

A Study of the Effectiveness of Podcasts in Teaching Computer Science as a Pedagogical Intervention for Effective Transaction

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Abstract: Podcasting in India is at a very nascent stage, despite the fact that the nation has a large number of active bloggers. In India it's growing very fast. For this purpose, researcher planned to study the effective teaching- learning techniques of podcasts for computer science in senior secondary classrooms. **Purpose:** This study accounts for the effectiveness of podcasts in teaching computer science in the extent of retention capability, interest of students and academic achievements of students at secondary school level. This study had shaded light on the use of technology i.e. Podcast in teaching-learning at senior secondary stage with respect to Computer Science. **Design:** For this study, researcher had developed podcasts with the content about two different topics of the computer science book of NCERT and used them as a tool through podcasting technique for a few weeks. This study lies in quasi-experimental design in nature. The sample for this study was taken through Random Sampling. The School was selected randomly from south-west Delhi zone. The sample size for students was 60 students from two different schools which assimilated using few parameters of class XI. In this study, 30 students were taught through podcasting mode with the help of podcasts and next 30 students through a regular lecture method. **Findings:** The result of the study implies that using podcasts stipulates qualitative reimbursement for students over and above regular mode (Lecture method) of teaching computer science. While the study is limited by small sample size and by some within- group variation in pedagogical techniques, the study provides initial evidence that podcasts have the potential to provide greater advantages if it is used in teaching-learning practices more than simply as a supplementary tool. Findings of this study have provided information about further research studies which includes different aspects of learning, subjects, teaching resources and learner. According to researcher, this study has shown a different outlook to the teachers and students respectively so that they can replace their traditional lecture methods, learning styles and include podcasting in education. **Research limitations:** This study focused solely on the schools of the south-west zone of New Delhi. Thus it would have been better if it could have covered several schools all over New Delhi and India. The study was confined to the students of the senior secondary stage only having Computer Science as an optional subject in their course.

Keywords: Podcasts, Effectiveness, Teaching, Pedagogical Intervention, Effective transaction, Computer Science

1. Introduction

A Podcast is generally used as an audio-video medium available on the internet in a sequence of many files communicating about a specific subject or topic. At present time education through podcasting is becoming very popular because it's easy to listen more than reading any information and it's easy to comprehend. Podcasts can be used as a tool with which to interrelate with an educational errand. Podcasting authorizes mobile learning, that's why being able to listen to podcasts series anywhere with iPod or any compatible expedient (Evans, 2007). Podcasting permits students to supervise their precious time. Podcasting is a very important technology that is easy and straightforward to use. Education through technology became very much easier because it has the potential to augment access, quality and efficiency in education. Technology enables the development of more and better students in any field of education or you can say that in any subject. Nowadays technology is the backbone of every subject whether its science, arts, commerce or any technical subject. Technology facilitates students and teachers both to enhance their teaching-learning capabilities. Other researches had revealed that when the teaching-learning process and technology comes together it becomes effective. In this research, researcher uses the podcast as a supplementary aid for teaching computer science at the higher secondary stage.

Nowadays technology takes place in every field of work. It can be a job place, home or school and college; everyone is using technology in the form of computers and so many other ways. In India, it's growing very fast. According to previous research, it is found that technology has a great crash on education (Stiegler, 1998). Nowadays many colleges and universities are working in this area to endorse technical education through technology. Education through technology became very much easier because it has the potential to augment access, quality and efficiency in education. Technology enables the development of more and better students in any field of education or you can say that in any subject. Nowadays technology is the backbone of every subject whether its science, arts, commerce or any technical subject. There is a positive relationship between education and technology. Technology facilitates students and teachers both to enhance their teaching-learning capabilities. Other researches had revealed that when the teaching-learning process and technology comes together it becomes effective. In this research, investigator used the podcasts as a supplementary aid for teaching computer science at the higher secondary stage. Contributions of podcast in education are:

(a) **Podcasts have made education joyful and entertaining:** Podcasts can be used to direct this addiction in a positive manner by introducing audio and video

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podcasts in computers and projector in the classroom for the purpose of interactive sessions, to see the relevant videos, share knowledge to solve queries and concepts (Carvalho, 2008).

(b) Education has become more accessible to all pupils by Podcasts: Virtual classrooms have entirely replaced traditional classroom approaches; this technology allows students to learn whenever and wherever they choose in their own comfort zone. Students from remote locations that were formerly cut off from the rest of the world can now obtain their academic papers through e-learning.

(c) Podcasts have made group studies and assignments much easier: In a traditional classroom when a teacher asks the student to conduct group study or do an assignment, it used to create confusion because every student has got their own opinion and group discussion would create a total mess. Now the discussion can be conducted online through podcast forums where they can upload their tasks and collaborate with one another in a perfect manner and teachers can solve their queries.

(d) Podcasts promote Globalization and decrease cultural gap: We can decrease cultural gaps by implementing information systems through podcasts to bring down the linguistic, geographical and some cultural boundaries. Podcasting helps in sharing information, knowledge, communication and relationships between different countries, language and cultures becomes much easier; hence it promotes globalization (Carvalho, 2008).

(e) Podcasting made both teaching and learning easier: Teachers can make engaging audio and video presentations using podcasts, which will keep students involved and help them understand all subjects better. Apart from that, such methodologies might lead to interactive sessions between students and teachers. As a result, both processes are simple to maintain and encourage digitalization.

2. Review of Related Literature

A literature review might be absolutely engaging, as in a clarified book reference, or it may give a basic evaluation of the writing in a specific field, expressing where the shortcomings and holes are, differentiating the perspectives on specific writers, or bringing up issues. Such a survey won't simply be a synopsis however will likewise assess and show connections between various materials, with the goal that key topics rise. Indeed, even an unmistakable audit anyway ought to be rundown and reword, however should include remarks and bring out subjects and patterns. Each bit of progressing research should be associated with the work previously done to accomplish a general importance and reason. The audit of related writing in this way turns into a connection between the research proposed and the investigations previously done. It enlightens the reader regarding viewpoints that have been as of now settled or finished up by different writers, and furthermore allows the reader to value the proof that has just been gathered by past research, and in this way extends the momentum inquired about work in the best possible point of view. A huge piece

of audit of writing entirely to be done even before the examination venture is formalized.

Podcast as Pedagogy:

(Edirisingha, 2007), this study explored the impact of podcasting on student learning in higher education. This research study was carried out in five universities of the UK across a range of different disciplines. It investigates the impact of podcasting through qualitative and quantitative data collection techniques. Finding of this study indicates that podcasting helps students learn by providing a good introduction to online material: assisting them in the organization of different weekly learning activities focused on the course and developing their positive attitudes towards formal and informal learning. So, according to the conclusion of this study, podcasts must be integrated with other learning activities.

(Carvalho, 2008), this study explored the uses of podcasts in different learning conditions like instructions, feedback and namely content for students' assignments from teachers. Researchers conclude on the basis of this research that podcasting is a very useful tool in all levels of learning because podcasts are easy to listen and create. According to the study podcasting is an innovative technique and effectively used in teaching-learning of a foreign language context.

(Frydenberg, 2006), concludes that podcasting is a very useful tool for inculcating critical thinking and technical skills in students so that they can develop their own podcasts. According to the researcher, podcasting can be a link between students' learning and course related interest. Further students should attain the actual content understanding, that they are able to determine which aspect of podcasting is important for their course work.

Podcast in Academic Subjects:

(Huann, 2006), concluded that Podcasts are most frequently used in higher education. According to the researcher this study investigated the effectiveness of using podcasts in teaching learning of music and visual arts in an educational institute. According to this study students found that podcasts are effective and should be used as a method of teaching which could be used to supplement face to face teaching. Students suggested that teachers should include podcasts in teaching of music and visual arts and needed to grow the importance of podcast content to what was taught during lessons.

(Heileson, 2010), this study concluded that when students adapt podcasting as a useful medium for studying, that will help them to improve the academic environment. According to the primary findings of the study it is noted that educational podcasts are like a boon for improving study environment. Podcasting serves as a challenge to the traditional lecture methods. Again it is deliberating the idea that podcasting improves the studying habits in a positive way.

Podcast for Listening and Reading Skills:

(Clark & Fernandez, 2013), concluded in this study that podcasting enhanced student reading under certain conditions. Interviews and Surveys conducted by (Fernandez, Simo, and Salan) found that listening to a course related textbook section better enabled the students' ability to check their understanding of the material of the students who participated in this study, more students found the written material more clear and understandable than the podcast. Using a quasi-experimental within subject approach, this research examines student reading behaviour when podcasts are not available as well as when podcasts are available to students.

(Abdulrahman, Basalama, & Widodo, 2018), this research investigated students' listening comprehension through the use of podcasts in EFL (English First Language) classroom. According to the study, students' perception is that authentic materials, interesting activities including listening exercises and meaningful tasks are provided by podcasts for them so they can be more motivated to learn English. Recommendations of this study are that podcasts are technology that is very effective and teachers should use podcasts in teaching listening.

Podcast as a Teaching-Learning Technology:

(Deal, 2007), this paper is based on the answer to this question: Does podcasting have any impact on education? Further study talks about three monarchies of educational podcasting are following: invent a lecture and distribute this for appraisal, then release significant content and at the end, students must produce and submit their own produced podcasts as part of their homework. Generation of Subject related appropriate content is the vital time and effort rigorous part of this process.

(Kao, 2008), concluded in this study that in earlier times there did not exist any technology like podcasts but in the present time these technologies are becoming the best medium of transactions in the classroom. According to the researcher, in engineering courses basic technical mechanisms are very much important and should be taught in such a way so that it can be made easy for students. For this reason researcher claim the use of podcasts in audio-visual both 6 aspects. Findings of this study explained that using video podcasts in classroom teaching-learning practices empowered students in adapting technology and made them comfortable with it. Technology enhances competency and diverse learning and makes students able to enjoy learning experiences with video podcasts.

Podcast for Self Efficacy, Attitudes and Behaviour:

(Donnelly & Berge, 2006) in this study, it's explained how podcasting helps different trainers, teachers and students. Podcasting assists its users for delivering appropriate content according to their need, anywhere, anytime. This study mainly focused on four powerful characteristics of podcasting like multitasking, less-time consuming etc. According to this study, in today's time podcasting can be used in different ways for teaching, learning, and training

and for entertainment also. Here, podcasting is a very strong transaction technique to help students and teachers use technology in the classroom and form a suitable content area and learn it together.

(Berger, 2007), concluded that podcasting is the medium that is emerging so much popularity through its flexible nature of transacting information and content delivery. Podcasting in engineering education helps in understanding better concepts and effectively used in the other fields of academic studies. This study provides evidence that students like podcasting, they like it because of its flexible nature of use (Berger, 2007). Further, this study focused on the potential of podcasting and found that podcasting could be more effective when it will be used as a supplementary tool with the efforts of teachers.

The above mentioned studies had been categorized broadly into five major themes which lead about the answers of these two questions:

1) What is already known about this study?

It is documented that podcasts help in deep learning approaches by fostering high quality learning outcomes and better content. Podcasts are used as a supplementary tool and are superior to substitute traditional teaching learning methodology. It has been seen that students can be encouraged to carefully structured assessment techniques through using podcasts in education.

2) What can be added to this study?

Podcasting fosters deep content knowledge and positive collaboration behaviour leads towards the interest factor in students for particular topic or subject. Podcasting improves learning outcomes, as measured by exam marks or academic achievement marks of students. Podcasting enhances retention capabilities of learning than surface learning approaches (Evans, 2007). It has been seen that the lack of sustained research culture around the use of podcasting in education in teaching-learning practices is a matter of concern since the inception of the institution. This warrants further study of how technologies like podcast and other online medium for teaching-learning activities can be used with in a context of differently positioned students, with a particular emphasis on an approaching of infusing technologies that is basically focused on:

- a) Awareness of context,
- b) Socially inclusive, and
- c) Keeping an eye on the introduction of low threshold technologies.

In doing so, the study is trying to counter that while there are pedagogical values in the use of podcasting, this pedagogical concept of teaching computer science through podcasts might not be perceived as equally useful by all students (Clark & Fernandez, 2013).

Need and Rationale of the study

According to this research, researcher studied effective teaching-learning techniques of podcasting in senior secondary classrooms. It is very helpful for teachers and students for new teaching and learning strategies. For conducting classes through podcasts teachers have to be

more technologically competent. Podcasting can add more meaning to the students learning the process and the changing needs (Carvalho, 2008). Podcasting offers opportunities to be easily accessible wherever they (students) are. Previous studies have shown that there are so many advantages like to replay downloaded podcasts series, they can revise and establish the truth of content, create their own content on the basis of previously recorded reprimands.

This study accounts for the effectiveness of podcasting in computer science at the senior secondary stage. There were two groups allocated: a podcast group (PG) i.e. Experimental group and a Control group (CG) based on pre-test and post-test activities. And for this study Researcher had developed podcasts and later it was used as a tool through podcasting technique. The podcast group then listened to 8 podcast episodes over a 5-6 week, while the control group was provided with the same content in regular teaching methodology. Both groups were assessed using the same test after 5-6 weeks. The findings of the study implied that podcasts stipulates qualitative reimbursement for students over and above regular mode (lecture) of teaching computer science. This study had shaded light on using podcasts in teaching-learning at senior secondary stage with respect to Computer Science. It has found out whether podcasts can be used as an effective tool in promoting learners' autonomy. Findings of this study have provided information about further research studies which includes different aspects of learning, subjects, teaching resources and learner (Heileson, 2010). According to researcher, this study has shown a different outlook to the teachers and students respectively so that they can replace their traditional lecture methods, learning styles and include podcasting in education.

Statement of the Problem

The research aimed at studying the comparison between the traditional lecture methods of teaching with the podcasting method. This study had thrown light on different aspects of podcast like the effectiveness of podcasts in extent of retention capability, interest and academic achievements of students in computer science at senior secondary level. Hence the study is titled as "A Study of the Effectiveness of Podcasts in Teaching Computer Science as a Pedagogical Intervention for Effective Transaction"

Objectives of the Study

- To measure the achievement of students in Computer Science by teaching through Podcasts.
- To determine whether Podcasts increase the interest of students in learning.
- To ascertain the extent to which Podcasts increase retention capabilities of students in Computer Science.
- To compare the achievement of students in Computer Science teaching through Lecture Mode and Podcasting Mode.
- To investigate the importance of podcasts in Computer Science education.

Hypotheses

H₁: Teaching through Podcasts method yields higher achievement scores of students in computer science than the lecture method.

H₂: Teaching through Podcasts method yields higher the retention capabilities of students in learning Computer Science.

Research Questions

- How does podcasting aid students in learning computer science?
- Whether podcasting increases the interest of students for learning or not?
- How does podcasting assist students in enhancing their learning capabilities?
- What are the relative advantages and disadvantages of podcasting vs. the lecture method?
- Why is podcasting considered to be useful in learning and teaching?

3. Major Findings of the Study

It was found that the mean score of the podcast group (experimental group) was higher than the control group and finally, the hypothesis of the effectiveness of podcasts for teaching computer science at senior secondary level was tested by using t-test.

Table showing Mean, Variance, Standard Deviation and T-value of Control group and Experimental Group:

The students in the control group received treatment through lecture method and the experimental group received treatment through podcasts method in teaching computer science subjects. The pre-test and post-test scores were carefully analysed and tabulated for further interpretation.

Table 1

Teaching Method	Control Group	Sample (n)	Mean	Variance	Standard Deviation	T-value
Lecture Method	Pre-Test	30	10.73	5.512	2.347	t=2.83
	Post-Test		14.13	3.912	1.97	

Table 2

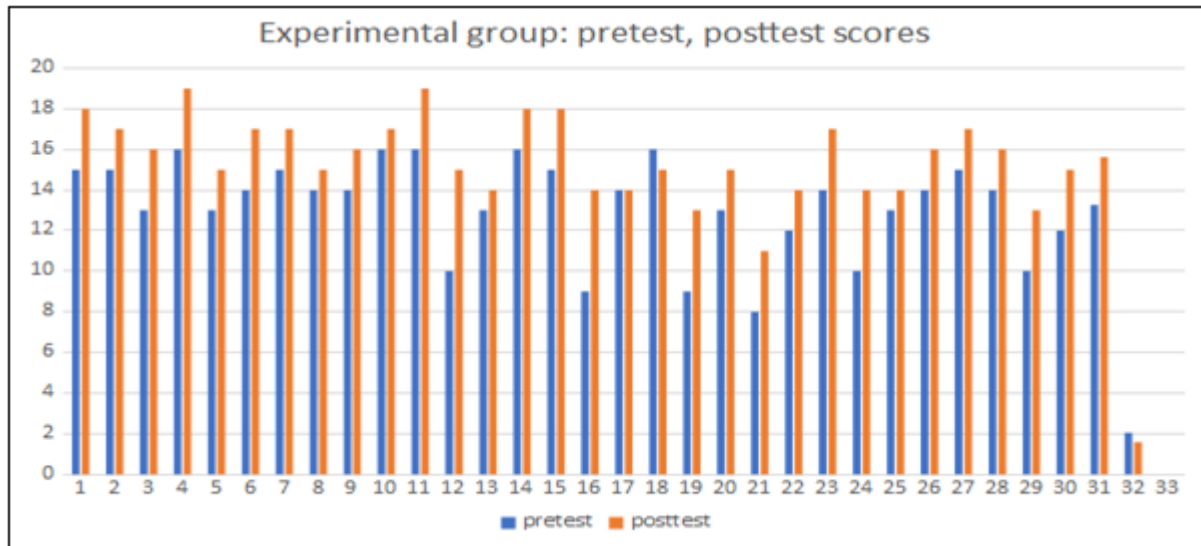
Teaching Method	Control Group	Sample (n)	Mean	Variance	Standard Deviation	T-value
Podcasts Method	Pre-Test	30	13.7	6.537	2.556	t=7.24
	Post-Test		15.67	2.755	1.65	

It is found that t- calculated (t=7.24) was greater than t-table, on the level of significance 0.05. Therefore, the hypothesis (H₁- Teaching through Podcasts method yields

higher achievement scores of students in computer science than the lecture method) was accepted at the specific level and found effective teaching of computer science through

podcasts method. As can be observed from the analysis of the pre-test and post-test scores, the experimental group produced higher achievement output, indicating that in-class podcasting had a positive impact on students' computer science teaching-learning (Evans, 2007). It can be concluded that the hypothesis (H2: Teaching through Podcasts method yields higher the retention capabilities of

students in learning Computer Science) was accepted by measuring the difference between the post test scores of the control group and the experimental group and this calculated value is greater than the scores of the post test of the control group.



- From the findings, it concluded that nearly 51% of the students are in agreement with the statement that students like to study Computer science through Podcasts.
- From the findings, it concluded that nearly 85% of the students are in agreement with the statement that students can use Podcasts anywhere, anytime.
- Nearly 90% of the students are in agreement with the statement that students like to study new things through the use of the internet.
- It concluded that nearly 68% of the students are in agreement with the statement that podcasts can help students to connect with their real life problems from outside the school.
- Nearly 66% of the students are in agreement with the statement that students like to study Computer science through listening Podcasts.
- Almost 77% of the students are in agreement with the statement that students believe that podcasts help them in enhancing their learning abilities.
- 73% of the students are in agreement with the statement that podcasts increase their interest in learning computer science.
- 70% of the students are in agreement with the statement that Podcasts support their learning with respect to understanding the concepts in computer science.
- 70% of the students are in agreement with the statement that using podcasts in teaching computer science creates a favourable environment in the classroom.
- 70% of the students are in agreement with the statement that learning computer science topics through podcasts helps to remember the topics for a longer period of time.
- 73.33% of the students are in agreement with the statement that podcasts help in improving self-efficacy of the students.
- 80% of the students are in agreement with the statement that teaching computer science through podcasts enhances creativity of students.
- 90% of the students are in agreement with the statement that learning through podcasts help in improving listening, speaking skills and academic achievement of students (Edirisingha, 2007).
- 76.66% of the students are in agreement with the statement that using podcasts in the teaching learning process helps in improving the concentration level of students during conducting the class.
- 79% of the students are in agreement with the statement that students should actively participate in creating podcasts along with teachers in the classroom.
- 83.33% of the students are in agreement with the statement that podcasts are easier to listen to than reading an information/topic of computer science.
- 83.33% of the students are in agreement with the statement that podcasts promote technology in the classroom.
- 83.33% of the students are in agreement with the statement that Podcasts offer opportunities to be easily accessible everywhere like the classroom.
- 76.66% of the students are in agreement with the statement that for conduction classes through podcast teachers has to be more technologically competent.
- 86.66% of the students are in agreement with the statement that podcasting can add more meaning to the student learning process in computer science.
- 100% of the students are in agreement with the statement that podcasts help students to replay downloaded podcast series so that they can revise content.

4. Summary of the Findings

The findings of this research, based on a worksheet of pre-test and post-test, Interest Inventory and questionnaires, showed that the participants would like to listen and practice podcasts in computer science. They wanted to use it both in the classroom and outside of it for their betterment in computer science. They believed that by practising, they could achieve efficiency in learning computer science; it increased their interest and retention power with listening and speaking skills. Moreover, most students appreciated the fact that podcasts can be used anytime, anywhere (Carvalho, 2008). Therefore, they were interested to carry it in their smartphone and listen to it during their free time. For which students' interest in becoming an autonomous learner was quite vivid. Educational Implications The overall findings would recommend some suggestions in order to use podcasts for various stakeholders in teaching-learning of computer science and other subjects also, and for learners' autonomy.

For Teachers

- Computer science teachers can include podcasts in order to teach coding languages like Python, C++ etc. which are included in their syllabus/curriculum.
- Podcasting should be used in other academic subjects in schools with respect to different domains of prescribed curriculum. In languages subjects it is very easy to use podcasting in an effective way, students asked to create podcasts for such subjects who includes teaching methodologies like story-telling, narration, speech related activities etc.
- Podcasts are easily available anywhere in this technical era and it is known as a standard method of teaching and learning because instead of being tethered to a classroom, students can learn the information that is shared by the teacher anytime. This generation enjoys podcasting by being able to download podcasts lectures and listen to it again and again, anywhere, anytime.
- Teachers should be more technologically competent because teaching-learning resources are more effectively used in the classroom when a teacher knows how to use this tool and further he/she can teach their students about using podcasts as a learning tool (Frydenberg, 2006).
- Teachers should encourage students to create their own podcasts so that they can be a part of the activity alongside teachers so as while interacting with students teachers are able to help and solve their individual problems by guiding them and acting as a facilitator to them.
- Teachers should be more technologically competent because teaching-learning resources are more effectively used in the classroom when a teacher knows how to use this tool and further he/she can teach their students about using podcasts as a learning tool.
- Teachers should synthesize students learning through podcasts creation and communicate with parents time to time and community also. It could be the best medium to link all the stakeholders of the education field.

For Students

- Making one's own podcasts is another method to express oneself, students should be asked to read the topic from a

text book and then 4-5 students can be asked to create podcasts and explain according to his/her understanding of the chapter by discussing it with their classmates and teachers also.

- Podcasts are portable technology or tool for teaching-learning, introduction of virtual classrooms has completely displaced the traditional classroom methodologies, this technology allows the student to study in their own comfort zone at anytime, anywhere.
- Podcasts promote technology in the classrooms because it is an innovative way of teaching-learning to engage students for hard subjects also by developing cognition power to understand things easily related to study (Clark & Fernandez, 2013). Lectures of difficult subjects can be in the form of narration, storytelling and example based learning.
- Podcasts provide information in a fun and entertaining way, thus increasing students' interest and engagement. Podcasts extend students learning with critical links between different concepts that way students feel good and satisfied with the teaching through podcasts.
- Podcasts encourage students to develop their podcasts to improve their reading, writing, listening and communication skills also and it enhances learning of students by targeting each student's interest.
- Podcasts promote creative teaching-learning unlike podcasting which gives direction to new strategies like guest-lectures, video-presentation, Audio-instruction learning, interviews etc. Students can develop their own podcasts in the form of assessment, doubts to ask teachers.
- Podcasts aid in the development of team spirit among students outside of the classroom, but they also aid in the teaching-learning process in the classroom, and teachers may teach them the qualities of practise and perseverance. Podcasts are an inextricable element of the teaching-learning process; hence efforts should be made to include more podcasts in educational settings.
- Podcasts teaching methods proved to be one of the best tools for enhancing the creativity, engagement of students, its work in repetitive mode, students can listen to previous lectures again and again till concepts are not clear.
- Necessary efforts should be made to actively engage all the students and give them all the opportunities to participate in podcasting which helps in building the individual self-confidence level of all students. The self-confidence gained in podcasting and developing their content, applies to all subjects, school, career and all over life also.
- Students should be introduced to different teaching methods (Podcasting) and then be allowed to make up their minds about which manner they choose to study, with the better approach (Podcasting) ultimately winning out in pedagogy.
- Because many students with special needs struggle with reading due to mental disabilities like Dyslexia, podcasts might help them. It's also effective in class when a student with a visual impairment makes traditional learning methods difficult.

For School Administration

In other aspects, podcasts are the great communicating tools because there are so many school in which newsletter never get read by students, their parents and sometime teachers also, so it can be a great help for them using podcasts as a newsletter to inform different activities like Parents-Teachers Meetings, Invitation for any events(sports or cultural) and for any other.

The authorities of different schools, colleges and universities can think of giving facilities of technology (e.g., computer, internet, multimedia etc.) to access their students in order to promote Podcasts in Education.

- According to the researcher, podcasts can be used as an extension for listening, reading, teaching of previous content to new knowledge. It can be used for research work; curriculum based content, assignments, projects, extra-classes, remedial-classes, interviews and counselling. • From the findings it has been proven that podcasts are affordable and very easy to create. Students and teachers both can create their individual podcasts respectively students for asking doubts and queries, and teachers for lectures (*Carvalho, 2008*).
- Podcasts should be used in schools for teaching- learning of computer science and as pedagogy assists students in the retention of a topic for a longer time and efforts should be made on the part of teachers and all stakeholders to use podcasts for teaching of different subjects other than computer science.
- Podcasts in education make an abstract concept and experience very concrete so the students can understand and have control over it. From the findings, it can be concluded that podcasts are an appealing technology and enhance and encourage students learning, who do not like reading, listening, and writing in the classroom.
- As it has been analysed that 36% students are disagree with the statement that podcasts is a time consuming tool for teaching, so the curriculum framers, school administration and teachers should design and develop podcasts in such a way that time constraints do not prevent students from reaping the full benefits and advantages of podcast learning (*Heileson, 2010*).
- In order to teach and learn computer science, podcasts should be employed in schools and as pedagogy assists students in the retention of a topic for a longer time and efforts should be made on the part of teachers and all stakeholders to use podcasts for teaching of different subjects other than computer science.
- Podcasts are new technology which assist students in different aspects like availability, innovative, effective and engaging which should be employed in a better manner which can lead to a favourable environment in the classroom.
- Traditional methods of teaching should be less used and students should be given opportunity for active participation in the pedagogy to develop their own podcasts, this would be a very innovative and effective teaching-learning process for teachers and students both.
- Podcasts serve as one of the better tools for bringing and increasing the enthusiasm level of students and they would enjoy classroom activities.

- Efforts should be made to incorporate podcasts activities more often as a method in the teaching-learning practices. Podcasts can readily be used to engage students and improve teaching-learning methods for both students and teachers in schools, universities, and institutions (*Evans, 2007*).
- Podcasting is also useful in social activities in the form of communication tools, so that people from different backgrounds use podcasts as a way to share their insights, ideas, thoughts and information.

5. Conclusion

According to this research, researcher studied effective teaching-learning techniques of podcasting in senior secondary classrooms. It is very helpful for teachers and students for new teaching and learning strategies. For conducting classes through podcasts teachers have to be more technologically competent (*Deal, 2007*). Podcasting can add more meaning to the students learning the process and the changing needs. Podcasting offers opportunities to be easily accessible wherever they (students) are. Previous studies have shown that there are so many advantages like to replay downloaded podcasts series, they can revise and establish the truth of content, create their own content on the basis of previously recorded reprimands. Till today, in most of the schools, Computer Science is often perceived as a boring and optional subject among students. It has been seen that not only in schools of rural areas but also in few schools of urban areas, Computer Science subject is not ranked in the school's curriculum. Students find it difficult to understand, remember and relate to daily life experiences (*Donnelly & Berge, 2006*). Both the contents and the methods used to foster learning in Computer Science are in themselves originative of creativity. In Computer Science classrooms, podcasting is an effective teaching tool that requires students to demonstrate their knowledge, abilities, attitudes, and engagement. The study's positive findings show that the institution's lack of a sustained research culture surrounding the use of podcasting in education in teaching-learning practises has been a source of concern since its beginning. This warrants further study of how technologies like podcasts and other online mediums for teaching-learning activities can be used within a context of differently positioned students, with a particular emphasis on an approach of infusing technologies. Amongst the variety of instructional technologies that exist, podcasting, therefore, should be viewed as another supplementary channel for supporting student learning. Still, with a dynamic, diverse, progressively tight student body that has higher expectations of the learning expertise, mistreatment podcasts present an excellent chance to fulfil the educational desires of this techno savvy generation (*Frydenberg, 2006*). Podcasting in education is a useful way to begin a piece of language to teach and learn. It is an alternative method of learning which can help to improve listening skills, content forming, storing and saving a lecture. Podcasting is ideal for lectures, hypnotherapy sessions, sleep therapy, telling stories, discussing books, interviewing specialists etc. So, podcasts are an incredible opportunity for all kinds of learning. Podcasts in education are very 18 useful to begin a piece of literature or to generate ideas for reading, writing, listening and teaching-learning. Podcasts can encourage

students to explore, clarify and elaborate feelings, attitudes and ideas. Because podcasting requires students to organize, synthesize and articulate their ideas, it provides an excellent opportunity for reflection and evaluation at the conclusion of a unit of study (Heileson, 2010).

After reading this paper, readers will have a better understanding of how podcasts can be used to teach computer science in senior secondary schools. Teachers can learn how to convey instructional subject in a fun and engaging way by listening to podcasts, making the classroom setting more engaging and enjoyable. The students understand that podcasts provide learners with autonomy. Furthermore, as a precondition for computer science, this study emphasised increasing students' recall abilities, attention level, and drive to learn. This study also looked into the usage of podcasts in teaching and learning. As a result, the overall conclusions may be advantageous to Compute.

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