sl. no.	PAPER	METHODOLOGY
1	Part-of speech tagger for sanskrit	The paper revolves about creating a central database for root words and to which many subject tables for each grammatical category can be mapped.
2	Introduction to Sanskrit shabamitra.	This paper introduces a digital tool for learning and informal setup.
3	Sandhi splitting techniques for different Indian languages	Describes the process by which one letter is broken to form two words.
4	Converting e-book into audiobook to enhance English receptive	The conversion of them will be adaptive to users to improve their knowledge.
5	Aural speed-reading some historical bookmarks.	This essay is a contribution to the growing taxonomy of techniques of listening.
6	The impacts of audiobooks on reading comprehension and enjoyment.	The main data collection tools are pre treatment and post treatment assessments, lesson assessments, these are dictated in a mixed method data collection.

V. METHODOLOGY

A. Design

The design of this application is quite simple, since it is a developing application there is a main screen where particular sutra's audio is played and below there will be the context of the sutra.

This particular application is designed upto certain state. As we know Sanskrit is a enormous language, it is very difficult to contemplate something so big, we decided to take segments of the sutra and explain it with that particular segment context.

On a single screen the audio is played along with the meaning of that particular sutra. In our application there is a play button, rewind button, forward button, the audio of the sutra and the pronunciation of the word.

VI. DEVELOPMENT

We like to take this project in a prominent way, not making things complicated.

The basic approach is to:

1) Collect the Datasets.
2) Collect the audio files and sutras.
3) Create a database for our project.
4) Intricate the given data.
5) Insert the data into the created database.

VII. CONCLUSION

Audiobook application has a great impact on users. It has an effect on reading comprehension and creates an enjoyable environment , thereby increasing learning interest of the users. For struggling reading this app is a boon, as it allows them to understand, read and learn the sutras/shlokas. It also allows them to understand sanskrit words and sentence pronunciation. Audiobook also creates interest for readers to learn the language. Research studies have found an improvement in students fluency, comprehension, vocabulary and motivation when utilizing audiobooks.

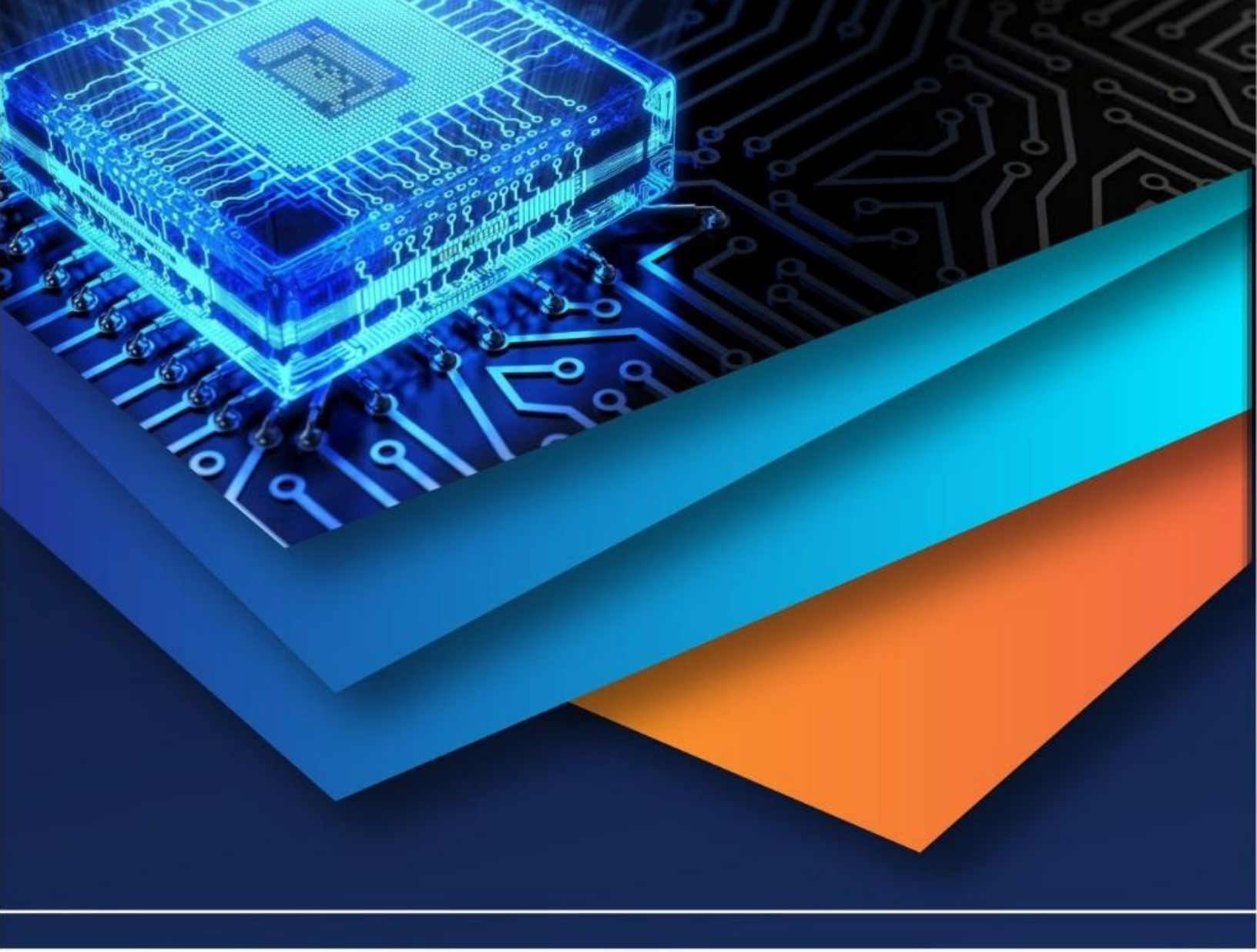
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Audiobook application has been used to draw struggling young readers with increasingly complex literature. Further, this application allows readers to match sounds as emulated by a fluent model to particular words. Thus, this enhances the comprehension skills, understanding pronunciation of words and increases their attention towards learning the language. Therefore, this research paper provides us a detailed description of the application used to learn and understand sanskrit sutras.

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