Enhancing Second Language Proficiency through Jigsaw Cooperative Learning among Technical Learners at Tertiary Level

Mr Kanta Rao D [1], Dr. Md Mojibur Rahman[2], Dr Pallavi Kiran [3]

1Research Scholar (IIT-ISM, Dhanbad) & Assistant Professor, Department. of Humanities and Social Sciences, GIET University, Gunupur, Odisha (India). E-Mail: dkantarao@gmail.com

ORCiD : http://orcid.org/0000-0002-6641-6645

2Associate Professor, Department of Humanities and Social Sciences, IIT(ISM), Dhanbad, Jharkhand (India). E-Mail : mrahmanelt@gmail.com

ORCiD : http://orcid.org/0000-0002-8454-0981

3 Assistant Professor, School of Management, Bennett University ,Greater Noida Uttar Pradesh(India) E-Mail: pallavi.kiran@bennett.edu.in ORCiD:https://orcid.org/0000-0003-0465-6720

Abstract: The technological revolutions in the field of science and technology in the 21st century has opened many opportunities and challenges for students on the back drop of globalization, AI tools and cut throat competition prevailing in the job market. In Indian sub-continent students face challenges with duel nature, scientific and technological advancements one hand and second language competence on the other unlike the students of native English. This paper is a quasi-experimental study on the multilingual technical learners who failed to get career opportunities on the grounds of low oral skills at tertiary level and how Jigsaw, a cooperative learning method used to enhance the language competence. 100 technocrats were selected through purposive sampling technique and divided into control and experimental group of equal numbers. Jigsaw method implemented for the experimental group to enhance second language oral skills for one month while control group taught conventionally. The oral skills of leaners tested at initial and final stages of the study, compared and analysed statically to find the efficacy of Jigsaw method on learners' second language oracy...

Keywords: Cooperative Learning (CL), Jigsaw, Communicative competence, Second language proficiency.

Introduction

In 21st century, the lives of people have been more globalised and digitalised with the rapid advancements with AI in various spheres of science and technology. The remarkable advancements in the fields of scientific knowledge base and technology are essential for the development of a country in the 21st century(Schmisseur, 2015; Baykhanova, 2024; Ermakov & Golub, 2025; Kurniawan, 2024; Lustosa, 2025), however to excel academically, professionally and socially, students need to acquire skills of 21 century along with optimal command over second language proficiency in English. English is a dynamic and the most sought after global language that provides direct access to the rich repository of knowledge and literature in the world and often widely accepted as a link-language for international communication system,

In the last four decades, learners with adequate command in second language English have achieved success in securing many greener pastures in life: employment, career growth, business,

travel and cultural exchange, so the world has witnessed a huge demand of the second language learning and teaching (Baykhanova, 2024; Kurniawan, 2024; Lustosa, 2025), however the scenario in Indian subcontinent seems different, where students pay more attention to academic and core skills rather than gaining English proficiency, this attitude for English has taken a toll on learners' jobs and career advancements so this paper focused on improving oral skills of technical learner through Jigsaw: a cooperative learning method..

Background

Indian subcontinent is known for multilingual diversities along with rich cultural heritage observed in all walks of life. According to Indian census of 1961, people across this vast country speak more than 1652 languages. 22 official languages are recognised and adopted by the constitution of India however, more than 150 languages are vividly spoken in the country, so taking into account the diversities prevailing in language, cultural and geographical dimensions of this vast country, second language learning & teaching remains a challenging task for both teachers and learners in Indian subcontinent (Winson et al., 2023; Seenivasan & Gadani, 2025). To get the desired results Teachers adopted various teaching learning methods and approaches to suit the language needs and interests of the learners, however despite all efforts, students struggled gain significant command on all sub-skills of second English as pointed by National Knowledge Commission on Education in its report.

"It is an irony; English has been part of our education system for more than a century. Yet English is beyond the reach of most of our young people, which makes for highly unequal access. Indeed, even now, barely more than one percent of our people use it as a second language….." (GOI.2007)

Conventional methods were repudiated with interactive approaches in 1970s and 1980s to meet the demand of industry and business English in different spheres of human endeavours as recognized by NCERT (NCERT, 2006). The adopted methods had merits as well demerits hence resulted in a few students gained proficiency in English language despite learning English for more than 16 years in Indian scenario. Clement & Murugave says "More number of technical graduates in India finds it a taunting task to speak or write in English with fluency and accuracy" (Clement & Murugave, 2015).

1 Oral Language proficiency: A Concern for Technical Students in India

The structure of 21st century global economy is quite different from that of the 20th century due to vigorous advancements in the fields of science and technology, information and communication system (ICT) along with the advent of AI and AI-related tools. The leading business houses are adopting AI tools to accelerate business and maximize profit in ITES (Information Technology-enabled service sector) and manufacturing hubs unlike as seen earlier(Marlene et al., 2010). To excel in career in the current global competitive world, one is ought to have higher-order thinking skills(Saavedra, & Opfer, 2012), a part from strong theoretical knowledge and practical skills-set coupled with AI-tools along with effective communication skills. 21 century is a knowledge building environment, the ways how people and ideas interact is very crucial for knowledge creation and develop understanding through practical interaction among students (Marlene et al., 2010) .Second language fluency and proficiency are the key factors to determine learners success in achieving professional and personal progress in the world. Kotak & Ami (2015) advocates that effective communication proficiency makes one understand the target language to communicate his thoughts and views in the best possible way to make others understand both verbally and nonverbally through Emails, telephones, Video and teleconferencing etc. Kazamia (2012) emphasises for technical knowledge to be sought and taught in engineering course, however it should be coupled with effective communication skills for better career opportunities.

Technical education is considered a de-facto graduate degree in the backdrop of immense career opportunities available for huge population of graduates passing out from educational institutes every year. India known globally as a soft power for its expertise in software and service related industries, however the command over English language competence among technocrats has been deeply questioned from time to time, as technocrats often seen failing to express effectively, technical

knowledge and skills in securing desired career options. Students at tertiary level get exposure to English environment through reading academic books and journal along with attending a good deal of lectures, tutorials, labs and project reports delivered in second language English and spending a lot of time on internet, however during the job seeking interviews process students found lacking required oral proficiency to crack interviews. It is often seen that technocrats with significant command over second language proficiency have a considerable edge over those who are not.(Kotak & Ami, 2015; Zubair, 2024) so learners are expected to express ideas and view in second language English without any ambiguity and fear for better career options (Clement & Murugavel, 2015).

In Indian second language classrooms, a lot of emphasis is put on written skills to determine learners' language command in the traditional summative examinations neglecting oral practice in target language during classrooms learning (Jones & Parker, 1989; Wang, 2022). Effective Communication plays a vital role in the lives of modern workforce to achieve professional and business successes in the highly competitive business world. Chaturvedi & Sachitanand (2013) says "India trains around 1.5 million Engineering graduates every year which is more than the US and China combined" however despite having command over latest technical skills coupled with AI Tools and advanced academic knowledge learners second language proficiency remains a serious concern for most of the engineering graduates across the country. Alagozlu (2007) argues that "since the traditional instructional process urges students to receive rote ready-made information without questioning, they [students] are not encouraged to think critically, which is probably transferred into ELT classes as well" so second language teaching in classroom is mostly traditional encouraging competition among learners to go for grades rather than to gain command over target language English. Thus the prevailing trends of teaching second language English lack quality and fail to obtain a universal appeal to address communication competence among learners despite learning it for more than 16 years, thus learners struggle to achieve language proficiency in India. The second language learners, who have passion to achieve language proficiency in English but have other regional language as first languages are terrified by rigid second language curricula and enormous syllabi. The national employability report by Aspiring Minds states that the employability of technocrats in India (as cited by Ghose, 2015) as "Only 18.43% of all engineers are eligible for a software engineer job in India, the low percentage of eligible engineers has nothing to do with the engineering skills but rather the low proficiency in English & soft skills make them lose an opportunity." Technical students in India do not possess required English language competence for global high paying jobs in business consulting, software, IT enabled services and knowledge processing fields thus learners need to gain significant language proficiency to use English in a creative and persuasive way to communicate ideas and views to get business deals in the highly competitive business world.

Challenges for Students & Teachers

The huge population in Indian subcontinent at various levels of Education demands innovative teaching and learning methods to be adopted in the second language classroom (Ghuge, 2024; Seenivasan & Gadani, 2025), further teachers need to adopt learners centric innovative methods to equip learners with emerging skills of the 21st century for productive living and solve real-world problems (Priyadarshini, 2025; Marlene et al., 2010; Rani, 2026; Winson et al., 2023). The reasons behind the limited success in English proficiency are as follows.

Over emphasis on teaching grammar, vocabulary, and reading skills neglecting listening, speaking and writing skills.

Teacher cantered autocratic classroom emphasises more on passive learning and creates little scope for learning among students.

Overcrowded classrooms pose a challenge for teachers to adopt a common teaching method that suit the needs of all learners .

Individual differences among learners in language proficiency and attitude for second language learning gives little scope for a teacher to devise a common method for learning

Language proficiency evaluated in terms of grades scored resulting in rote learning of rules of grammar and language components for examination, further teachers also seen focusing on syllabus completion to make learners take examinations instead of concentrating on learners' second language competence

To address the above five challenges researcher has adopted one of the Cooperative learning strategies; Jigsaw as an innovative method to enhance the language competence of students.

Cooperative Learning Method

One of the most common learner centred teaching learning methods is cooperative learning that involves small group of learners collaborate to achieve common goals of teaching learning process, gain command over learning concepts and build interpersonal skills among peer (Slavin, 1996; Johnson & Johnson, 2014; Davidson et al., 2014; Lynda & Brody, 2017; Johnson, Johnson, & Smith, 1998; Slavin,1987; Yaduvanshi & Singh, 2024; Gupta & Pasrija, 2016). Cooperative learning is based on the principle of Constructivism that transformed the field of teaching & learning across the globe. CL as constructive process treats learners' not as mere passive listeners but active participants in teaching & learning process to construct knowledge in the group rather than absorbing information passively. (Ning & Hornby, 2010; Chinna & Reddy, 2017; Gupta & Pasrija, 2016; Vhalery & Nofriansyah, 2018).

Johnson, Johnson and Smith (1998) define cooperative learning, as an interactive learning teaching method in which students work in cooperation in small groups to attain the shared learning objectives. Cooperative learning defined as learners working together in small groups to "attain group goals that cannot be obtained by working alone or competitively" (Johnson, Johnson & Holubec, 1986). Olsen and Kagan (1992) define cooperative learning as a group learning activity organize learning progresses on exchanging of ideas, views, thoughts and information between members in groups, each learner is responsible for his/her own learning and helps peers to enhance learning altogether. Cooperative learning is a learner-centred teaching learning strategy adopted in large heterogeneous classroom by dividing whole class into small groups to solve a problem and enhance learning experience collectively by helping one another (Johnson, Johnson, & Holubec,; Moskowitz et al.,1985). It encourages active involvement of learners in the learning process and opens ways for learners' empowerment for learning and gaining language competence (Namaziandost et al., 2019). The results of cooperative learning techniques enhance learners academic achievement and group cohesiveness (Slavin, 1980, Soudaya, 2014; Yaduvanshi & Singh, 2024; Francis, 2013).

Jigsaw & oral competence at tertiary level

The name Jigsaw is a metaphor that refers putting all the pieces a puzzle together to see the whole comprehensive picture (Evcim & İpek, 2013). Jigsaw approach is a flexible approach; makes each learner in the group become an expert on the topic through continuous mutual contribution (Sanaie et al., 2019; Moskowitz et al., 1985). Education, a systematic and dynamic process focuses on teaching and learning, so a learner should not be treated as an empty vessel to be filled with some concepts in classroom but rather nurtured carefully with inherent skills for the active participation with peers. (Gupta & Pasrija, 2016). Chan (2004) gives an overview of Jigsaw II implementation in five steps: (1) reading; (2) expert group discussion; (3) home group reporting; (4) testing; and (5) group recognition. Bhandari et al., (2017) Jigsaw method not only builds comprehension of topics, but also encourages cooperation among participants resulting in improvement in listening and communication competence (Marhamah & Mulyadi, 2013;). To promote effective learning, learners must overcome stubborn nervousness and inhibition of learning in teacher centred classroom, on the other hand cooperative learning democratic environment facilitates learners to openly utilise target language to address problem at hand by developing critical thinking collectively with the help of peers.(Costouros, 2020), hence CL fosters freedom among learners to express ideas and thoughts candidly.

At tertiary stage, learners' primary objective is to achieve a bright career and academic excellence.

There are a few learners desire to take up entrepreneurship and business as a career, however all these career options require strong language command and communication skills to excel in the competitive world (Priya et al., 2017), however the oral fluency of Indian technical learners is limited as most of them treated English as one of the subjects of study to pass semester exams. Limited second language proficiency has negative impact on the employability of graduates resulting in un-employment. The majority of language teachers in India follow conventional methods of language teaching but to enhance language competence, teachers need to adopt innovative approaches and play a crucial role in making teaching second language effective(Nawaz et al., 2014). Teachers must adopt techniques and ways to motivate learners to make second language learning appealing. Chomsky says wrote that 'the truth of the matter is that 99% of teaching is making the students feel interested in the material' (Chomsky 1988: 81), he was referring to the importance of emotional aspects of language learning (Agudo, 2018 ed.)

A few teachers have adopted novel teaching methods and approaches to address the challenges faced by learners in class resulting in learners' mastery in few skills but majority of the learners imitated teacher without any linguistic creativity and critical thinking.

Incorporating a learner-centred class has become a challenge in a heterogeneous classroom in India; however this can be successfully mitigated by adopting Cooperative learning method: Jigsaw to enhance communicative competence. The efficacy of Jigsaw method on language achievement rate of English pre-school students proved experimentally (Evcim & İpek, 2013). Jigsaw connects theories of second language acquisition: the comprehensible input, the comprehensible output, the interaction and context, and the intuitive domain of motivation to collectively challenge and accept one another's reasons and conclusion while addressing a problem (Goli, 2015; Sabbah, 2016:Gupta & Ahuja, 2015).

Tomlinson, Moon & Callahan (1997) advocated the effectiveness of cooperative learning at multiple stages and disciplines as a leading instructional strategy of the 1990s. Mirici admits teachers adopting Jigsaw create convenient learning atmosphere for the learners to discuss information in the target language openly with their peers It also reinforces learners personal and professional skills resulting in better individual in society (Karacop. 2017; Evcim & İpek,2013; Marhamah & Mulyadi, 2013). Cooperative learning method's efficacy in learning foreign language teaching at the tertiary level was experimentally proved in China (Ning & Hornby, 2010).

In this current empirical study, an attempt has been made to strengthen oral fluency of technical learners by implementing cooperative learning strategy: jigsaw in one of the technical institution in rural area in India (Andhra Pradesh). Jigsaw: A cooperative learning approach allows learners learn in small group. In this technique, each learner has been allocated a portion of the topic to learn and responsible to teach his portion to the rest of the group. This technique encourages slow learners apprehensive of speaking in a large classroom to become more comfortable in language learning by speaking in smaller group.

Objective of the study

The current study investigates the efficacy of Jigsaw: A cooperative learning approach for enhancing oral competence of tertiary level technical graduates.

Research questions

1 What effects does Jigsaw technique have on second language learners' oral competence?

2. What impact do cooperative learning methods have on the ESL learners' cognitive and behavioural competence?

Research Methodology

The empirical study was conducted at one of the Andhra Pradesh's rural technical institutes situated in Srikakulam District. Purposive sampling technique adopted to select sample for the study.

A total of 100 students pursuing Engineering course were selected from final semesters engineering course. The groups were divided into two sets of experimental and control groups comprising 25 students each. Each experimental group comprises five work groups and each workgroup have five students with distinct sub-topics to master. Students with same subgroup topic join together to form an expert group as shown in Figure 2

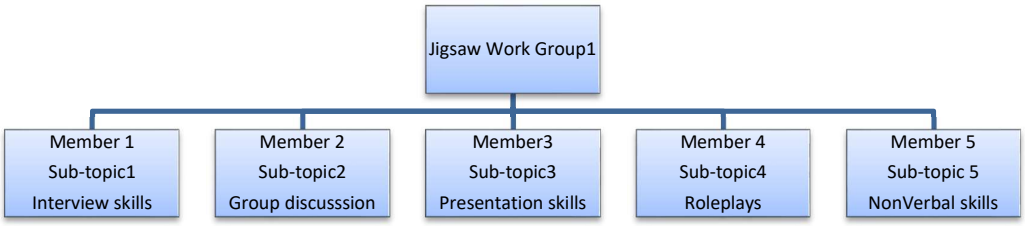

Figure 1. Workgroup 1 composition with members and subtopics.

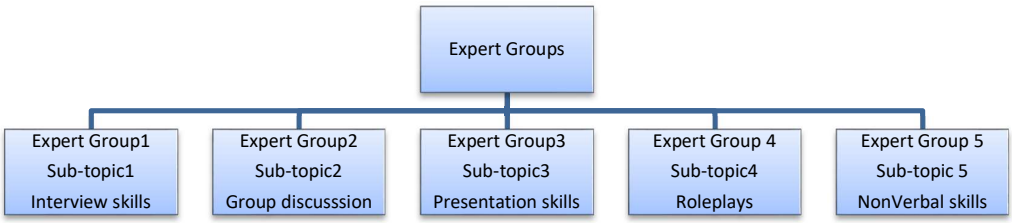

Figure 2. Five Expert Groups dealing separate sub topics

The pre-test was carried out on control and experimental group learners before implementing novel technique to assess the initial language proficiency in English using role-plays, group interviews, group discussions, presentations on diverse topics with suitable body language. Later, Jigsaw technique administered on two sets of experimental group for one month, After the treatment, post-experimental groups' scores were compared with pre experimental scores to determine any change in statistical data in oral competence through mean, standard deviation and T-Test through a post-test to find out the effect of Jigsaw strategy on experimental groups.

The control group was taught speaking skills in a teacher centred traditional classroom allowing learners to take initiatives to participate in the classroom learning by asking doubts to language teacher rather to peers.

Sample

The sample comprised 100 students selected for study is final year technical learners from remote engineering collages, who struggle with limited second language oral proficiency during recruitment drives. To select learners, purposive sampling technique adopted and with males 40% and females 60% in experimental and control group.

Instruments for study

The researcher has selected role plays, group discussions, face to face interview and presentation skills along with body language on social subjects carry out study in the presence of a second language teacher. Cooperative learning approach: Jigsaw implemented for the experimental group learners. The home and expert groups formed of the experimental group learners while adopting Jigsaw.

Elliot Aronson invented and developed a novel teaching learning method Jigsaw: a cooperative learning strategy in the early 1970s at the University of Texas, California. Jigsaw technique has more than four-decade history of enhancing educational outcomes and learners performance in various educational levels. Here each learner's contribution is essential for achieving teaching learning objectives so all participants seriously and continuously contribute for the group success to attain

common educational objective (Marhamah & Mulyadi, 2013). The oral language competence of the study groups is tested after four weeks of implementing Jigsaw method through group discussions, interview skills, and presentation skills along with appropriate body language.

100 mixed ability final semester learners divided in to experimental and control group, further the experimental divided into two groups (Jigsaw1 & Jigsaw2) with 25 students each to easily implement jigsaw in small group. Initially, both the groups assessed for oral language proficiency through a one to one unstructured interview by a few language teachers right before the commencement of seventh semester engineering classes followed by Jigsaw instruction for 4 weeks for experimental group and conventional oral teaching for control group, further at the end of the instruction process, a post-test conducted for learners of experimental and control group.

Data Analysis

Pre-test data collected initially from both groups has been statistically analysed for oral competency. Learners command over communicative competence bridges the gap between theory and performance in real-world social settings since it integrates both linguistic proficiency and behavioural theory (Wiemann & Backlund.1980).

Experimental group was further divided into five work groups comprising five learners in each group. Each learner from various workgroup joined together to form expert group and gain profound command over oral skills through learner centred active learning activities like Group discussions, Role Play, Interview Skills, Presentation skills and professional etiquette & Body language separately through jigsaw technique.

Two sub-groups of 25 students each formed from the experimental and control groups. 25 learners from experimental group were further divided into 5 small work groups comprising five students each. All the students in the jigsaw group spited to form expert groups to deal with one specific oral skills activity like role play, GD, presentation and interview skills along with professional etiquette & body language. Students discussed the said content topics for two weeks in the expert group and in last next two weeks joined parent groups to discuss the things learned among work group members. Learners of the control group taught oral skills in a traditionally by language teachers for four weeks. Language classroom was teacher centred and only two-way communication happened between teacher and students were limited to few learners.

To determine the change in the oral competence of the respondents before and after implementing jigsaw technique, a pre & post-test conducted to collect data and scientifically analysed. T-test administered on the pre and post test data using SSPS software 20 to plot data and results in tables for standard deviation and mean to investigate the significant change in oral competence between groups after treatment.

Results and discussions

Table 1.A. Indicate group Statistics for Mean and Standard Deviation of Pre-Test Scores of control and experimental groups at initial stage of the study.

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Pre-test	Experimental	50	29.360	2.3453	.3317
	Control	50	29.180	2.6084	.3689

The above Table 1.A shows the group statistics of Experimental group (N=50, M=29.36 and SD=2.34) initial oral competence compared with that of control group (N=50, M=29.18 and SD=2.60). The table shows mean scores and SD of both the groups similar at initial stage of the study hence the table clearly ascertains that both the group learners had same level of oral fluency prior to the implementation of Jigsaw and conventional learning technique in the experimental and control group respectively, however to prove this experimentally a Null hypothesis is tested through an independent sample t test administered on both groups.

Table 1.B. Independent sample T- test to shows Levene's Test for equality of variances & T-test for equality of Means, T value and significance difference *P* for Pre-test scores of control and experimental groups before implementing Jigsaw technique.

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.398	.530	.363	98	.717	.1800	.4961	-.8044	1.1644
Equal variances not assumed			.363	96.913	.718	.1800	.4961	-.8046	1.1646

**P<0.05*

Table 1.B states that outcome variables were normally distributed and equal variances assumed based on result of Levene's Test for Equality of Variances(F=.398,P=..717), since P>.530 so the result of Levene's test found to be non-significant so equal variances assumed for initial oral competence between both the groups.

To prove statistically the difference between experimental and control group initial oral proficiency, an independent sample t-test administered on both groups. Null hypothesis tested to check if both the groups' oral skills similar at the initial stage. The t-test value T (98) =.363 and Significance value P=.717>0.05, as significance value assumed to be α=0.05. The table1.B shows P> 0.05 so the NULL hypothesis stays valid indicating no significant difference in oral competence at initial stage between groups, hence t-test in table 1.B experimentally proves Null hypothesis as valid indicating no significant differences between oral fluency of experimental and control group.

Table 2.A. Paired Sample T-Test indicating N, Mean, Standard Deviation before & after implementing Jigsaw technique for the experimental group.

Experimental Group		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTest Group	29.380	50	2.3895	.3379
	Post Test Group	43.1400	50	3.06401	.43332

A post-test conducted on both groups pre and post test data to evaluate change in oral skills after implementing Jigsaw and conventional learning at the end of the study. A paired sample t test was employed to compare the pre and post test scores of the experimental group learners The table 2.A highlighted experimental group pre-test data (M=29.38,N=50,SD=2.389) and post-test data (M=43.14,N=50,SD=3.064). The statistical data indicated a significant increase in the mean and SD scores of experimental group after adopting Jigsaw method. Significant increase in oral competence observed among experimental group learners in the table (2.A).

Table 2.B. Paired Sample T-test showing difference in Mean and Standard Deviation along with 'T' Values, degrees of freedom, and significance value P for Pre & Post Test data of experimental group

Experimental Group		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pre-Test Post Test	-13.760	2.352	.33266	-14.4285	-13.0914	-41.364	49	.000

*p<0.5

The above table presents a significant difference in mean and Standard Deviation between pre & post-test data of experimental group (M=-13.76 & SD=2.352) after implementing Jigsaw. The result indicated oral competence of experimental group learners has enhanced due to Jigsaw learning (Zahra, 2014). To assess scientifically the efficacy of Jigsaw on oral competence, a paired sample t-test was administered on the experimental group to test the Null hypothesis. The table shows T (49) = -41.364 and Significance value P=.000<0.05 since significance value assumed to be α=0.05 and p value is <0.05 so the null hypotheses is rejected. The difference between pre & post-test mean, found to be -13.76 and SD as 2.352, indicating a significant difference in oral competence of experimental group learners after implementing Jigsaw. The oral competence of learners in Jigsaw learners centred environment enhances cognitive competence through continues interaction and active participation in target language during teaching learning process develop critical thinking and problem solving skills among group learners(Özdemir & Arslan, 2016;Gupta & Pasrija, 2016; Sanaie et al., 2019). Further jigsaw method also allows expert group do the teaching process on specific topic in target language in the respective work groups so in doing so behavioural competence among learner would develop when learners independently play various role in the heterogeneous work group. Hence experimental group learners gained considerable command over target language oral skills due to a cooperative learning method: Jigsaw, further it also inculcates productive learning while learners actively involved in sharing ideas and work collectively to complete the academic tasks (Zakaria & Iksan,2007; Marhamah & Mulyadi, 2013; Mergendoller & Packer, 1989).

Table 3.A. Paired Sample T-Test indicating N, Mean, Standard Deviation for implementing conventional methods of oral teaching in the Control group

Control Group		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test	29.060	50	2.5747	.3641
	Post-test	33.6200	50	2.74709	.38850

This table compares Pre & Post Test mean scores of control group. Pre-test (Mean =29.06, N=50, SD=2.57) is compared with Post-test (Mean =33.62, N=50, SD=2.74). Table 3.A shows a considerable difference in mean scores of control group from Post-test to Pre-test stage. The difference is also observed in the standard deviation of the Pre & Post-test oral proficiency score for conventional teaching. Hence change is also seen among control group students at the post test level after being taught through conventional method and to prove it statistically a pair sample t test conducted between post and pre-test data of control groups.

Table 3.B. Paired Sample T-test shows difference in Mean & Standard Deviation along with 'T' Values, degrees of freedom, significance P between Pre & Post Test control groups.

Control Group		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pre-test – Post-test	-4.5600	1.40204	.19828	-4.95846	-4.16154	-22.99	49	.000

*p<0.05

This table shows statistical change in the mean and Standard Deviation (M= -4.56 & SD=1.40) between pre & post-test group scores, the difference in the mean between pre and post groups is small when compared to experimental group scores indicating minor enhancement in oral competence. To find a significant change in oral competence after one month conventional teaching between pre & post control group, a paired sample t test was performed and null hypothesis is tested. The result in the table indicates t (49)= -22.99, the degrees of freedom as 49 and SD=1.40 and Significance value P=.000<0.05 and significance value assumed to be α=0.05 so the null hypotheses is rejected, indicating a significant change in oral skills during conventional teaching. In the conventional teaching the scope for cognitive and behavioural development is low as learners are passive during teaching and learning. Hence, in the control group also certain change in oral competence is observed after one month of teaching but much more significance is seen among experimental group learners due to Jigsaw technique.

Conclusion

In traditional second language classroom lot of emphasis is on the process of teaching language rather than language itself making learners passive listeners, however in Jigsaw method second language classroom becomes vibrant and lively with the active participation of learners in small groups and practical usage of target language. In the current study also students in Jigsaw class have explored language among group members through group discussions, role-plays, face to face interviews without any hesitation or nervousness among peer, motivated by teacher and fellow students to participate in discussion and master the subtopic, while convention group learners were passive listeners of teacher. The efficiency of Jigsaw technique proved experimentally in the current study through independent

and dependent sample t-test administered and the pre and post test data of experimental and control group after the instructional sessions. It is observed by the researcher that, cognitive and behavioural competence of the experimental group learners developed vigorously in a student centres classroom while participating and solving the problems at hand compared to passive learning in control group students.

The study also motivates second language teachers to implement Cooperative learning (Jigsaw) technique in class for better language teaching rather that redundant conventional methods, however this study has a limitation and cannot be generalized for all technical students as the study was conducted on a small group of students so vast research need to be done on effectiveness of Jigsaw method on oral skills..

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