# E-learning in Preregistration programs issues for students and educators: A review of the literature.

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# Aim

- Examine primary research published between January 2001 and December 2012.
- Focus issues for students and educators involved with E-learning and associated technology in preregistration nursing programmes.

# Background

- E-learning most significant change since move from hospital training to the tertiary sector.

- Computer and information literacy levels for both students and educators influence the successful implementation of E-learning into curricula.

# Definitions

Computer literacy — an understanding of the concepts, terminology and operations that relate to general computer use (45.).

Information literacy — recognize the need for information, determine the extent of information needed, access information efficiently, critically evaluate information and its sources, classify, store, manipulate and redraft information collected or generated and incorporate selected information into their knowledge base (8.).

Nurse informatics (NI) — the skills required by the registered nurse to integrate nursing science, computer science and information science to manage and communicate data, information and knowledge in nursing practice (15.).

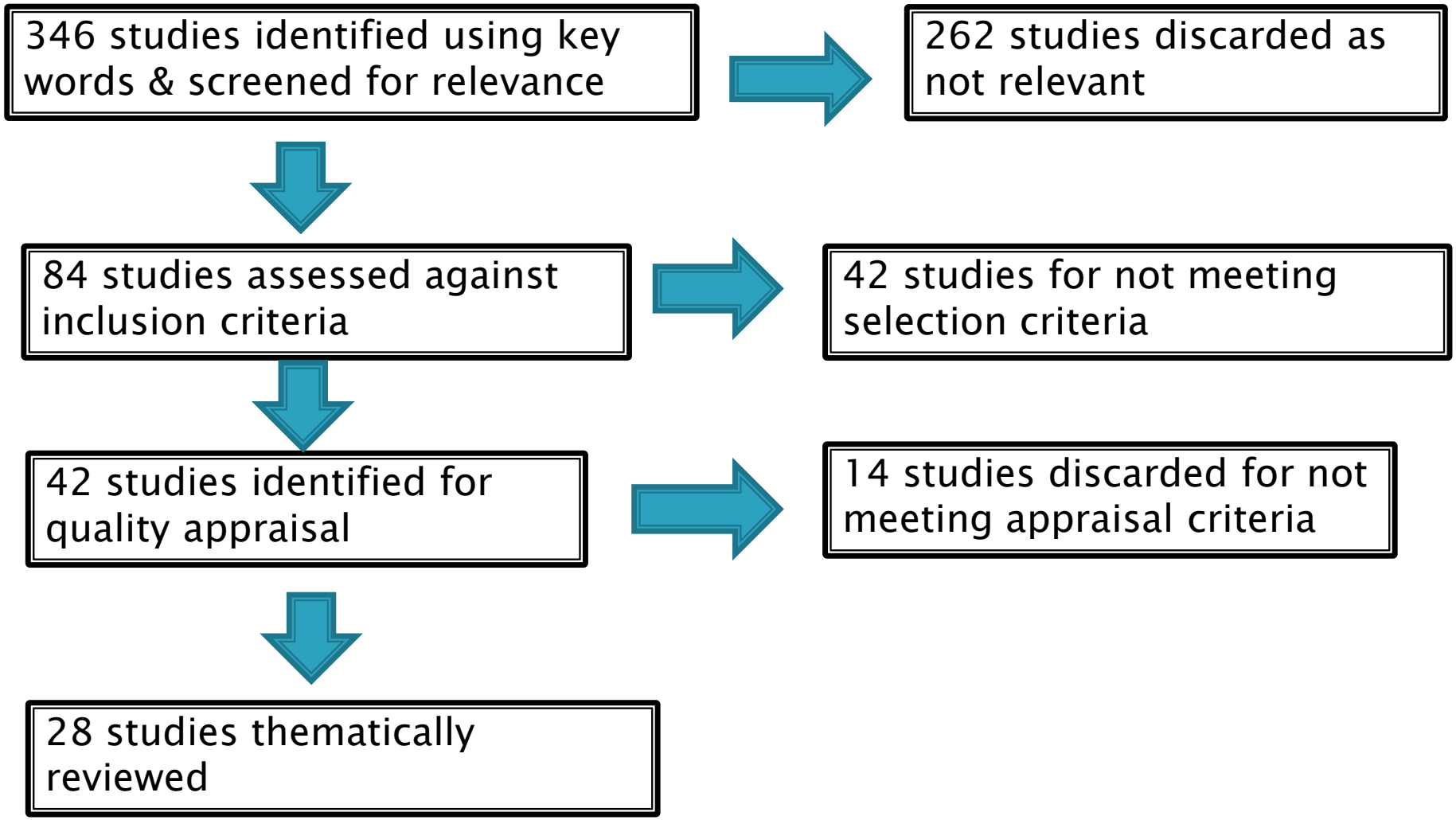
# Method

Inclusion & exclusion criteria

- Issues faced by nursing students and/or nurse educators from undergraduate preregistration nursing programs using E-learning and associated information computer technology (ICT).

- Published in English in peer reviewed journals between January 2001 and December 2012.

# Summary of search and appraisal process.



# Analysis of the 28 reviewed studies

- Critical Appraisal Skills Programme (CASP) (41).

- Thematically analysed following Braun and Clarke (6).

Study Design

- 16 quantitative studies
- 9 mixed methods
- 3 qualitative studies.

Study locations

- 11 USA including 1 combined with Canada
- 9 Australia
- 5 United Kingdom
- 1 Greece
- 1 Ireland
- 1 New Zealand

# Results: Theme Identification and frequency

Three themes, no single theme found across all studies.

Theme 1 was found in 71% (n=20)
Issues relating to E-learning for students.

Theme 2 was found in 57% (n=17)
Using ICT.

Theme 3 was found in 32% (n=9)
Issues relating to E-Learning for educators.

# Theme 1: Issues relating to E-Learning for students (n=20 studies)

- Negative aspects of E-Learning
  - Found in all 20 studies
- Computer literacy levels
  - Found in 10 of the 20
- Positive aspects of E-Learning
  - Found in 7 of the 20
- Blended learning
  - Found in 4 of the 20



# Theme 1: Issues relating to E-Learning for students

Negative aspects of E-Learning

- Anxiety using computers (20, 25, 29).
- Lack of ICT skills (4, 5, 21, 31, 34, 36, 42, 46).
- Unreliable computer systems ( 2, 17 ).
- Links with ICT and workforce not made explicit in the curriculum ( 1, 31, 39, 46. ).



# Theme 1: Issues relating to E-Learning for students

Positive aspects of E-Learning

- Mobile ICT was ubiquitous ( 43, 44).
- Flexibility, self paced, timely responses (23, 29).
- Online allowed students to get to know each other outside of classroom (28, 34, 44).
- Deeper learning ( 13, 37) .

# Theme 1: Issues relating to E-Learning for students

Blended learning

- Students wanted face to face and online (23, 28, 24, 37.)

- Student more active online than face to face (2, 4, 5.)

32.

# Theme 1: Issues relating to E-Learning for students

27.

## Computer literacy

- Students overestimated their computer competency (21)
- Student basic skills are improving (4,5 )
- ICT skills not extended in curricula (36)
- Access to ICT and low skills (20).

# Theme 2: Using information communication technology (n=17)

- Nursing Informatics (NI)
  - Found in 10 of the 17
- Information literacy
  - Found in 9 of the 17 studies
- Graduate information communication technology (ICT) skills
  - Found in 5 of the 17

# Theme 2: Using information communication technology

Information literacy (IL)

- Students unable to manage information (4,5, 20, 34.).
- Not improved on graduation (17).
- ICT adequate but not IL (4, 5, 17, 20, 34, 42.).



# Theme 2: Using information communication technology

Nursing Informatics (NI)

- Not being adequately covered in current curricula (36, 38, 40).
- Report into health information management 15 years ago highlighted that all Australian universities should take a leading role in integrating information technology into nursing curricula (Commonwealth of Australia, 1997) (29) .

# Theme 2: Using information communication technology

Graduate information communication technology (ICT) skills

- Curricula not adequate ( 1, 22, 34, 36, 46)
- Openly discouraged from using online resources (22, 34, 36).

32.

# Theme 3: Issues relating to E-Learning for educators (n=9)

- Educators want to improve their skills (11, 36, 40).
- Increased time involved in E-Learning (3, 11, 13, 16, 18, 38, 43).

30.

# Cost of E-Learning production

Estimated for a basic E-learning package including content pages, text, graphics, simple video, test questions and the incorporation of PowerPoint visuals, one online hour of content required

79 h of program production at an estimated cost of

$10,737.83 AUD (10).

It is important to note that these costs were based on a computer programmer, not an educator, undertaking the work.

# Strengths & weaknesses

- Different tools to collect data in response to the lack of appropriate current valid tools.
- Reliability and validity was discussed in only six of 16 quantitative studies.
- No power analysis to determine sample size in any of the reviewed studies.
- The wide variety of survey tools created difficulties in comparing results from each study. Any direct comparison between studies was not possible.
- Many of the studies were conducted in only one university.
- This review excluded studies prior to 2001 and this was seen as a strength. The development of E-learning technology continues to occur at a rapid pace.

# Conclusions

- ICT implications for students and educators worldwide.
- Not only teaching and learning technology also nursing graduates .
- Urgent need to develop robust quantitative instruments to measure the impact, effectiveness and perceptions of students and educators who are using E-learning.

# Conclusion

- 68% of reviewed studies recommended that education providers incorporate IL & NI into the preregistration curriculum as a matter of urgency.

- This inclusion would meet the current work requirements of registered nurses worldwide.

# Conclusion

- Information literacy is an essential lifelong learning skill for RNs alongside the skills involved in clinical judgments about client care.
- Nurse educators want high quality, accessible and tailored ICT staff development.

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# Thank you
# Questions