

# A Study Habits Inventory for University Students

Saroj Sahu \*, Partha Sarathi Mallik\*\*, Brundaban Meher\*\*\*, Dipanjali Sahu \*\*\*\*

\*Research Scholar, School of Education, Gangadhar Meher University, Sambalpur. Email Id- ssahuedu@gmuniversity.ac.in

\*\*Associate Professor, School of Education, Gangadhar Meher University, Sambalpur

\*\*\*Assistant Professor, Dr. Parashuram Mishra Institute of Advanced Study in Education, Sambalpur

\*\*\*\*Research Scholar, School of Education, Gangadhar Meher University, Sambalpur

DOI: 10.29322/IJSRP.13.02.2023.p13405

<http://dx.doi.org/10.29322/IJSRP.13.02.2023.p13405>

Paper Received Date: 18th December 2022

Paper Acceptance Date: 29<sup>th</sup> January 2023

Paper Publication Date: 6<sup>th</sup> February 2023

**Abstract-** Though good number of standardized tools are available to collect data on study habits, but these tools have certain limitations like inappropriate way of measurement, non-comprehensiveness and bulkiness of items. Considering these limitations, the present study aims at developing a study habits inventory for university students. This inventory encompasses eight aspects of study related habits of university students, assessed by 13 items. The inventory was developed following proper procedure of tool development which can be further used by researchers to assess study habits of both university and college students.

**Index Terms-** Study Habits, Tool Development, Inventory

## INTRODUCTION

In research process, valid data collection is a vital aspect. Good quality data collection depends upon appropriate selection and use of the tool. In this context, researchers either uses any one from the available standardized tools or develop a tool for their own purpose. The decision for selection of appropriate one from available tools depends upon lots of consideration like how the variable has been operationalized, how score will be interpreted i.e., quantitatively or qualitatively etc.

Study habits denotes consistent pattern of study behaviours, skills and approach for study etc (Singh,2009; Fanai & Lalrinngheti, 2016). It is an individualised process of study (Jafari et al. 2019; Siah & Maiyo,2015) which varies from person to person in terms of quality rather than quantity. Study habits also includes decisions about how to learn, what to learn, where to learn, what strategies to be followed whether self-testing after study etc (Zhou & Wang, 2020).

In researches literature, during operationalization of study habits as a variable, two common features are seen. For example, researchers from Indian, African and Middle East countries have used some standardized tools which included maximum dimensions of study related behaviours like approaches, skills, techniques, time, examination preparation mechanism within umbrella variable of study habits (Iaisan & Kumar, 2011; Ossai, 2012; Naqvi et al., 2018). On the other hand, researchers from western countries have used some standardized tools which

measure specific study related habits which are not comprehensive in nature.

## Standardized Study Habits Scale/ Inventory

Globally, multiple standardized tools in the form of inventory, questionnaire, scale are available to measure study habits and researchers have collected study habits data by using these. These are “Approaches and study skills inventory” of Entwistle (1986) which was further culturally adapted by Byrne et al. (2007) for the students of USA and by Diseth (2015) for Norway population; “Study process questionnaires” of Biggs (2001) which was also further culturally adapted by Immekus and Imbrie (2010) for USA population; “Motivated strategy for learning questionnaire” of Duncan & McKeachie (2010); “Learning and study strategies inventory” of Weinstein et al. (1987) which was culturally adapted by Yip (2013) for Hong Kong population.

Similarly, good number of standardized tools are used by researchers from India, Africa and Asian countries to measure study habits. These are “study habits inventory” of Palsane & Sharma (1989); “study habits inventory” of Mukhopadhyaya & Sansanwal (1985); “study habits inventory” of B.V. Patel (1976); “test of study habits and attitudes” of C.P. Mathur (2005); “study habits scale” of Rani and Jaidka (2015).

## Critical Analysis of the Existing Tools

Before using these available standardized tools, it requires brief idea about both technical and non-technical quality of the tool. Though there are lots of feature of a standardized tool, that a researcher requires to know before use but the quality of existing standardized tools have been analysed from three feature i.e., comprehensiveness, bulkiness of the items and operationalization process.

Firstly, comprehensiveness as a quality of tool means whether the tools measure or covers maximum attributes which is supposed to be measured. It is found that maximum researchers from western world have used study habits tools like “approaches and study skills inventory of Entwistle (1986) and “study process questionnaire” of Biggs (2001) measure limited aspects of study habits like approaches to study (deep, strategic and surface approach) which only measure how the information are processing

during study. But literature suggests that study habits as a variable includes large number of study related dimensions like duration of study hour, study techniques, study environment, sources of study, exam-centric study etc., which these tools are lack of.

Secondly, lengthiness of items is also another quality of a data collection tool. It is found that the maximum standardized tools of study habits have more than 45 items. For example, "Approaches and study skills inventory" of Entwistle (1986), there are 52 items; in "Learning and study strategy inventory" of Weinstein et al. (1987), there are 55 items; in "study habits inventory" of Palsane and Sharma (1989), there are 45 items; in "study habits inventory" of B.V. Patel (1976), there are 45 items; in "test of study habits and attitudes" of C. P. Mathur, there are 60 items; in "study habits inventory" of Mukhopadhyaya and Sansanwal (1985), there are 52 items etc. It has been claimed by researchers that answering huge numbers of items in a lengthy tool by the respondents will not only time taking but also decreases response rate and produce/ elicit low quality data (Sahlqvist et al., 2011; Galesic & Bosnjak, 2009).

Third consideration about quality of a data collection tool is operationalization process. It has been found that maximum standardized tools have operationalized study habits in terms of quantity. The assumption is that each behaviour will present among all participant which may vary in terms of quantity and high score means more study habit and less score means less study habit. But literature suggested that study habits is a qualitative variable and it is an individualized process which will vary in terms of quality (Odiri, 2015; Kamoru & Ramon, 2017; Dhanalaskhmi & Murthy, 2019). For example, some students may opt for deep approach of study whereas others may opt for strategic or surface. Similarly, some students may prefer for studying a long duration of study at a stretch, whereas others for taking study break; some may have fixed time or schedule for study, other may not have; some may use their own note for study, whereas others may use text book or downloaded materials for study. So, it is not justified to quantify study habit rather the nature of study is to be described by quality. Therefore, based on literature and existing standardized tools of study habits, it has been conceptualized that study habit is a qualitative variable which varies from one student to the other in terms of quality.

Due to above limitations in the existing standardized study habits tools, it has been decided to develop an inventory which will encompasses maximum dimensions of study habits and will not be a lengthy one. Along with above two aspects, it has been proposed that the variable will be assessed in terms of quality rather than quantity. For this cause, categorical option will be given.

Along with this above technical quality consideration, literature on study habits suggested that students' social demography like gender, parental socio-economic status have significant effect on different aspect of study habits. For example, girls have better time management skill than boys' students (Kaya et al. 2012); children of working mothers are better in concentration during the study, task orientation & supports than the children of non-working mothers (Jahan & Sheikh, 2012; Ghosh, 2014). Similarly, it has been reported that institutional factor affects study habits i.e., hosteller students prefer for deep

approach of study and engage more time in study than day scholar (Morris, 2012).

Therefore, the proposed tool has consideration for variation in students' study habits in relation to their personal and institutional variables.

### **Procedure for Development of Inventory**

The study habits inventory was developed in four phases i.e., identification of dimensions of study habit, item generation, pilot testing and estimating psychometric properties. In the first phase, dimensions were identified by extensive review of literature & existing standardized tools. In the second phase, dimension wise items were generated. In the third phase, both preliminary and final try-out were done and in fourth phase, psychometric properties of the inventory like reliability, validity and norm were estimated.

### **Identification of Dimensions of Study Habits**

After intensive review of literature including available standardized tools, it was noticed that though study habit as a variable indicates lots of study related behaviours but after critical review of items in the existing tools and dimension, it was found that all these behaviour or habits can be included within eight dimensions. These are Time management habit, Preferred study time, Preferred sources of study, Preferred study technique, Preferred study environment, Preferred study approach, Exam-centric study and Use of library for study. Time management habit means how much time students devote for attending class and how much they devote for self-study and whether they study by planning or non-planning. Preferred study time means preferential time for self-study, may be morning, evening or late night. Preferred sources of study mean the primary sources of study material used by the students for their study, may be textbook, e-material or note prepared by themselves.

Preferred study techniques mean technique used by students during the study, may be by taking notes or not taking notes during class, revising or not revising notes/ study material after study; studying long hours at a stretch or taking study break. Preferred study environment means whether the students prefer to study alone or with group. Preferred study approach means how, the students are processing the information or material or concept during study, may be by deep, or may be strategic or may be surface level. Exam-centric study means whether students study from the very beginning of semester or start studying just after notification of exam dates and how they prepare themselves for exam, may be by self-note, note prepared by friends or from online material. Use of library for study means whether students' studies at library or not.

### **Item Generation**

After identification of dimensions of study habits, initially 20 items were generated to represent these dimensions. Then, the inventory was sent to the two subject experts and one language expert to seek their opinion about quality of the items and representativeness in the inventory. Based on their suggestions and recommendations, 7 items were dropped due to ambiguity in wording and overlapping the same aspects. Furthermore, the wording of two items were modified. Finally, 13 items were retained for the inventory.

**Table-1. Table of Specification of Study Habit Inventory**

Dimensions of Study Habits	SL. No. of Items
Time Management	1, 2
Preferred Study Time	3
Preferred Study Techniques	4, 10, 11, 12
Preferred Study Environment	5
Preferred Sources of Study	6
Preferred Study Approach	7
Exam-Centric Study	8, 9
Use Library for Study	13
<b>Total</b>	<b>13</b>

**Pilot Testing**

Result of pilot testing is also used for item analysis. Generally, item quality is judged from three aspects i.e., difficulty value, discrimination index and plausibility of distractor (in case of multiple-choice type items). But these types of analysis are not done for items here as these are nominal or categorical in nature rather researchers have analysed the quality of items by expert judgement.

In this first phase of pilot testing, the inventory was administered on 10 samples to check whether the respondent could properly follow the instruction, meaning of the items. Based upon their feedback, wording of two items were revised. In the second phase, the inventory was administered on 120 post-graduate students from Gangadhar Meher University and Sambalpur University. Though there are numerous mechanisms for testing ideal sample size for pilot testing but it has been suggested that the numbers of sample for pilot testing have relation with number of items in the inventory and proportion should be 1:5 (Gorusch, 1983). In the present inventory, as there are 13 items, so sample size of 65 is valid.

**Estimating Psychometric Properties of Inventory**

Psychometric properties are important feature of a good data collection tool. Reliability, validity and norms are the three important psychometric properties of a tool.

**Reliability**

Reliability means how much the scores or response in the tool are stable with respect to time. There are multiple ways to estimate reliability of a data collection tool like split half method or inter-consistency method, test-retest method etc. But these procedures have a direct link with nature of data that the tool elicit. When it is a scale data or numerical value, researchers may use split half or inter-consistency method i.e., Cronbach alpha value. But in the present inventory, as the data are in categorical or nominal scale, So, test-retest method was preferred. The tools were administered in June, 2022 and after 3 months the same inventory was administered on the same sample. The item wise percentage of agreement by Cohen kappa method was used to estimate reliability.

**Table -2 - Item wise Reliability Index of Study Habit Inventory**

Items	Test		Re-test	Percentage of Agreement (Value)
	Levels	N & Percentage	N & Percentage	
Number of days, I was absent in last semester	Nil	20 (16.7)	23 (19.2)	0.88
	One week	77 (64.2)	69 (57.5)	
	15 days	21 (17.5)	23 (19.2)	
	More than one month	2 (1.7)	5 (4.2)	
I have the habit to study	In fixed time (routine)	49 (40.8)	59 (49.2)	0.83
	No fixed time	71 (59.2)	61 (50.8)	
I mostly prefer to study particularly at	Morning	36 (30)	30 (25)	0.85
	Evening	27 (22.5)	36 (30)	
	Late Night	57 (47.5)	54 (45)	
I prefer to study	Long hours	26 (21.7)	34 (28.3)	0.82

	Study break	94 (78.3)	86 (71.7)	
I mostly prefer to study	Alone	82 (68.3)	88 (73.3)	0.87
	Group	38 (31.7)	32 (26.7)	
I mostly prefer to study from	Textbook	40 (33.3)	34 (28.3)	0.91
	Internet	41 (34.2)	44 (36.7)	
	Note prepared by self	39 (32.5)	42 (35)	
While studying, my target is	Deep	83 (69.2)	76 (63.3)	0.86
	Strategic	31 (25.8)	31 (25.8)	
	Surface	65 (5)	13 (10.8)	
I prefer to study	From very beginning of academic year	78 (65)	69 (57.5)	0.84
	Just after the notification of exam dates	42(35)	51 (42.5)	
I prepare myself for exam	Self-note	72 (60)	77 (64.2)	0.92
	Note prepared by friends	12 (10)	10 (8.3)	
	Online material	36 (30)	33 (27.5)	
I take notes in the class during lectures	Yes	97 (80.8)	91 (75.8)	0.85
	No	23 (19.2)	29 (24.2)	
After studying any material/ lectures / textbook, I revise what I have learnt.	Yes	100 (83.3)	93 (77.5)	0.81
	No	20(16.7)	27 (22.5)	
After studying a unit/ topic, I do some exercise to check my own learning progress.	Yes	89 (74.2)	83 (69.2)	0.83
	No	31 (25.8)	37 (30.8)	
I prefer to spend time at library	Yes	71 (59.2)	62 (51.7)	0.84
	No	49 (40.8)	58 (48.3)	

Percentage agreement means reliability index

From the above table No.2, it was found that value of percentage of agreement of all items are more than 0.80. It has been suggested by expert that when the percentage of agreement value are more than 0.80, it can be considered that the items are stable or highly reliable (Warrens, 2020). So, all the 13 items were accepted. In this way, reliability was established.

### Validity

Validity is another important psychometric property of a tools which refers to whether the data collection tool measures what it intends to measure. Validity of a tool can be established by either logical or statistical method. Here,

logical method has been followed which means expert opinion has been taken. In this inventory, content validity has been considered to establish whether the items measure the same dimension of study habits or not. The views of two experts have been taken i.e., language expert and subject experts. The inventory was sent to the experts. They have suggested to change the words initially what we have used. Apart from this, they have recommended to omit 7 items and finally they have assured that all items will assess specific dimension of study related behaviour. Then, the investigators modified and refined the tool. So, in this way, validity of the inventory was established (Urbina, 2004).

## Norm

Another important property of a good research tool is the norm which means the average performance or score of a tool. Calculating norm has another significant implication, i.e., it can be used for interpretation of data. The norm in each item of the study habit inventory was calculated on the basis of percentage. Also, the distribution percentage in each study habit dimension was calculated in relation to their personal variables (Gender, caste, paternal income and education status, maternal income and education status), and institutional variables i.e., academic stream and institutional residence type.

As per the data obtained from the samples, norm of the inventory was given.

**Table No-3. Norm of Study Habit Inventory**

Table -3 - Distribution of study habits in relation to Personal and Institutional variable										
Dimensions of study habits	Levels	Gender N & %		Academic Stream N & %			Institutional Residence N & %			Total & Percentage
		Boy 55 (%)	Girl 65(%)	Arts 50(%)	Science 45 (%)	Commerce 25 (%)	Hosteller 62 (%)	Day scholar 16(%)	Chamber 42(%)	
Class Absence rate	Nil	7(13.7)	13(20)	10(20)	7(15.6)	3(12)	12(19.4)	3(18.8)	5(11.9)	20 (16.7)
	One week	32 (58)	45(69.2)	30(60)	30(66.6)	17(68)	40(64.5)	9(56.2)	28(66.7)	77 (64.2)
	15 days	14(25.5)	7(10.8)	9(18)	7(15.6)	5(20)	10(16.1)	2(12.5)	9(21.4)	21 (17.5)
	More than one month	2 (3.6)	0 (0)	1(2)	1(2.2)	0(0)	0(0)	2(12.5)	0(0)	2 (1.7)
Routine based study habit	Yes	19(34.5)	30(46.1)	24(48)	22(48.9)	3(12)	30(48.4)	7(43.8)	12(28.6)	49 (40.8)
	No	36 (65.5)	35(53.9)	26(52)	23(51.1)	22(88)	32(51.6)	9(56.2)	30(71.4)	71 (59.2)
Preferred study time	Morning	17(31)	19(29.2)	14(28)	13(28.9)	9(36)	20(32.2)	6(37.4)	10(23.8)	36 (30)
	Evening	8 (14.5)	19(29.2)	9(18)	13(28.9)	5(20)	12(19.4)	3(18.8)	12(28.6)	27 (22.5)
	Late Night	30(54.5)	27(41.6)	27(54)	19(42.2)	11(44)	30(48.4)	7(43.8)	20(47.6)	57 (47.5)

Preferred study technique	Long hours study	10(18.2)	16(24.6)	10(20)	11(24.4)	5(20)	12(19.4)	6(37.4)	8(19.1)	26 (21.7)
	Study break	45(81.8)	49(75.4)	40(80)	34(75.6)	20(80)	50(80.6)	10(62.6)	34(80.9)	94 (78.3)
Preferred Study Environment	Alone	43(78.1)	59(90.7)	40(80)	42(93.3)	20(80)	54(87.1)	10(62.6)	38(90.5)	102 (85)
	Group	12(21.9)	6(9.3)	10(20)	3(6.7)	5(20)	8(12.9)	6(37.4)	4(9.5)	18 (15)
Preferred study sources	Textbook	14(25.5)	26(40)	15(30)	17(37.8)	8(32)	23(37.1)	7(43.8)	10(23.8)	40 (33.3)
	Internet	25(45.5)	16(24.6)	16(32)	15(33.3)	10(40)	13(21)	7(43.8)	21(50)	41 (34.2)
	Note prepared by self	16 (29)	23(35.4)	19(38)	13(28.9)	7(28)	26(41.9)	2(12.4)	11(26.2)	39 (32.5)
Preferred study Approach	Deep	36(65.4)	47(72.3)	37(74)	32(71.1)	14(56)	37(59.7)	8(50)	38(90.5)	83 (69.2)
	Strategic	14(25.5)	17(26.1)	12(24)	13(28.9)	6(24)	22(35.5)	6(37.5)	3(7.1)	31 (25.8)
	Surface	5 (9.1)	1 (1.6)	1(2)	0(0)	5(20)	3(4.8)	2(12.5)	1(2.4)	6 (5)
Exam-centric study	From very beginning of academic year	30 (54.5)	48(73.9)	32(64)	26(57.8)	20(80)	41(66.1)	9(56.2)	28(66.7)	78 (65)
	Just after the notification of exam dates	25 (45.5)	17(26.1)	18(36)	19(42.2)	5(20)	21(33.9)	7(43.8)	14(33.3)	42(35)

Exam preparation mechanism	Self-note	38(69)	52(80)	34(68)	35(77.8)	21(84)	46(74.2)	8(50)	36(85.7)	90 (75)
	Note prepared by friends	5 (9.1)	2(3.1)	2(4)	4(8.9)	1(4)	1(1.6)	4(25)	2(4.8)	7 (5.8)
	Online material	12(21.9)	11(16.9)	14(28)	6(13.3)	3(12)	15(24.2)	4(25)	4(9.5)	23 (19.2)
Classroom note taking	Yes	50(90.9)	60(92.3)	46(92)	41(91.1)	23(92)	59(95.2)	12(75)	39(92.9)	110 (91.7)
	No	5 (9.1)	5(7.7)	4(8)	4(8.9)	2(8)	3(4.8)	4(25)	3(7.1)	10 (8.3)
Revision after study	Yes	43(78.1)	57(87.7)	42(84)	38(84.4)	20(80)	46(74.2)	14(87.5)	40(95.2)	100 (83.3)
	No	12(21.9)	8(12.3)	8(16)	7(15.6)	5(20)	16(25.8)	2(12.5)	2(4.8)	20(16.7)
Self-testing after study	Yes	44 (80)	45(69.2)	33(66)	37(82.2)	19(76)	43(69.4)	13(81.2)	33(78.6)	89 (74.2)
	No	11 (20)	20(30.8)	17(34)	8(17.8)	6(24)	19(30.6)	3(18.8)	9(21.4)	31 (25.8)
Use of Library for study	Yes	32 (58.2)	39(60)	25(50)	30(66.6)	16(64)	47(75.8)	11(68.8)	13(30.9)	71 (59.2)
	No	23 (41.8)	26(40)	25(50)	15(33.4)	9(36)	15(24.2)	5(31.2)	29(69.1)	49 (40.8)

From the above table, it is evident that in class absence rate, there are four categories of response, it is found that 64.2% university students remain absence for one week and only 1.7 % students are absent for more than one month in a semester. This distribution also varies with regard to students' gender, academic stream and institutional residence category. With reference to Gender wise distribution, it is found that in One week absence category, 69.2% girls are absent whereas 58% boys are absent. Academic stream wise, it is found that in fifteen absence category, 20% commerce students are absent, followed by 18% Arts stream, followed by 15.6% science stream. Institutional residence wise, it is found that 12.5%-day scholar are absent more than one month in a semester.

In follow of study routine, it is found that 59.2% university students do not follow schedule for study whereas 40.8% students follow routine for study. Gender wise distribution, it is found that 65.5% boys and 53.9% girls do not follow routine for study whereas 34.5% boys and 46.1% girls follow routine for study. Academic stream wise, it is found that majority of commerce students do not follow routine for study. Institutional residence wise, it is found that 71.4% chamber students do not follow routine for study, followed by 56.2%-day scholar, followed by 51.6% hosteller.

In preferred study time, it is found that 47.5% university students prefer to study at late night, followed by 30% students prefer to study in the morning, followed by 22.5% students prefer to study in the evening. Gender wise, it is found that 54.5% boys and 41.6% girls opt for late night study. Academic stream wise, it is found that 36% commerce stream students prefer to study in the morning, followed by 28.9% science stream, followed by 28% arts stream. Institutional residence wise, it is found that 28.6% chamber students prefer to study in the evening, followed by 19.4% hosteller, followed by 18.8%-day scholar.

In preferred study technique, it is found that 78.3% university students prefer to study long hours by taking break, whereas 21.7% study for long hours at a stretch. Gender wise, it is found that 81.8% boys and 75.4% girls prefer to study for long hours with break whereas 24.6% girls and 18.2% boys prefer to study long hours at a stretch. Academic stream wise, it is found that both 80% Arts and commerce stream prefer to study for long hours with break, followed by 75.6% science stream. Institutional residence wise, it is found that 37.4%-day scholar prefer to study long hours at a stretch, followed by 19.4% hosteller, followed by 19.1% chamber.

In preferred study environment, it is found that 85% university students prefer for studying alone but 15% prefer for group study. Gender wise, it is found that 90.7% girls and 78.1% boys prefer for studying alone. Academic stream wise, it is found that 93.3% science, 80% Arts and commerce students prefer for studying alone. Institutional residence wise, it found that 87.1% hosteller, 62.6%-day scholar and 90.5% chamber or mess students prefer for studying alone.

In preferred sources of study, it is found that 34.2% university students prefer for studying from internet, 33.3% prefer for studying from textbook and 32.5% for studying from self-notes. Gender wise, it is found that 25.5% boys and 40% girls prefer to study from text book; 45.5% boys and 24.6% girls prefer for study from internet; 29% boys and 35.4% girls prefer to study from self-note. Academic stream wise, it is found that 30% Arts,

37.8% science and 32% commerce students prefer to study from text book; 32% Arts, 33.3% science and 40% commerce students prefer to study from internet; 38% Arts, 28.9% science and 28% commerce students prefer to study from prepared self-note. Institutional residence wise, it is found that 41.9% hosteller, 26.2% chamber and 12.4%-day scholar prefer to study from self-note.

In preferred study approaches, it is found that 69.2%, 25.8%, 5% prefer for deep, strategic and surface approach respectively. Gender wise, it is found that 65.4% boys and 72.3% girls preferred for deep approach; 25.5% boys and 26.1% girls for strategic approach; 9.1% boys and 1.6% girls preferred for surface approach of study. Similarly, 74% Arts, 71.1% science and 56% Commerce stream have preference for deep approach; 28.9% science, 24% Arts and Commerce for strategic approach; 2% Arts, 0% science and 20% commerce for surface study approach. Institutional residence wise, it is found that 37.5%-day scholar, 35.5% hosteller and 7.1% chamber prefer strategic approach for study.

In exam-centric study, it is found that, 65% students start study from the very beginning of academic year and 35% students start study just after the notification of exam dates; 73.9% girls start study from the very beginning of academic year and 54.5% boys start study just after the notification of exam dates. Academic stream wise, it is found that 80% commerce, 64% Arts and 57.8% science stream students start study from the very beginning of academic year. Institutional residence wise, it is found that 43.8%-day scholar, 33.9% hosteller and 33.3% chamber students start study just after the notification of exam dates.

In exam preparation mechanism, it is found 75% students study their self-note for exam, 19.2% students study online material for exam and 5.8% students study their friends' note for examination. Gender wise, it is found that 21.9% boys and 16.9% girls study online material for exam. Academic stream wise, it is found that 84% commerce, 77.88% science and 68% Arts stream students study their self-note for exam. Institutional residence wise, it is found that 74.2% hosteller, 50%-day scholar and 85.7% chamber students study their self-note for exam.

In classroom note taking, it is found 91.7% students take note during classroom lecture whereas 8.3% student does not take note during lecture. Gender wise, it is found that 92.3% girls and 90.9% boys take note during classroom lecture whereas 9.1% boys and 7.7% girls do not take note during lecture. Academic stream wise, it is found that 92% both Arts & commerce stream and 91.1% science stream take note during classroom lecture. Institutional residence wise, it is found that 95.2% hosteller, 75%-day scholar and 92.9% chamber students take notes during classroom lecture.

In revision after study, it is found 83.3% students revise study material after study whereas 16.7% student does not revise the study material after study. Gender wise, it is found that 87.7% girls and 78.1% boys revise study material after study. Academic stream wise, it is found that 84% Arts, 84.4% science and 80% commerce students revise study material after study. Institutional residence wise, it is found that 25.8% hosteller, 12.5%-day scholar and 4.8% chamber does not revise the study material after study.

In self-testing after study, it is found 74.2% students self-test after study whereas 25.8% students do not self-test after study. Gender wise, it is found that 80% boys and 69.2% girls self-test

after study whereas 30.8% girls and 20% boys do not self-test after study. Academic stream wise, it is found that 82.2% science, 76% commerce and 66% Arts stream students self-test after study. Institutional residence wise, it is found that 81.2%-day scholar, 78.6% chamber and 69.4% hosteller self-test after study.

In use of library for study, it is found that 59.2 students use library for study whereas 40.8% student does not use library for study. Gender wise, it is found that 58.2% boys and 60% girls use library for study. Academic stream wise, it is found that 50% Arts, 36% commerce and 33.4% science stream students do not use library for study. Institutional residence wise, it is found that 75.8% hosteller, 68.8%-day scholar and 30.9% chamber use library for study.

#### CONCLUSION

Study habits is an important variable to increase the academic achievement of the students. To measure the study habits of university students, a number of existing tools are available in the literature. Due to certain limitations like non-comprehensiveness, bulkiness of items etc, the researchers have developed a study habits inventory. Though the study habits inventory was developed on university sample but it can also be used to assessed the study habits of college students. Therefore, this study habits inventory will beneficial for the researchers to collect data on study habits.

#### REFERENCES

[1] Abdulrahman, K.A.B., Khalaf, A.M. & Alanazi, O.T. (2021). Study habits of highly Effective medical students. *Advances in Medical Education and Practice*, 12, 627-633. doi10.2147/AMEP.S309535

[2] Adams, R. & Blair, B. (2019). Impact of time management behaviours on undergraduate engineering students' performance. *Sage Open*, 9(1), DOI: 10.1177/2158244018824506

[3] Adeyemo, C. (2005). Test anxiety, cognitions, study habits and academic performance: A perspective study. *Advances in Test Anxiety Research*, 7, 221-41.

[4] Aditya, C. & Ghosh, R. (2014). Study habits of secondary school students of working and non-working mothers. *Journal of Humanities and Social Science*, 19(10), 12-15.

[5] Ahangar, S.U.D. (2019). A Study of personality characteristics and study habits of in-service and pre-service b.ed trainees. *Journal of Emerging Technologies and Innovative Research*, 6(6), 1086-1088. <https://www.jetir.org/papers/JETIR1908D35.pdf>

[6] Biggs, J., Kember, D., and Leung, D. Y. (2001). The revised two-factor Study Process Questionnaire: r-SPQ-2F. *British Journal of Educational Psychology*, 71, 133-149. <https://doi.org/10.1348/000709901158433>

[7] Brown, W. and W. Holtzman, 1955. A study attitudes questionnaire for predicting college success. *Journal of Educational Psychology*, 46(2): 45-84.

[8] Byrne M, Flood B, Willis P. (2004). Validation of the Approaches and Study Skills Inventory for Students (ASSIST) using accounting students in USA and Ireland: a research note. *Account Educ*, 13:449-459.

[9] Chand, S. (2013). Study habits of secondary school students in relation to types of school and types of family. *International Journal of Social Science & Interdisciplinary Research*, 2(7), 90-96.

[10] Chen, P. H. (2019). In-class and after-class lecture note-taking strategies. *Active Learning in Higher Education*, 22(3), 245-260. <https://doi.org/10.1177/1469787419893490>

[11] Chitakara, N., Singhal, P., & Aggarwal, P. (2014). Study habits of higher performing engineering students: A Survey. *International Journal of Computer Applications*, 97(2), 33-37.

[12] Credé, M., Kuncel, N. R. (2008). Study habits, skills, and attitudes: The third pillar supporting collegiate academic performance. *Perspectives on Psychological Science*, 3, 425-453. <https://doi.org/10.1111/j.1745-6924.2008.00089.x>

[13] Dalomba, E., Bonsaksen, T. & Mansur, S. (2021). Healthcare Students' Approaches to Studying in Association with Self-Efficacy and Mental Health: Repeated Cross-Sectional Analysis. *Occupational Therapy in Mental Health*, DOI: 10.1080/0164212X.2022.2078757

[14] Dayal, J. K. (2013). Impact of family environment on study habits. *Indian Journal of Applied Research*, 3(9), 172-173.

[15] Devi, S. S. (2016). An investigation into the study habits of high school pupils in relation to their academic achievement in tribal area of Yercaud. *Shanlax International Journal of Education*, 4(3), 13-15.

[16] Dey, C. (2014). Effect of study habit on academic achievement. *International Journal of Research in Humanities and Social Sciences*, 2(5), 101-105.

[17] Dhanalakshmi, K., & Murthy, K. V. S. N. (2018). Relationship between study habits and academic stress of B.Ed. trainees. *Scholarly Research Journal for Humanity Science and English Language*, 6, 7851-7856.

[18] Diseth, Å. (2001). Validation of a Norwegian version of the approaches and study skills inventory for students (ASSIST): Application of structural equation modelling. *Scandinavian Journal of Educational Research*, 45(4), 381-394.

[19] Diseth, A. (2002). The relationship between intelligence, approaches to learning and academic

[20] Duncan, T. G., & McKeachie, W. J. (2005). The making of the motivated strategies for learning questionnaire. *Educational Psychologist*, 40(2), 117-128.

[21] Elias, R. Z. (2010). Students' Approaches to Study in Introductory Accounting Courses. *Journal of Education for Business*, 194-199. <https://doi.org/10.3200/JOEB.80.4.194-199>

[22] Entwistle, N.J. & Waterson, S. (1988). Approaches to studying and levels of processing in university students. *British Journal of Educational Psychology*, 58, 258-265.

[23] Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE Publications.

[24] Galesic, M., & Bosnjak, M. (2009). Effects of questionnaire length on participation and indicators of response quality in a web survey. *Public Opinion Quarterly*, 73(2), 349-360. <https://doi.org/10.1093/poq/nfp031>

[25] Gorsuch, R. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

[26] Grewal, S. (2018). A comparative study of study habits of English medium and Hindi medium school students. Retrieved from, <http://www.ijariie.com>.

[27] Grollino, E. & Velayo, R.S. (1996) Gender Differences in the Attribution of Internal Success Among College Students. In: *Annual Convention of the Eastern Psychological Association*. 1-12.

[28] Hartwig, M.K., Dunlosky, J. (2012). Study strategies of college students: Are self-testing and scheduling related to achievement? *Psychon Bull Rev*, 19, 126-134. <https://doi.org/10.3758/s13423-011-0181-y>

[29] Iaisan, M. & Kumar, D. (2011) Study habit of post graduate students in relation to Gender, Faculty and Academic Achievement. *International Journal of Educational & Social Development*, 2(1), 55-68.

[30] Immekus, J. C., & Imbrie, P. K. (2010). A test and cross-validation of the revised two-factor study process questionnaire factor structure among western university students. *Educational and Psychological Measurement*, 70(3), 495-510. <https://doi.org/10.1177/0013164409355685>

[31] Jafari, H., Aghaei, A., & Khatony, A. (2019). Relationship between study habits and academic achievement in students

- of medical sciences in Kermanshah-Iran. *Advances in Medical Education and Practice*, 637-643.
- [32] Jameel, T., Gazzaz, Z.J., Baig, M., Tashkandi, J.M., Alharenth, N.S., Butt, N.S., Shafique, A. & Iftikhar, R. (2019). Medical students' preferences towards learning resources and their study habits at King Abdulaziz University, Jeddah, Saudi Arabia. *BMC Research Notes*, 12(30),1-6. <https://doi.org/10.1186/s13104-019-4052-3>
- [33] Jansen, E., & Suhre, C. (2010). The effect of secondary school study skills preparation on first- year university achievement. *Educational Studies*, 36(5), 569-580. <https://doi.org/10.1080/03055691003729070>
- [34] Jena, P. C. (2018). Study habit of university foreign students in relation to gender and streams of education. *World Scientific News*, 92(2), 351-359.
- [35] Kamoru, U., & Ramon, O.G. (2017). Influence of Self-Concept, Study Habit and Gender on Attitude and Achievement of Secondary School Students in Mathematics.
- [36] Kaya, H., Kaya, N., & Pallo, A.K. (2012). Assessing time management skills in terms of age, gender and anxiety levels: A study on nursing and midwifery students in Turkey. *Nurse Education in Practice*, 12(5),284-288.
- [37] Marton F, Säljö R. (1976). On qualitative differences in learning: 1 – outcome and process. *Br J Educ Psychol*, 46(4),11.36.
- [38] Mathur, C. P. (2002). *Manual for test of study habits and attitudes*. Agra: National Psychological Corporation.
- [39] Morris, R. (2012). Are the study habits of first year undergraduate students influenced by where they live while attending college?
- [40] Mukhopadhyaya, M; Sansanwal, D.N. (1983). *Manual for study habit inventory* Agra: National Psychological Corporation, Kacheri Ghat.
- [41] Omar, Z., Siddiqi, J., Shamshad, B. (2019). Impact of mobiles phones on study habits of university of Karachi students. *International Journal of Current Research*, 11(04),3263-3268.
- [42] Ozsoy, G., Aysel, M., & Turan, T. (2009). Metacognition, Study Habits and Attitudes. *International Electronic Journal of Elementary Education*, 2(1),154-166.
- [43] Pachaiyappan, P.& Prabu, T. (2014), Study habits of higher secondary Biology students – An analysis. *Indian Journal of Applied Research*,4(6),15-17.
- [44] Palsane and Sharma, 1989. Study habit inventory (PSSHI). National Psychological Corporation. 4/230, Kacheri Ghat, Agra (UP) India.
- [45] Pathak, R. (2016). Study habits of hosteller and day scholar students: a comparative study. *Indian Journal of Applied Research*, 6(1), 399-401.
- [46] Rajakumar, M. and Soundararajan, M. (2012). A study on higher secondary students' study habits in Tirunelveli district. *Indian J. Innovations Dev*, 1(4).
- [47] Rajendran, R., Sangeetha A., & Sharon, S. T. (2019). An analysis on the study habits among undergraduate medical students. *International Journal of Medical Research and Review*,7(05),404-410.
- [48] Rani, D. & Jaidka, M.L. (2015). *Manual for study habits scale*. National Psychological Corporation, Agra, U.P., India.
- [49] Sahlqvist, S., Song, Y., Bull, F. et al. (2011). Effect of questionnaire length, personalisation and reminder type on response rate to a complex postal survey: randomised controlled trial. *BMC Med Res Methodology* 11 (62). <https://doi.org/10.1186/1471-2288-11-62>
- [50] Sheikh, M. & Jahan, Q. (2012). Study habits of higher secondary school students of working mothers and non-working mothers. *Journal of Education and Practice*, 3(12),119-126.
- [51] Sherafat, R., & Murthy, C. G. V. (2016). A study of study habits and academic achievement among secondary and senior secondary school students of Mysore city. *The International Journal of Indian Psychology*, 3(2), 161- 170.
- [52] Siah, E. A. & Maiyo, J.K. (2015). Study of the relationship between study habits and academic achievement of students: a case of Spicer higher secondary school. *International Journal of Educational Administration and Policy Studies*,7(7),134-141.
- [53] Singh, A.B. (2019). A study of study habits of senior secondary school students. *International Journal of Humanities & Social Science invention*,8(6), 23-28.
- [54] Skogsberg, K. & Clump, M. (2003). Do Psychology and Biology majors differ in their study
- [55] Uju, E. F. & Paul, O. A. (2017). Study habit and its impact on secondary school students' academic performance in biology. *Educational Research and Reviews*,12(10), 583-588.
- [56] Urbina, S.P. (2004). Essentials of psychological testing. <https://doi.org/10.1037/h0053347>
- [57] Urh, M. & Jareb, E. (2014). Learning habits in higher education. *Social & behavioural Sciences*,116, 350-355.
- [58] Uslu, S. & Korukcu, M. (2021). A Mixed Analysis on the Study Habits of Middle School Students. *Journal of Education and Learning*, 10(3), 140-148. <https://doi.org/10.5539/jel.v10n3p140>
- [59] Warrens, M.J. (2021). Kappa coefficients for dichotomous-nominal classifications. *Adv Data Anal Classify*, 15,193–208. <https://doi.org/10.1007/s11634-020-00394-8>
- [60] Weinstein, C. E., Palmer, D. R., & Schulte, A. C. (1987). *Learning and study strategies inventory*. Clearwater, FL: H & H Publishers.
- [61] Yip, M.C. (2013). The Reliability and Validity of the Chinese Version of the Learning and Study Strategies Inventory (LASSI-C). *Journal of Psychoeducational Assessment*, 31, 396 - 403. <https://doi.org/10.1177/0734282912452835>
- [62] Zhang, L.F. (2003). Does the big five predict learning approaches? *Personality and Individual Differences*, 34(8), 1431-1446. [https://doi.org/10.1016/S0191-8869\(02\)00125-3](https://doi.org/10.1016/S0191-8869(02)00125-3)
- [63] Zhou, J. & Wang, X. (2020). The influence of Chinese college students' meta cognitive strategy and motivational beliefs on their study habits. *Asia-Pacific Edu Res*.

## AUTHORS

**Correspondence Author** – Dr. Partha Sarathi Mallik, Associate Professor, School of Education, Gangadhar Meher University, Sambalpur

**First Author** – Saroj Sahu, Research Scholar, School of Education, Gangadhar Meher University, Sambalpur

**Second Author** – Dr. Brundaban Meher, Assistant Professor, Dr. Parashuram Mishra Institute of Advanced Study in Education, Sambalpur

**Third Author** – Dipanjali Sahu, Research Scholar, School of Education, Gangadhar Meher University, Sambalpur

APPENDIX

**A Study Habits Inventory for University Students by Saroj Sahu and Dr. Partha Sarathi Mallik**

Dear friends, you know that we all have our own way of studying which may not be same for all. That does not mean a particular way of study is better than others. In this research, we have tried to know, the different ways the university students are studying. There are only 13 items and against each item some fixed alternatives are given. You are requested to put tick mark on the option which is appropriate for you. There is no such right or wrong answer. Your response will be kept confidential and will be used only for research purpose.

Put tick mark (✓)

DEMOGRAPHIC

- (A) Gender: Boy / Girl  
(B) Institutional Residence Type: Day Scholar / Hosteller / Staying at Chamber  
(C) Academic Streams: Arts / Science / Commerce  
(D) Caste: General / SC / ST  
(E) Parents' Education Status: Below 10<sup>th</sup> / 10<sup>th</sup> to +2 / Graduation or Above  
(F) Parents' Income Status: (Per Month) 10000 Rs / 10000 to 50000 Rs / Above 50000Rs

**Items**

**Alternatives**

- |  |  |
|--|--|
| 1) Number of days, I was absent in last semester-    | [Nil / less than one week/15 days /more than one month ]                             |
| 2) I have the habit to study -                       | [According to my study routine/As per my mood (No fixed time)]                       |
| 3) I <i>mostly prefer</i> to study particularly at - | [ Morning / Evening / Late night]  |
| 4) I prefer to study -                               | [Continuously for a long-hours without gap/ One or two hours, then I take some rest] |
| 5) I <i>mostly prefer</i> to study -                 | [ Alone / With group ]   |
| 6) I <i>mostly prefer</i> to study from -            | [ Textbook / Internet or e-material /Note prepared by me]                            |

- 7) While studying, my target is -
- (a) To understand the subject matter
  - (b) To prepare myself for examination
  - (c) To memorize, what is written
- 8) I prefer to study -
- (a) From very beginning of academic year
  - (b) Just after the notification of exam dates
- 9) I prepare myself for exam -
- (a) By self-prepared notes
  - (b) Notes prepared by friends
  - (c) By taking print of some text materials from internet
- 10) I take notes in the class during lectures. Yes / No
- 11) After studying any material/ lectures /textbook, I revise what I have learnt. Yes / No
- 12) After studying a unit/ topic, I do some exercise to check my own learning progress. Yes / No
- 13) I prefer to spend time at library. Yes / No