

Improving critical appraisal skills of evidence-based medicine: How to help pharmacy students become better future pharmacists

YT Pan¹, YF Liang¹
1.Department of Pharmacy, Far Eastern Memorial Hospital, New Taipei City, Taiwan

INTRODUCTION

Critical appraisal (CA) of evidence-based medicine (EBM) is crucial for health care professionals to help patients make informed decisions based on the best available evidence. However, pharmacy students often lack these skills: they indicated that often feel uncomfortable with research evidence and anecdotally finding CA a “boring” topic. The objective of this study was to design and assess the impact of an education program to help students develop critical appraisal skills which included modern educational approaches that is learner centered and reflect our current evolving technological landscape.

METHODS

All fourth year pharmacy students enrolled at the externship program at our medical center from August 2020 to October 2022 were required to participate. They completed a questionnaire before and after the education program to evaluate their perceived educational impact. We included learning techniques preferred by the younger generation of pharmacists(1,2) (Figure 1).The format of the program was as shown in Figure 2.

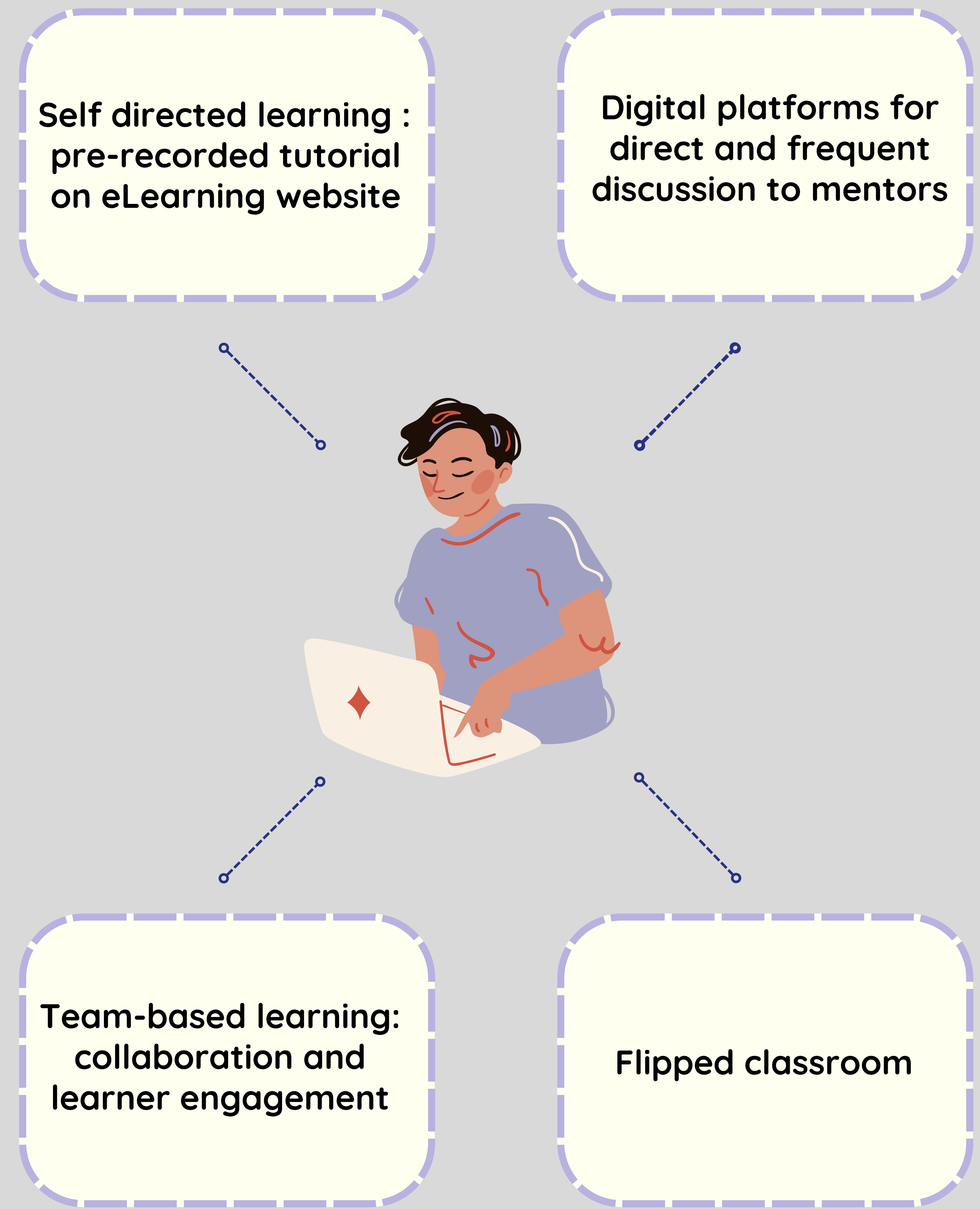


Figure 1: Learning techniques preferred by students



Figure 2: Format of the education program

RESULTS

A total of 63 Students were included in this program. The students provided feedback in the following to see if they improved confidence in the following:

- Analyzing the design of a systematic review (forest plot, confidence interval, funnel plot)
- Evaluating the quality and reliability of a systematic review using critical appraisal tools such as CASP or CEBM checklist
- Clinical relevance of the results for patients in Taiwan in terms of benefits and harms.

All of the students indicated that they did not have any experience or were not confident in these items. After participation, the majority of the students indicated they felt confident or very confident in all assessment items (Figure 3)

BEFORE	CONFIDENCE LEVEL	AFTER
0%	Analysis of results in systematic review 	73.0%
0%	Using CA tools evaluate the quality of evidence 	79.3%
0%	Application of the results in clinical practice 	74.6%

Figure 3: Confidence level perceived by students

CONCLUSION

This education program was tailored to the needs of the millennial and generation Z pharmacy students. There was a significant improvement in students’ literature evaluation skills and confidence in applying EBM in real life scenarios.

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