Digital learning to improve prescribing practice
A systematic review

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Conclusion

Digital learning is well appreciated and effectively creates awareness in appropriate prescribing. Freedom and multimedia are the most valued assets of digital learning.

Background

10% Of prescriptions by junior doctors contain a potential hazardous error

50% Of patients are affected by these errors

European clinical pharmacology and therapeutics (CPT) education was found to be insufficient

Digital Learning has potential to overcome these problems. Advantages include:

- Accessibility
- Freedom
- € Cost effectivity

The aim of this review is to assess the effects of digital learning strategies for prescribing education and identify quality indicators

Methods

PubMed, Embase, CINAHL and ERIC were searched for the combinations:

Clinical pharmacology and therapeutics
i.e. prescribing, drug interactions, medication error etc.
Prescribers and student-prescribers
i.e. medical student, physician, nurse-practioner etc.
Digital learning
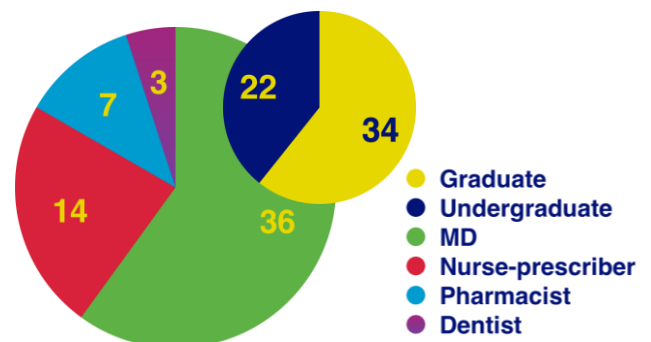i.e. e-learning, serious gaming, virtual reality etc.

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Recipe Research & Expertise Center In Pharmacotherapy Education

Results

1816 Records were identified through database searching

56 Articles were included after selection by two reviewers

25	**14**	**8**	**9**
Qualitative	Cohort	Case-control	RCT

MERSQI 11.2 ± 2.9 out of 18
Medical Education Research Study Quality Instrument

Pie chart legend:
- Graduate — 34
- Undergraduate — 22
- MD — 36
- Nurse-prescriber — 14
- Pharmacist — 7
- Dentist — 3

44	**8**	**8**
Basic e-learning	Blended learning	Online assessment

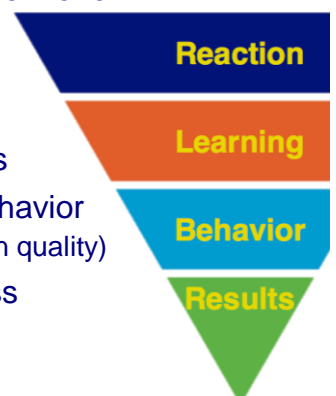### Results per Kirkpatrick level

8 / 9 articles report positive reactions — **Reaction**

13 / 17 articles report increase in test-scores — **Learning**

2 / 3 articles report behavior change (e.g. prescription quality) — **Behavior**

1 / 2 article reports less prescription errors — **Results**

Qualitative analysis
The number of qualitative articles identifying a positive or negative feature

Positive
- 7 Freedom
- 2 Direct feedback
- 2 Revisit
- 5 Multimedia

Negative
- 3 Time burden
- 2 Too complex
- 4 Technological issues
- 5 Poor Design
- 2 Lack of authenticity