

Validation of Assist Using Second Year MBBS Medical Students in Punjab, Pakistan

Faraz Ahmed Bokhari¹, Arshad Kamal Butt² and Ian Willis³

¹Department of Physiology, Shaikh Zayed Postgraduate Medical Institute/Shaiikh Khalifah Bin Zayed Al-Nahyan Medical and Dental College, Lahore

²Department of Postgraduate Medical Education/Gastroenterology, Shaikh Zayed Shaikh Zayed Postgraduate Medical Institute/Shaiikh Khalifah Bin Zayed Al-Nahyan Medical and Dental College, Lahore

³Educational Development Division, Centre for Lifelong Learning, University of Liverpool, UK

ABSTRACT

Background: Educational developers argue that the way students learn is not just based on individual characteristics, rather it is a dynamic process including personal experiences, teaching methods, assessment protocols and subject matter. We analyzed the reliability of a standard research instrument in elucidating different learner types amongst medical students. **Methods:** Second year MBBS students from two medical colleges in the Punjab were asked to complete the Approaches and Study Skills Inventory (ASSIST) instrument comprising of four sections. The second section consists of 52 items that assess study approaches in three different scales: Deep, Strategic and Surface Apathetic - against a Likert-type scale. Cronbach's alpha estimation was used to check the reliability of the scales and subscales. **Results:** The alpha values for the main scales range from 0.57 for the Surface Apathetic Approach, and 0.75 each for Deep and Strategic Approaches, indicating low and high levels of internal consistency respectively. The results for the subscales for our sample ranged from 0.51 to 0.67. **Conclusions:** Our alpha scores are in congruence with various international research findings, except that of Surface Apathetic Approach score. Further research is required on this variation. Furthermore, this inventory may be used for classifying students on entry into the MBBS program in order to 'adjust' teaching methods and techniques. Further follow up analysis of the same student body is expected to yield valuable research data about medical student learning practices and how they change during their formative undergraduate years.

Keywords: approaches to learning, ASSIST, medical students

INTRODUCTION

With an explosion in private sector medical colleges in the province of Punjab, Pakistan the need for quality assurance in teaching and learning practices is a pressing issue. The medical education field is now witnessing students entering the medical profession from a wide variety of backgrounds. Factors such as socioeconomic status, type of high school education (Pakistani F.Sc. verses British based GCSE etc), urban versus rural backgrounds, technological prowess and presence of peers or other family members already in the medical field may affect the learning experiences of

medical students.

The learning strategies and techniques, referred to in the literature as students' approaches to learning, have been shown to significantly affect the learning outcomes achieved. Acquiring an understanding of these learning approaches is very important for faculty members in organizing the learning outcomes of the courses that they teach and also the learning and teaching activities in the classroom¹⁻³.

Measuring learning approaches

Initially the qualitative, interview-based method known as phenomenography was used to

elucidate various learning approaches amongst students. This and subsequent research yielded three main categories of approaches used by students namely, surface, deep and strategic. Briefly, students taking a 'deep' personal interest in learning actively intend to understand the study material. These students experiment with new information, *constructively* connecting it with previous known concepts and facts. Contrarily, students employing a surface approach merely focus to rote memorization of facts and figures and are not critical in their thinking at all. They generally study because the syllabus requires them to do so. Significantly, data indicates that the former are associated with higher achievement, both in formal assessment and work-based performance, and the latter are associated with poor outcomes^{4,5}. The intentions and activities of strategic approach students are primarily focused on acquiring high grades in formal assessments. These students are very cognizant of the academic content and the requirements of the assessment system. They adjust their learning strategies to maximize their chances of academic success⁶. In yet to be published data, we have found significant correlation between deep and strategic type of students, which indicates that these approaches are generally found together in bright, result achieving medical students.

There are various research instruments designed to study learning approaches in students. Most of this research is based in developed countries and cannot be applied uncritically to the realities in under-developed countries⁷. Furthermore, after an extensive review of literature, we could only find one study which looked at student learning approaches in Pakistan⁸. We chose the most cited learning approaches inventory, the Approaches and Study Skills Inventory for Students (ASSIST)⁹, in a project studying the learning approaches of 2nd year medical students from two medical colleges in the Punjab province of Pakistan.

MATERIALS AND METHODS

Research instrument

The participants were given the Approaches and Study Skills Inventory for Students (ASSIST) questionnaire, which is a revision of Approaches of

Study Inventory ASI (9). Respondents answered the questionnaire using a 5-point modified Likert scale (1 -disagree and 5 - agree). The first part relates to perception of learning and has 6 statements. The second part deals with the actual approaches to studying. This contains 52 statements combined into 13 subscales of four items each, which are then further grouped into the three main scales: Deep Approach (DA), Strategic Approach (SA), and Surface Apathetic Approach (SAA). The third part looks into the preference of course type and teaching methods and contains 8 statements and uses a like-dislike scale (1- definitely like, 5- definitely dislike). A final question asks the respondent to self evaluate himself/herself about previous assessments and was used as the self appraisal score used in the analysis. The English version of ASSIST has been validated by Byrne et al.¹⁰.

Data collection

In this observational analytical study, participants were 2nd year MBBS students from two private medical colleges of Punjab, Pakistan. The study duration spanned approximately three months from March to May 2012, after approval from relevant review boards and departmental authorization. The ASSIST was distributed to students during tutorial classes. The purpose of the study was explained to them and informed consent taken, after which they were asked to complete the inventory in respect of their study of Physiology. A total of 210 students completed and returned the proformas.

RESULTS

Table 1 details the ASSIST main scale and subscale scores of our sample. Cronbach alpha values for the main scales range from 0.57 for Surface Apathetic Approach, and 0.75 each for Deep and Strategic Approaches, indicating low and high levels of internal consistency respectively. The results for the subscales for our sample ranged from 0.51 to 0.67. Table 2 for detailed results of reliability analysis.

Table1: ASSIST Scores of our sample.

Scale/Subscale	Mean	SD	Skewness	Kurtosis
Deep approach	79.32	10.04	- 0.84	0.56
Seeking meaning	16.40	2.63	- 1.03	1.09
Relating ideas	15.48	2.99	- 0.79	0.63
Use of evidence	16.53	2.59	- 1.17	2.22
Interest in ideas	16.18	2.73	- 1.13	1.63
Monitoring effectiveness	14.73	3.06	- 0.63	0.34
Surface apathetic approach	54.09	9.10	- 0.45	0.28
Lack of purpose	11.53	3.39	0.03	- 0.33
Unrelated memorising	13.17	3.12	- 0.15	-0.54
Syllabus boundness	15.51	3.15	- 0.50	- 0.62
Fear of failure	13.88	3.43	- 0.54	- 0.14
Strategic approach	60.35	9.93	- 0.70	0.13
Organised study	14.18	3.50	- 0.64	0.21
Time management	14.56	3.36	- 0.46	- 0.52
Alertness to assessment demands	15.70	3.09	- 0.89	0.77
Achieving	15.91	3.12	- 0.77	0.28

Table 2: Cronbach's Alpha Analysis

Scale/Subscale	Pakistan (n = 210)	Portugal (n = 566) (11)	USA (n = 298) (10)	Ireland (n = 437) (10)	Norway (n = 573) (12)	Canada (n =1,080) (13)	UK (n = 817) (14)
Deep approach	0.75	0.81	0.82	0.84	0.81	–	0.84
Seeking meaning	0.51	0.51	0.55	0.63	0.49	0.62	0.57
Relating ideas	0.55	0.54	0.59	0.59	0.62	0.59	0.59
Use of evidence	0.54	0.59	0.49	0.59	0.49	0.51	0.53
Interest in ideas	0.54	0.56	0.67	0.69	0.64	0.73	0.76
Monitoring effectiveness	0.56	0.58	0.61	0.61	0.51	0.60	0.62
Surface apathetic approach	0.57	0.79	0.80	0.83	0.70	–	0.87
Lack of purpose	0.64	0.54	0.57	0.59	0.68	0.60	0.57
Unrelated memorising	0.62	0.73	0.68	0.75	0.57	0.72	0.76
Syllabus boundness	0.54	0.62	0.55	0.64	0.57	0.59	0.55
Fear of failure	0.64	0.63	0.72	0.74	0.57	0.75	0.69
Strategic approach	0.75	0.83	0.87	0.87	0.81	–	0.80
Organised study	0.66	0.51	0.55	0.63	0.59	0.59	0.54
Time management	0.67	0.65	0.77	0.74	0.72	0.80	0.68
Alertness to assessment	0.60	0.40	0.56	0.63	0.41	0.62	0.76
Achieving	0.56	0.67	0.63	0.68	0.66	0.67	–

DISCUSSION

Our main finding in this study was that ASSIST can be used reliably to identify Deep and Strategic minded students, but it needs to be adjusted for the Surface type of students.

With the exception for alpha values for Surface Apathetic Approach, the rest of the values for both the main scales and the subscales were found to be within acceptable limits for scales of their respective length and type¹⁾ and are similar to the values reported in other studies which used the

ASSIST (Table 2 for comparison). Further research is required on the behaviour of Surface Apathetic Approach in larger and different ethnic background students in Pakistan.

The world of medical education is developing and facing its teething problems especially in Punjab province due to the liberalization of the private medical education sector. This means that medical regulatory bodies, admission committees, medical college administrations and faculty members need to find qualitative and quantitative ways to analyze students enrolling in medicine and to focus on the ways to develop more effective teaching methods and interactive activities.

One of the criticisms of using a pure quantitative evaluation of a complex concept like learning has its due appeal. Despite the fact that these scales are easy to use and are practical, their usefulness remains debatable as they implicitly stereotype learning and students. This may cloud important 'personalized' aspects of how students learn^{16, 17}. Learning styles are affected by context, subject matter and socioeconomic factors amongst many other factors¹⁸. It is common observation by experienced faculty members that a medical learner will change his/her learning style from first year to final year during an MBBS course, and more profoundly during the postgraduate years.

Limitations of this study include the sample size. A better sample size would have also enabled us to study in depth reliability by stratification of the sample according to gender and year of study.

It is therefore suggested that a mixed model be used to ascertain this complex subject in our context. Furthermore, a local adaptation of ASSIST be developed in conjunction with the medical education departments of both public and private sector medical colleges with a special focus on the findings of this study.

REFERENCES

1. Ramsden, P. Student learning research: retrospect and prospect. *Higher Education Research and Development*. 1985;4(1):51-69.
2. Biggs, J. Student Approaches to Learning and Studying. Hawthorn, VIC: Australian Council for Educational Research, Holden R, McGrath J. Shadowing for self development. *J Further Higher Educ*. 1992;16:40-9.
3. Entwistle, N., McCune, V. and Hounsell, J. Approaches to studying and perceptions of university teaching-learning environment; concepts, measures and preliminary findings. Occasional Report 1, ETL Project, Universities of Edinburgh, Coventry and Durham. 2002.
4. Marton, F. and Saljo, R. On qualitative differences in learning: I - outcome and process. *Br J Educat Psychol*, 1976;46:4-11.
5. Trigwell, K. and Prosser, M. Relating approaches to study and quality of learning outcomes at the course level. *Br J Educat Psychol* 1991;61:265—75.
6. Watkins, D. Learning and teaching: a cross-cultural perspective. *School Leadership and Management*. 2000;20(2):161-73.
7. Kember D, NG S, TSE H, Wong ETT, Pomfret M. An examination of the interrelationships between workload, study time, learning approaches and academic outcomes. *Studies in Higher Education*. 1996;21(3):347-358.
8. Rehman, R, Khan, R, Akahai, MA, Hassan, f. Approach of freshly-inducted medical students towards learning at Bahria University Medical & Dental College. *JPM* 2013;50(20):2000.
9. Richardson, JTE. Researching Student Learning: Approaches to Studying in Campus-based and Distance Education, Buckingham: The Society for Research in Higher Education, Approaches and Study Skills Inventory for Students. Edinburgh: Centre for Research on Learning and Instruction, University of Edinburgh. 2002.
10. Byrne M, Flood B, Willis P: Validation of the approaches and study skills inventory for students (assist) using accounting students in the USA and Ireland: a research note. *Accounting Education: An International Journal* 2004;13(4):449-459.
11. Sandra Cristina A. T. S. Valadas, Fernando R. Goncalves, Lui's M. Faisca Approaches to studying in higher education Portuguese students: a Portuguese version of the

- approaches and study skills inventory for students. *Higher Education*. 2010;59:259–275.
12. Diseth, A. Validation of a Norwegian version of the Approaches and Study Skills Inventory for Students (ASSIST): an application of structural equation modelling. *Scandinavian Journal of Educational Research*. 2001; 45:381–394.
 13. Kreber, C. The scholarship of teaching: A comparison of conceptions held by experts and regular academic staff. *Higher Education*. 2003;46: 93–121.
 14. Entwistle, N. J., McCune, V., & Walker, P. Conceptions, styles and approaches within higher education; analytical abstractions and everyday experience. In R. Sternberg & L.-F. Zhang (Eds.), *Perspectives on thinking, learning, and cognitive styles* Mahwah, NJ: Lawrence Erlbaum Associates Inc., Publishers. 2003, pp. 103–136.
 15. Entwistle, N., Tait, H. and McCune, V. Patterns of response to an approaches to studying inventory across contrasting groups and contexts. *European Journal of Psychology of Education* 2000;15(1):33-48.
 16. Diaz DP, Cartnal RB. Students' learning styles in two classes. *College Teach* 1999;47:130–135.
 17. Walsh K. Learning Styles: Do they really exist? *Med Educ*. 2008;41:618–620.
 18. Laurillard D. The processes of student learning. *Higher Educ* 1979;8:359–409.

The Authors:

Faraz Ahmed Bokhari,
Assistant Professor
Department of Physiology, Shaikh Zayed
Postgraduate Medical Institute/Shaiikh Khalifah Bin
Zayed Al-Nahyan Medical and Dental College,
Lahore

Arshad Kamal Butt
Professor
Department of Postgraduate Medical Education/
Gastroenterology, Shaikh Zayed Shaikh Zayed
Postgraduate Medical Institute/Shaiikh Khalifah Bin
Zayed Al-Nahyan Medical and Dental College,
Lahore

Ian Willis³
Educational Development Division,
Centre for Lifelong Learning, University of
Liverpool, UK

Corresponding Author:

Faraz Ahmed Bokhari,
Assistant Professor
Department of Physiology, Shaikh Zayed
Postgraduate Medical Institute/Shaiikh Khalifah Bin
Zayed Al-Nahyan Medical and Dental College,
Lahore