

A Comparative Study on the Concentration Skill between E- Learning Methods and Traditional Learning Methods among Higher Education Students

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Abstract – Concentration is the ability to focus and give undivided attention on a single task by ignoring all other distractions. According to time magazine report the average attention span of human is 8 sec. As per Hartley and Davis average attention span of adult is 10-15 minutes. Observation of environment takes place through immediate concentration. Reading, learning and thinking take place through prolonged concentration. The concentration is needed for students to study subjects and listen class. Due to lack of concentration the teacher student interaction is low. The study aims to analyze the factors influencing concentration and to know about the concentration of students pursuing higher education. The survey was conducted among college students in Tiruchy district level. The study reveals the concentration of students who practice online learning is high. In online learning students learn traditional subject through innovative way. The students who have the habit to watch video, read novel has good concentration therefore, habitual practice will improve concentration. Hearing music, practicing yoga and exercise will improve student's concentration skill. Brainstorming, self-testing game, quiz, solving problem during lectures will boost concentration of the students.

Keywords – concentration, skill, students, cognitive skill

INTRODUCTION

Concentration is potential of the individual to put their mental work in any situation [1]. Concentration skill leads the person to focus on their position and responsibilities [2]. Concentration skill is the ability to ignore all other distractions and focus on a particular job. Swami Vivekananda mentions “concentrated mind is really a search light”. Observation of environment takes place through immediate concentration. Reading, learning and thinking take place through prolonged concentration.

To accomplish every day occupational task concentration is needed. Students should concentrate to improve their competency and skill to memorize the matter for long period of time [3]. Important skill needed for the student is stay focus and listen the instruction of the teacher. Concentration will help the students to complete the task in shorter period and helps to reduce error. The students can able to understand subjects easily if their concentration is good. The students' academic

success will be depending on their ability to concentrate. The online learning platform will improve the skills of the students by personalized, project based curriculum.

The fourth industrial revolution has lead industries to search for new and emerging technology to improve their production. The Indian GDP was quadrupled during 1991 to 2001 due to technological development. The technological transformation directs the industries to look for skilled labour. Nearly 500 million people in India are in the age bracket 5-24. According to International labour organization (ILO) report 2018 in India, 18.6 million people are unemployed [4]. As per Aspring minds, 80% engineers were unable to get job due to lack of skills [5]. Aim of skill India is to train 500 million people by 2020[6].

Managing attention is a vital skill necessary for students to be successful in 21st century. If concentration is not present students cannot able to understand subjects. There will be difficult in reading, spelling,

mathematical. Student's attention is declining after 10-15 minutes. Taking notes will become a difficult task. The student's daily routine, job, social area will be affected due to lack of concentration. Concentration problem lead students to not complete job in shorter period and they get distracted during conversation and lecture. It leads students to poor academic performance and the teacher student interaction will be low.

In India the education system was transformed to learner center method [7]. The enhancement in digitalization would increase the usage of multimedia in education [8]. The internet had improved the skill of the reader. Digital era changed reading habit. Most of the professional directly read on internet instead of taking printout [9]. Many students had change reading printed textbook, newspaper with online version [10]. Numerous benefits were present in the usage of social media for learning. The social media will help to share information and also improve reading ability of students [11] The technological usage will improve the activities related to learning inside class but the students' excitement for using technology for educational purpose also cause distractions [12]. The usage of laptop and cell phone inside classroom will create negative impact on learning process of students [13]

The study aims to analyze the factors influencing concentration and to know about the concentration of students in Tirchy district.

CONCEPTUAL FRAMEWORK

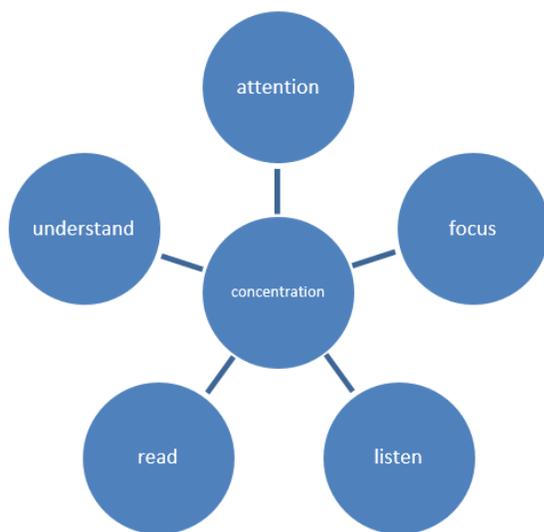


Fig 1: Conceptual framework

The conceptual frame work defines the dimensions of the concentration skill. The dimensions such as attention, understand, focus, read, listen are independent variable.

Attention is the ability to focus thought and action on some goal in environment. The goal indicates perception, thought and action. Attention is a selective process needed for assigning truth values [14]. Attention of human being is constrained by demand to perceive, act, talk and think [15]. Attention leads resources to available information. Difference is present overt attention and covert attention. Overt attention acquires information from a specific source. Covert attention leads mental resource to some aspect of sensory signal [16].

The unwanted processing of the background is lowered and locus of attention becomes steadfast. The impact of increasing concentration is present in brain stem activity apart of auditory system that incoming sound passes through it before reaches to brain conscious part cortex [17]. Reading is the capacity to identify words present in documents and use the knowledge for personality development [18]. Listening is defined as the process of attend, perceive, interpret, remember and respond to the expressed needs, offered by other people [19]. Listening skill is based on speed accuracy of the processing of delivered input. The listening instruction is given to the learners to improve the interconnected network of learner's cognitive process [20] Hearing music in study time increases concentration of the student. It will also improve their academic performance [21]. The people who practiced yoga has good concentration and attention skill [22].

RESEARCH OBJECTIVES

This study aimed to identify the level of concentration skills among college students; to study various dimensions of concentration skill; to find out the impact of concentration skill among different groups of students; and give suggestions for enhancing concentration skill.

METHODOLOGY

In order to address the objectives the descriptive research design was used. The secondary data was collected from the journals, books, articles. Based on the secondary data five different dimensions of the concentration was determined. The primary data was collected through survey. The research instrument used for the study is questionnaire. The questionnaire includes demographic details of the respondents and statement

which consists of independent and dependent variable of the study. The statement was framed based on the dimensions as five point likert scale answer question 1 denotes strongly disagree to 5 strongly agree. The participants of the survey were higher education students of Tirchy district. Tirchy district is selected purposively because of online penetration in education compare to other districts in Tamil Nadu. The collage from Tirchy district are selected by simple random sampling method. Education Institution (1 university, 1 art and science, 2 engineering and 1 skill development) are selected. For the study from 5 institutions using stratified random sampling samples are grouped in strata and are collected for study. The sample size is found to be 163 with error margin 5% of acceptance of error at significant. In the study we had followed the privacy and safety of the respondents. The SPSS software package is used to analysis the data. First t test and one way anova was performed to find out difference concentration skill of students with respect to learning mode, what they view and read on internet, how long they start to use internet. Next friedmen test was performed to find out which dimension ranks first.

Reliability analysis

Cronbach’s alpha was calculated on all the dimensions of the study for analysis of reliability. The overall Cronbach’s alpha value for the variables under concentration is 0.82. The value indicates good internal consistency among variables. For all the variables the cronbach’s alpha reliability co-effecient was above 0.7 indicating high reliable except focus. The focus dimension is above .6 which indicates reliability quite high. Therefore alpha values indicate that the construct used in the study confirmed the reliability of scales used. The table shows the results of the reliability analysis of the study.

Hypothesis

1. There is no significant relationship between concentration in digital and traditional education
2. There is no significant difference between concentrations of students with respect to what they view in internet
3. There is no significant difference between concentrations of students with respect to what they read on internet
4. There is no significant difference between concentration of students with respect to how long they have been using internet

Table 1: Reliability analysis

Concentration	Cronbach’s reliability coefficient
Focus	.647
Understanding	.764
Attention	.812
Listen	.830
Read in busy	.713

DATA ANALYSIS AND DISCUSSION

This part includes behavioral profile and reading habits of respondents, findings of the test and results of survey.

Behavioral profile of the respondents

The following table shows the behavioral profile of the respondents.

Table 2 Behavioral profile of the respondents

Variable	Categories	f	%
Mode of learning	Traditional	121	74.2
	Digital	42	25.8
	online news	45	27.6
	online magazine	9	5.5
	e book	18	11.0
Read on internet	stories/ novel	23	14.1
	movie review	22	13.5
	comic or joke	33	20.2
	Journals	13	8.0
	Movies	34	20.9
View on internet	Memes	33	20.2
	Jokes	25	15.3
	motivational speech	35	21.5
	subject videos	36	22.1
How long have been using internet	before std 5	12	7.4
	frm 5-7	9	5.5
	8-10	30	18.4
	11-12	39	23.9
	Collage	73	44.8

The respondents are 163 students were taken for the survey. There were 74.2% of students were practiced traditional education. About 27.5% students read online news, 22.1% students watch subject videos, 44.8 % students were started using internet from collage.

Digital learning improves concentration

The resources of learning will be different in online and tradition education. Hence there will be difference between concentration of students in traditional and digital learning. To find out the relationship between online and traditional learning T test was used.

Null hypothesis: There is no relationship between concentrations of students with respect to learning mode.

Table 3. T test to determine relationship between mode of learning and concentration

Concentration	Learning mode	Mean	Std. Deviation	T value	P value
	Traditional	3.20	.583	2.77	.006
	Digital	3.49	.516	9	*

*denotes 5% level of significance

Table 3 shows that T test used to determine the relationship between concentrations of students with respect to learning mode. The results from the table reveal that statistically there is significant difference between concentrations of students with respect to learning mode, $P=.006^*$ ($P<.05$). Therefore null hypothesis was rejected. The mean score value of digital learning (3.49) is higher than the traditional learning (3.20). In digital learning students get opportunity to learn through various resources like audio, video which will improve their concentration. . In online education students learn traditional subject through innovative way with the help of online resources and educational courseware which will motivate the students and improve their concentration skill.

Students who read novels and e book possess higher concentration

The attention needed for reading books stories joke review is different. Hence there will be difference between concentrations of students with respect to reading habit on internet. To find out the relationship between concentrations of the students with respect to their reading habit on internet Anova test was used.

Null hypothesis: there is no relationship between concentrations of students with respect to their reading habit on internet.

Table 4. Differences on the concentrations of student’s with respect to their reading habit on internet

Read on internet	Mean	Std. Deviation	F value	P value
online news	3.32 ^{ab}	.573		
online magazine	3.29 ^{ab}	.521		
e book	3.50 ^b	.704	2.514	.024*
stories/ novel	3.42 ^b	.632		
movie review	2.95 ^a	.576		
comic or joke	3.25 ^{ab}	.534		

Journals	3.60 ^b	.455
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Table 4 reveals that the results of one way anova test to determine the relationship between concentrations of students with respect to their reading habit on internet. Since P value (.024*) is less than .05 the null hypothesis is rejected at 5 % level of significance. So it is concluded that there is significant difference between concentrations of student’s with respect to their reading habit on internet. Since the test was significant, Duncan multiple range test was performed. Based on Duncan multiple range test the student who read novel (3.42), e book (3.50), journals (3.60) has high concentration skill. The students who read movie review (2.95) possess low concentration skill. Novels form an imaginary world which stimulate student’s brain and keep brain active. When the student read a story or books their full attention is focused on story. Habitual practices have the capacity to change neuronal structures.

Table 5: Differences on concentrations of students with respect to what they watch on internet

Watch on internet	Mean	Std. Deviation	F value	P value
Movies	3.39 ^{bc}	.694		
Memes	3.07 ^a	.517		
Jokes	3.20 ^{ab}	.532	3.601	.008*
motivational speech	3.27 ^{abc}	.547		
subject videos	3.57 ^c	.567		

The time taken to read memes subject videos will be different. Hence there will be difference between concentrations of students with respect to what they watch on internet. To find out the relationship between concentrations of the students with respect to their reading habit on internet Anova test was used.

Null hypothesis: there is no relationship between concentrations of students with respect to what they watch on internet.

Since p value (.008*) is less than .05 the null hypothesis is rejected at 1 % level of significance. So it is concluded that there is significant difference between concentrations of student’s with respect to what they watch on internet. Since the test was significant, Duncan multiple range test was performed. Based on Duncan multiple range test the students who watch subject videos (3.57) have good concentration skill than others. The subject videos can be watched via visual and auditory students were able to get sensory experience . The subject videos aid to motivate and maintain interest for long duration of time. Usage of text and graphics will

direct student’s attention and concentration by placement, layout and color.

Age start to use internet have no impact on concentration

The skill of student who uses internet for long time is different due to in daily internet usage they acquire good knowledge. Individual characteristics, student age usually associated with maturity and self control is negatively associated with digital distraction [23]. Hence there will be difference between concentrations of students with respect to how long they start use of internet. To find out the relationship between concentrations of the students with respect how long they start to use internet anova test was used.

Null hypothesis: there is no relationship between concentrations of students with respect to how long they start use of internet.

Table 6. Anova test to determine how long start to use internet with respect to age.

How long use internet	Mean	Std. Deviation	F value	P value
before std 5	3.35	.537	2.345	.057
frm 5-7	3.47	.714		
8-10	3.41	.526		
11-12	3.05	.632		
Collage	3.31	.535		

Since p value is greater than .05 the null hypothesis is accepted at 5 % level of significance. So it is concluded that there is no significant difference between concentrations of student’s with respect to what they watch on internet. The changes in brain occurs different stages. The time spend on internet is different from student to student. Hence there is no difference in usage.

Focus is the most important concentration skill

To determine which factor has good impact in concentration skill the Freidmen test is used.

Table 7. Freidmen test to determine overall factors and concentration skill

Concentration	Mean Rank	Chi square	P value
Focus	3.45	83.773	.000**
Understanding	3.43		
Attention	3.23		
Listen	2.57		
read in busy	2.32		

Since p value (.000**) is less than .01 null hypotheses is rejected at 1 % level of significance. Hence it is concluded that there is significant difference in mean rank factors. The focus skill (3.45) rank first based on the mean rank value. The students were able to focus in lectures or conversation by ignoring everything else goes around them. The students have good focus on lectures and conversation. The students have the capacity to engage conversation or lecture by ignoring everything else that goes around them. The second rank is for understanding with mean rank 3.43. The students can understand their subject very easily. The students have better understanding in their subject. The attention skill ranks 3rd with mean value 3.23. It shows that the students were unable to concentrate and give undivided attention to class. The fourth rank is for listen with mean rank 2.57. Due to lack in listening skill the subjects were not efficiently understood by students. The student’s ability to listen lecture beginning to end is low. The reading skill ranks least. The students were unable to read in busy and noisy places. The students can able to concentrate and think about it and use concept to deal with the subject. The students were not able to concentrate and give undivided attention to the class and not able to listen lecture from beginning to end. The students don’t have ability to read in busy and noisy places. The students get distraction easily. The poor reading skill and lack of concentration lead poor academic performance.

CONCLUSIONS AND RECOMMENDATIONS

The study reveals that the concentration skill of digital learning students is better than the traditional learning. Technology drives students to expand their scope of education. In online students learn traditional subject through innovative way. The concentration skill is higher for those who watch subject videos and read stories/ novels, journals on internet. One of the most fascinating parts of the human body is brain. The subject videos can be watched via visual, auditory, here students can able to get sensory experience. When the student read a story or books their attention is focused on story. Novels form an imaginary world which stimulate student’s brain and keep brain active which improve concentration of students.

Focus skill helps the student to put their full attention on the task until it get completed and helps students to attended class from beginning to end. Attention is the ability to focus on selective environment which helps the students to obtain only needed information from irrelevant information. Good attention skill helps students to follow instruction of teachers

effectively. Listening is the ability to receive information from others and able to respond it. Listening skill is necessary for students for active participation in classroom. Understanding skill helps the students to understand the subject taught by teachers.

Brainstorming, self-testing game, solving problems during lectures will improve concentration. Teachers should interact with students during class and provide individual assignments. Flexible seating arrangement increases concentration. The students can study in better adequate lightning environment.

The students are suggested to read interesting story books and novels. Students can solve crossword puzzles while reading newspaper and magazine. Visualization will provide more concentration students should watch subject related videos available in various websites.

The management should conduct programs like yoga for students. Various competitions like chess, memory game can be conducted. While designing curriculum the academicians should give importance to e-learning and Skill based curriculum. The courses for personal development can be included in the curriculum.

The brain game and brain training apps can improve concentration. More number of apps, tools and resources should be developed for brain training. The various apps related for learning activities should be developed. When the students possess high concentration they will be success in academics as well as in workplace.

Limitation

The study is limited to Tirchy district as the time was limited.

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