

ORIGINAL ARTICLE

Innovative Way of Teaching Pharmacology through E-posters during Pandemic Times

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ABSTRACT

Introduction: The education systems have evolved dramatically in the present times. Most of the people have experienced some form of digital learning in this pandemic. There is still immense potential and lot to explore in approaches to digital design that can make online learning engaging and exciting.

Methodology: When the pandemic happened, we at SMS Medical College Hospital, INDIA started online working and conducting teaching and training classes remotely. Departmental residents were involved first in the e-poster making activity and they submitted the same in various conferences. The second MBBS batch of 2018 (regular and remanded) comprising of 264 students was divided into 18 groups (15 students each in group). Core areas from the subject pharmacology were chosen and allotted to individual groups. An anonymous survey in form of Google forms was taken from in students upon completion of the activity. The project activity was graded.

Results: The post activity survey results indicated that e-posters provide a transition from a stationary piece of paper to a more dynamic experience that actively connects and can be used to provide newer insights to learning. There was practically no cost involved.

Conclusion: The ramifications of COVID-19 are going to be with us for a long time and in order not to disadvantage an entire generation there is a need to change entrenched values. It requires out of the box thinking, to be creative and to be able to adapt and evolve.

Keywords: Innovative Way of Teaching, Pandemic, E-posters

INTRODUCTION

The education systems have evolved dramatically in the present times. Most of the people have experienced some form of digital learning in this pandemic. The world is evolving, and so is teaching. The needs and expectations of learners – and the challenges for those who create educational materials have become more diverse and complex. For medical education it had been a challenging task from day one. It can be said that, there is no substitute to regular teaching in medicine because of the range of skills and techniques (including the most important patient communication skills) that are needed to be acquired.¹This is important since the new competency based medical curriculum is in pipeline to be implemented in all the medical colleges of INDIA. Having said that, the top medical institutes took up this daunting job and developed methods for effective teaching and training remotely.

Here, we discuss our institutional experience of an innovative method using electronic posters (e-posters) for teaching pharmacology to undergraduate medical (MBBS) batch of 2018. The idea was generated while attending the international medical conferences which had to be conducted online this year and wherein e-posters were being encouraged. At first the residents of the department were trained through an e-poster activity and subsequently they framed and submitted the e-posters in leading conferences worldwide. Thereafter the activity was formulated and conducted for the whole undergraduate medical, nursing and paramedical batches. There is still immense potential and lot to explore in

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approaches to digital design that can make online learning engaging and exciting.²

METHODOLOGY

When the pandemic happened, we at SMS Medical College Hospital, INDIA started online working and conducting teaching and training classes remotely. We started using online learning platforms and made them accessible to our medical, nursing and paramedical students but we were not that sure and confident that our learners were getting the best benefits from the sessions they attended online. For this the feedback from the students was taken using google forms and it was found that most of the students were either lacking interest in the online classes or had limited connectivity. The students came for varying backgrounds and from places in INDIA where the access to the internet had not been that easy. They had to learn at their own pace if or when technological resources were made available.

In the meantime, we were continuously trying to discover more ways to make the online platform suitable to our specialized needs. There is a science behind the best

online learning practices³. We explored the various transformative approaches to digital learning, created our own and among them the one that had an encouraging response was that of electronic poster (e-poster) learning.

Our students had no previous experience or training for designing e-posters. We uploaded a 30 minute didactic training video on various techniques for making an effective e-poster activity. The video ensured proper orientation of the students on what was expected out of the activity⁴. This was made available to them on social media sites YouTube and Whatsapp for further access and additional materials. Departmental residents were involved first in the e-poster making activity and they submitted the same in various conferences. The second MBBS batch of 2018 (regular and remanded) comprising of 264 students was divided into 18 groups (15 students each in group). Core areas from the subject pharmacology were chosen and allotted to individual groups. (Table 1). An anonymous survey in form of Google forms was taken from in students upon completion of the activity. The project activity was graded.⁵

Table 1: Assignment of e-poster group-wise among the Second MBBS pharmacology students

ROLL NO.s	GROUP CATEGORY	TOPIC OF POSTER
1-15	A	Routes of drug administration 3 posters Enteral, Parenteral and newer
15-30	B	Mechanism of drug action 3 posters G protein coupledreceptor Other receptor mediated Non receptor mediated action
31-45	C	Kinetics of elimination 3 poster with graphs and examples First order, Zero order and Mixed orders
46-60	D	TYPE A ADR TYPE B ADR PHARMACOVIGILANCE
61-75	E	Biotransformation of drugs phase 1 and phase 2 two posters 3rd poster of Enzyme induction and Inhibition
75-90	F	Pharmacotherapy of glaucoma, myaesthesia gravis, organophosporus poisoning 3 posters
91-105	G	Adrenergic receptors and drug classification one poster, Beta blockers classification and uses 2nd poster, Alpha blockers classification and uses third poster
106-120	H	Diuretics 3 posters covering three major groups with uses and mechanism and site of action

ROLL NOS	GROUP CATEGORY	TOPIC OF POSTER
121-135	I	Drug therapy of angina pectoris one poster with details of nitrates, MI secondposter Calcium channel blockers mechanism of action and classification uses one poster.
136-150	J	Drugs for cardiac arrhythmia three posters covering major drugs
151-165	K	Drug for dyslipidemia one poster for lipid disorder and types of lipoprotein, second classification of drugs third poster details of each group
165-180	L	NSAIDs classification with mechanism and uses, Pharmacotherapy of rheumatoid arthritis Pharmacotherapy of gout one poster
181-195	M	Prokinetic drugs classification, mechanism of action and adverse effects.
195-210	N	Drug treatment of peptic ulcer with classification, H2 blockers, pump blockers three posters
211-225	O	Antitubercular drugs, classification, mechanism of action and side effect of first line category wise treatment of TB and treatment of multidrug resistance and extensively resistance tuberculosis.
226-240	P	Drugs treating HIV, highly active antiretroviral drugs and treatment protocol
241-255	Q	Antiepileptic drugs, classification, mechanism of action & Recent drugs
256-264	R	Drug treatment of type 2 diabetes mellitus three posters

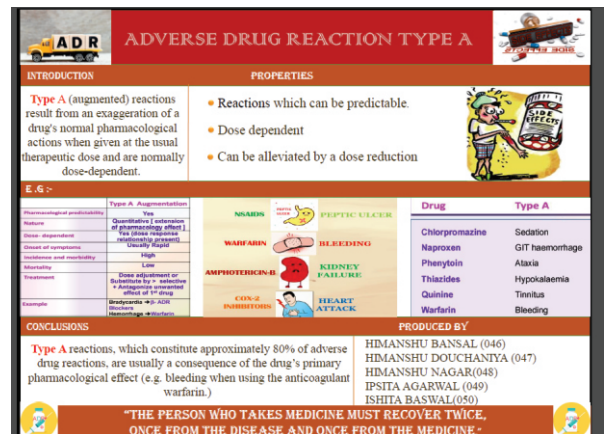
RESULTS

The whole IInd MBBS batch of 2018 submitted a total of 50 e-posters on the allotted core topic areas. The evaluation of the e-posters was done on the basis of design, quality of content, structuring, creativity and e-presentation. Upon grading individual e-posters- 3 best projects were awarded with online certification. E-poster booklet was prepared and kept in the library for future reference and further improvement. A sample copy of the e-posters submitted by our students is given here. (Figure 1).

Figure 1: Sample e-posters submitted by students A & B



b)



The activity ensured that the students participated in groups, developed team spirit, an in depth knowledge of the topic that was allotted (even when the internet connectivity was poor) and generated curiosity in the young minds. It also gave them a chance to be creative, versatile, participate in the conferences and developed their patient communication skills. E-posters are still comparatively new and a short coming in a few e-posters

was that students simply created copy-paste e-versions of basic google slides. There is a need for additional computation skills to be taught to the medical students.⁶

The post activity survey results indicated that e-posters provide a transition from a stationary piece of paper to a more dynamic experience that actively connects and can be used to provide newer insights to learning. There was practically no cost involved.

CONCLUSION

It is possible to teach medical, nursing and paramedical students the basics of e-poster design, and further expand their creative and communication skills into the domain of e-communications. The outlined innovative method can prepare the students as e-poster creators for academic conferences, patient communication and especially for quality learning.

The ramifications of COVID-19 are going to be with us for a long time and in order not to disadvantage an entire generation there is a need to change entrenched values. It requires out of the box thinking, to be creative and to be able to adapt and evolve.

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