

A medical student's insight into set induction: A Cross sectional study

Neeraj Sadiq¹, Syeeda Anees², Ghulam Subhani^{1*}, Mohammed Mohsin¹ and Maddipati sai Krishna³

¹Department of Pharmacology, Deccan College of Medical Sciences, P.O. Kanchan Bagh, DMRL 'X' Road, Santhosh Nagar, Hyderabad-500058, Telangana, India, ²Department of Biochemistry, Deccan College of Medical Sciences, P.O. Kanchan Bagh, DMRL 'X' Road, Santhosh Nagar, Hyderabad-500058, Telangana, India and ³Statistician, Deccan College of Medical Sciences, P.O. Kanchan Bagh, DMRL 'X' Road, Santhosh Nagar, Hyderabad-500058, Telangana, India

Received: 07th November 2022; **Accepted:** 03rd March 2023; **Published:** 01st April 2023

Abstract: *Background:* Set induction are preliminary measures taken by the teacher to start effectual classroom instruction and training. *Objectives:* The aim of the study is to familiarize the mode of set induction to MBBS students. To know the perceptions of MBBS students batch wise towards set induction as an introductory step in teaching/learning method. *Methods:* A Cross sectional study with cluster sampling was done on of second, third and fourth year MBBS students of Deccan College of Medical Sciences. After taking informed consent orally they were introduced to different types of set induction namely case -based scenarios, narratives and audio visual aids, then a questionnaire was given and results were noted and analyzed statistically in R-language software. *Results:* Among the 312 students that participated, 208 students (66%) answered all questions. Set induction impacts the students immensely and has significant role to play for all the batches 2020(2st year), 2019(3rdYear), 2020(4thyear). There is a statistically significant difference between batches regarding their perceptions towards set induction and was found to be engrossing and applicable. *Conclusion:* Set induction must be deliberately designed to facilitate its incorporation for smooth teaching learning process. Case based scenario introduction is the most preferred by students, closely followed by narration based and lastly by audio-visual based introduction.

Keywords: Set Induction, Questionnaire, Teaching, Education, Learning.

Introduction

The induction of a suitable set can be characterized as the fundamental blueprint used to set up a structure of recommendations. It was purposefully designed to make it easier to develop a communication link between prior and new knowledge, and it is used to best absorb practical understanding of a subject. A strategy or instrument for catching the students' attention at the start of a lecture, boosting motivation, recognizing prior knowledge, and giving a general overview of the material that will come next is also known as an introduction [1].

However, there has been little evidence in recent years that teachers are aware of the skills of set induction, which is very advantageous for both students and teachers. For this reason, this study

is being conducted to determine the preferences of students and the methods that are more preferred by students. According to psychological research, it is a necessary prerequisite to learning, thus induction processes were created for students to make communication with teachers easier and to foster their potentialities [2].

A set induction consists of four elements applicable for students in school which can also be valid for other students which are; 1) Alignment, 2) Comprehensible exercise, 3) Impetus and 4) Awareness. [3]. Narratives could be an effective teaching tool for medical students. Stories tap into a number of crucial learning techniques, such as encouraging educators, fostering empathy, and enhancing memory. Narratives may be directly utilized

in lectures for medical students to encourage a humanistic view of medicine as well as professional identification and understanding [4].

Case-Based Learning is an effective teaching strategy that works well for instructing medical students and enhances their performance as well as case-analysis skills [5]. Mixed audiovisual aids were used during the presentation, which was approved. This improved the effectiveness of the teaching-learning process and offered perceptions for determining expectations or requirements. This research will be highly helpful for large-scale learning in the future [6]. The learning experiences of students should encourage active engagement, suitable conditions for practice, and the availability of feedback [7].

We must give our academic applications careful considerations [8]. Distinguished educators use a variety of approaches that are crucial for an effective induction, including reviewing previous material, compressing previously taught material, encouraging questions, energizing engagement, and storytelling. The teachers also stressed the importance of using these sets of introductory skills to guarantee high-quality health education teaching and learning [9]. It is believed that in order to help students achieve better intellectual standards, we must strengthen our capacity to pique the teacher's curiosity, ideas, and enthusiasm for the subject area [10].

Material and Methods

Study design and setting: The present study is a prospective observational study, which was conducted at Deccan College of Medical Sciences, Hyderabad, between June 2022 and Sept 2022, the study participants were MBBS students of three batches 2018, 2019, 2020. A questionnaire was designed and the students were asked to answer it [11]. About 10 questions which were asked after exposure to three kinds of set induction namely case based, narration based, and audio visual based scenarios. There were three sets of questions;

1. Demographic factors like age of student, gender and qualification (MBBS batch).
2. Insightful questions like which type of set induction was more absorbing and, which set induction deviated focus of the student and other related questions.

3. Feedback from the students, judgment on merits and demerits of set induction where a set of four questions like, which set induction was simple fun and amusing, which one could connect, grasp and enhance the present knowledge. Demerits of set induction like set induction not being familiar, diversion of attention, set induction being too lengthy (>5-7 min), lack of continuity and direct start of a lesson.

Sample size: Total number of students were 312. Informed consent was taken. Participation was voluntary.

Inclusion criteria: All participants who completed the questionnaire within time limit.

Exclusion criteria: The students who had incomplete questionnaire were excluded from the study.

Statistical evaluation was done using R-language software, mean, standard deviation was calculated and Anova was used to evaluate significance between groups. P value was noted for different batch wise set induction. P-value less than 0.05 were considered statistically significant.

Results

In this study which was conducted using Likert scale, 208 out of 312 students, 67% who responded answered all questions were considered for our study. In the demographic characteristics most students were in the age group 19-21 years, female participation 67% outnumbered male 33%, maximum participation was from 2nd year (45%), 3rd year (26%) and 4th year (29%). In The first set of questions, majority (68%) of students wanted case based scenario as the set induction followed by 25% who preferred audio-visual then narration based introduction at 8%.

46% of students thought use of case based set induction was absorbing and engrossing, but 45% found audio visual based set induction to be more absorbing and engrossing and only 10% preferred narration based set induction to be more engrossing. 54% students were of the opinion that utilization of introductory classes

deviated their focus if narration based set induction was used, 24 % thought it was case based scenario and 22% thought it was audio-visual based set induction.

Next question was, whether they could appreciate the class from initial instruction. As many as 65 % appreciated case based scenario as set induction, 22 % preferred audio based introduction about the class and only 13% appreciated an overview of the class in set induction. 38% of the students felt the teacher was eager to teach case base scenario, 37% students felt teacher was eager to teach audio visual based introduction followed by 25% narration based set induction.

Use of Utilization of introductory steps were motivating in 59%, 30% in audio visual based introduction and least was narration based. Majority of students (57%) thought the utilization

of set induction was proper in case based scenario. When asked whether an introductory part was good before starting the actual lesson, the answer was nearly statistically significant (p value 0.06) most of them liked case based discussion and also whether set induction was absorbing significant difference between batches (p<0.05) 0.03 (table 1).

All the batches wanted case based discussion type of set induction, and then narration based. All other variables like deviation of focus, familiarity of the subject, appreciation of initial instruction, eagerness to teach, motivation to contribute in discussion, set induction proper to the actual content was observed as not significant, (table 1) difference between batches, and all batches of students preferred case scenario based discussion or narration based set induction before starting a lesson.

Table-1: Descriptive and Inferential Statistics

Sl no	Parameters	2018	2019	2020	Repeated measures of ANOVA	P-value	Sig
1	Insightful questions answered by the students. Do you like an introductory part before starting the actual lesson	5.1±0.618	5.05±0.45	5.24±0.55	3.332	0.06*	S
2	The use of set induction was more absorbing and engrossing	5.1±0.673	5.33±0.67	5.41±0.63	4.0704	0.03*	S
3	The utilization of introductory classes deviated my focus from the subject	4.862±0.834	4.62±0.75	4.6±0.81	0.922	0.338	NS
4	The utilization of introductory steps described in the lecture was familiar to me	4.89±0.673	4.90±0.65	4.9±0.55	0.529	0.468	NS
5	I could appreciate what the class was about from the initial instruction	4.896±0.617	5.1±0.51	5.1±0.60	1.758	0.186	NS
6	The educator was eager to teach	4.93±0.75	4.7±0.76	4.9±0.78	0.662	0.417	NS
7	The utilization of introductory steps motivated my contribution in discussion	5.13±0.63	5.14±0.59	5.2±0.60	0.758	0.385	NS
8	The utilization of initial instructions was proper to the presentation	5.03±0.73	5.25±0.64	5.1±0.61	0.001	0.982	NS

Table-2: Gender comparison in the perception of set induction

Sl no	Parameter	Female	Male	Student t-Test	P-value	Significance
1	Insightful questions answered by the students. Do you like an introductory part before starting the actual lesson	5.1±0.51	5.14±0.62	0.398	0.691	NS
2	The use of set induction was more absorbing and engrossing	5.4±0.63	5.14±0.67	2.9535	0.0037	S
3	The utilization of introductory classes deviated my focus from the subject	4.59±0.78	4.85±0.81	2.1236	0.0356	S
4	The utilization of introductory steps described in the lecture was close to me	4.93±0.57	4.95±0.63	0.2075	0.8359	NS
5	I could appreciate what the class was about from the initial instruction	5.1±0.54	5.02±0.66	0.8126	0.4182	NS
6	The educator was eager to teach	4.84±0.77	4.9±0.78	1.216	0.026	S
7	The utilization of introductory steps stimulated my participation in discussion	5.22±0.57	5.13±0.66	0.8977	0.3712	NS
8	The utilization of initial instructions was proper to the presentation	5.20±0.62	5.01±0.68	1.9374	0.054	S

Statistically significant differences were observed that the set induction (table 2) was absorbing and engrossing ($p < 0.05$) 0.003 and was proper to the presentation ($p < 0.05$) 0.05 along with the eagerness of the teacher to teach the subject ($p < 0.05$) 0.026. It was also observed that utilization of introductory classes deviated focus from the subject ($p < 0.05$) 0.03.

Other parameters like introductory part before starting the actual lesson, utilization of introductory steps described in the lecture, appreciation and utilization of class from initial instruction were proper to the presentation, were not significant.

Table-3: Merits of set induction

Students feedback: The students judgment on merits of set induction	Freq.	% age
Amusing, enjoyable, and simple	36	17.31
Applicable as a prompt during exams	36	17.31
Beneficial in giving a layout about the talk	47	22.60
I could connect, grasp and enhance my present knowledge	89	42.79
Total	208	

About the merits of set induction, (table 3) most of the students (42%) could connect, grasp and enhance the knowledge, only 17% found the set induction to be amusing, enjoyable and simple and also applicable as a reminder during exams and 22% found set induction in giving a layout about the lecture.

Table 4: Demerits of set induction

Students judgment on the demerits of set induction	Freq.	% age
Introductory steps are not done by teachers, they directly start the content	48	23.08
Set induction are too lengthy	31	14.90
Slides diverted my concentration	43	20.67
Some parts narrated in set induction were not known or familiar	64	30.77
There is lack of continuity in the discourse	22	10.58
Total	208	

About the demerits of set induction (Table 4) 30% of students said some parts were not familiar, 23% thought teachers directly start the lesson, the slides diverted attention in 20%

and only 14 % believed set induction was too lengthy, 10% believed there was lack of continuity.

Discussion

To keep the balance required for every adult to learn successfully, change must be accepted, welcome, and promoted [12]. The goal of set induction is to first engage students' attention, promote their curiosity, and make set induction extremely effective [13], and then, in line with Dong and Jong's study, to think about linking and going from previously known information to new information. Knowledge gained earlier has a significant impact on learning engagement. In order for teaching and learning to be successful, cognitive load is essential for the link between past knowledge and learning engagement through help-seeking behaviors [14].

Awang and Mehzan M found participation in educational activities, proactive student activity, group work facilitation are as examples of observed learning conduct. And an effective set induction is a connection between the creativity of the instructor and his expertise as a teacher [15]. The group that received the introduction was more engaged than the group that did not, according to Tiffany and Sarah Lavern Johnston's study on set induction. The ramifications of these findings for educators in creating lesson plans that can better interest students from the outset are significant. The findings are also important to researchers in this field since they may decide to continue their research in this area of emphasis. For those researching the application and outcomes of set inductions in classroom approaches, further obtained data may prove to be of the utmost value [16].

All teachers were found to have a decent amount of understanding of the set induction skill, which they used to motivate students and draw their attention to the subject matter at the beginning of class. Kost and Gerald think that the introduction skills of health education teachers and public health- established medical professionals need improvement [17]. Learning preferences differ across the sexes, and this has an impact on how well medical students succeed academically [18].

Lack of motivation may easily be the reason why teachers occasionally notice medical students

who are demotivated, bored, or otherwise not engaged in their studies. The findings by Schrempft, Stephanie highlight the importance of jointly considering student traits and context-related factors when supporting medical students to enhance their performance [19]. Both case-based learning and team-based learning placed a strong emphasis on the value of activating past information, applying and integrating knowledge, and problem-solving skills [20].

The virtue of this study is that it is prospective, despite some restrictions like the maximum participation of second-year students relative to other batches. Set induction is a part of microteaching skill where the teacher begins a lesson [21]. Race demands that educators take responsibility in the classroom [22]. Soleas and Dagnone in a study in 2020 found an active organization-based approach to flourish and corroborate chief competencies sooner rather than later when shifting to CBME [23].

Ryan and Holmboe in a review article in 2022 felt the need to return to routine in post Covid-era and hoped that the expeditious drive toward CBME during the pandemic should not be weakened. Many of the disparities in CBME may be filtered down to ongoing problems with academic constitution, evaluation, and teachers training [24]. As we see ahead to the after pandemic globe, the infrastructure has been laid for rewarding competency based medical education (CBME).

Conclusion

Set introduction significantly influences student motivation and sets the tone for improved student thinking and learning outcomes. Every lecture must deliberately planned and begin with a set induction. Most students prefer discussions based on case studies, but they also enjoy introductions that include narration and audios and videos.

Acknowledgement

The authors acknowledge all the students of 2nd, 3rd and 4th year who participated in the study and administration of the study institution for facilitating the research.

Financial Support and sponsorship: Nil

Conflicts of interest: There are no conflicts of interest.

References

- Hargie O. Opening and closing interactions: the skills of set induction and closure. *Skilled Interpersonal Communication. Ulster University: Jordanstown*, 2021;pp.279-320.
- Aubertine HE. The set induction process and its application in teaching. *The Journal of Educational Research*, 2015; 61(8):363-367.
- Mohamed S, Jasmi KA, Ranga MS, Razak ZA, Shukor KA. The Practice of Induction Set during Preschool Teaching and Learning in the Field of Islamic Education. *ICRIE*, 2018; pada 26 November 2018 at Chancellery Building, al-Ghazali Room, Level 1, UTM KL.
- Easton G. How medical teachers use narratives in lectures: a qualitative study. *BMC Med Educ*. 2016; 16:3.
- Cen XY, Hua Y, Niu S, Yu T. Application of case-based learning in medical student education: a meta-analysis. *Eur Rev Med Pharmacol Sci*. 2021; 25(8):3173-3181.
- Roy M & Saha N. Medical students and the use of mixed audio-visual aids in lecture classes. *IOSR Journal of Dental and Medical Sciences*. 2015; 14(12): 68-70.
- Van Diggele C, Burgess A, Mellis C. Planning, preparing and structuring a small group teaching session. *BMC Med Educ*. 2020; 20(Suppl 2):462.
- Nestel D, Reedy G, McKenna L & Gough S. Clinical Education for the Health Professions: Theory and Practice (Eds). *Springer*. 2020; <https://link.springer.com/referencework/10.1007/978-981-13-6106-7>
- Subedi K, Aryal B and Subedi S. How Health Education Teachers Start Their Lesson: A Qualitative Inquiry at Education Campuses of Nepal. *Creative Education*. 2021; 12:573-583.
- Wiggins G & McTighe J. Understanding by design, expanded (2nd ed.). *Alexandria VA: Association for Supervision and Curriculum Development*. 2005.
- Narayanan S, Shankar N, Ananth V. Medical student's perception to different types of set induction in anatomy lectures. *Anat Cell Biol*. 2019; 52(3):296-301.
- Kassis C. The Adult Learner: Nature or Nurture?: A Case study of Teacher Educators and Teacher Learners (Doctor of Philosophy (School of Education)). *University of Notre Dame Australia*. 2021. <https://researchonline.nd.edu.au/theses/282>
- Pelaccia T, Viau R. Motivation in medical education. *Med Teach*. 2017; 39(2):136-140.
- Dong A, Jong MS, King RB. How Does Prior Knowledge Influence Learning Engagement? The Mediating Roles of Cognitive Load and Help-Seeking. *Front Psychol*. 2020; 11:591203.
- Awang MM et al. (2013). Effective teaching strategies to encourage learning behaviour. *IOSR Journal of Humanities and Social Science*. 2013; 8(2):35-40.
- Johnston T. The Effect of Set Induction on student knowledge, attitude, and engagement levels of high school agricultural science students. December 2008. Available from: <http://oaktrust.library.tamu.edu/bitstream/handle/1969.1/ETD-TAMU-2008-12-97/JOHNSTON-THESIS.pdf>
- Kost GJ, Zadrán A, Zadrán L, Ventura I. Point-Of-Care Testing Curriculum and Accreditation for Public Health-Enabling Preparedness, Response, and Higher Standards of Care at Points of Need. *Front Public Health*. 2019; 6:385.
- Nuzhat A, Salem RO, Al Hamdan N, Ashour N. Gender differences in learning styles and academic performance of medical students in Saudi Arabia. *Med Teach*. 2013; 35 Suppl 1:S78-82.
- Schrempft S, Piumatti G, Gerbase MW, Baroffio A. Pathways to performance in undergraduate medical students: role of conscientiousness and the perceived educational environment. *Adv Health Sci Educ Theory Pract*. 2021; 26(5):1537-1554.
- Burgess A, Matar E, Roberts C, Haq I, Wynter L, Singer J, Kalman E, Bleasel J. Scaffolding medical student knowledge and skills: team-based learning (TBL) and case-based learning (CBL). *BMC Med Educ*. 2021; 21(1):238.
- Remesh A. Microteaching, an efficient technique for learning effective teaching. *J Res Med Sci*. 2013; 18(2):158-63.
- Kassam Zayn. Making Learning Happen: A Guide for Post-Compulsory Education. Teaching Theology & Religion By Phil Race. Thousand Oaks, Calif.: Sage Publications, 2010. *Wiley Online Library*. 2013; 16(1): 102-104.
- Soleas E, Dagnone D, Stockley D, Garton K, van Wylick R. Developing Academic Advisors and Competence Committees members: A community approach to developing CBME faculty leaders. *Can Med Educ J*. 2020; 11(1):e46-e56.
- Ryan MS, Holmboe ES, Chandra S. Competency-Based Medical Education: Considering Its Past, Present, and a Post-COVID-19 Era. *Acad Med*. 2022; 97(3S):S90-S97.

Cite this article as: Sadiq N, Anees S, Subhani G, Mohsin M and Krishna M. A medical student's insight into set induction: A Cross sectional study. *Al Ameen J Med Sci* 2023; 16(2): 140-145.

This is an open access article distributed under the terms of the Creative Commons Attribution-Non Commercial (CC BY-NC 4.0) License, which allows others to remix, adapt and build upon this work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

*All correspondences to: Dr. Ghulam Subhani, Associate Professor, Department of Pharmacology, Deccan College of Medical Sciences, P.O. Kanchanbagh, DMRL 'X' Road, Santhosh Nagar, Hyderabad-500058, Telangana, India. E-mail: subhanis_2000@yahoo.com