

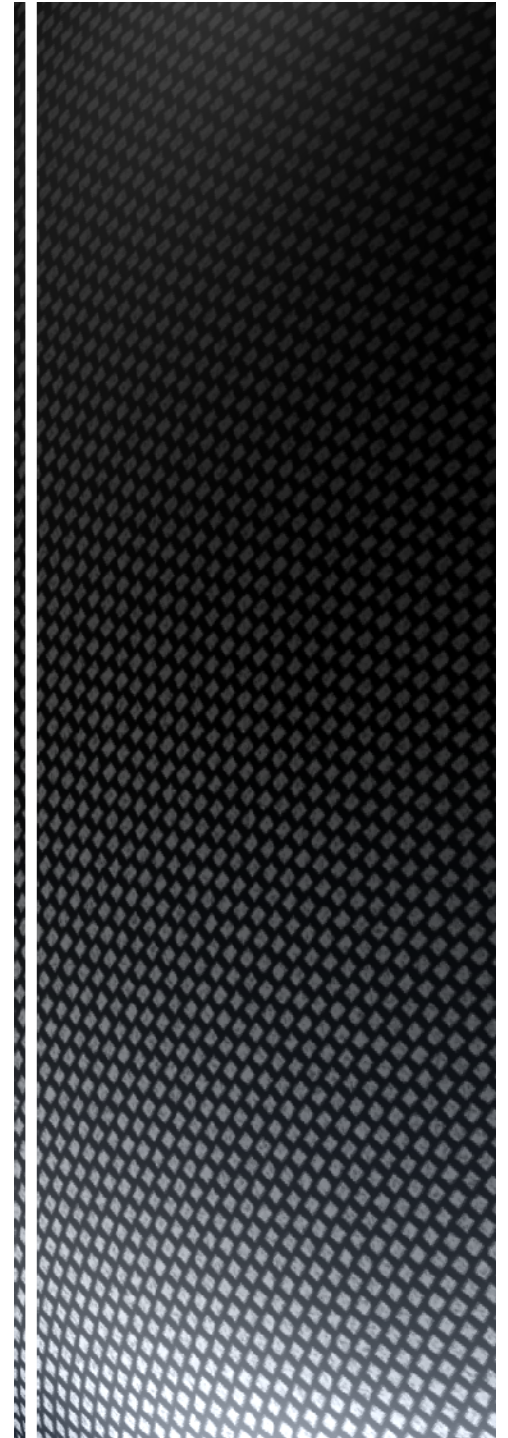
Exploring student and faculty perceptions on access to and use of information: Responding to a call to reframe nursing competence

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Research Team

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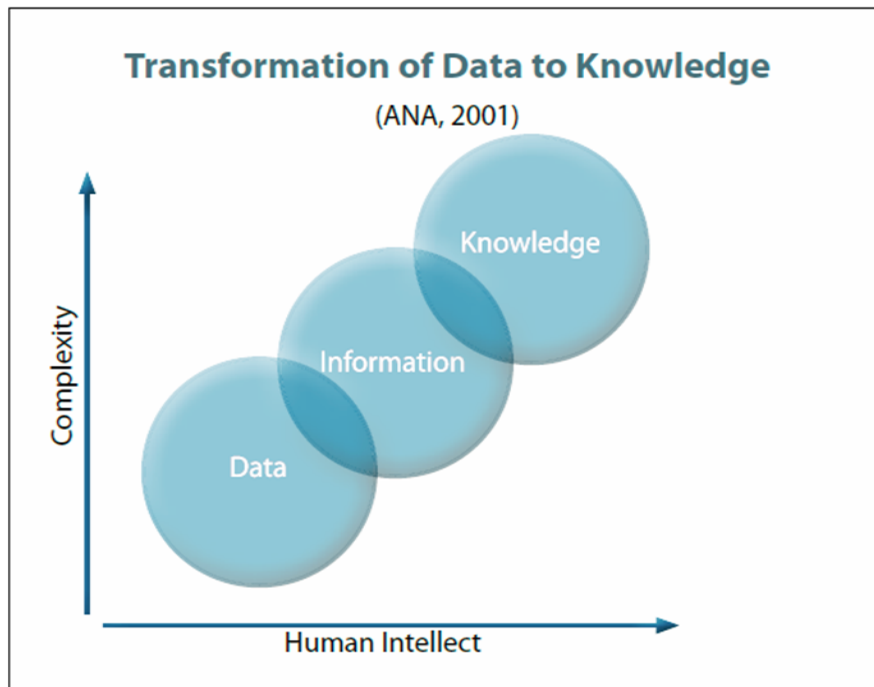
Presentation Outline

- Background literature
- Research Purpose and Scope
- Methodology
- Salient Findings
- Implications and Recommendations

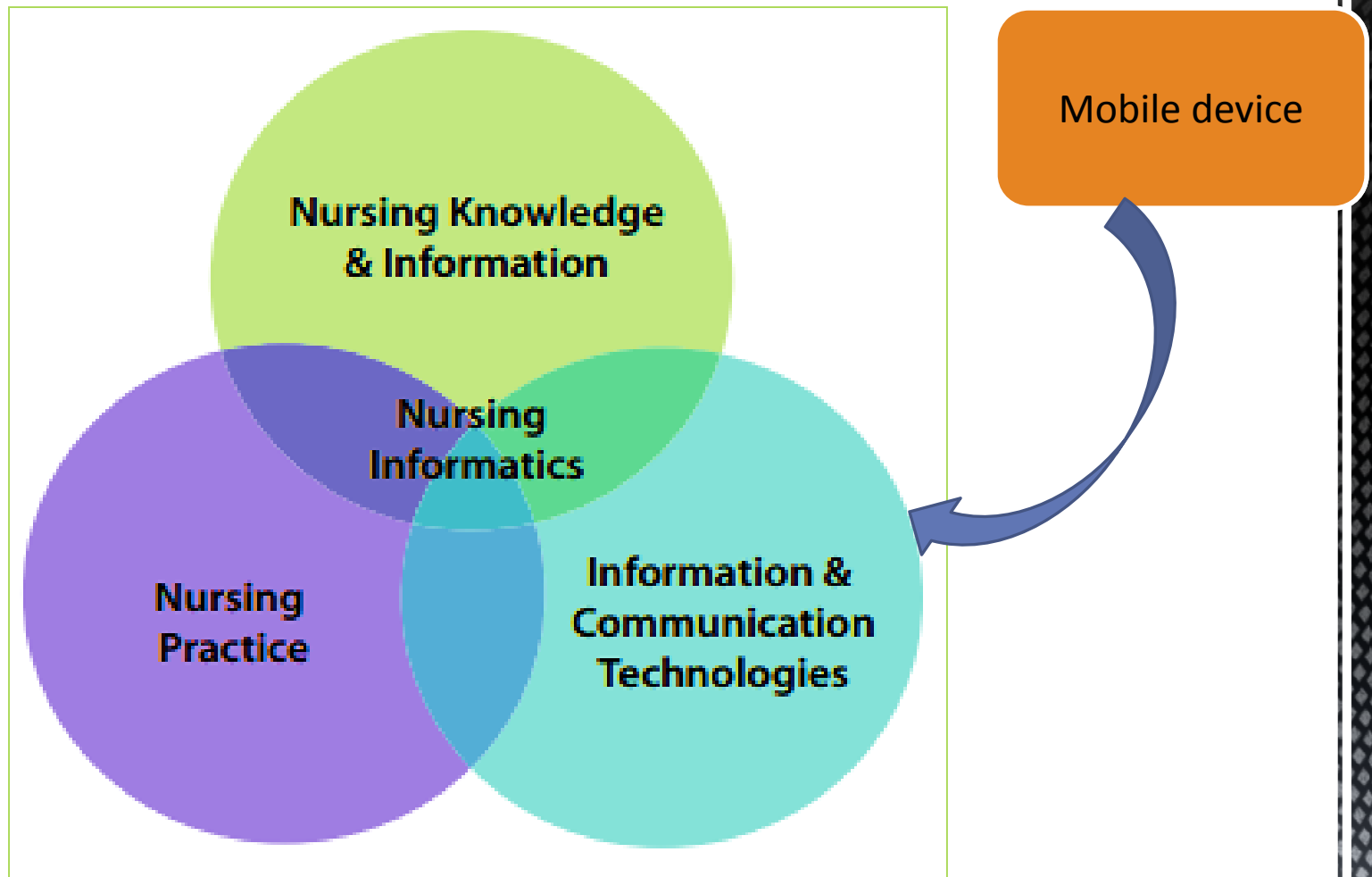


Background

A Review of the Literature

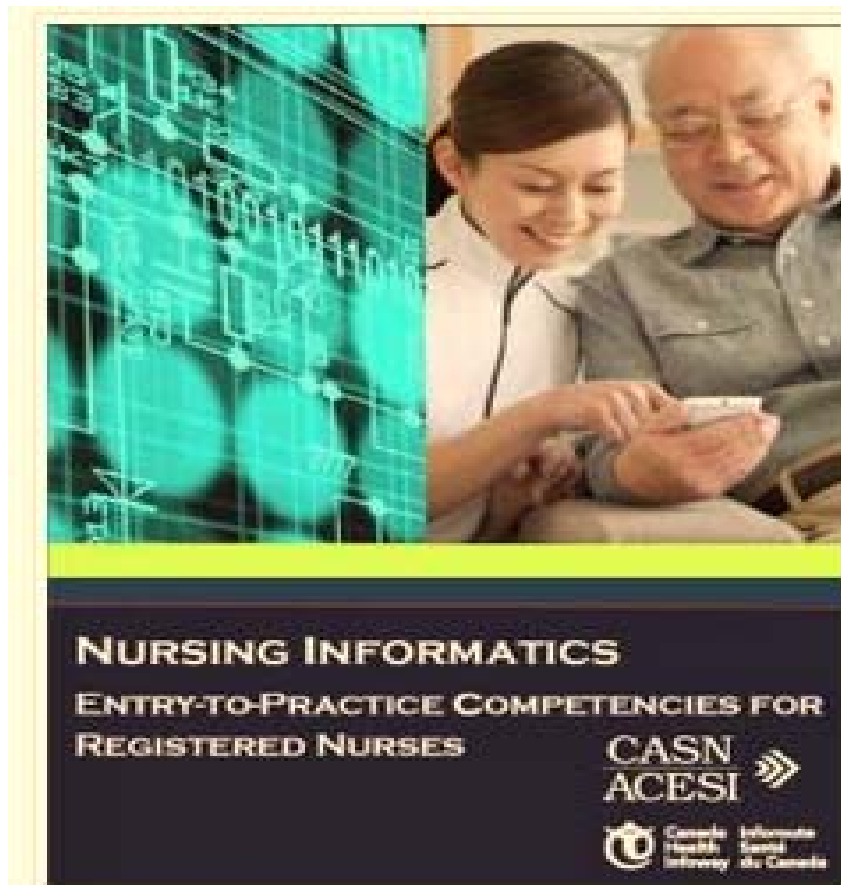


Definition of Nursing Informatics (NI)

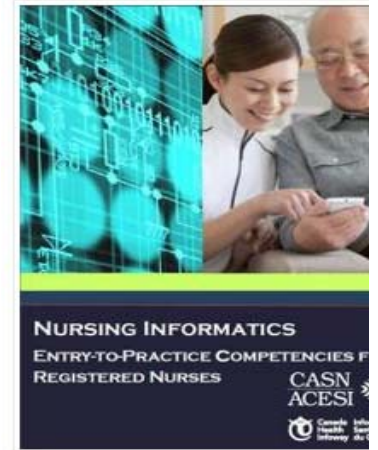


(IMIA, 2009)

Canadian Association of Schools of Nursing (CASN)



Competency 3: Information & Communication Technologies



Overarching Informatics Competency

‘...Uses information and communication technologies to support information synthesis in accordance with professional and regulatory standards in the delivery of patient/client care’ (CASN, 2012, pg. 5).

■ Indicators

3.1 ‘Identifies and demonstrates appropriate use of a variety of information and communication technologies (e.g., point of care systems, EHR, EMR, capillary blood glucose, hemodynamic monitoring, telehomecare, fetal heart monitoring devices, etc.) to deliver safe nursing care to diverse populations in a variety of settings.’

Experts suggest mobile information improves

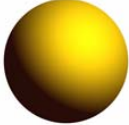
■ Students:

- information literacy (Smith, 2012), currency (Koeniger-Donohue, 2008; Scollin et al., 2006), lower information stress and higher confidence in clinical practice settings (Jamieson et al., 2009), accuracy of drug dosage calculations (Farrell & Rose, 2008; White et al., 2005).

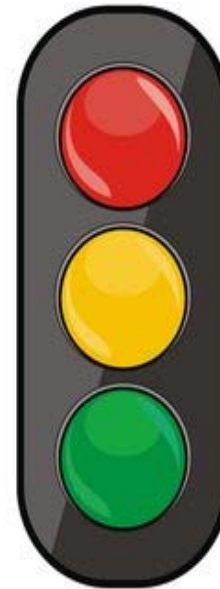
■ Nurses

- workflow, and evidence-informed decision making (*Doran et al., 2010*; Scollin, Healey-Walsh, Kafel, Mehta, & Callahan, 2007; Secco et al., 2010),
- ongoing reliance on information rather than memory (Thompson, 2005), patient safety (Hebda & Calderone, 2010).

Overall Evidence on Mobile Information in Nursing Education

- Studies
 - Mostly lower quality, observational designs lacking control groups
- Outcomes
 - Poorly validated self-report scales
 - Focus on computer attitudes & not nursing outcomes
- Overall Weight of the Evidence
 - CAUTION Yellow 
 - Not strong but promising
 - Need both higher level studies and valid outcome measures

Does the evidence support recommending implement in Nursing Education?



Red: No

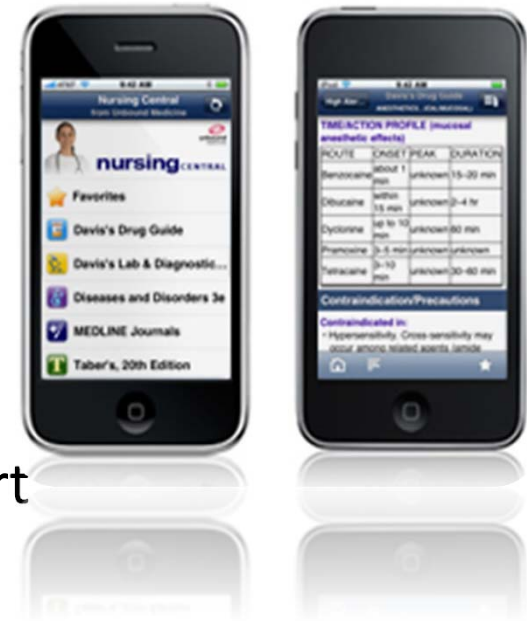
Yellow: Maybe

Green: Yes

(Novak, 2013)

Research Purpose and Scope

- Student
 - Validate the Mobile Information Support Evaluation Tool (MISSET)
 - Describe Faculty and Student
 - Use of Mobile Information in Classroom, Laboratory & Clinical Settings
 - Experiences with & attitudes toward mobile information resources
 - Make recommendations for nursing education and informatics competencies



Study Questions

- To what extent and for what purpose do nursing students and faculty use mobile information?
- Do mobile information sources improve student learning and/or faculty teaching? If so, how?





Welcome to Nursing Central

Nursing Central is the complete mobile and web solution for nurses and students. Consult five trusted references including a best-selling drug guide, a leading medical dictionary, literature searching, and an exclusive study system.

🔍 Search Nursing Central

Calculators



Davis's Drug Guide



Davis's Lab & Diagnostic Tests



Diseases and Disorders



Health Assessment in Nursing



MEDLINE Journals, Selected



Miami Dade Curriculum



Taber's Medical Dictionary

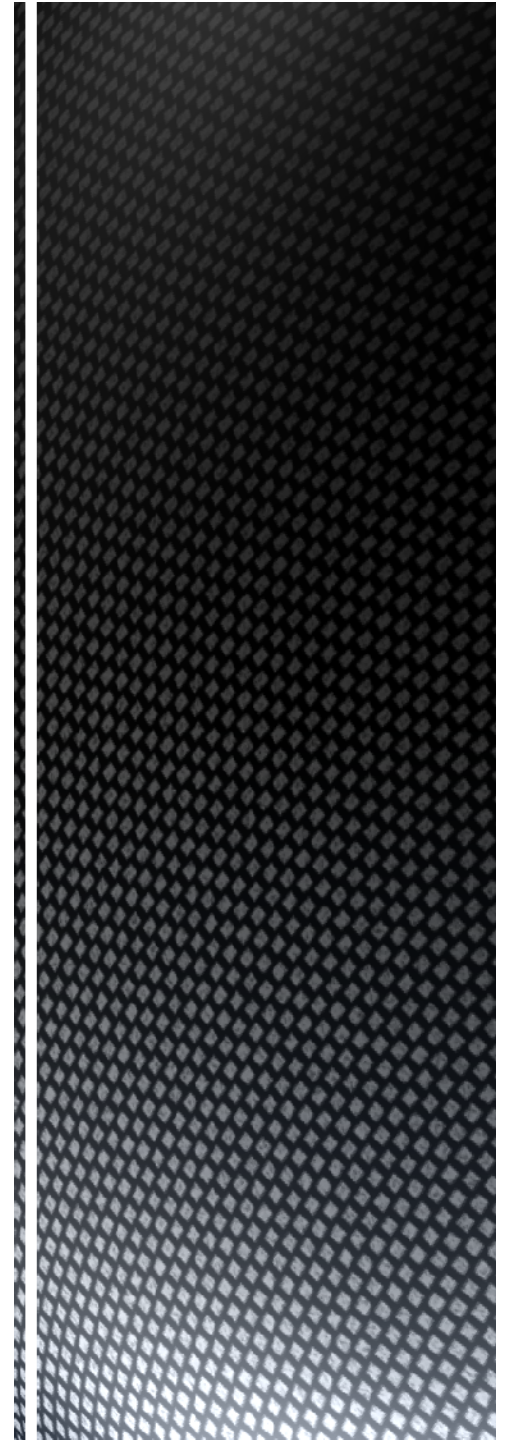


Taylor's Handbook of Clinical Nursing Skills



Salient Program Differences

- CBU required peer reviewed article for clinical practice
- Length of programs
 - BCIT, 3 year program
 - CBU 4 year and
 - UNB 4 year and 2 year ASP
- Program have different mobile resource resources and requirements



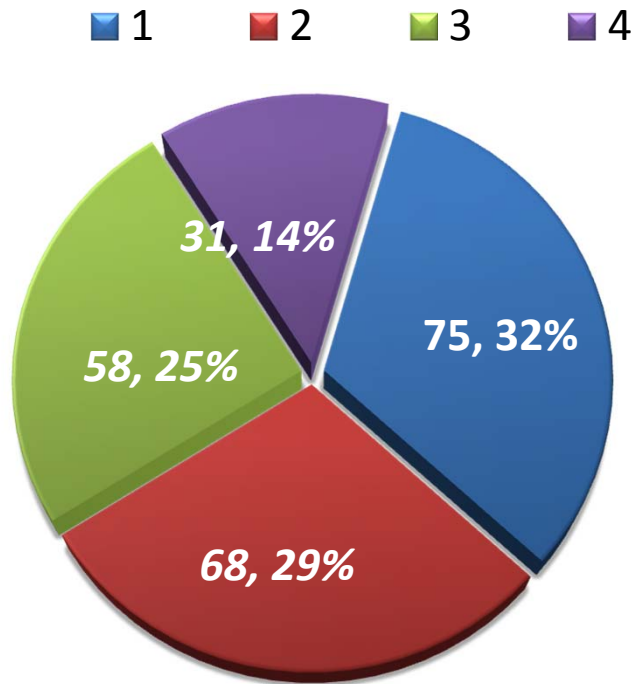
Methodology

- Mixed Methods Design
 - Quantitative
 - Student & Faculty Surveys
 - Psychometric analysis → Mobile Information Software Evaluation Tool (MISSET) Scale
 - Qualitative
 - Faculty & Student Content Analysis using NVivo 10 Team

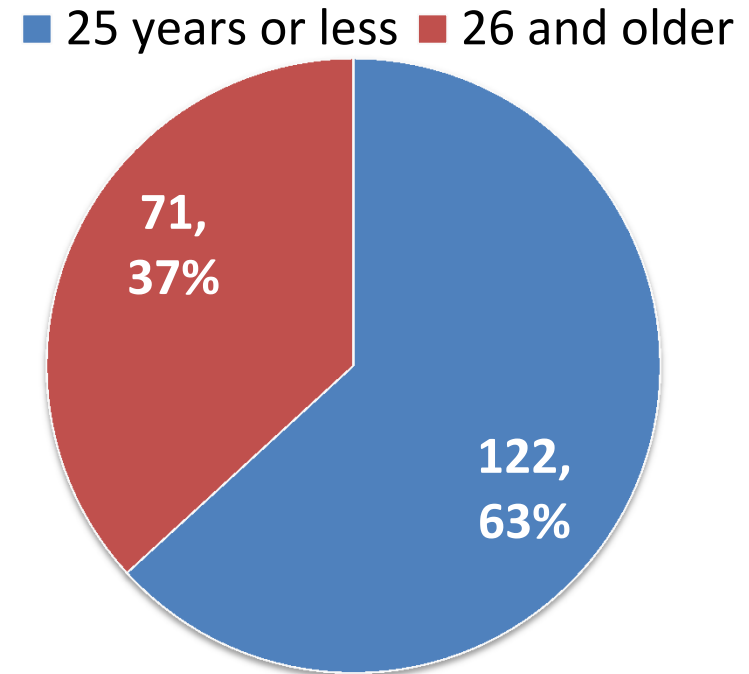


Student Sample Demographics

- Year in Program

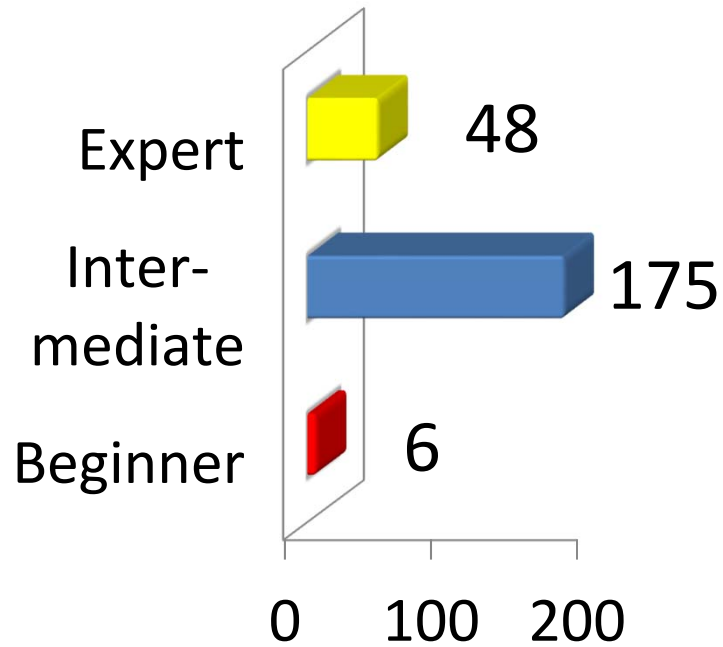


- Age Groups

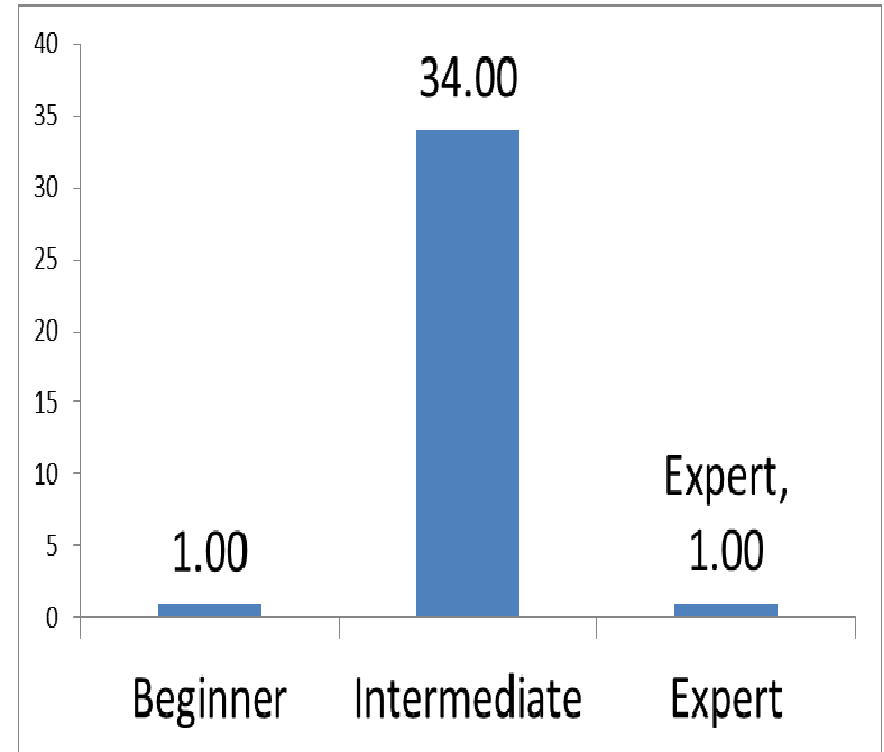


Computer Competence

- Student (N = 229)



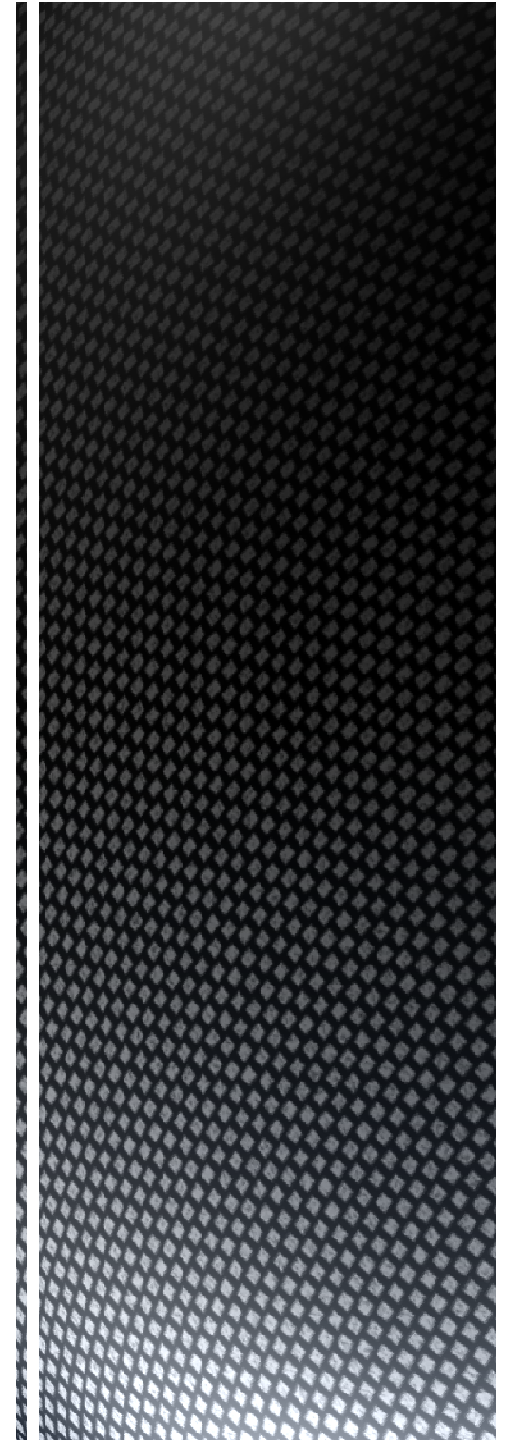
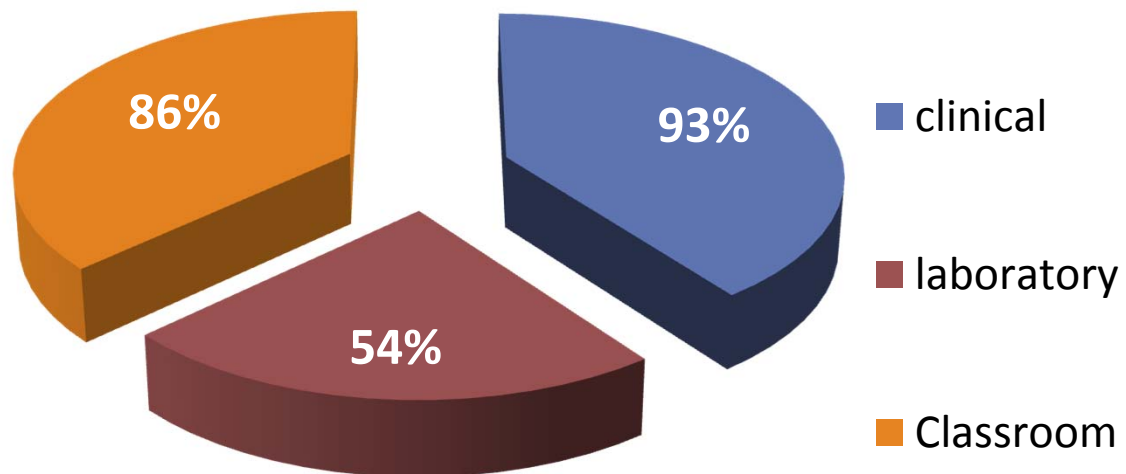
- Faculty (N = 36)



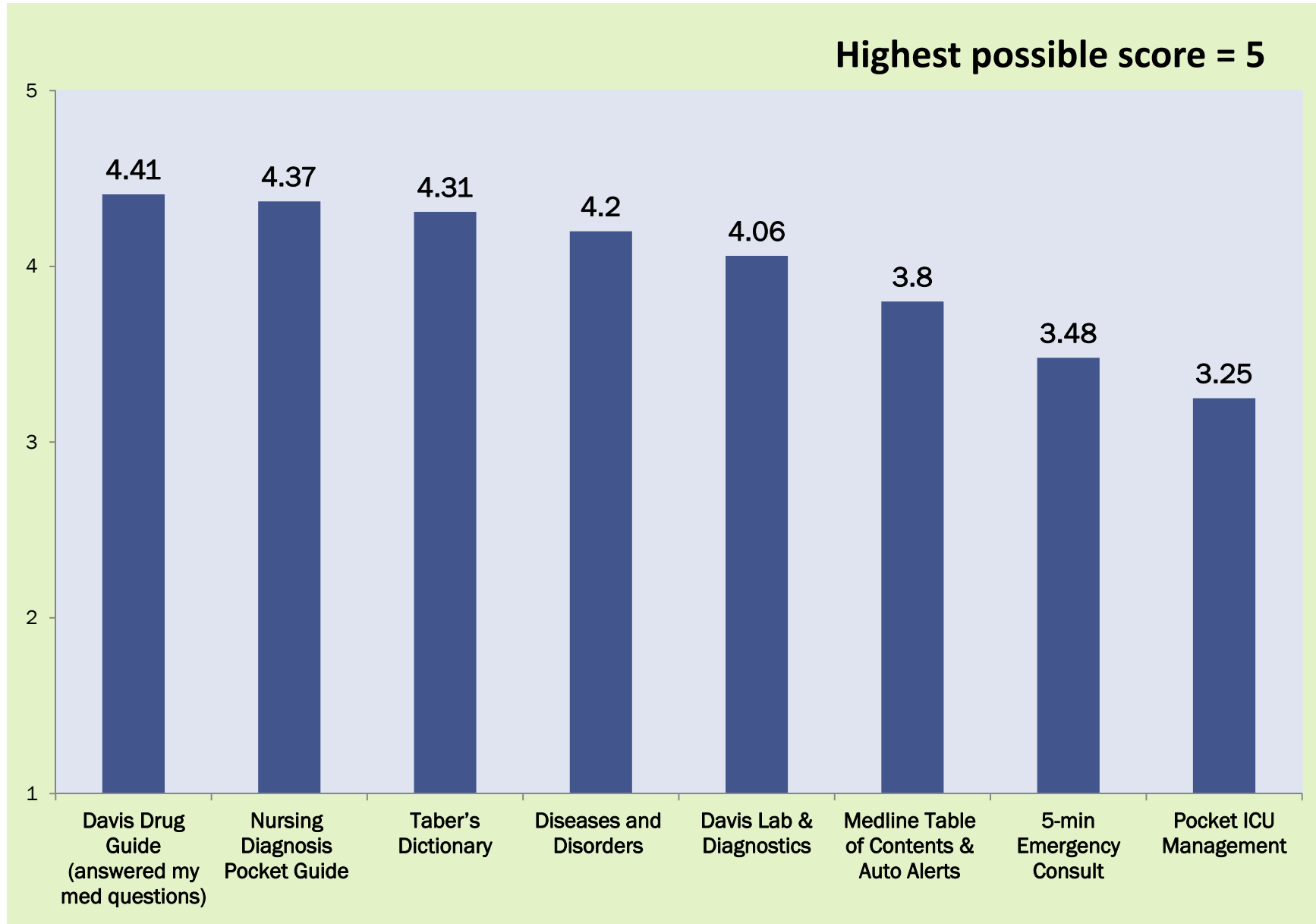
Quantitative Findings



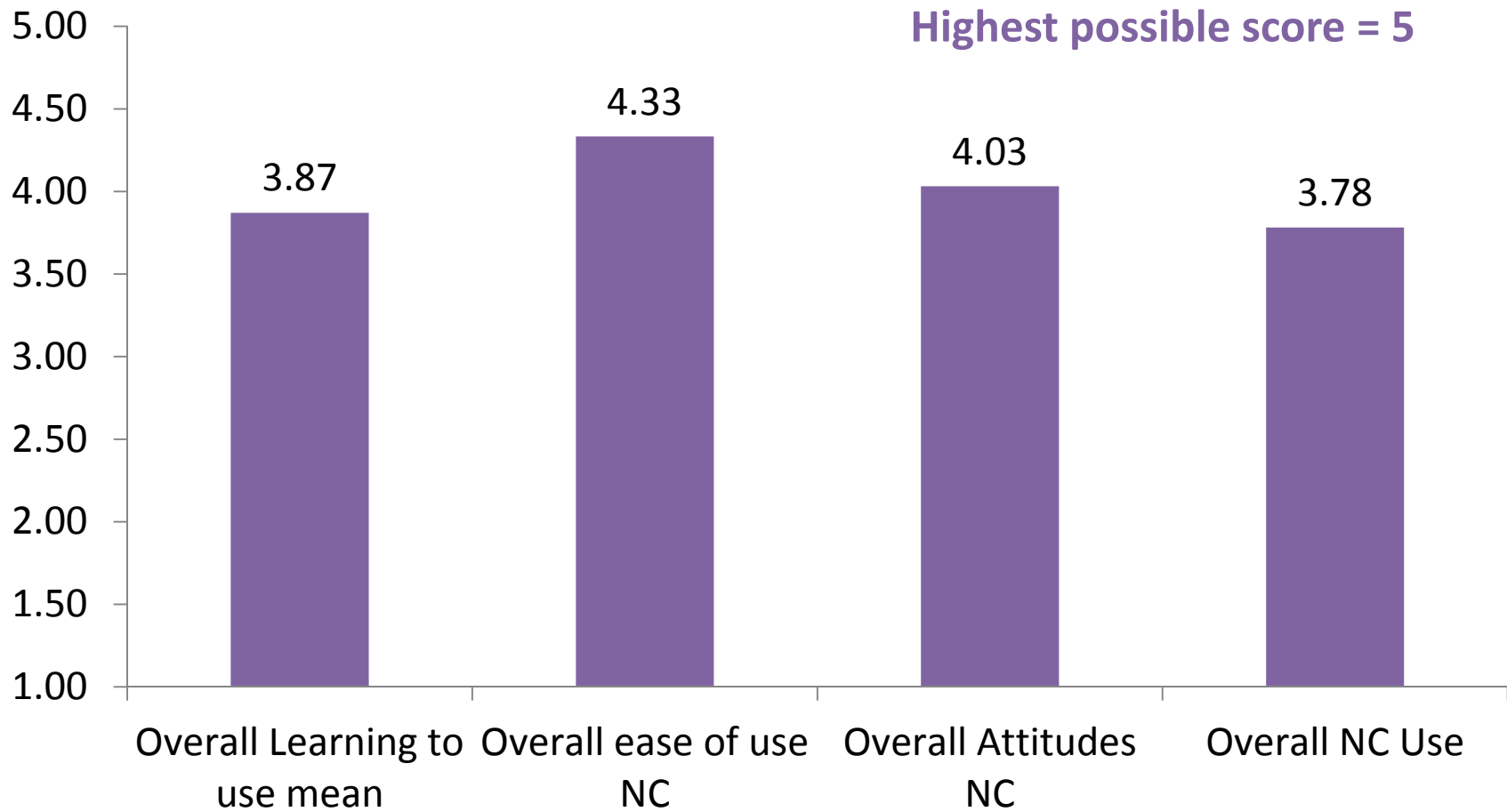
Student Setting: Mobile Information Use



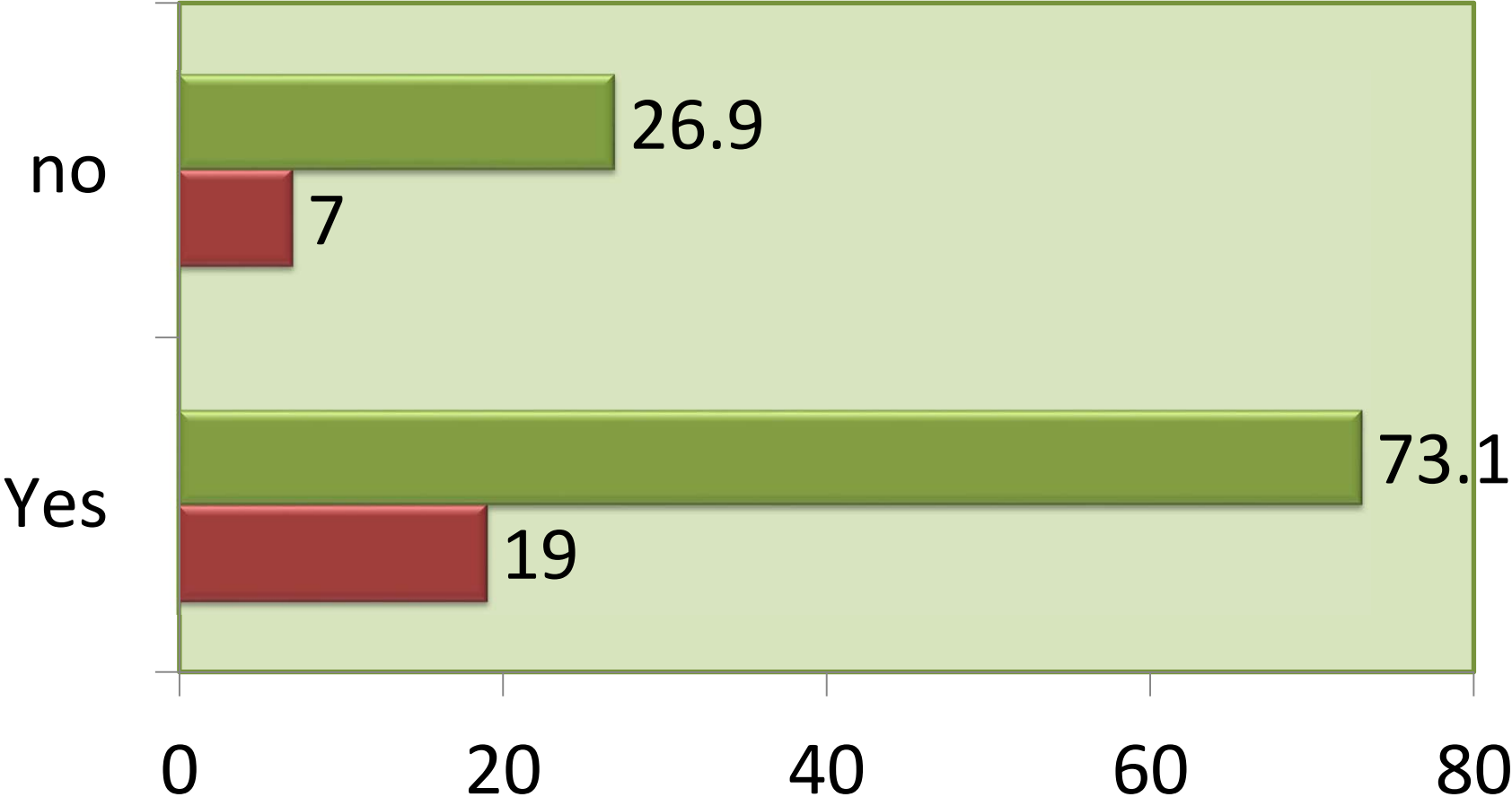
Students: Attitudes & Use



Faculty Overall Use and Attitudes

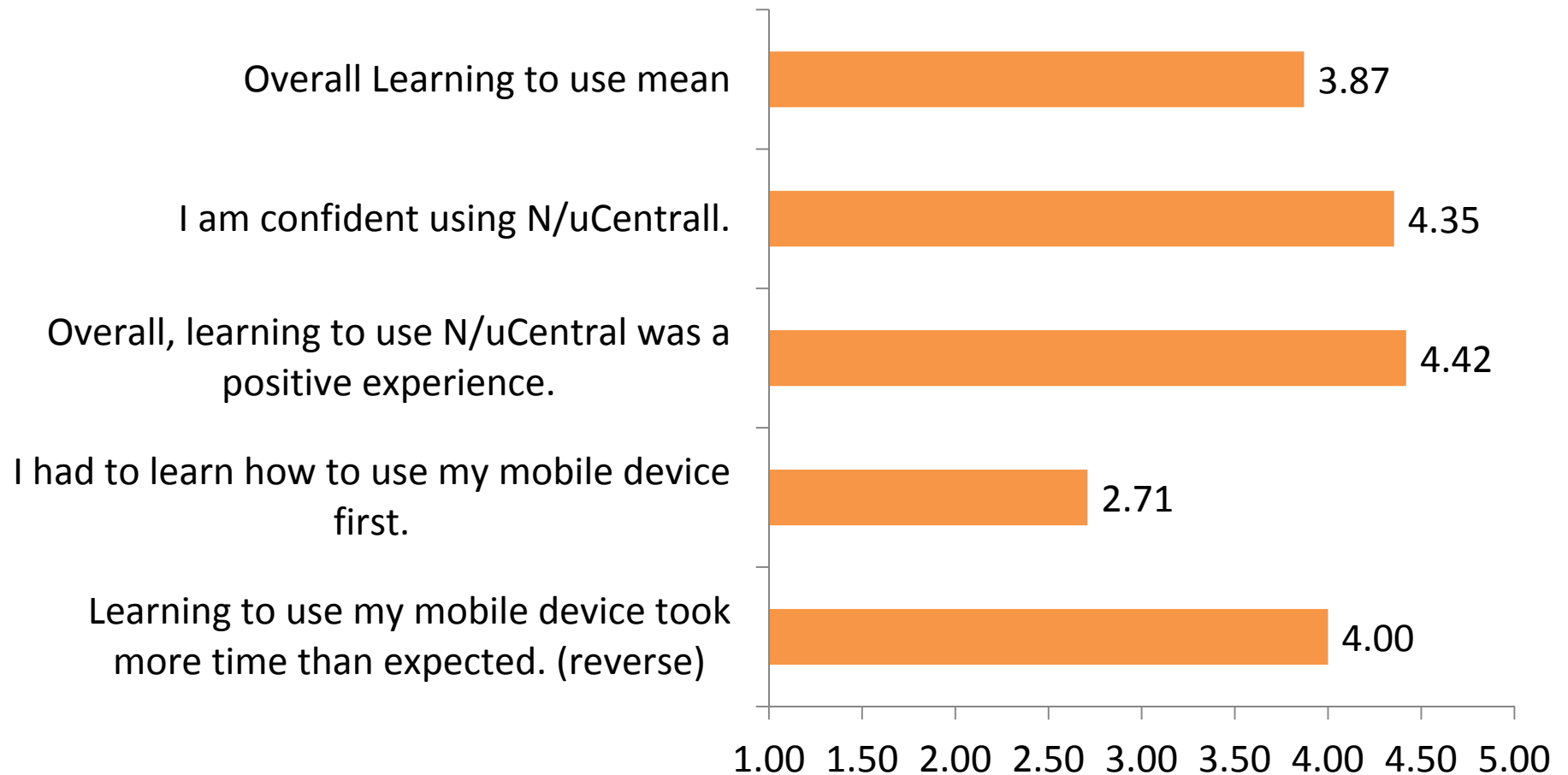


Faculty: Mobile Information Improves Student Critical Thinking (CT)?



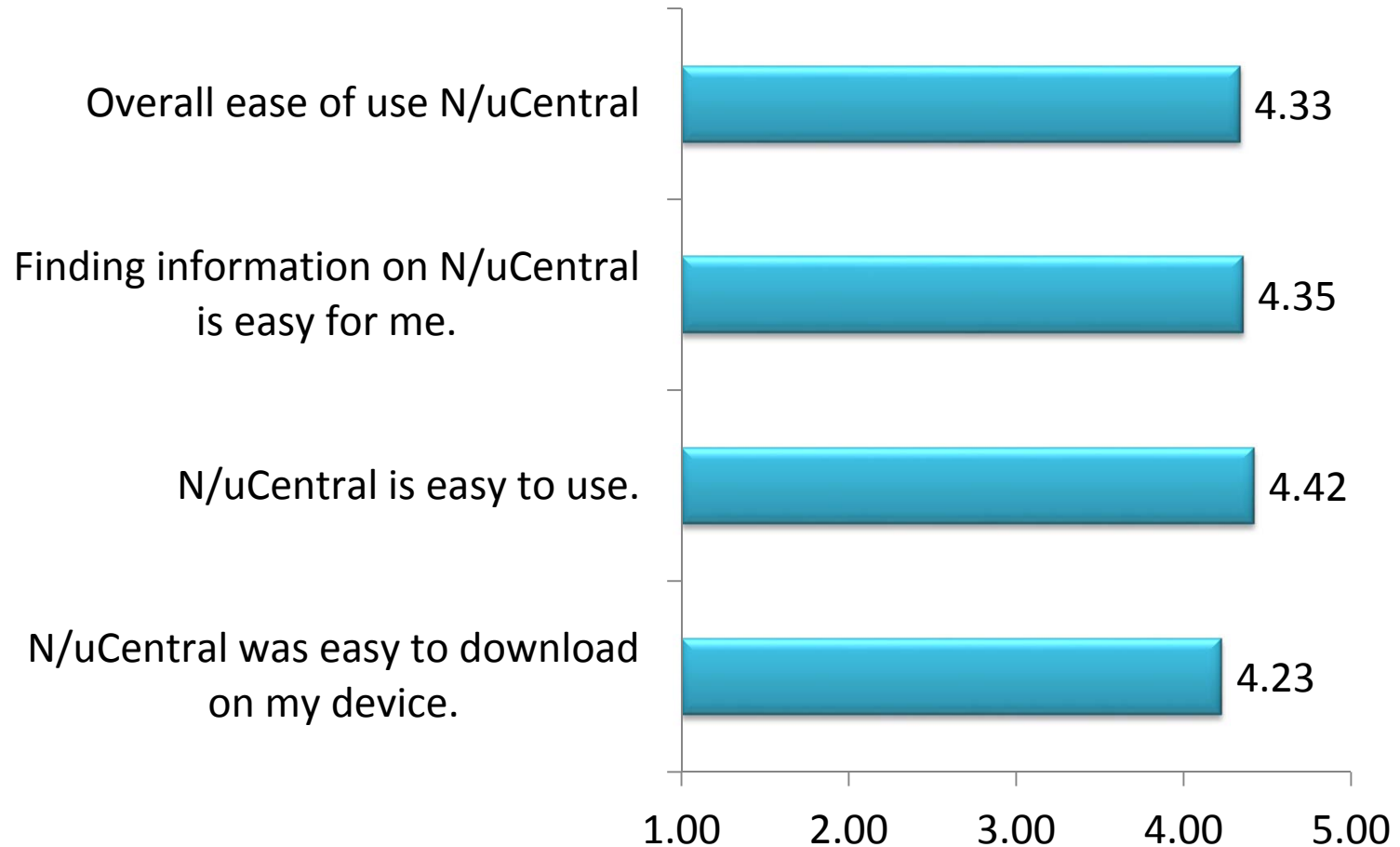
Faculty: Learning to Use N\uCentral

Highest possible score = 5



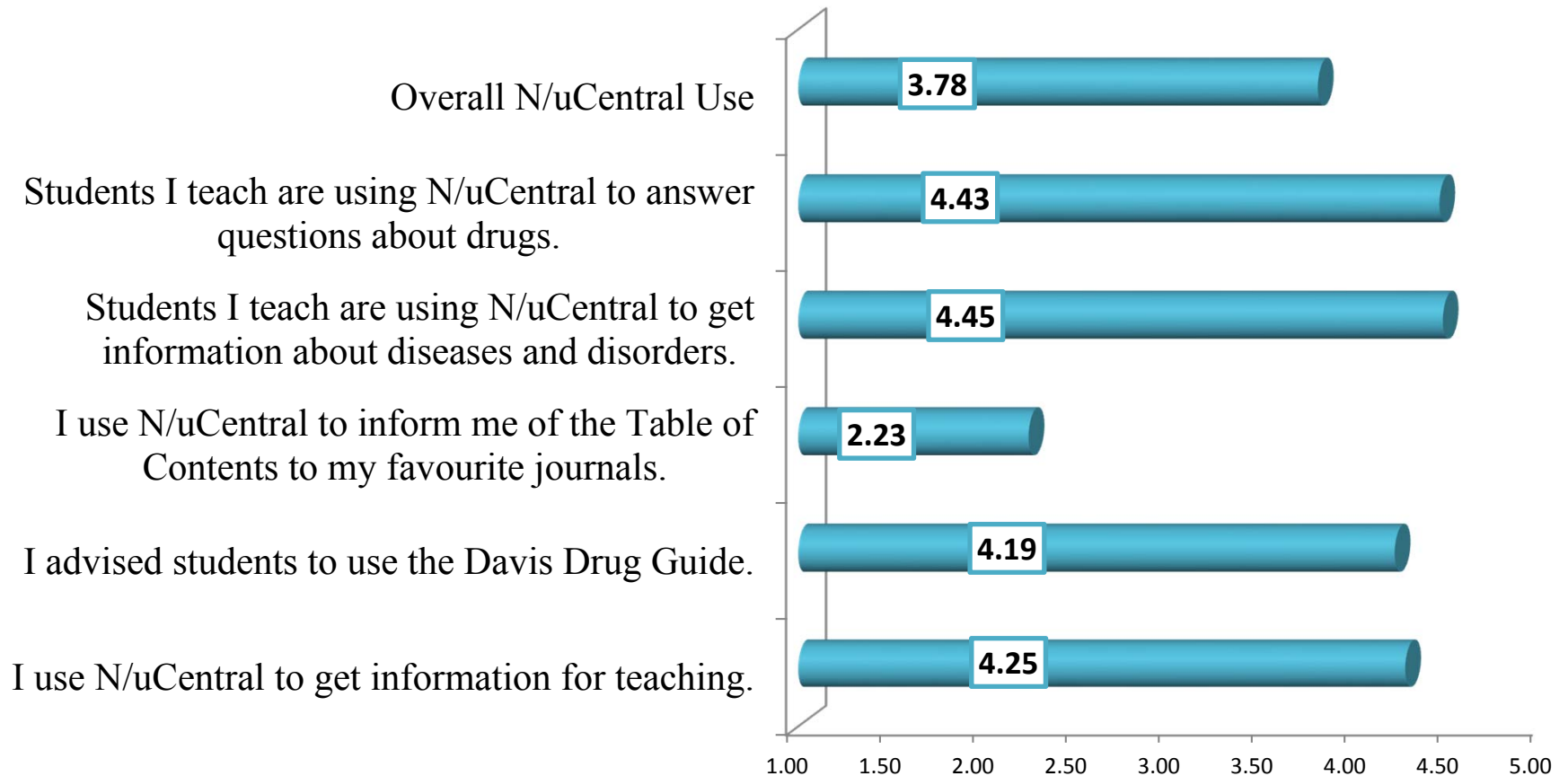
Faculty Ease of N/uCentral Use

Highest possible score = 5

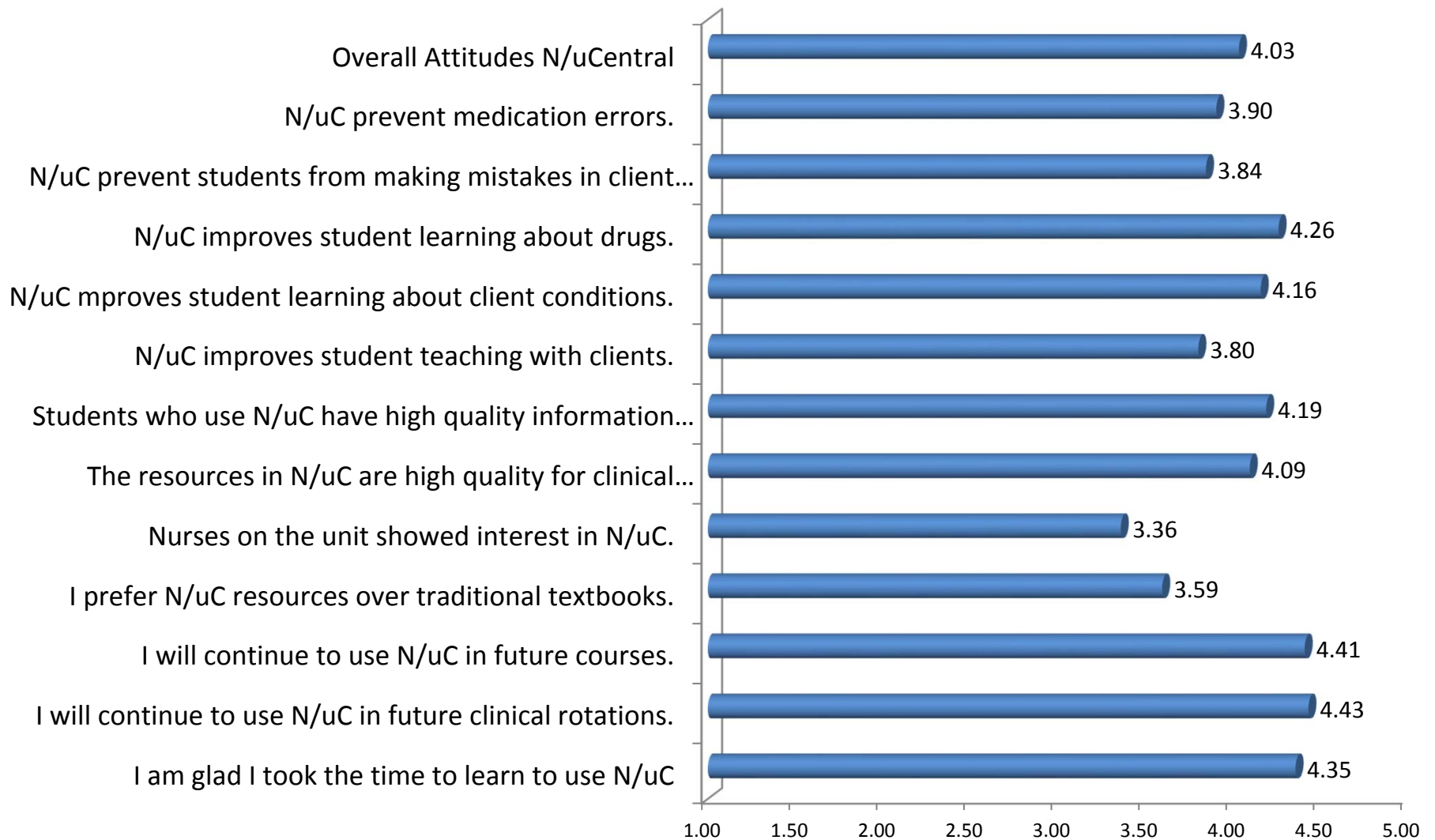


Faculty: Overall N\uCentral Use

Highest possible score = 5



Faculty Attitudes N\uCentral



Mobile Information Software Evaluation Tool (MISSET) for Students

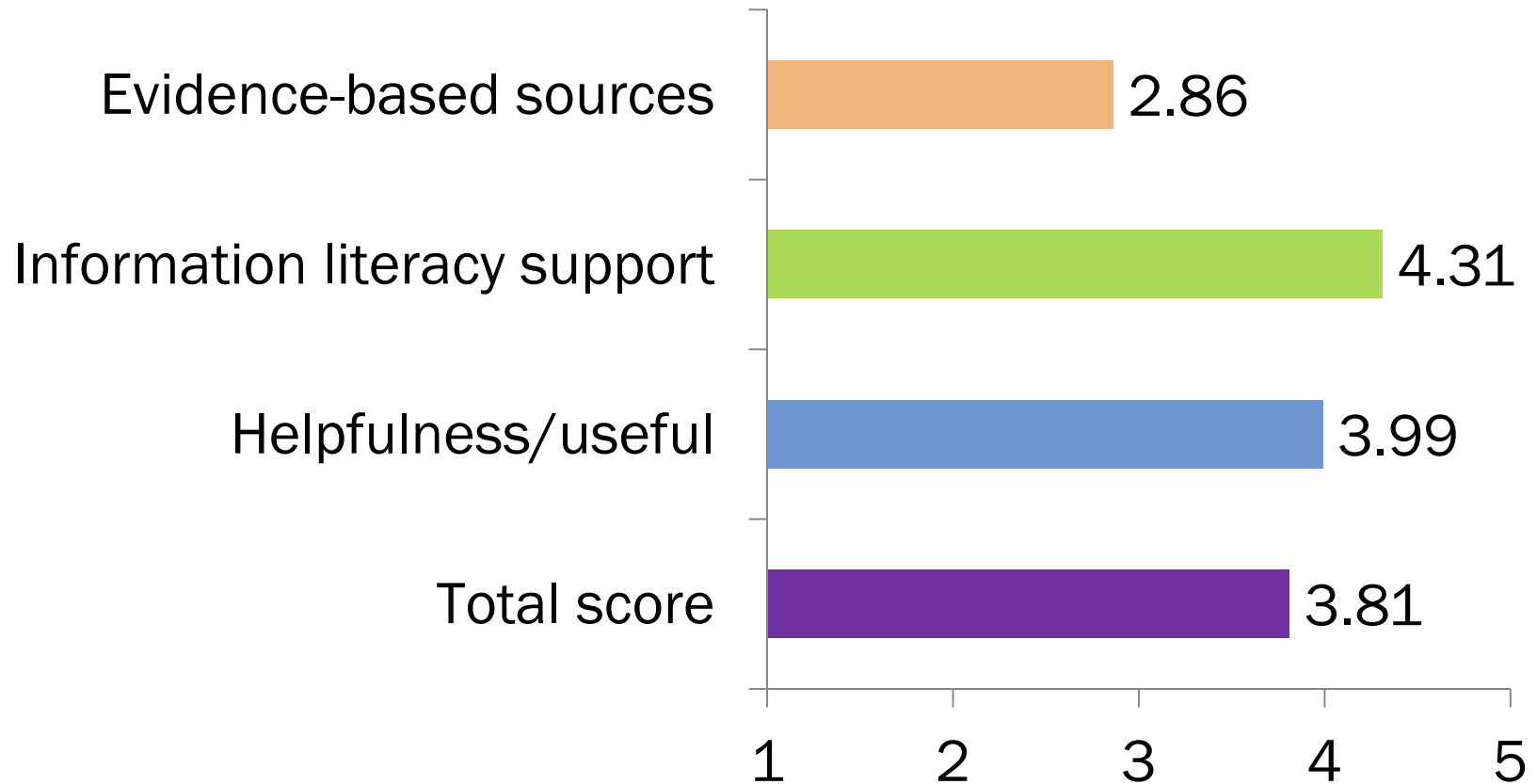
Psychometric analysis identified three valid and reliable subscales:

- Helpfulness\Usefulness (7 items)
- Information literacy support (6 items)
- Use of Evidence-based sources (2 items)

Mobile Information Software Evaluation Tool (MISSET)

Subscale & (# items)	Example items	mean
Helpfulness or Usefulness (7)	... increased my nursing knowledge.	4.45
	... increased confidence teaching clients about medications.	4.29
Information Literacy Support (6)	... Lowered stress getting information for clinical practice.	4.45
	... Helped access needed information.	4.62
Use of Evidence-Based (2)	... helped get information ... review papers, electronic journals	2.68
Total (15)		

Student MISET Subscale Means



Student MISET Means by Program Year

Year	MISET Total	Helpfulness Usefulness	Information Literacy Support	Use of EB Sources
1	3.51	3.52	4.09	2.67
2	3.82	4.10	4.29	2.91
3	3.97	4.31	4.46	2.99
4	4.00**	4.45***	4.57**	2.94

** p = .02

*** p = .000

Student MISET Means By University

University	MISET Total	Helpfulness Usefulness	Information Literacy Support	Use of EB Sources
BCIT	3.62 (40)	3.94 (54)	4.10 (52)	2.42 (50)
CBU	3.87 (48)	3.92 (76)	4.31 (74)	3.15 ^a (68)
UNB	3.91 [!] (53)	4.13 (72)	4.45 ^{&} (73)	2.90 (63)

! approaching significance $p = .08$;

& $p = .04$

a $p = .009$

Qualitative Findings

Exploring mobile information use and teaching and learning experiences and outcomes.



Qualitative Student & Faculty Findings Support Quantitative...

Students

- Helpful and useful:
 - Used frequently in clinical
 - Helped with drugs, clinical decisions
 - Increases confidence, lowers stress
- information literacy
 - Improves access to information

Faculty

- Helpful and useful
 - Tool to support 'in the moment' teaching & learning
 - Supports learning technology & Nursing Informatics application
- Critical Thinking (CT)
 - Yes (19;73%) Quality information to support student CT
 - No (7; 27%) Consultation with nurses and instructors required

• Both faculty and students ~ Evidence-based information

- Limited mention of access to research or scholarly theoretical articles to support learning
- Access mainly 'task-oriented' information sources (drugs, diseases, etc.)

Exemplar Faculty: Qualitative findings...

... mobile device use allows students to see how informatics is used by nurses at the point of care.....

... Students see how information is formatted, ... labelling, hierarchy of components ... this helps them consider how a nursing information system could also be developed to reflect how nurses think and make decisions.

... They must understand how nurses use technology to support them in practice and using mobile devices is a good starting point.



Exemplar: Student Critical Thinking: Need for Consultation

I had a neonate patient who's safe calculated dose for an antibiotic was 8 mg less than what was ordered by the doctor. This safe dosage was calculated using values from uCentral and from the [paediatric unit] medication manual. By using this data I was able to ask both my instructor and the primary RN caring for my patient the rationale to why it was above the dosage. The prescribed dosage was only safe if my patient was being treated for meningitis which he was negative for. The doctor was alerted to this news and a change in the dosage was made.





Qualitative Findings

- Student Learning to Use/Apply Mobile Nursing Information
 - While it is vital to Move from access, to understanding, interpretation, and application in practice, students described needing to consult nurses and/or instructors when information and nursing practice was complex
- Faculty
 - Many comments on Mobile Information as support for nursing process, decision-making, judgement and critical thinking
 - At least one noted the information is not always enough for CT

Why are students & faculty not using Nursing Central/uCentral to access comprehensive evidenced-informed sources?

- Do they define “evidenced-informed” sources differently?
 - (defined as structured abstracts and review papers in journals)?
- Are mobile devices useful tools to access comprehensive evidence-informed resources?
 - Or do they access these information sources other ways, such as via library databases?
- Do faculty and students value ‘evidence-informed’ sources as information to prepare for nursing care of clients?
 - Are these sources emphasized in nursing programs?

Implications

- Both students and faculty reported NC or mobile resources:
 - Were useful, helpful and supported IL
 - Mainly accessed for task-oriented information
 - Limited access to scholarly theoretical or research journal sources
- Faculty:
 - Students needed nurse and/or instructor consultation to interpret, understand and apply complex information
 - General agreement that mobile resources improved student CT but consensus not achieved

Recommendations:

Nursing Education & Reframing Competence

- Curriculum revision & incorporation of NI abilities and outcomes that:
 - Intentionally integrate ICT learning in the class, lab and clinical settings to improve IL and CT
 - Develop students IL ability to foster CT, clinical judgment, and evidence-informed patient care
 - Challenge students to access, appraise, and make decisions on application of scholarly nursing sources (theory and research)
 - Library searches , Critical appraisal of information sources
 - Example: CBU – requires retrieval of peer reviewed sources from Nursing Central and application with clinical preparation

Recommendations:

Nursing Education & Reframing Competence

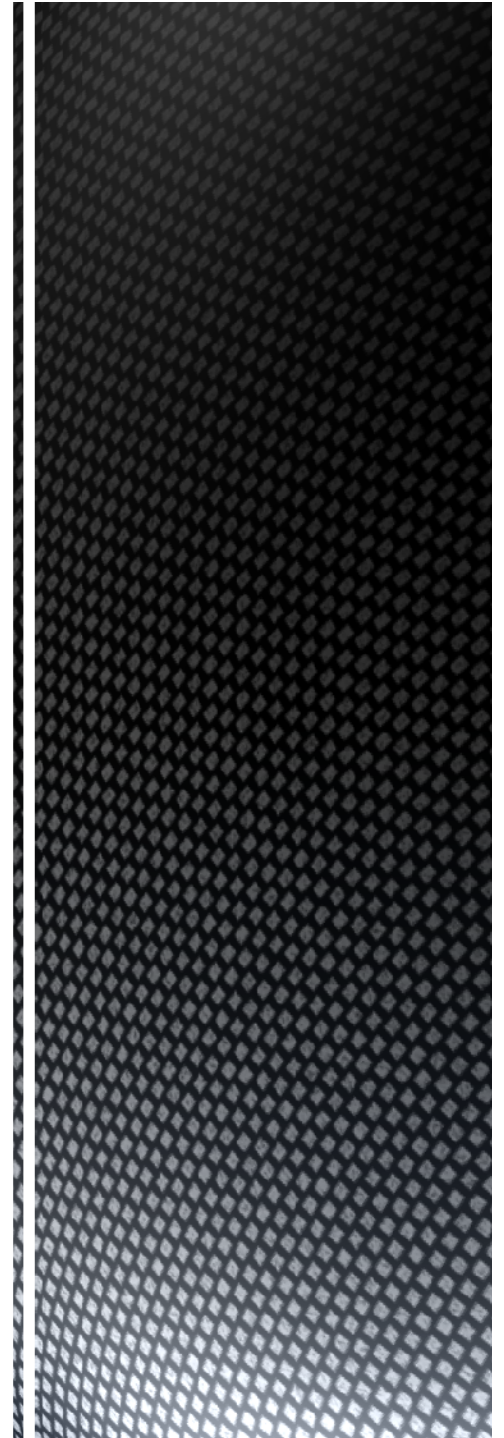
- CASN has established a faculty development resource called the '*CASN Digital Health Peer Leaders Network*'
 - Expert, trained faculty are available to university faculty for consultation and mentorship advice with NI and eHealth education
 - Education, role modeling and support
 - <http://www.casn.ca/2015/03/digital-health-nursing-faculty-peer-network/>

Making the Journey to Thinking Beyond the Device



How can nurse educators integrate mobile devices learning opportunities that promote more than “fact finding” or “task-oriented” information quests?

Students should access and apply comprehensive, scholarly research and theory sources o advance their nursing knowledge and wisdom



Thank you for listening.

Questions?



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