

Identification of Predominant Learning Approaches in Medical Students using ASSIST in An Indian Medical School: A Cross-sectional Survey

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ABSTRACT

Introduction: Approaches to study and learning may either improve or attenuate educational outcomes. Medical educators, therefore need to monitor the various approaches adopted by students in pursuit of their learning. This can be achieved using Approaches to Study and Skills Inventory for Students (ASSIST).

Aim: To find predominant learning approach amongst medical students in a western Indian medical school.

Materials and Methods: A cross-sectional observational study was conducted at second year MBBS students in September 2015, at the private medical college of Pramukhswami Medical College, Gujarat, India for documenting details about their understanding about learning and its concepts, different learning approaches and preferences for different types of courses and teachings adopted by students in their daily academic routine. Descriptive analysis was carried out finding frequency (n) and percentages (%) and Independent sample t-test was applied to compare the scores of quantitative data between the sub groups. Analysis was done using the software Statistics and Data Science (STATA) version 14.2.

Results: Out of 100 students, 75 participated (38 females and 37 males). Results displayed the frequency scores of ASSIST and its three sections. Under first section i.e., “what is learning” and “what are concept”, there was no significant difference (p-value >0.05) in mean (Standard Deviation) scores. While in second section on “Approaches of learning” maximum students used Strategic Approach (SA) (79.82±8.97), followed by Deep Approach (DA) (64.39±6.01) and then surface approach (50.10±9.87). There was a positive correlation between deep and strategic learning approach ($r=+0.44$) whereas deep and surface approach showed negative relation ($r=-0.23$). In addition, surface approach had negative relation with SA ($r=-0.21$). In regards to the preferences for different types of course and teaching, there was no significant difference ($p>0.05$).

Conclusion: Knowledge of student’s ‘approaches to learning’, ‘conceptions of learning’ and ‘preference towards different types of teaching styles can help optimise the quality of student learning, as well can support teaching and assessment methods used by educators.

Keywords: Deep learning, Learning conceptions, Strategic learning, Superficial learning

INTRODUCTION

With a myriad of pedagogical methods, currently medical education is facing the challenge of educating students to be lifelong learners. Evidence suggests that students adopt a wide-range of methods for learning e.g., by relying on comprehension, practicing on memorising pieces of information and knowledge recall [1]. A recent review states that students who adopt deep learning have more systematic organisation of ideas, are able to recall better and can easily apply ideas while strategising their approaches to learning [2,3]. Encouraging deep learning approaches in higher education helps augment profound learning and development of lifelong learning skills in the 21st century.

In this context, there are three different approaches to learning viz., Deep Approach (DA), Surface Apathetic Approach (SAA) and Surface Approach (SA) [3]. While, it is imperative for a student to understand a subject to its core as compared to a surface or superficial understanding, students who are “average” may believe their methods of surface or strategic studying are working well and stay at that level. This holds very true especially when a student is simply targeting to pass examinations. In lieu of this, medical students need to follow a properly structured, focused and appropriate approach to learning. Medical schools need to reinforce deep and strategic learning approach for a holistic development in students.

According to Entwistle NJ et al., ‘the way a student approaches a learning situation is not inherent, but an acquired trait or strategy

dependent on the learning context, educational environment or situational demands [4]. In similar lines, Bigg’s student learning research and theory states that approaches to learning are sensitive to individual differences, as well to teaching contexts i.e., students tend to stabilise their learning approaches according to ongoing teaching experiences, their knowledge levels, experiential learning and intrinsic motivation [5].

Literature documents various inventories for assessing approaches to learning, one of the most common questionnaires used by numerous researchers is that of ASSIST [6]. This inventory has its origins in the Approaches to Studying Inventory (ASI) which was developed first in the University of Lancaster in the late 1970s by Entwistle NJ and Ramsden P. It was designed mainly to indicate the relative strengths of students’ approaches in three main dimensions- deep, surface and strategic. However, ASI has limitations in reliability and validity. The questionnaire was then modified to ASSIST, which was developed by the Centre for Research on Learning and Instruction in the University of Edinburgh in 1997 by works of Marton F and Saljo R (1976) Entwistle NJ et al., and the ASSIST questionnaire, consists of three parts/categories [1,4].

The first part is related to the two conceptions of learning “Learning as a means of reproducing knowledge” and “Learning as a means of transforming taught material”. The second part identifies tendencies of students to adopt deep, surface and SA to learning and studying [7]. The third part encourages students to display their preference towards different types of teaching i.e., teaching which supports

understanding” and teaching which consists of only transmitting information” [4].

The current study was undertaken to primarily find predominant learning approach amongst medical students in a western Indian medical school. By identifying learning approaches, medical schools can intervene and optimise the learning environments in a much better way, in terms of formulation of clear institutional goals and objectives, practicing good quality teaching, designing effective curriculums and using appropriate methods of assessment. This in turn will be useful to understand the need and accordingly bring in curricular reforms by incorporating more of strategic and deep learning approaches in teaching learning practices.

MATERIALS AND METHODS

A cross-sectional observational study was conducted on second year MBBS students in September 2015, at the private medical college of Pramukhswami Medical College, Gujarat, India. Out of a total of 100, 75 students participated in the study. The study was conducted after obtaining permission from the Institutional Ethics Committee (HREC No. HMPCE: HREC/2015/Out. No.163/15) and after obtaining the written informed consent from participants. The instrument used to measure students’ approaches of learning was Approaches and Study Skills Inventory for Students (ASSIST) [Appendix-1].

Inclusion criteria: All second year MBBS students of the selected medical college who consented for the study and provided the answers to complete questionnaire were included in the study.

Exclusion criteria: Those students who did not consented for the study and those who did not provided the answers to complete questionnaire were excluded from the study.

Approaches and Study Skills Inventory for Students (ASSIST)

ASSIST stands for Approaches to Study Skills Inventory for Students [4] [Appendix-1]. It consists of three sections/categories:

Section 2 (A) depicts what is learning?: Conceptions of learning: There are a total of six items. The first three, indicates a conception of learning as reproducing knowledge, while the remaining three cover a view of learning as ‘transforming’ the taught material, seeing learning as involving personal understanding and developing as a person.

Section 2 (B) depicts approaches to studying: Herein, the questionnaire consists of 52 items out of which 16 items focus on the surface and DA each and 20 items emphasise on SA to learning. The scoring procedure for this section follows the rule of Likert scale- 1 (disagree) to 5 (agree). The items in approaches to study are grouped into three scales, which denote the various approaches of learning i.e., (DA, SAA, SA). Each of them consists of subscales respectively.

Subscale scores are formed by adding together the responses on the items in that subscale. Scores for the three main approaches are obtained by adding together the subscale scores which contribute to that specific approach.

Section 2 (C) consists of preferences for different types of course and teaching: Herein, there are total eight items, four items each of supporting understanding (related to a DA) and transmitting information (related to a surface approach). It is scored as the sum of the four items.

Prior to data collection, participants were briefed regarding ASSIST, during regular working hours. The questionnaire was then distributed in the form of hard copies to those who consented. Simultaneously, they were also sensitised regarding the aims and objectives of the study. First, they were asked to fill in their particulars in context to age, gender, and board of studies. Following this, the ASSIST 52 item questionnaire were administered to students for determining

their most preferred learning approach. Total time allotted for completing the questionnaire was one hour.

STATISTICAL ANALYSIS

Data was entered into a Microsoft excel sheet and the scores were statistically analysed using Independent sample t-test to compare quantitative variables across categories and Chi-square test to find association between two categorical variables. Descriptive statistics were used to analyse the students’ preferences of the various learning approach using Software for Statistics and Data Science (STATA) version 14.2.

RESULTS

There were 38 females and 37 males. Majority of the students 66 (88%) were from state board of education, while only 4 (5.3%) were from CBSE board; remaining 5 (6.6%) completed their schooling from either ICSE or International board. There was no statistically significant association found between the distribution of gender with deep (p -value=0.774), strategic (p -value=0.391) and surface (p -value=0.798) approach. The age category of the study subjects was widely distributed between 19 and 20 years and statistically was not significantly associated with different approaches [Table/Fig-1].

Learning approaches	Gender	Mean (SD)	p-value
Deep	F	64.59 (6.06)	0.774
	M	64.18 (6.04)	
Strategic	F	80.71 (8.84)	0.391
	M	78.91 (9.14)	
Surface	F	49.81 (8.97)	0.798
	M	50.40 (10.84)	

[Table/Fig-1]: Depicts the association of approaches with gender.
F: Female; M: Male

Assessment of Learning using ASSIST

Section 2 (A): What is learning and its concepts? About knowledge reproducing, students felt that learning means getting on with the things you have got to do, building up knowledge by acquiring facts and information, making sure you remember things well, and being able to use the information that they had acquired. While for transforming taught knowledge, students felt that learning means understanding new material for yourself, seeing things in a different and more meaningful way, using all their experiences in life, developing as a person and being able to relate to people better. Analysis shows that mean scores for both reproducing knowledge and transforming taught knowledge were comparable i.e., showed no significant difference in mean (\pm SD) scores (p -value >0.05) [Table/Fig-2].

Section 2 (B): Assessment of approaches to studying: The quartile groups were defined as follows:

For deep approach: low (<60), middle-low (60-65), middle-high (65-68), and high (>68).

For strategic approach: low (<74), middle-low (74-80), middle-high (80-86), and high (>86).

For surface approach: low (<44), middle-low (44-51), middle-high (51-57), and high (>57). The frequency of students in each quartile group is depicted in [Table/Fig-3].

The relations between the different approaches when explored through Pearson’s correlation coefficient revealed that there was a positive correlation between Deep and Strategic learning approach ($r=+0.44$) whereas DA and SAA as expected were negatively related ($r=-0.23$) and also the surface approach had negative relation with SA ($r=-0.21$).

Section 2 (C): Preferences for different types of course and teaching: In terms of preferences for different types of course and teaching, there was no significant difference (p -value >0.05) in mean (\pm SD) scores i.e., mean scores for both were comparable. Herein

Section	Subdomains	Mean (\pm SD)
2A	Reproducing knowledge	13.44 \pm 1.34
	Transforming taught knowledge	13.45 \pm 1.36
2B	Deep	
	Seeking meaning	16.61 (2.28)
	Relating ideas	15.80 (2.39)
	Use of evidence	16.72 (2.22)
	Interest of ideas	15.32 (2.33)
	Strategic	
	Organised studying	15.83 (2.56)
	Time management	14.45 (3.18)
	Alertness to assessment demands	16.19 (2.62)
	Achieving	16.59 (2.70)
	Monitoring effectiveness	16.77 (2.20)
	Surface	
	Lack of purpose	9.71 (4.23)
	Unrelated memorising	12.44 (3.18)
	Syllabus boundness	13.64 (3.23)
Fear of failure	14.32 (3.49)	
2C	Deep approach	
	Supporting Understanding	16.58 (2.50)
	Superficial and Strategic Approach (SA)	
	Transmitting information	16.40 (3.18)

[Table/Fig-2]: Depicts the Mean (\pm SD) of sub-domains of approaches to studying.

Approach	Low	Middle-low	Middle-high	High
Deep	16	18	17	24
Strategic	18	18	19	20
Surface	17	17	17	24

[Table/Fig-3]: Frequency distribution in Quartile groups.

supporting understanding (was related to a DA), wherein students preferred lecturers who encouraged them to think for themselves and showed them how they themselves think. Also exams which allow them to show that they have thought about the course material for themselves, courses where they are encouraged to read around the subject a lot for ourselves, books which challenge them provide explanations which go beyond the lectures. While transmitting information (was related to superficial and SA), wherein students preferred lecturers who tell them exactly what to put down in their notes, they favoured assessment methods which need only the material provided in the lecture notes, they preferred courses in which it is made very clear which books to read and refer especially books which cater only to definite facts and information. The current study showed that majority of students preferred both strategic and deep learning approaches, mean values of 79.82 \pm 8.97 and 64.93 \pm 6.01, respectively, where SA was a clear predominance.

DISCUSSION

The current study was conducted on second year medical students and inferred that although, majority of students preferred both strategic and deep learning approaches, SA was a clear predominance.

In context to the second section of ASSIST which targets the three approaches of learning, study conducted by Jhala M and Mathur J and Chonkar SP et al., reports that comprehending a subject at its core is more valuable than a surface/superficial understanding [7,8].

This is similar to findings by Wickramasinghe DP and Samarasekera DN in a study conducted on preclinical, clinical and postgraduate students from the University of Colombo, Sri Lanka, where SA (Median: 67, 58.5 and 64) was the most preferred by students followed by DA (Median: 62, 57 and 62) and least by surface approach (Median: 47, 52 and 50) [9].

Likewise, Samarakoon L et al., determined learning styles and learning approaches among preclinical (first professional year), clinical (final year) and postgraduate trainees at the University of Colombo, Sri Lanka, also documented strategic learning (mean: 68.99, 66.28 and 73.91) as one of the preferred learning approach in all three groups [10]. Besides this, a study conducted by Sevsen Cebeci MD et al., on preferred learning approaches adopted by medical students presented similar findings with highest mean for DA (M: 69.05 \pm 12.54) followed by SA (M: 65.29 \pm 12.82) and lastly superficial approach (M: 59.19 \pm 12.25) [11].

Shankar PR et al., conducted a study in a Caribbean Medical School, on approach to learning of medical students [12]. They found that median scores for surface, deep and SA were 52, 60 and 73 respectively. In another study, conducted by Chonkar SP et al., at various medical colleges in Singapore, majority of the students preferred deep and SA while only 8.8% students preferred surface approach respectively [8]. In another mixed method, study conducted by Asad N and Ashar A in similar lines stated that final year medical students and postgraduates used deep (M: 60.81 and 63.01) and SA (M: 74.24 and 74.67) with predominance of strategic in undergraduate students [13].

While there is a global trend to promote deeper learning through student oriented curriculums, problem-based learning and case-based learning, there remains consistent preference for SA. A perceived impetus behind this could be the segregated and exhaustive curriculums, strenuous amount of workload and a stipulated time frame.

Education in India is deep rooted with rote memorisation and assessment oriented, competitive exams and grades to secure admissions remain its focal point. And yet, studies by Soundariya K et al., on 121 second year MBBS students carried out at Puducherry and by Ramnathan V et al., carried on 152 first year medical undergraduate students belonging to three different batches at a private medical college Enathur, Kanchipuram, Tamil Nadu, India [14,15]. The Wilson K and Fowler J study findings suggested higher mean scores for deep (3.75 \pm 0.50 and 65 \pm 0.913) and SA (3.65 \pm 0.55 and 65 \pm 1.067) than surface approach. While there is marginal predominance for DA in these studies compared to the predominance of SA in the present study, it would be beneficial to analyse the p-value of deep-SA in these studies to clearly state the student preference of one over the other. Albeit, the preference of surface, deep or SA is influenced by various factors, such as the curriculum, teaching-learning methods, assessment methods both, faculty and student attitude, feedback, among many others [16]. Accordingly, to shift the student's learning approaches and enhanced learning, certain curricular changes such as student-centered teaching-learning methods, early clinical exposure, promoting self-directed learning, more objective and formative assessments, feedback could be implemented, which might eventually benefit the community [17]. Incidentally, India is at the brink of a paradigm shift with the introduction of competency based medical education catering to this need of the hour.

Using the Biggs's Revised Two-Factor Study Process Questionnaire (RSPQ-2F), Shah DK et al., in their study using at CMC, Tribhuvan University, Nepal found significantly higher levels of deep to surface approach among first and second year medical students (33.26 \pm 6.40 vs. 24.25 \pm 6.55) first and second year dental (31.71 \pm 6.51 vs 27.51 \pm 7.45) and nursing (31.36 \pm 4.72 vs. 26.15 \pm 5.89) students [18]. Paudel KR et al., presented similar findings in their study on 132 medical students from the first to fourth terms at Trinity School of Medicine where the mean score for the deep learning approach was 29.4 \pm 4.6 compared to 24.3 \pm 4.2 for the surface approach [19]. Subasinghe SDLP and Wanniachchi DN, found mean scores of 29.2 and 24.9 for deep and surface approach using the same questionnaire on 202 second year students at the

Faculty of Medicine, Colombo [20]. D'Cruz SM and Rajaratnam N also presented significantly higher mean scores for DA (32.86±5.41) compared to surface approach (22.26±6.54) [21].

In a cross-sectional study by Rehman R et al., conducted at Karachi on 98 first year medical students using modified questionnaire from ASSIST, displayed 71.4% preferred SA while DA was preferred by 15.3% students followed by 13.3% for surface approach [22].

Mirghani H and Elnour M in their study using Dundee Ready Educational Environment Measure (DREEM) questionnaire on 59 clinical phase medical students in Sudan found that the mean score for DA was significantly higher than the mean score for the superficial approach (29.49±6.39 vs. 22.81±6.94) [23]. While this questionnaire (RSPQ-2F) was analysed to give separate scores for DA (all deep motive and all deep strategy) and surface approach (all surface approach and all surface strategy) there is an obvious inclination of students towards DA which can be utilised to benefit them in achieving the long-term goal of a competent medical graduates.

Similarly, the way we teach our students clearly influences them with regard to their style of learning, level of understanding and finally their performance. Therefore, teachers must play a pervasive role in linking or reinforcing teaching, learning and assessment. This helps them to improve the teaching practice and enhance students learning [24].

The current study's population age range is significantly narrower compared to the other studies. While it cannot be conclusively stated if age has an impact on the learning approaches selected by the students, it is certainly in lines with the hypothesis stated in literature that students, in the later years of their academics especially in postgraduation, tend to incline towards deep and strategic learning approaches [25]. This could be due to the addition of clinical postings in the 2nd professional year and also a gradual shift in their perspective towards learning after the initial struggle in preclinical years to shift from memory based school education to more application based and higher education.

Limitation(s)

Assessment of approaches to learning used by students, if averaged over a large class would give an index of the quality of curricular reforms, instructional mode and pattern of assessment used. Besides this, we need to conduct such studies in Competency-Based Medical Education (CBME) batches also so as to understand the difference in approaches. Another constraint faced was that developers of ASSIST have not given any guidelines in regards to matching learning style with learning approach.

CONCLUSION(S)

Impetus must be on medical schools and universities to reinforce certain learning approaches which instil DA methods in students. Focusing more on the deep learning approach, helps medical school prepare competent healthcare professionals. It could also suggest that, universally, assessment remains a vital component for students before selecting any learning strategy. And that a teacher's guidance plays pivotal role in how they approach learning. Henceforth, it would be beneficial to incorporate time-management and organisational skills in our curriculum to enhance the student learning through their preferred approaches.

Acknowledgement

The authors acknowledge the contributions of Noel Entwistle, Velda McCune (University of Edinburgh) and Hilary Tait (Napier University) for preparing and compiling the "Approaches and Study Skills

Inventory for Students (ASSIST)" and Report of the development and use of the inventories.

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PLAGIARISM CHECKING METHODS: [\[Jain H et al.\]](#)

- Plagiarism X-checker: Apr 10, 2021
- Manual Googling: Sep 15, 2021
- iThenticate Software: Oct 23, 2021 (21%)

ETYMOLOGY: Author Origin**AUTHOR DECLARATION:**

- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Apr 09, 2021**
Date of Peer Review: **May 06, 2021**
Date of Acceptance: **Sep 16, 2021**
Date of Publishing: **Nov 01, 2021**

APPROACHES AND STUDY SKILLS INVENTORY FOR STUDENTS (ASSIST QUESTIONNAIRE)**SECTION A. What is learning? – Conceptions of learning**

The first four, can be combined to indicate a conception of learning as reproducing knowledge, while the remaining four cover a view of learning as 'transforming' the taught material, seeing learning as involving personal understanding and developing as a person.

Learning as reproducing knowledge

1. Getting on with the things you've got to do.
2. Building up knowledge by acquiring facts and information.
3. Making sure you remember things well.
4. Being able to use the information you've acquired.

Learning as transforming taught material

5. Understanding new material for yourself.
6. Seeing things in a different and more meaningful way.
7. Using all your experiences in life.
8. Developing as a person.

Section B. Approaches to studying

Herein the questionnaire consists of 52 items. The scoring procedure for this section follows the rule of Likert scale-1 (disagree) to 5 (agree). The items in Approaches to Study are grouped into three scales, which denote the various approaches of learning i.e., (DA, SAA, SA). Herein, 16 items focus on the surface and DA each and 20 items emphasise on SA to learning. DA scale contains four subscales which are Seeking Meaning (SM), Relating Idea (RI), Use of Evidence (UE) and Interest in Ideas (II). The SA scale consists of five items, which are Organised Study (OS), Time Management (TM), Achieving (A), alertness to Assessment Demands (AD) and Monitoring (M). Surface Approach scale also includes four items of subscales. The items are Lack of Purpose (LP), Unrelated Memorising (UM), Syllabus Boundness (SB) and Fear of Failure (FF). Sub-scale scores are formed by adding together the responses on the items in that sub-scale. Scores for the three main approaches are obtained by adding together the subscale scores which contribute to that specific approach.

Deep Approach (DA) to learning:**Seeking meaning:**

4. I usually set out to understand for myself the meaning of what we have to learn.
17. When I'm reading an article or book, I try to find out for myself exactly what the author means.
30. When I am reading I stop from time to time to reflect on what I am trying to learn from it.
43. Before tackling a problem or assignment, I first try to work out what lies behind it.

Relating ideas:

11. I try to relate ideas I come across to those in other topics or other courses whenever possible.

21. When I'm working on a new topic, I try to see in my own mind how all the ideas fit together.
33. Ideas in course books or articles often set me off on long chains of thought of my own.
46. I like to play around with ideas of my own even if they don't get me very far.

Use of evidence:

9. I look at the evidence carefully and try to reach my own conclusion about what I'm studying.
23. Often I find myself questioning things I hear in lectures or read in books.
36. When I read, I examine the details carefully to see how they fit in with what's being said.
49. It's important for me to be able to follow the argument, or to see the reason behind things.

Interest in ideas (Motivational aspect):

13. Regularly I find myself thinking about ideas from lectures when I'm doing other things.
26. I find that studying academic topics can be quite exciting at times.
39. Some of the ideas I come across on the course I find really gripping.
52. I sometimes get 'hooked' on academic topics and feel I would like to keep on studying them.

Monitoring effectiveness (Originally included in strategic, but now seen as more closely related to deep):

7. I go over the work I've done carefully to check the reasoning and that it makes sense.
20. I think about what I want to get out of this course to keep my studying well focused.
34. Before starting work on an assignment or exam question, I think first how best to tackle it.
47. When I have finished a piece of work, I check it through to see if it really meets the requirements.

Strategic Approach (SA) to studying:**Organised studying:**

1. I manage to find conditions for studying which allow me to get on with my work easily.
14. I think I'm quite systematic and organised when it comes to revising for exams.
27. I'm good at following-up some of the reading suggested by lecturers or tutors.
40. I usually plan out my week's work in advance, either on paper or in my head.

Time management:

5. I organise my study time carefully to make the best use of it.
18. I'm pretty good at getting down to work whenever I need to.
31. I work steadily through the term or semester, rather than leave it all until the last minute.
44. I generally make good use of my time during the day.

Achieving (Motivational aspect):

10. It's important to me to feel that I'm doing as well as I really can on the courses here.
24. I feel that I'm getting on well, and this helps me put more effort into the work.
37. I put a lot of effort into studying because I'm determined to do well.
50. I don't find it at all difficult to motivate myself.

Alertness to assessment demands (Loads with strategic in some studies, but now seen as a distinct aspect):

2. When working on an assignment, I'm keeping in mind how best to impress the marker.
15. I look carefully at tutors' comments on course work to see how to get higher marks next time.
28. I keep in mind who is going to mark an assignment and what they're likely to be looking for.
41. I keep an eye open for what lecturers seem to think is important and concentrate on that.

Surface Approach:

This dimension has also been called 'surface apathetic' or 'instrumental' in some publications

Lack of purpose (Sometimes separates out as a distinct aspect):

3. Often I find myself wondering whether the work I am doing here is really worthwhile.
16. There's not much of the work here that I find interesting or relevant.
29. When I look back, I sometimes wonder why I ever decided to come here.
42. I'm not really interested in this course, but I have to take it for other reasons.

Unrelated memorising:

6. I find I have to concentrate on just memorising a good deal of what I have to learn.
19. Much of what I'm studying makes little sense: it's like unrelated bits and pieces.

32. I'm not really sure what's important in lectures, so I try to get down all I can.

45. I often have trouble in making sense of the things I have to remember.

Fear of failure (Motivational aspect)

8. Often I feel I'm drowning in the sheer amount of material we are having to cope with.
22. I often worry about whether I'll ever be able to cope with the work properly.
35. I often seem to panic if I get behind with my work.
47. Often I lie awake worrying about work I think I won't be able to do.

Syllabus-boundness (Does not contribute to the overall score effectively in all subject areas):

12. I tend to read very little beyond what is actually required to pass.
25. I concentrate on learning just those bits of information I have to know to pass.
38. I gear my studying closely to just what seems to be required for assignments and exams.
51. I like to be told precisely what to do in essays or other assignments.

Section C.

Preferences for different types of course and teaching: Scored as the sum of the four items.

Supporting understanding {related to a Deep Approach (DA)}:

- b. - lecturers who encourage us to think for ourselves and show us how they themselves think.
- c. - exams which allow me to show that I've thought about the course material for myself.
- f. - courses where we're encouraged to read around the subject a lot for ourselves.
- g. - books which challenge you and provide explanations which go beyond the lectures.

Transmitting information (related to a surface approach):

- a. - lecturers who tell us exactly what to put down in our notes.
- d. - exams or tests which need only the material provided in our lecture notes.
- e. - courses in which it's made very clear just which books we have to read.
- h. - books which give you definite facts and information which can easily be learned.