



# Impact of Students' Perception of Their Classroom on Their Approaches to Studying - A Systematic Review

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**Abstract:** Understanding students' approaches to studying has been an excellent area of research worldwide. Several models and inventories have been developed and modified for this purpose. Many researchers claimed that students' learning approaches may be observed as a reaction to their learning environment. This systematic review aims to focus on the two important contextual factors of learning approach viz. *Classroom Learning Environment* and *Course Experience*. Methodology is developed to explore the research area. After rigorous survey, studies that meet inclusion criteria were analysed under different categories and complied in tables. Studies are discussed under the themes like Country/continent, (b) Population, (c) Methodology used (d) Assessment tools, (e) Association among the scales under study, and (f) Other related findings. Future direction of research has been suggested based on the review.

**Keywords:** *Approaches to studying, Classroom Learning Environment, Course Experience, Students' Perception.*

## 1. Introduction

Indian traditional teaching-learning environment is teacher-centric on the whole since ages where teacher's effort is to go on passing information and instructions while the learners are supposed to receive the same and act accordingly. On the contrary, The National Education Policy, 2020 focuses not only on learning but also on the importance of learners understanding of how to learn. It proclaims a paradigm shift in the purpose of education from mere content delivery to igniting ability for critical thinking and adapting to as well as absorbing new information. In the field of Education, several researches had been done on students' learning. Learning may be defined as a process of acquisition of new knowledge or idea or a pattern thereto for processing new piece of information or experience thereof. As per constructivist philosophy of education (Piaget, 1972), when some new information is encountered, individual learner in effect actively constructs his/her own knowledge by connecting or collating the new ideas to existing ones. The way learners internally interact with the information gathered or derived is defined as 'Approaches to learning', a concept first introduced by Marton and Säljö (1976). Interestingly, the process of learning is not one and the same for all learners. Marton and Saljo identified two different learning approaches adapted by the learners: Deep and Surface

approaches, which were later supplemented by another approach, Achieving (or Strategic) approach introduced by Biggs (1976) and Ramsden (1981) and these three approaches together are known as 'Approaches to Studying'.

### **1.1 Approaches to Learning and Approaches to Studying**

According to Entwistle (2012),

"Approaches to learning" describe the contrasting ways in which students carry out learning tasks. The main distinction is between a surface approach and a deep approach to learning, while 'approach to studying' includes the further dimension of strategic approach, involving organized and directed effort" (Encyclopedia of the Sciences of Learning, p 288).

By the very name, 'Deep' approach is one that emphasizes on in-depth understanding of the learning materials by the students aspiring to (i) seek the meaning of and interact critically with the contents or ideas, (ii) relate or collate those ideas with their previous knowledge and experience, and (iii) examine the underlying logic and the evidences placed in support of the content or statement or idea to arrive at the conclusions (Beattie, Collins, & McInnes, 1997; Enwistle, & Ramsden, 1983).

On the contrary, the surface approach is focused on superficial or shallow learning by the students to the extent that it helps to reproduce the content or statement or idea for the purpose of assessment only for which they tend to (i) memorize the parts of the content and accept the concepts given without asking for any question or evidence, and (ii) concentrate on remembering facts without trying to find out any underlying principles or patterns (Beattie et al., 1997; Enwistle, & Ramsden, 1983).

'Strategic' approach is aimed at achieving better marks or grades in evaluation. Learners adapting strategic approach are focused to work hard for good performance. They organize their study time systematically and can concentrate while studying easily (Enwistle, 2012).

### **1.2. Measuring learners' approaches to studying**

Understanding students' approaches to studying occupies a central place in any educational planning. Marton and Säljö(1976) innovated a novel line of research through their work on quantifying learners' study approaches by means of self-reporting questionnaires. Alongside, several inventories have been developed by the researchers for this purpose, for example, Approaches to Study Inventory (ASI; Entwistle, & Ramsden, 1983), Lancaster Approaches to Studying Questionnaire (LASQ; Ramsden, 1983), Biggs' Learning Process Questionnaire (LPQ) and Study Process Questionnaire (SPQ; Biggs, 1987), Inventory of Learning Styles in Higher Education (ILSHE; Vermunt, 1994), Approaches to Study Skill Inventory for Students (ASSIST; Tait, Enwistle, & Mccune, 1998), and Revised Two-Factor Study Process Questionnaire (R-SPQ-2F; Biggs et al., 2001), Approaches to Learning Science Scale (ALS, Lee et al., 2008) etc.

The 3-P model (Presage, Process, and Product) suggested by Dunkin and Biddle (1974) and Biggs (Biggs, 1985; 1987; 1989; 1999) is a handy framework to understand SAL (Students' Approaches to Learning). This model exhibits student's learning in terms of the interaction between him and the teacher. It focusses on the interrelationships between: 1) Presage factors, which refers to student's prior knowledge, her/ his individual characteristics and the situational constraints s/he faces (i.e. students'

characteristics and teaching context) 2) the Process component, which refers to deep and surface approaches to learning, and 3) The Product factor of learning refers to the learning outcomes measured quantitatively i.e. in the form of grades/marks or qualitatively i.e. in the form of assessing how much or, how well things are learnt.

### **1.3. Classroom Environment and Approaches to Studying**

Off late, the traditional teacher-centred approach of teaching- learning is yielding place to the student-centred approach where due emphasis is laid on knowledge construction through experience, activity and collaboration among teachers and their pupils. The principal role of the teacher in this constructivist approach is to guide the students in their way of constructing new knowledge so that they can find their own knowledge connections and can come to their own conclusions (Martin, 2006). Moreover, the 'Presage factor' – teaching context as described in the 3-P model, is also claimed to be interrelated with students' learning approaches. Therefore, it is the classroom learning environment which turns out to be an important factor in the context of students' adaption or preference for a particular study approach.

Two distinct lines of researches were found that revealed the association between students' experience and perception of their learning environment. Those are: (a) '*Classroom Learning Environment*' research and (b) Students' '*Course Experience*' measurement research. A brief account of these two lines are given below.

#### **a) Concept of Classroom Learning Environment**

Most of the instruments that are used in learning environment studies are related to the theoretical framework for human environments proposed independently by Walberg (1968) and Moos (1968). While working on a Harvard Project on Physics, Herbert Walberg and his colleagues developed the Learning Environment Inventory (LEI; Anderson & Walberg, 1968; Fraser, Anderson, & Walberg, 1982; Walberg & Anderson, 1968). Subsequently, Moos, in his research on human environments (Moos, 1974; Moos, 1979a; Moos, 1979b; Moos, 1979c; Moos & Houts, 1968; Moos, Insel & Humphrey, 1974; Moos & Trickett, 1974; Moos & Trickett, 1987) established that diverse learning environments can be classified in three general categories. The three categories recognised are: *Relationship dimensions* which identify the nature and intensity of personal relationships within the environment and assess the extent to which people are involved in the environment and support and tend to support each other; *Personal Development dimensions* which assess basic directions along which personal growth and self-enhancement tend to occur; and *System Maintenance and System Change dimensions* which involve the extent to which the environment is orderly, clear in expectations, amenable to control, and responsive to change (Moos, Insel, & Humphrey, 1974). Some of this research resulted in the development and validation of the Classroom Environment Scale (CES) (Moos & Trickett, 1974, 1987; Fisher and Fraser, 1983b). Following this line of research several other learning environment survey tools were developed, namely, Individualised Classroom Environment Questionnaire (ICEQ; Fraser, 1990); My Class Inventory (MCI; Fisher and Fraser, 1981; Fraser et al., 1982; Fraser and O'Brien, 1985); College and University Classroom Environment Inventory (CUCEI, Fraser and Treagust, 1986; Fraser et al., 1986); Questionnaire on Teacher Interaction (QTI, Wubbels and Brekelmans, 1998; Wubbels and Levy, 1993);

Science Laboratory Environment Inventory (SLEI, Fraser et al., 1995; Fraser and McRobbie, 1995); Constructivist Learning Environment Survey (CLES, Taylor et al., 1995; Taylor et al., 1997); and What Is Happening In This Class (WIHIC Fraser et al., 1996) questionnaire.

### b) Concept of Course Experience

Interview-based research conducted during 1970s indicated that students in higher education use three different approaches to studying, and that these depend on the content, the context and the demands of specific learning tasks (Laurillard 1979; Marton 1976; Ramsden 1979). By context, or environment, it means the art of teaching, course organisation, subject areas, and assessment methods of university department (Ramsden, 1979). Besides developing ASI (Entwistle & Ramsden, 1983), researchers of Lancaster University also focused on to look more closely at the characteristics of academic contexts at different departments teaching different subjects/ courses and hence, Ramsden (1979) came up with a questionnaire to assess course perception of the students. Later, Ramsden & Entwistle (1981) finally developed Course Perception Questionnaire (CPQ) which had 40 items and eight dimensions namely Relationships with students, Commitment to teaching, Workload, Formal teaching methods, Vocational relevance, Social climate, Clear goals & standards, and Freedom in learning. Ramsden (1991) again revised CPQ and developed 'Course Experience Questionnaire (CEQ)' as a performance indicator for monitoring teaching quality in Higher Education at the level of entire course or degree.

## 2. Purpose of the systematic review

Students' approaches to studying are found to be generally associated with a host of factors some of which are categorized as *individual factors* (e.g. gender, age, past experiences) and *contextual factors* (e.g., teaching/ learning activities/methods pursued, workload perceived, assessment process practised etc.) (Biggs, 1987; Zeegers, 2001). Enwistle and Tait (1990) suggested that students' learning approaches may be observed as a reaction to their learning environment to some extent. Moreover, they stated that good teaching resulted in adoption of deep approach. Many researchers found linkage between students' learning approaches and classroom environments. Students adapting deep approach perceived their classrooms as more individualized, inspiring and participatory and also thought that they used inquiry skills. (Dart et al., 1999; Dart et al., 2000). The aim of the present review is to focus on the two important contextual factors of learning approach viz. *Classroom Learning Environment* and *Course Experience*.

Since the National Education Policy 2020 in India aims at creating an education system where emphasis should be on developing conceptual understanding rather than on rote learning and learning-for-examinations, on creativity and critical thinking, on encouraging logical decision-making, and on building life skills such as communication, cooperation, teamwork and resilience, it is imperative to conduct a study to know how do our students perceive their classes in today's scenario, and investigate the impact of contextual factors like learning environment and course experience on students' approaches to learning and their learning outcomes. The present systematic review is carried out with a

view to getting an idea of the current state of knowledge in the targeted field of study and to identify and bridge the gaps, if any, in the near future. Hence, two research questions have been developed.

### Research Question

RQ1. Does classroom learning environment have any relationship with students' study approach?

RQ2. Does Course experience influence students' approach to study and their academic achievement?

An in-depth literature survey is carried out to reveal responses to these two research questions.

### 3. Methodology

The systematic review is done separately for two research questions.

#### 3.1. Search Strategy for RQ1

This literature search is done using electronic search platforms like Google Scholar, Inflibnet, JSTOR, ERIC, Springer, Taylor Francis, Sage etc.

To investigate into the first research question, the relationship between approaches to study and learning environment, search terms or key words used were: "Approaches to study" or "Approaches to learning" or "Study approaches" and "Learning environment Survey" or "Classroom Learning environment survey" or "Constructivist learning environment survey".

#### 3.2 Criteria for Inclusion and Exclusion for RQ1

<b>Table 1: Criteria for Inclusion and Exclusion for RQ1</b>	
<b>1. Inclusion criteria</b>	
1.1 Year limit of publications	Studies published from 1999 to 2020 were included
1.2 Nature of study	Only full papers written in English language published in peer reviewed journals retrieved using electronic search platforms like Google Scholar, Inflibnet, JSTOR, ERIC, Springer, Taylor Francis, Sage etc.
1.3 Research Area	Approaches to learning/studying (Biggs or Entwistle framework); Classroom learning environment (Fraser and associates framework)
<b>2. Exclusion criteria</b>	<p>Papers, published before 1999 and/or written in any other language and/or full paper not available online were excluded</p> <p>Researches focused on learning approaches of students - i)with learning disabilities; ii) studying in distance mode were excluded</p>
<b>3. Search strategies</b>	
3.1 Search engine	Google Chrome
3.2. Key words	<p>"Approaches to study" or "Approaches to learning" or "Study approaches"</p> <p>And</p> <p>"Learning environment Survey" or "Classroom Learning environment survey" or "Constructivist learning environment survey".</p>
<b>4. Focus area</b>	Location of the study, nature of population and sample, objective of the study, tools used, deep approach

#### 3.3. Search Strategy for RQ2

For the second research question, influence of course experience on approaches to learning, search terms or key words were: "Approaches to study" or "Approaches to learning" or "Study approaches" and "Course Experience" or "CEQ".

### 3.4. Criteria for Inclusion and Exclusion for RQ2

<b>Table 2: Criteria for Inclusion and Exclusion for RQ2</b>	
<b>1. Inclusion criteria</b>	
1.1 Year limit of publications	Studies published from 2000 to 2020 were included
1.2 Nature of study	Only full papers written in English language published in peer reviewed journals retrieved using electronic search platforms like Google Scholar, Inflibnet, JSTOR, ERIC, Springer, Taylor Francis, Sage etc.
1.3 Research Area	Approaches to learning/studying (Biggs or Entwistle framework); Course Experience (Ramsden & Entwistle framework)
<b>2. Exclusion criteria</b>	Papers, published before 2000 and/or written in any other language and/or full paper not available online were excluded
<b>3. Search strategies</b>	
3.1 Search engine	Google Chrome
3.2. Key words	“Approaches to study” or “Approaches to learning” or “Study approaches” And “Course Experience”
<b>4. Focus area</b>	Location of the study, nature of population and sample, objective of the study, tools used, deep approach

### 3.5. Data extraction for RQ1 and RQ2

The following characteristics of each study were recorded: (a) Name of the author, (b) journal name with publication year, (c) location (country, continent and region name), (d) population, (e) objective, (f) tools used, (g) result of the study and (h) limitations (if any) which are being presented in Appendix 1 and in Appendix 2 for RQ1 and RQ2 respectively.

## 4. Discussion

### 4.1. RQ1. Does classroom learning environment have any relationship with students' study approach?

After rigorous search, only 16 studies were identified which met the inclusion and exclusion criteria and finally included in the present systematic review. Details are given in Table 3.

- a) **Country/ continent-** Notwithstanding that Australia is a leading country in the field of research on classroom environment, yet out of the 16 studies found, only one group of researchers from Australia (N=2) worked on students' perception of classroom learning environments and their Approaches to Learning. Apart from Australia, the present systematic review covers studies from five countries of two major continent namely (a) Europe including Belgium (N=2) (b) Asia including Turkey (N=5), UAE (N=2), China (N=3) and Malaysia (N=2). No studies were found to be conducted in India.
- b) **Population-** The concerned studies were conducted on variety of learners starting from elementary students to trainee teachers. However, most of the studies involved school students (N=9), followed by medical science students (N=4), trainee teachers (N=2) and undergraduate students (N=1).
- c) **Methodology used-** Survey method was used in all the studies. Besides, in one study, qualitative analysis was done through interviews (Kek & Huijser, 2009). Data analysis was done through descriptive statistics in most studies. While some of the studies used non- parametric statistics (Al Qahtini, 1999),

most of the studies analysed the data using higher order parametric statistics, ANOVA, MANOVA, Factor Analysis etc. through soft wares like SPSS.

**d) Assessment tools-** For understanding students' perception regarding their classroom learning environment, researchers used total four types of instruments: CLES (N=10), ICEQ (N=2); ADQ (Assessment Demands Questionnaire; Scouller and Prosser 1994) (N=1) and Dundee Ready Education Environment Measure (DREEM; (Roff et. al., 1997) (N=2).

Students' approaches to learning/ studying were measured by Approaches to Study Inventory (ASI; Entwistle, & Ramsden, 1983; N= 2), Learning Process Questionnaire (LPQ; Biggs, 1987; N= 3), Study Process Questionnaire (SPQ; Biggs, 1987; N= 2), Revised Two-Factor Study Process Questionnaire (R-SPQ-2F; Biggs et al., 2001; N= 3), Learning Approach Questionnaire (LAQ; Cavallo, 1996; N= 2), and Approaches to Learning Science Questionnaire (ALS; Lee et. al., 2008; N= 2).

**e) Association among the scales under study**

*Learning Environment and Deep Approach-* Several researchers found a positive relationship between classroom learning environment and approaches to study. Al Qahtani (1999), in her Ph. D. project, used an instrument called DREEM which measured students' perception of class participation, stimulating teaching, confidence, competence development and active learning. She observed that in an encouraging environment, students tend to use a deeper approach. Dart et al. (1999) used ICEQ in their research along with LPQ. They found deep approach to learning to be significantly related to such classroom learning environments which were highly personalised and provided scope for active participation and generated investigative skills in the learning process. In an experimental study, Fok and Watkin(2007) found that the students developed deeper approach to study when they were exposed to a new constructivist learning environment. However, not all the scales of constructivist learning environment are found to be related with deep approach to learning. Table 3 below shows the results of several studies that found positive relationship between deep approach and different scales of constructivist learning environment.

**Table 3 : Relationship between deep approach and different scales of CLES**

Author	Personal Relevance	Student Negotiation	Shared Control	Critical Voice	Uncertainty
<b>Kek &amp; Huijser (2009)</b>		+	+	+	
<b>Ozkal (2009)</b>	+	+		+	
<b>Uysal (2010)</b>	+	+	+	+	+
<b>Guo (2016)</b>	+	+	+		+

(‘+’ sign indicates positive relationship)

Researchers also enquired if deep learning approaches could be induced among students or not. Gijbels et. al. (2008, 2009), in two separate studies, observed that students participating in a constructivist learning environment did not change their approaches to learning towards a more deep approach. They also found that little alterations in the learning-assessment environment did not modify students' approaches to learning.

Interestingly, Cirik et al. (2015) observed that students with a high level deep approach evaluated their learning environment more constructivist than middle and low levels. According to Yerdelen-Damar & Aydin (2015), when students perceived their learning environment have more constructivist elements,

they adopted mastery-approach goals, which increases the possibility of the students' falling on deep approaches to learning.

*Learning Environment and Surface Approach-* Kek & Huijser (2009) did not find any significant relationship between the two elements. However, according to Yerdelen-Damar & Aydin (2015), performance approach and performance avoidance goals can lead students to adopt surface approaches to learning. Further, their results demonstrated that students endorsing mastery approaches goals reported lesser use of surface strategies and students having mastery-avoidance goals preferred to use surface approaches to learning. Guo (2016) noticed a negative correlation between Personal Relevance and Surface Strategy.

#### f) Other related findings

Some researchers tried to find out interconnection between classroom environment, study approaches and achievement. Boz et al (2018) observed students' rote learning approaches, their gender (through rote learning) and students' perceptions of constructivist learning environment (through meaningful learning approaches) were significantly related to their science achievement. Kek et al. (2007) found surface approach to learning to be related to poor quality processes and outcomes while a deep approach to learning to be related to high quality processes and outcomes. Uysal (2010) also observed that students' learning approaches influenced their science achievement.

#### g) Research gaps

From the review of the literatures under this study, certain gaps are found that needs to be addressed in future researches.

- No studies were found to be conducted in India. Besides, total number of study in this field worldwide is only 16 for last two decades which proves that this area is not explored thoroughly.
- The associations between classroom learning environment and deep approach as well as surface approach were established by several researchers. However, the area of strategic approach was not well-explored.
- No study was done using ASSIST.
- Qualitative research like interview or case study could have strengthened the findings, however, it was done only in one study. Several researchers mentioned that self-reporting questionnaires limited their findings which could be overcome by applying qualitative method.

#### 4.2 RQ2. Does Course experience influence students' approach to study and their academic achievement?

After extensive search, 33 studies were found which met the inclusion and exclusion criteria and were finally included in the present systematic review. Several researchers claimed to observe positive relationship between students' course experience and their approaches to study. The details are presented in Table 5.

a) **Country/ continent-** The studies under this review are distributed in fifteen countries. Since Australia had been using CEQ for long, it is not surprising that several Australian researchers (N=8)

focused on finding out the association between students' experience of the entire course and their approaches to studying. China (N=6) also followed suit. Besides one study (N=1) has been conducted both in Australia and China. Apart from Australia and China, the present systematic review consists of studies from 13 countries of 3 major continents namely (a) Europe including Greece (N=2), Belgium (N=1), Romania (N=1), England (N=2), Finland (N=1), Norway (N=3) (b) Asia including Turkey (N=2), Pakistan (N=2), Japan (N=1), Thailand & Cambodia (N=1) and Malaysia (N=2) and (c) USA (N=1). Some studies focused on comparing the populations of different countries. Sun & Richardson (2012) compared the perceptions of quality and approaches to studying in higher education between Chinese and British postgraduate students at six British business schools and found lower score on deep approach scales of the Chinese students. Fryer et. al. (2012) adapted and validated the CEQ and the R-SPQ-2F to the Japanese tertiary environment and concluded that Students' Learning Theory constructs may be constituted differently in the Japanese context in some areas. In Pakistan, Ullah et. al. (2013) compared their sample with results from Western countries and observed that, contrary to Western research, students' perceptions of their learning environment varied with age and year of study, but their approaches to studying did not. They pointed out that gender differences mattered in their perceptions and motivation. Vann (2016) compared learning approaches and learning outcomes of the English university curriculum in two countries namely Cambodia and Thailand and observed different levels of learning approaches but similar degrees of learning outcomes in the two sample population of the two countries. No studies were found to be conducted in India in relation with RQ2.

**c) Population-** Majority of the studies under this review were conducted on undergraduate students. Two of the studies dealt with post graduate students in their surveys and one study compared between UG and PG students. From the study it was revealed that the diversity of disciplines/ departments/ subjects yielded variety in results. In fact students of subjects like Physics, Economics, English, Commerce, Marketing Science, Management Studies, Education, Philosophy, Psychology, Behavioural Science, Engineering, Architecture, Biological Science, Medical Science, Nursing, Occupational Therapy etc. participated in the surveys of the studies under this review. Moreover, researchers compared students' perception according to different subject areas and different method of teaching- learning as well. For example, Ullah et. al. (2013) observed students in the arts and social sciences perceived their programmes more positively and were more likely to adopt a deep approach to studying, compared to students in science and technology or business and management. Prosser, M., & Sze, D. (2014) studied effect of Problem-based learning (PBL) on Student learning experiences and outcomes.

**d) Methodology used-** While most of the researchers followed quantitative approach through survey (N=26), some researchers (N=4) followed quasi-experimental approach through pre- and post-survey during a course. Besides, one study (Wilson & Fowler, 2005) was found to follow mixed method, where two other studies were based on qualitative method, where one was through conducting interviews (Jackling, 2005) and the other one was through case study (Prosser, M., & Sze, D., 2014). Data analysis was done through higher order statistics in case of quantitative researches including ANOVA, MANOVA, Factor Analysis etc. through soft wares like SPSS.

e) **Assessment tools-** For understanding students' perception regarding their course CEQ is used by most of the researchers (N=26) in quantitative studies.

Students' approaches to learning/ studying were measured by inventories such as Approaches to Study Inventory (ASI; Entwistle, & Ramsden, 1983; N= 6), Study Process Questionnaire (SPQ; Biggs, 1987; N= 8), Revised Approaches to Studying Inventory (RASI; Entwistle & Tait, 1994; N= 4), Approaches and Study Skill Inventory for Students (ASSIST; Tait, Entwistle, & McCune, 1998; N= 4), Revised Two-Factor Study Process Questionnaire (R-SPQ-2F; Biggs et al., 2001; N= 5), Approaches to Learning and Studying Inventory (ALSI; Entwistle & McCune, 2004; N=1) Experiences of Teaching and Learning Questionnaire (ETLQ; Entwistle, 2005; N= 2) and Learning and Study Strategies Inventory (LASSI; Weinstein & Palmer, 2002; N= 2).

Guo et. al.(2017) conducted a huge survey on 74687 UG students of 39 full-time regular universities in China and for this purpose, they constructed new tools for understanding students' approaches to study and course experience as well.

**f) Association among the scales under study**

Several CEQ scales were found to have strong association with the approaches to studying. Most studies showed unanimity in finding positive correlation between deep approach and CEQ scales of good teaching, clear goal, appropriate workload, appropriate assessment and independence in choice. Similarly, several researchers found that heavy workload and inappropriate assessment were associated with students' surface approach of studying. Strategic approach was less studied in relation to study approaches. Diseth et. al. (2006), Nijhuis et. al. (2008), Webster et. al. (2009) and Guo et. al. (2017) observed contrasting positive association between good teaching and surface approach. The table (Table 4) below reflects the relationship between these variables as found by several researchers.

<b>Table 4 : Relationship between Approaches to studying and CEQ scales</b>				
<b>Author</b>	<b>Year</b>	<b>Deep</b>	<b>Surface</b>	<b>Strategic</b>
Johnston	2001		-good teaching +inappropriate assessment +Less choice/ independence + fewer clear guidelines	
Lizzio et al.	2002	+ good teaching	+heavy workload, + inappropriate assessment	
Abraham	2002	+good teaching +appropriate assessment +Independence	+ heavy workload,	+good teaching +appropriate assessment
Prosser	2004	+ good teaching +clear goal and standards	+ heavy workload, - appropriate assessment	
Karagiannopoulou & Christodoulides	2005	+ good teaching	No relationship with workload	
Diseth et al	2006	+ good teaching +appropriate workload	- good teaching - appropriate workload	+ good teaching + clear goal and standards
Nijhuis et. al.	2008	+ good teaching +clear goal and standards +appropriate workload +independence	+heavy workload, + inappropriate assessment +good teaching	
Webster et. al	2009	+inappropriate workload	+ good teaching + inappropriate workload	

Rahman & Mokhtar	2012	+ good teaching +clear goal and standards -inappropriate work load	+ inappropriate workload	
Guo et al.	2017	+ good teaching	+good teaching	
Fryer & Ginns	2018	+ teaching quality		
Mørk et al.	2020	+ Generic skills		+Generic skills
Natoli et al	2020	+ good teaching +clear goal and standards		

(‘+’ sign indicates positive relationship, ‘-’ sign indicates negative relationship)

### g) Other related findings

While searching for interrelationship between course experience of the students and their approaches to studying, researchers found several other related factors. Prosser et al. (2000) observed that students with the most developed prior knowledge and understanding focused on those aspects of their learning environment which evoked deep approaches to study in a coherent way, while those with the least developed prior knowledge and understanding seemed to focus in an incoherent way. Wilson & Fowler (2005) reported that 'typically surface' learners were influenced to adopt deeper processing strategies in the action learning design and those students explained this 'deep shift' in terms of the greater expectations of learner activity and responsibility in the action learning design. In a qualitative study, Jackling (2005) showed how individual differences in the perceptions of the learning context relate to study motives and strategies. In a longitudinal study, Ning & Downing (2010) showed that after controlling for previous academic achievement, student learning experience measured at one time (Time 1) exerted significant influence on study behaviour measured next time (Time 2), and study behaviour measured at the first time (Time 1) also exerted significant impact on learning experience next time (Time 2). Bliuc et al. (2011) focused on understanding how socio-psychological dimensions such as student social identity and student perceptions of their learning community affect their learning and observed that perceptions of learning community mediate the relationship between student social identity and deep approaches to learning. Kyndt et al (2012) investigated the relation of perceived workload, motivation for learning and working memory capacity (WMC) with students' approaches to learning and observed students with high WMC and average motivation scored higher on surface approaches and lower on deep approaches. Besides, gender and age were also observed as factor of approaches to studying.

### h) Research Gaps

From the review of the literatures under this study, certain gaps are found that needs to be addressed in future researches.

- No studies were found to be conducted in India.
- Out of 33 studies, only one was based on mixed method and two other studies were based on qualitative method. Several researchers mentioned that self-reporting questionnaires limited their findings which could be overcome by applying qualitative method.
- No study was done on school students, and hence, it is required to study course experience to the students in their schools so that it can be related with their study approaches.

## 5. Conclusion and Future Direction

The field of approaches to learning has always been an important area of study to the researchers. The present systematic review is based on the literatures published in last 20 years as available through online databases. It is found that both the students' perception of their learning environment and course experience work as determinant of their approaches to study.

Researches showed deep approach to learning to be positively related with scales of Constructivist Learning Environment. A learning environment where students get freedom in selecting learning activities, can make their own decisions after discussing with peer groups and get exposure of the world outside, should definitely induce students' thought process and provoke them to adapt deep approach to studying. On the other hand, good teaching is one of the most powerful parameter that is found to be related with deep approach directly. Along with it, other CEQ scales are found to be related with deep approach positively and with surface approach negatively. For example, it was found that student adapt surface approach when workload or assessment pressure is excessive and this seems to be obvious.

Understanding studying approaches of new learners (inside the school) is crucial as their learning and academic performances are of vital importance to any nation. But in the absence of specific studies on school students no effort of planning and reform is going to be effective in any country. In India, there is hardly any research to find out inter-relationship between approaches to studying, constructivist learning environment, course experience, and academic performance and also how the contextual parameters like gender, subject of study or medium of instruction etc. interplay in the field of education.

It is always ideal that the students adopt deep approach to study for the sake of in-depth knowledge in any subject area. In science, understanding the basic concepts thoroughly is very crucial and for that students need to take up 'Deep approach' to study. Besides, students' academic performance is also a matter of immediate concern. Explorative study is required to understand the factors that influence the students to adapt a study approach. For successful implementation of New Education Policy, the new findings in this area could be used by curriculum developers and educators for creating better learning situation in our schools.

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