Improving Learning & Teaching in ICT: Findings from the UES and collaborative assessment

ACDICT Learning and Teaching Academy Forum
Victoria University
April 4 2013

Ali Radloff & Jacob Pearce
highereducation@acer.edu.au

Australian Council *for* Educational Research

University Experience Survey

- Largest national student survey to date
- 40 Australian universities participated
- Responses secured from 110,000 students
- Information to understand and improve student experience
- New cross-institutional benchmarks for enhancement

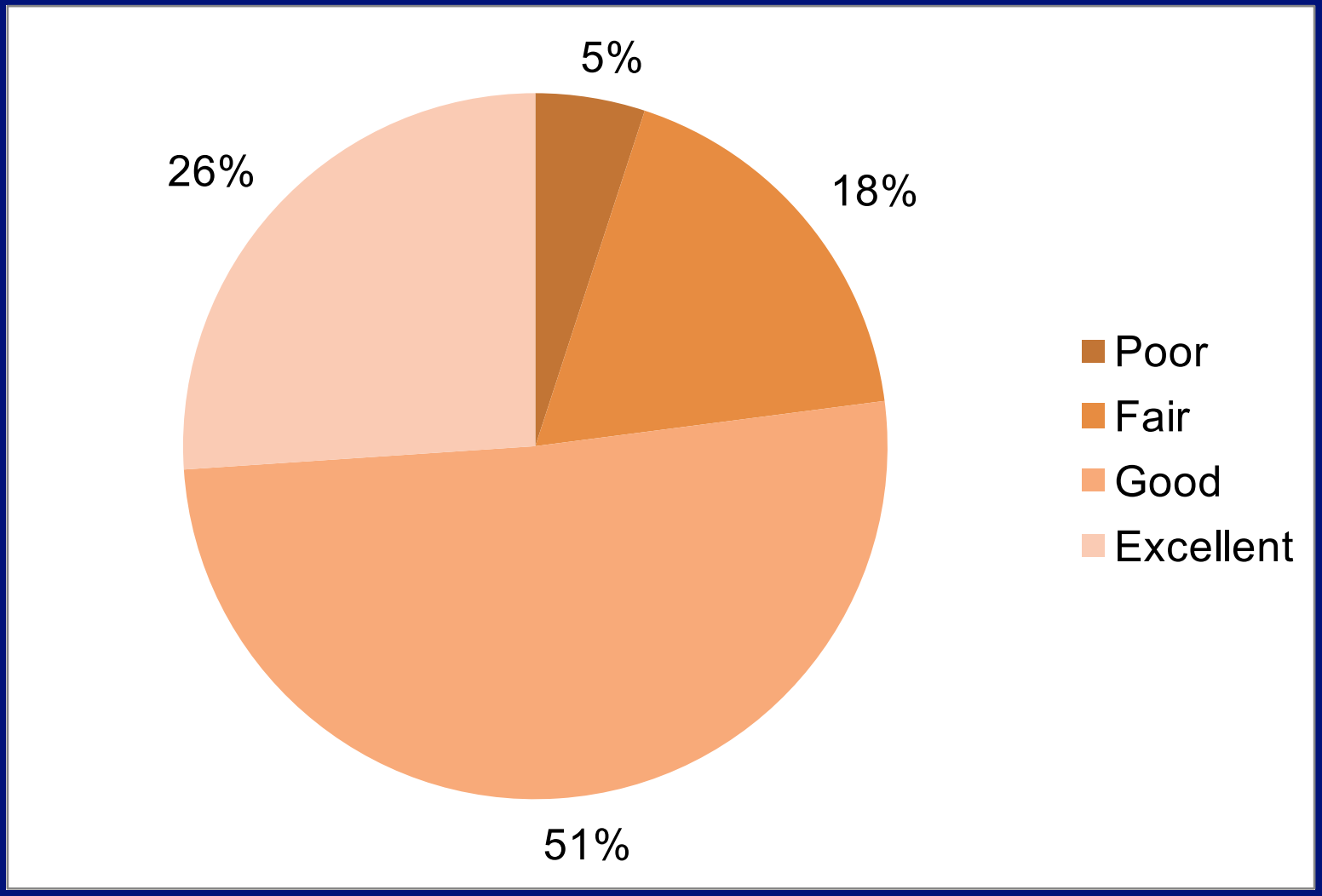
Level of response

	IT	Overall
Sample	15,101	455,322
Response	3,450	110,135
Response Rate	23%	24%
Universities	37	40

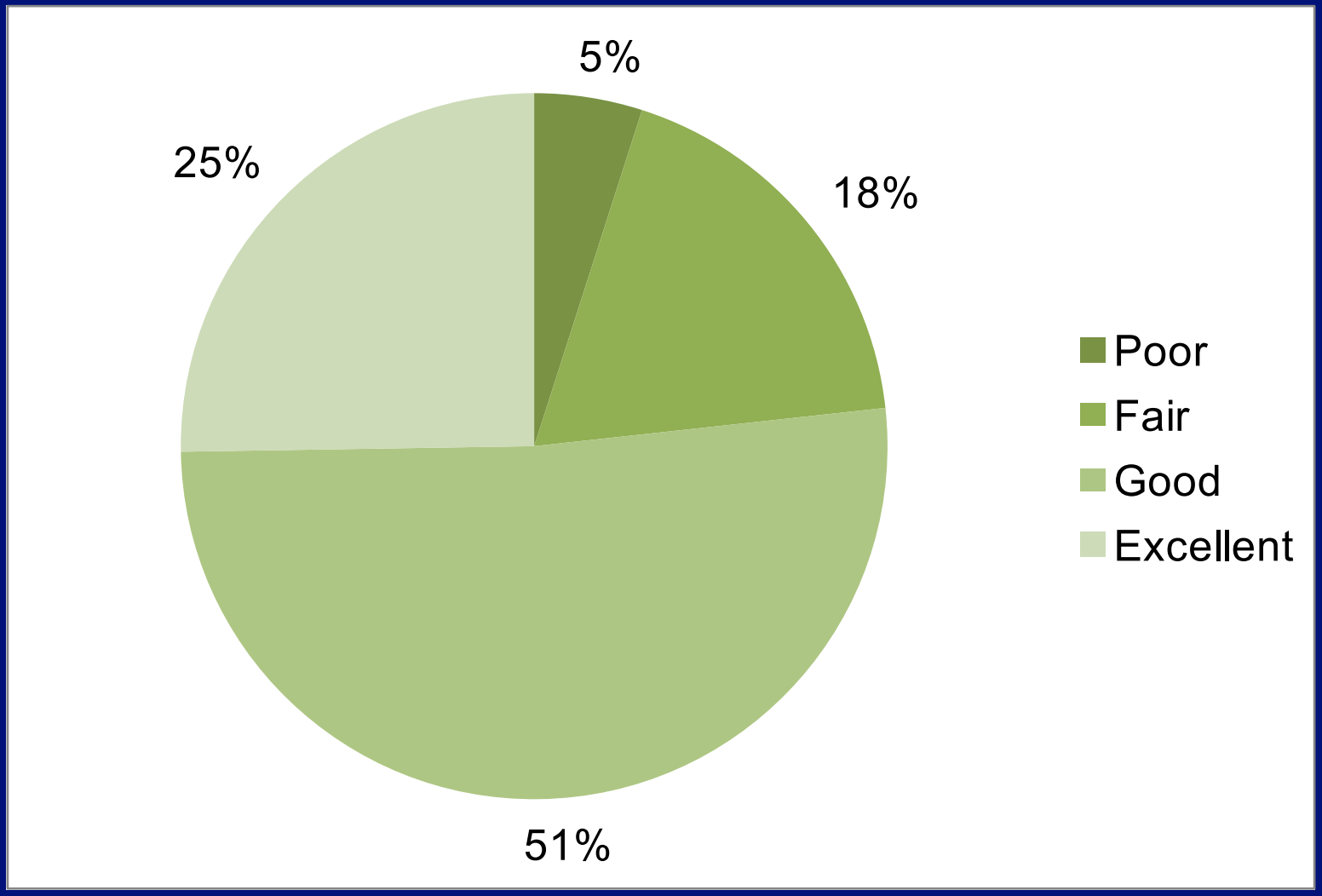
Student demographics

	IT	Overall
Female	17%	64%
External mode	11%	14%
International	28%	15%
Indigenous	1%	1%
First in family	42%	46%
Disability	5%	6%

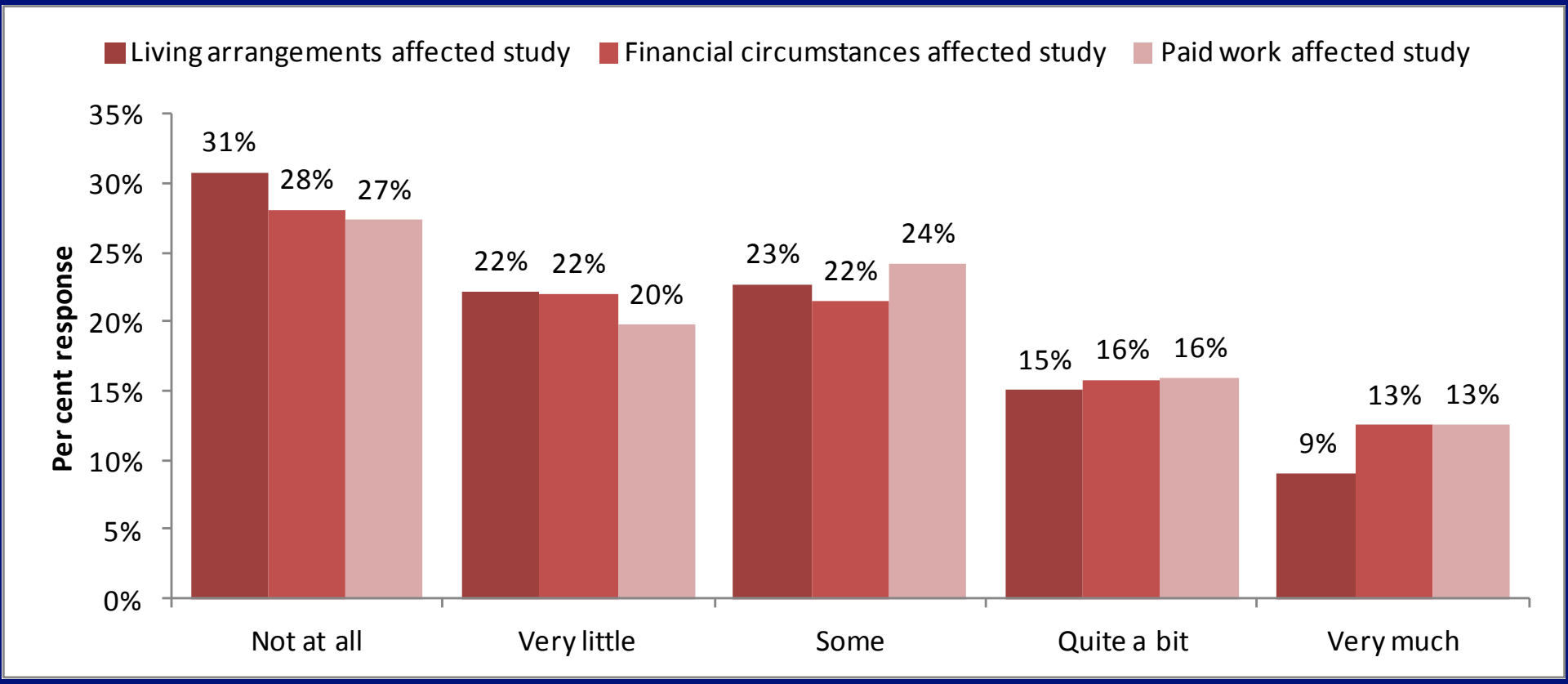
How would you rate the quality of the teaching you have experienced?



How would you rate the quality of your entire educational experience?



Circumstances affected study



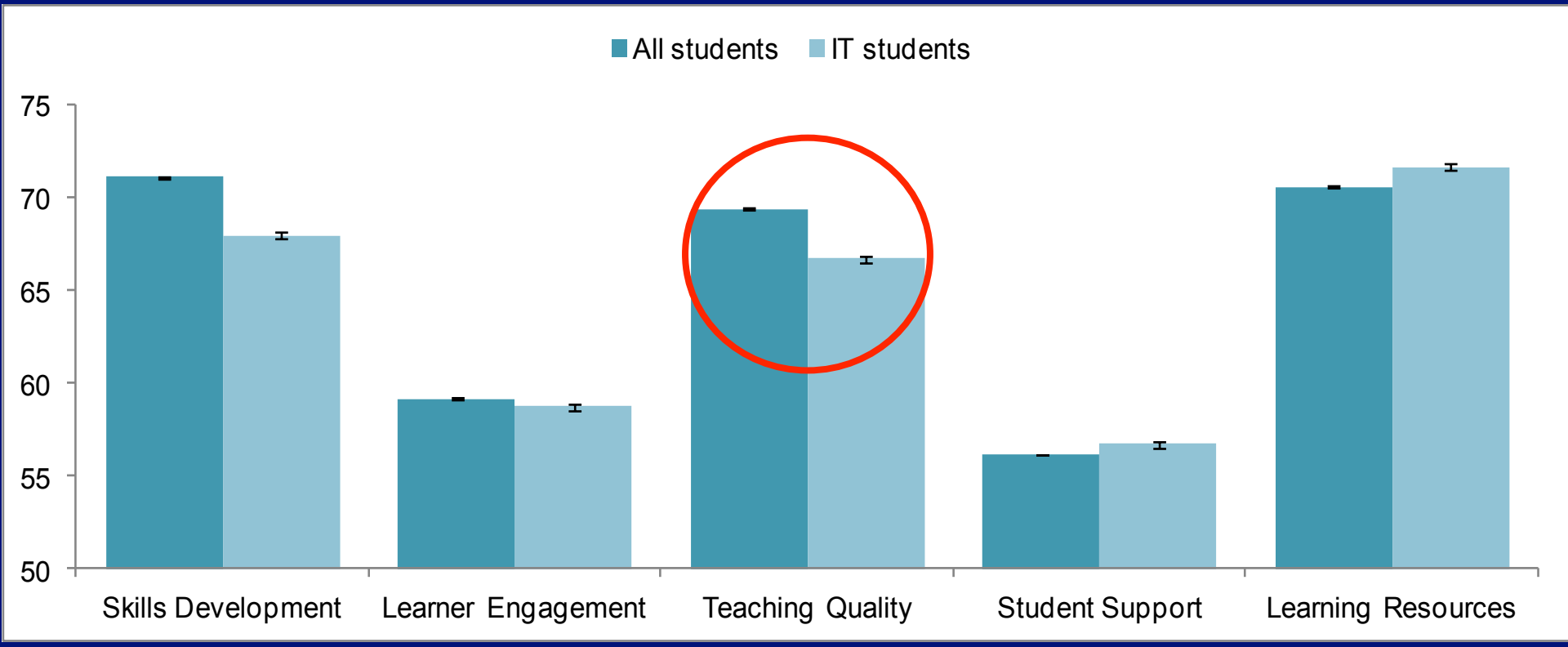
Have you seriously considered leaving before completing?

Information Technology	17.5%
Science	16.8%
Engineering	15.7%
Architecture	22.2%
Agriculture	19.9%
Health	18.1%
Education	19.4%
Business	16.4%
Humanities	19.8%
Creative Arts	21.3%

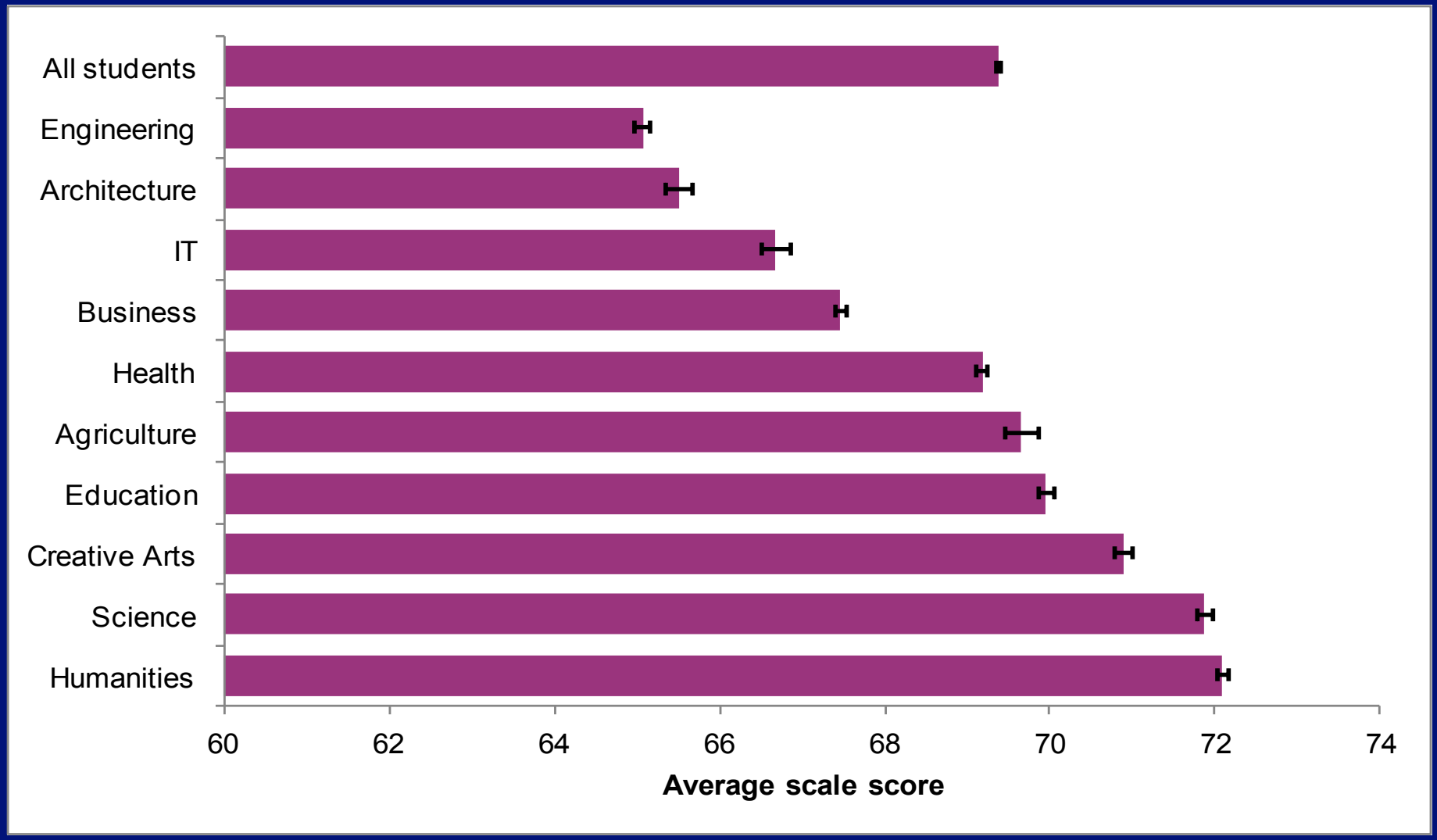
Top reasons for considering departing

IT students		All students	
Expectations not met	37%	Expectations not met	30%
Boredom	32%	Health or stress	26%
Quality concerns	29%	Financial difficulties	24%
Academic support	21%	Study/life balance	24%
Health or stress	21%	Workload difficulties	23%
Career prospects	21%	Boredom	23%
Workload difficulties	19%	Academic support	21%
Need to work	18%	Quality concerns	21%
Financial difficulties	18%	Personal reasons	20%
Personal reasons	18%	Career prospects	20%

Average scale scores



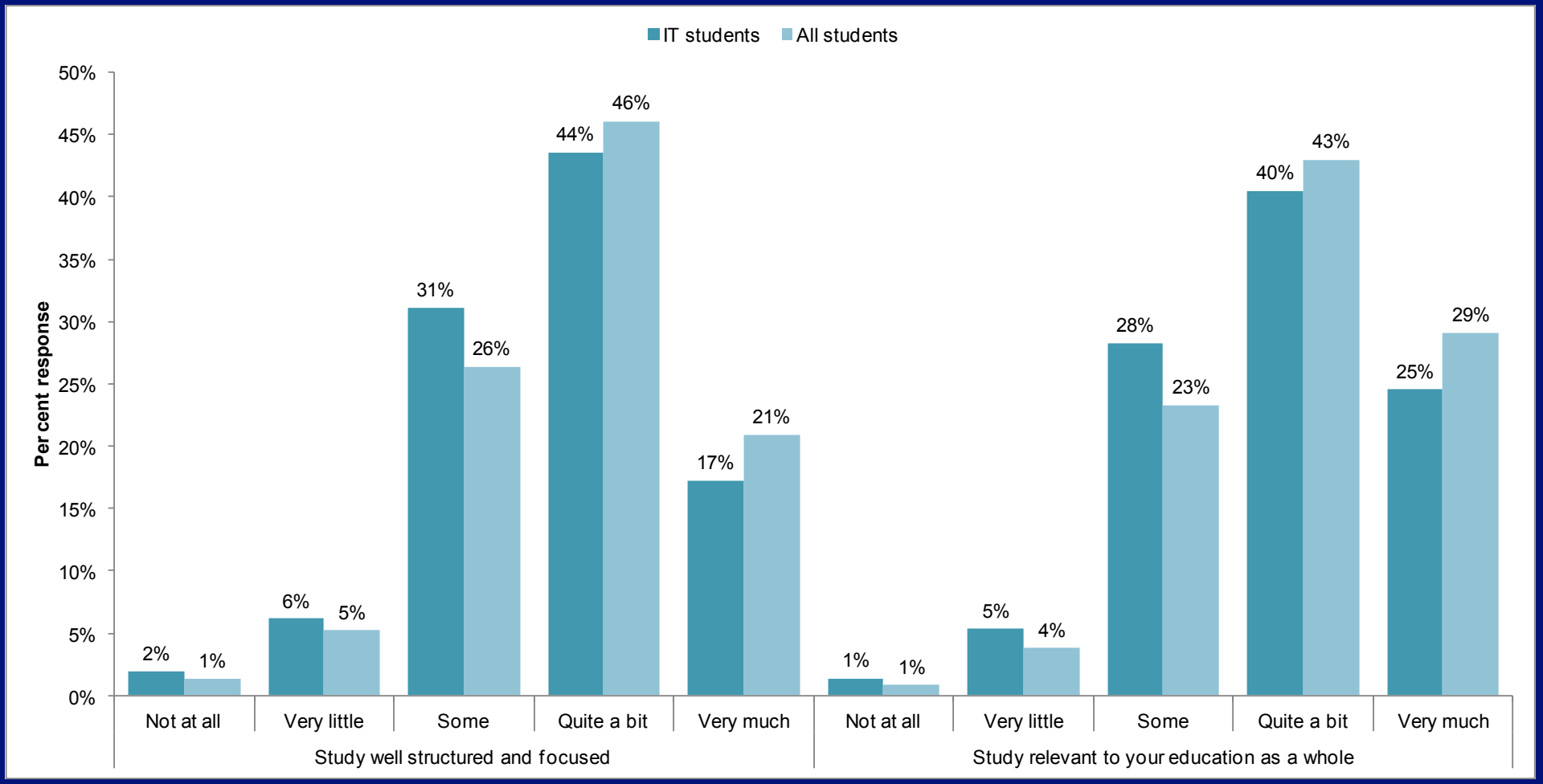
Average teaching quality scores by broad field of education



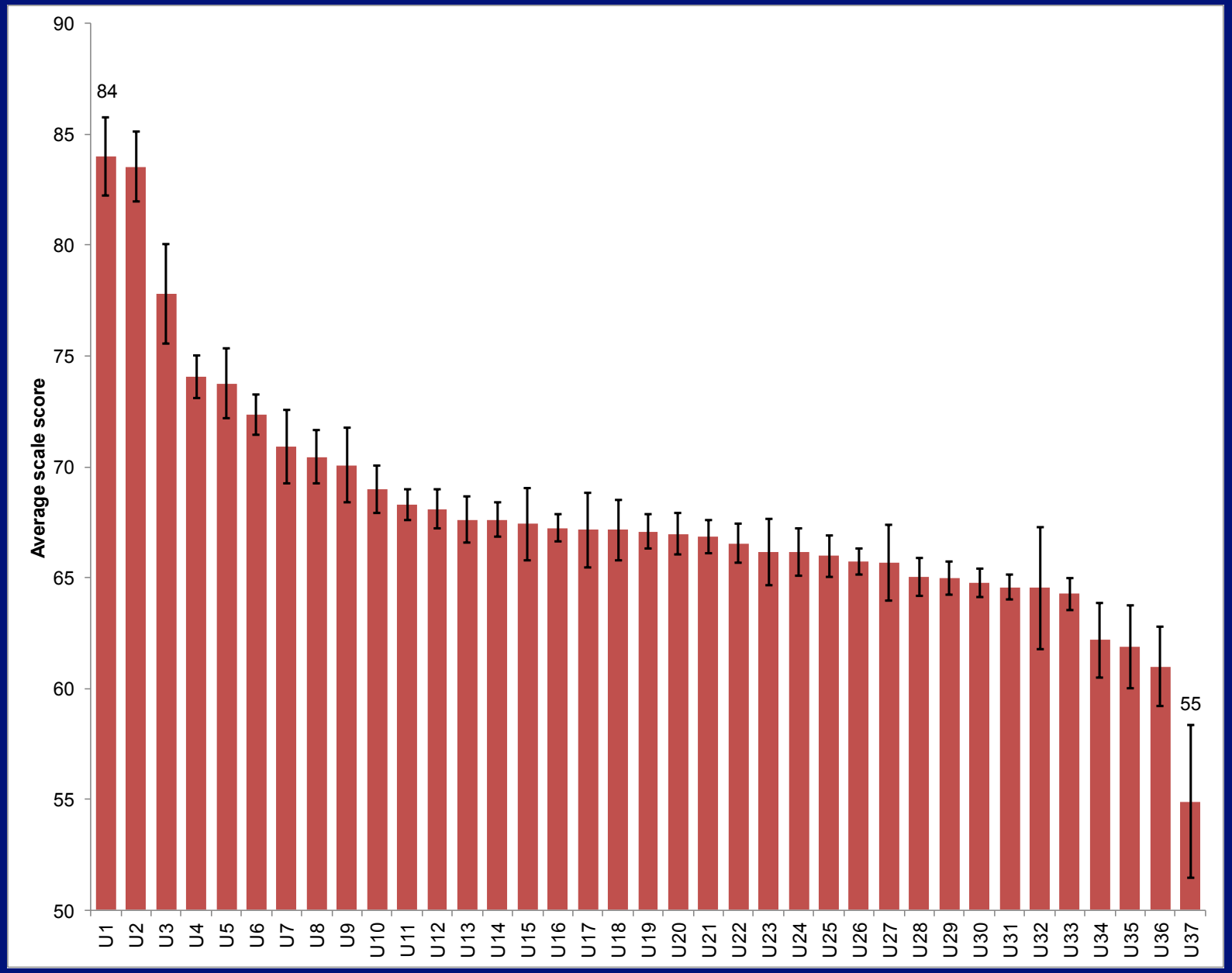
During 2012, teachers frequently…

	IT	Overall
Stimulated you intellectually	57%	65%
Engaged you actively in learning	57%	63%
Demonstrated concern for student learning	54%	59%
Set assessment tasks that challenged you to learn	69%	73%
Seemed helpful and approachable	65%	68%
Provided clear explanations on coursework and assessment	63%	65%
Commented on work in ways that help you learn	50%	50%

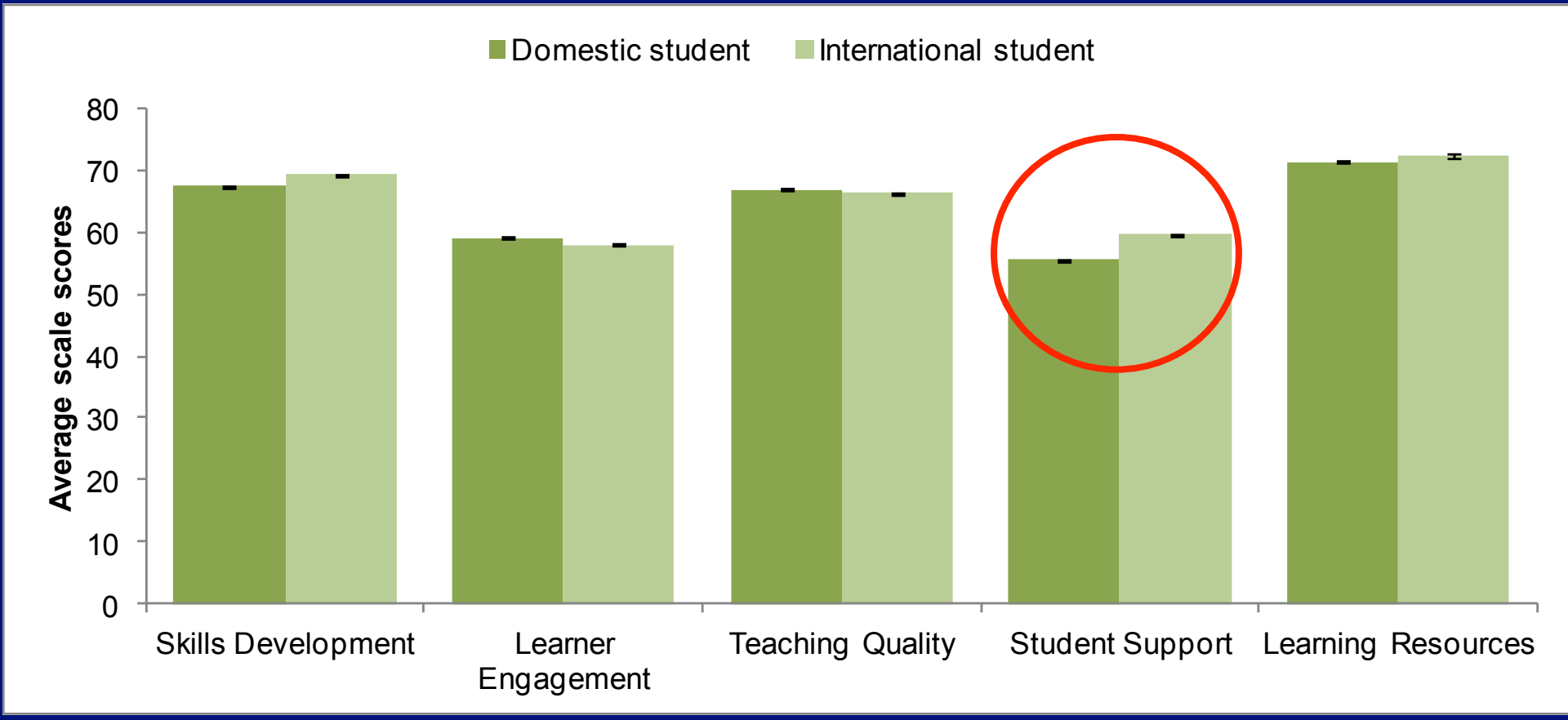
Study structure and relevance



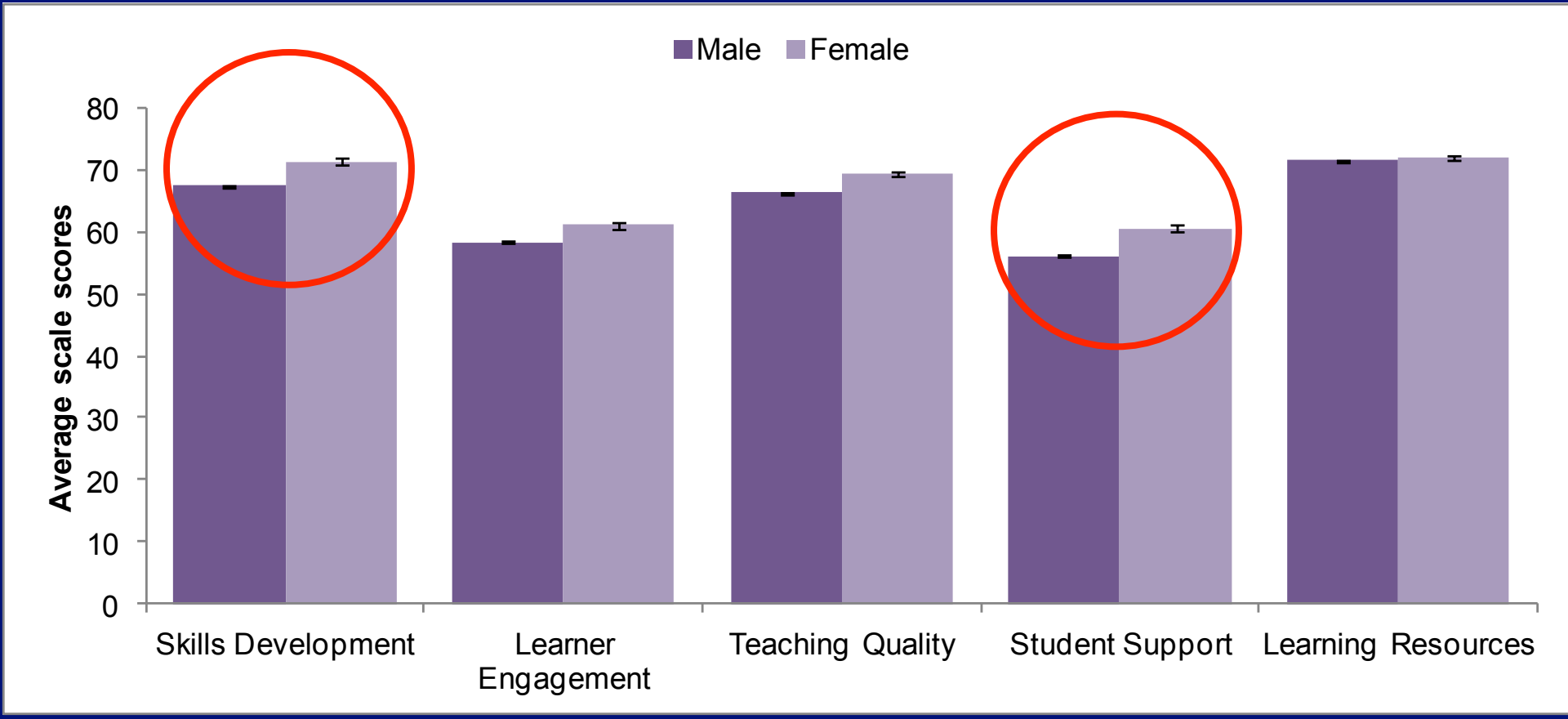
Teaching quality by institution



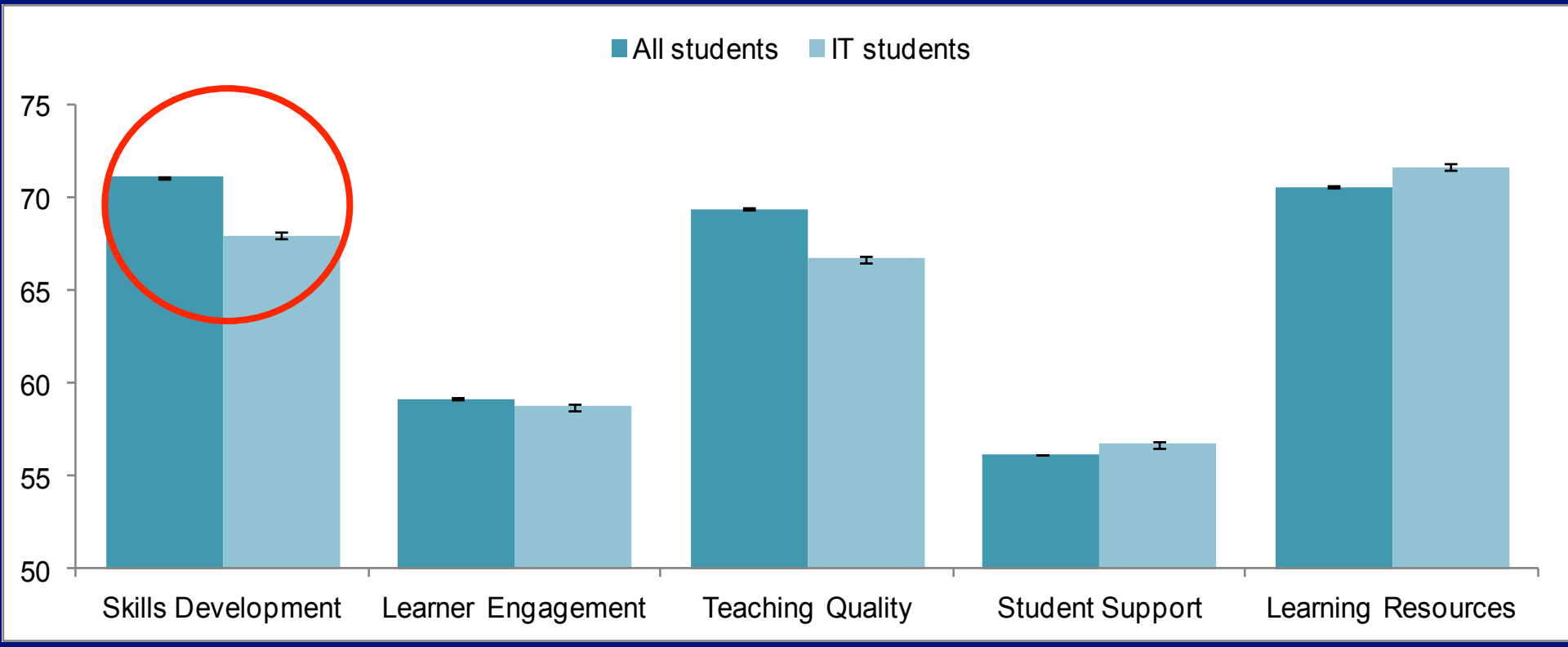
International students studying IT



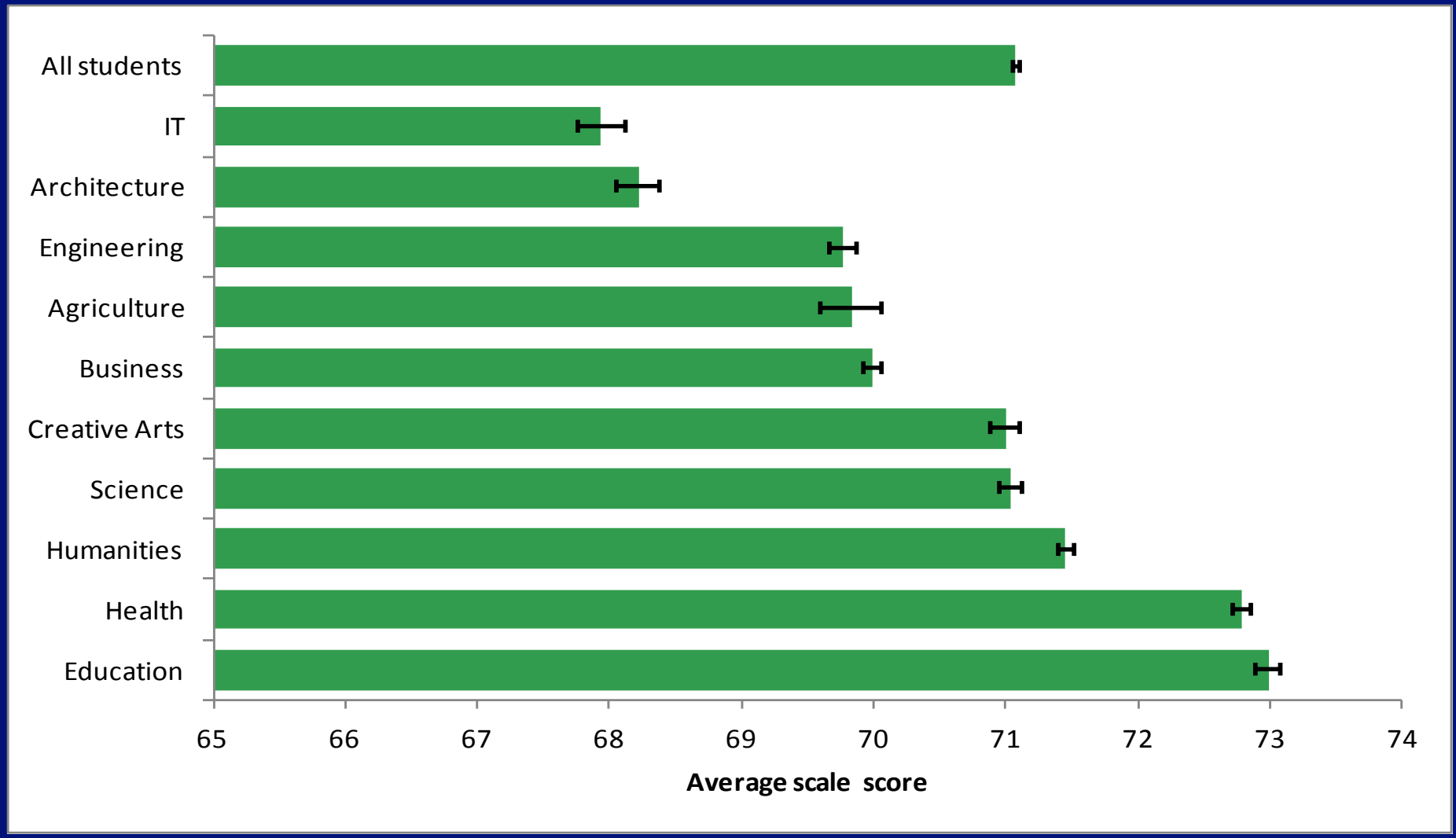
Female students studying IT



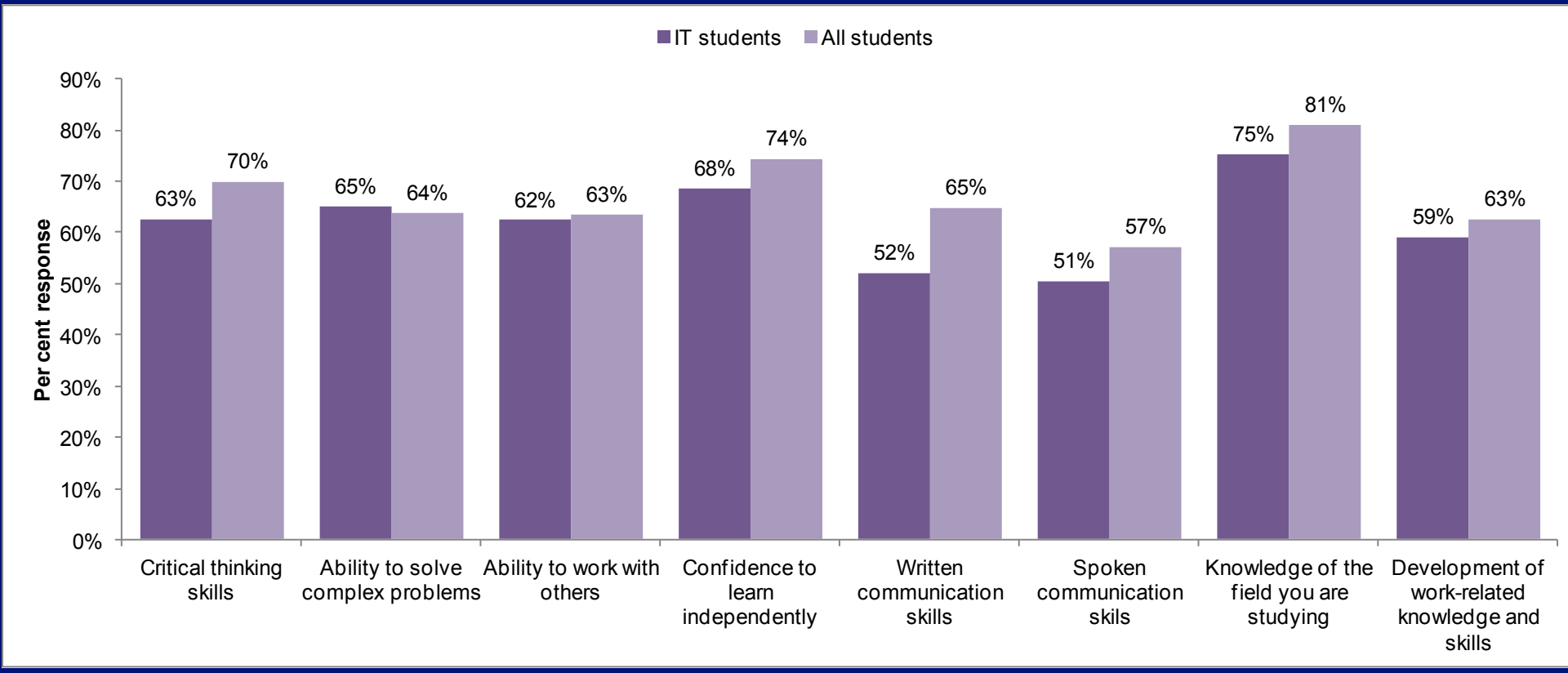
Average scale scores



Average skills development scores by broad field of education



University has developed skills ‘quite a bit’ or ‘very much’



Collaborative assessment for learning

Jacob Pearce

Australian Council for Educational Research

Australian Council of Deans of ICT Forum

April 4-5, 2013

Assessment for learning

- Higher Education Assessment at ACER
- Collaboration with discipline experts
- 2 Case studies relevant for ICT Learning and Teaching
- Assessment for learning

The role of ACER

- Expertise in quality assessment development and delivery:
  - Test development
  - Valid assessment instruments
  - Reliable assessment instruments
  - Efficient implementation and reporting

What is AHELO?

- OECD Feasibility Study
- Assessment of Higher Education Learning Outcomes
- Is it possible to undertake an international assessment of final-year students' capacity to use, apply and act on the knowledge and reasoning they have gained from their degrees?
- Is it possible to assess these outcomes in an efficient and internationally comparable way?
- Can policymakers, institutional leaders, university staff and students be convinced that the assessment of higher education learning outcomes as an essential checkpoint in the educational process?

What is AHELO?

- AHELO involves the development and validation of assessments in three core areas:
  - Generic Skills
  - Economics
  - Civil Engineering
- It also includes development of contextual instruments to aid with the interpretation of assessment data.
- The assessments are targeted at students in the final year of bachelor degrees and aim to assess their capacity to apply their skills and knowledge to real-world problems.
- 23,000 students, 248 HEIs, 17 countries/economies

Participating countries

Generic Skills

- Colombia
- Egypt
- Finland
- Korea
- Kuwait
- Mexico
- Norway
- Slovakia
- United States

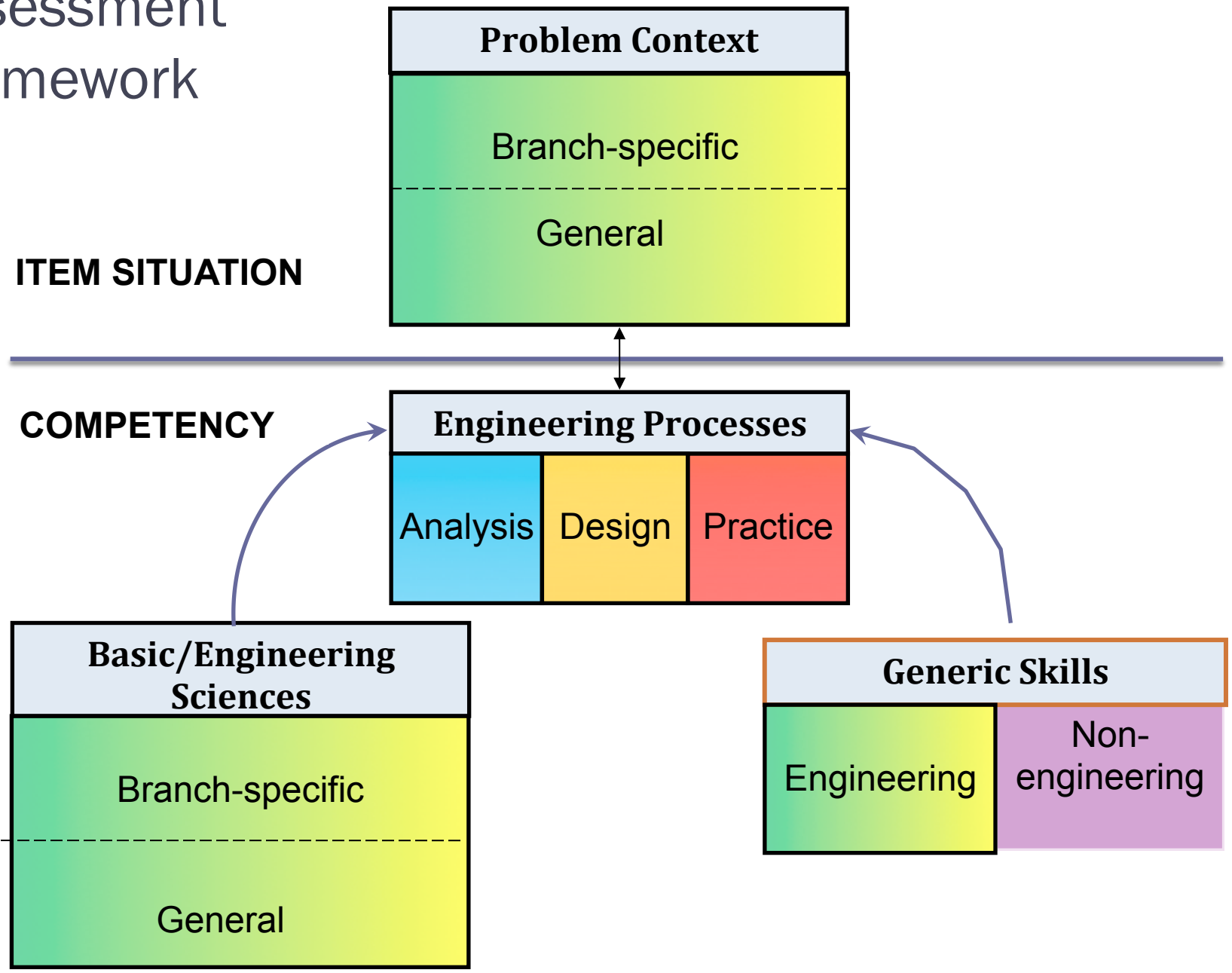
Economics

- Belgium
- Egypt
- Italy
- Mexico
- Netherlands
- Russia
- Slovakia

Engineering

- Abu Dhabi
- Australia
- Canada
- Colombia
- Egypt
- Japan
- Mexico
- Russia
- Slovakia

Assessment Framework



Feasibility outcomes

- New perspectives/data on higher education
- Institution/national reports for stimulating education change
- Strategies for engaging systems, institutions, faculty and students
- Clear evidence of feasibility, built over many years
- Assessments of global graduate capability
- Advanced approaches to quality assurance
- High-quality, efficient and scalable methods
- New standards for higher education research
- Positioning of AHELO within higher education globally

What is AMAC?

- Australian Medical Assessment Collaboration
- ALTC Project (AMAC-1): collaboration between UQ, Monash and ACER formed based on mutual interest and complementary expertise
- AMAC-2: collaboration between ACER and 16 medical schools in Australia and New Zealand

Evolution of AMAC

- Proposal for funding responding to national and international policy moves towards greater quality assurance
    - Internationalisation of the profession
    - diversification of programs and curricular
    - pressure to prove/improve academic standards
    - TEQSA
- Australia has highly developed entry systems, well established accreditation processes, testing of standards for migrant medical practitioners, but no overall way to measure/ benchmark learning outcomes for domestic graduates.

Process

This OLT/ ALTC Project

1. Project planning and initiation
2. Framework drafting
3. Engagement Forum
4. Framework revision
5. Item collection, creation and validation (pilot)
6. Item library architecture established
7. AMAC secretariat and 'engagement model' established

Evaluation

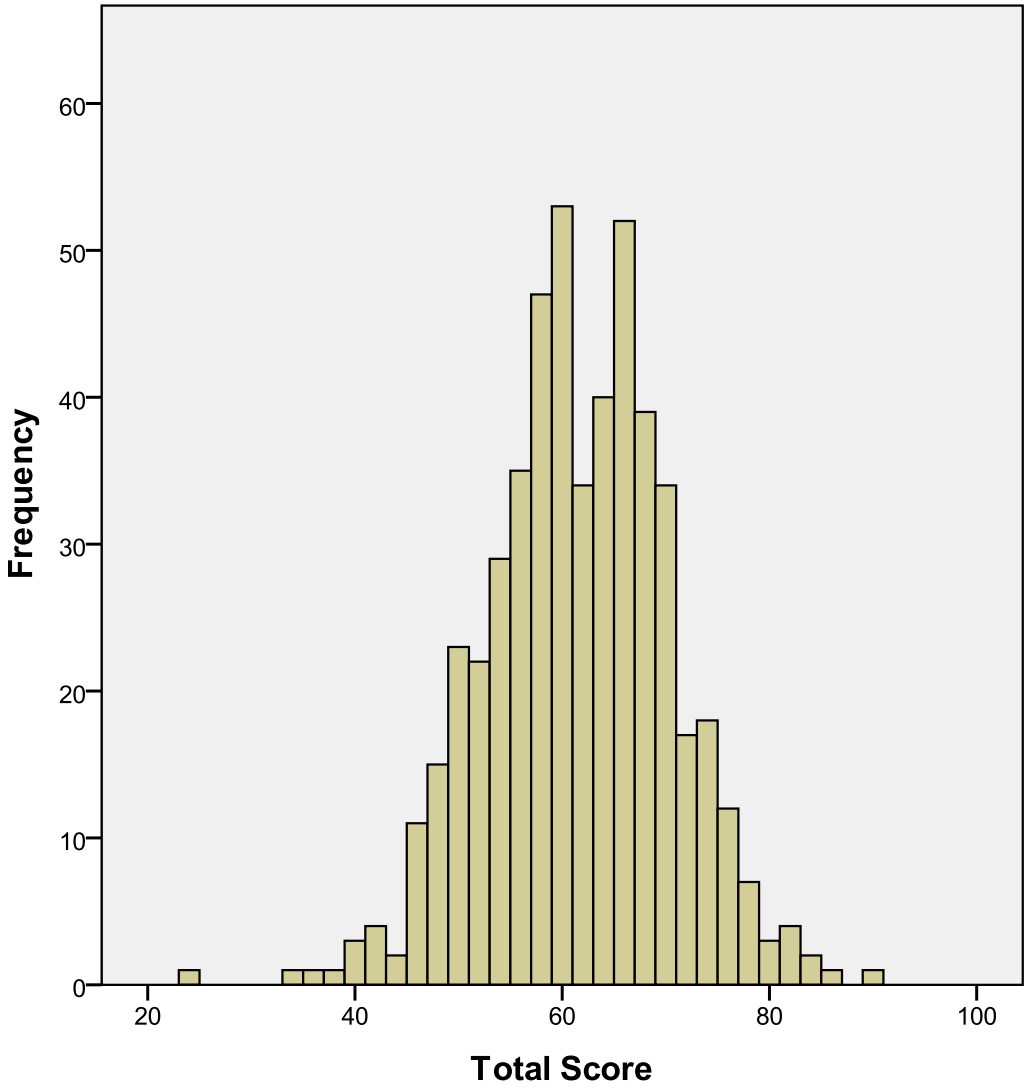
AMAC in the future

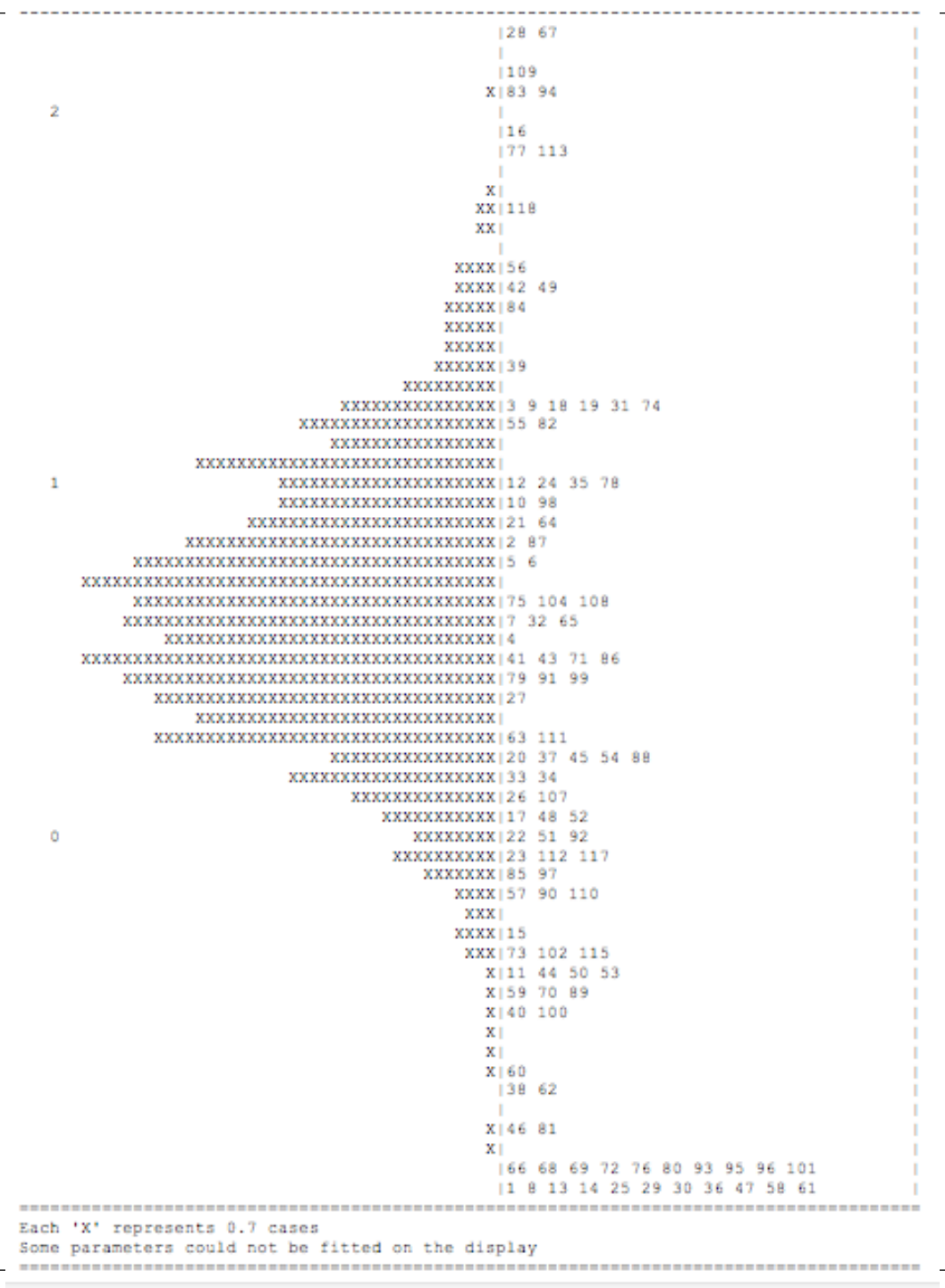
8. Ongoing collection, validation and dissemination of items
9. Continued engagement and collaboration with universities in Australia and abroad
10. Other functions…???

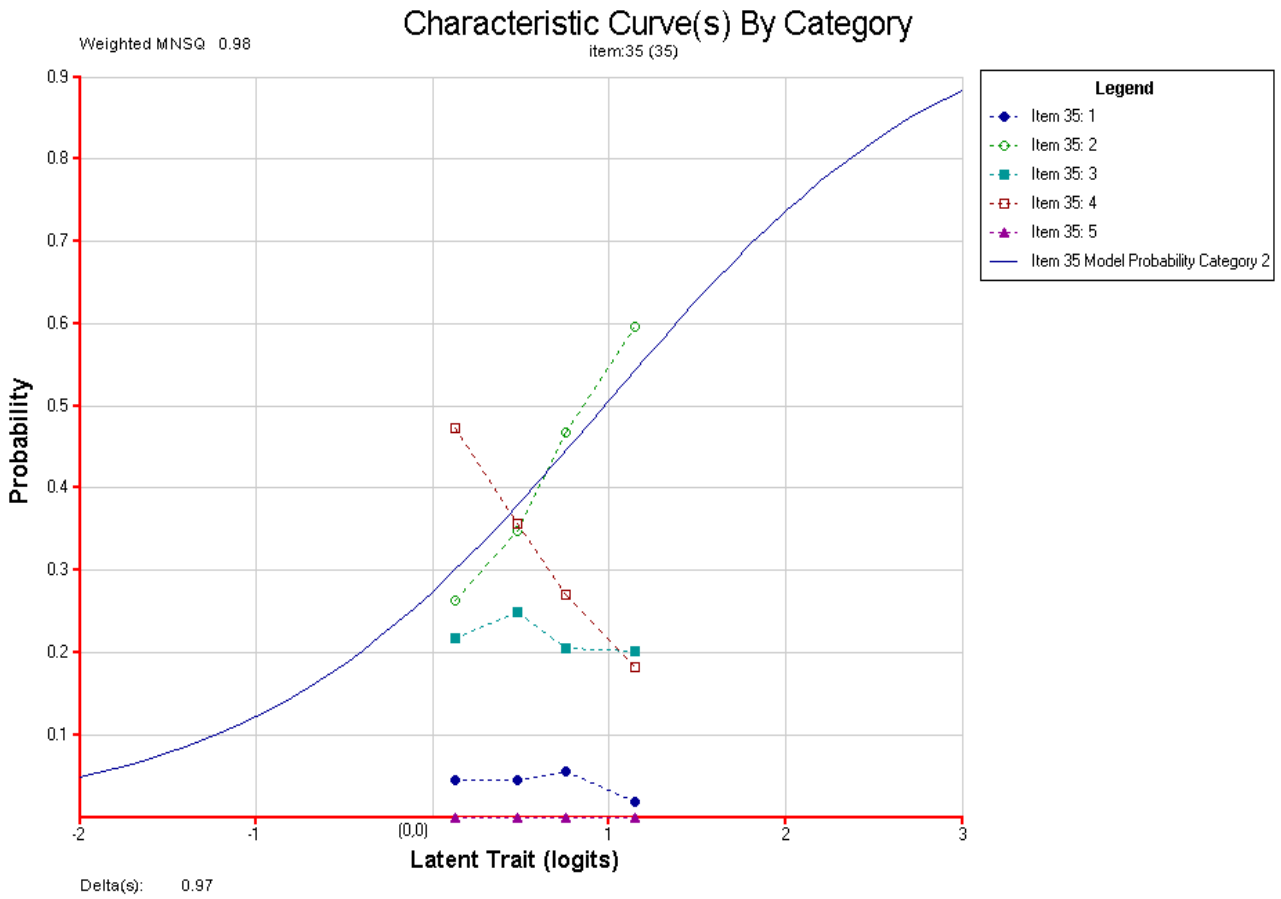
Quality assurance

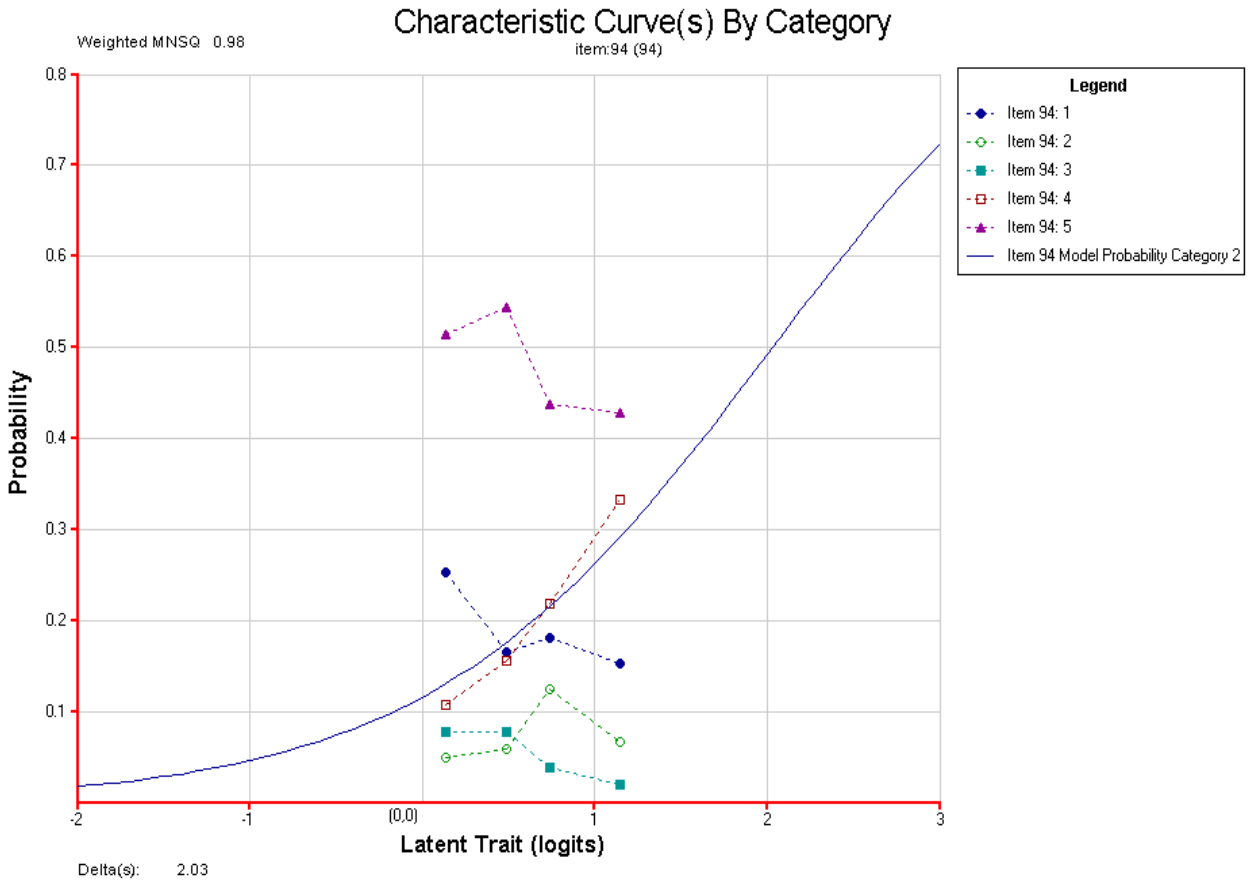
- The AMAC assessment instrument is designed to achieve consistency, fairness and standardisation in assessment through the development of high quality assessment items, validated by qualified and experienced medical education experts and clinicians.
- Submission, selection, modification, review, discipline experts, education experts, delivery, dissemination.

AMAC Pilot – result distribution

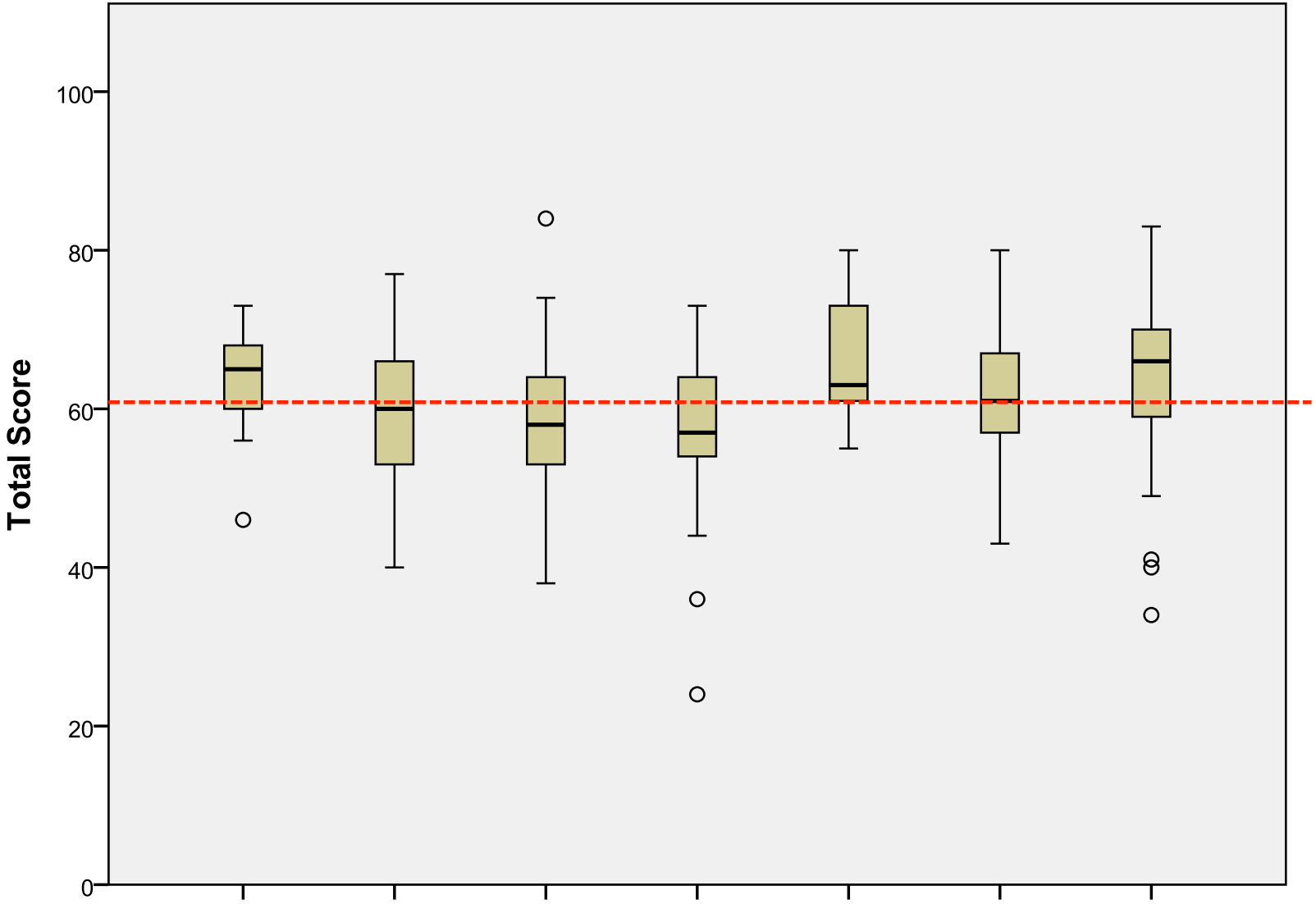



2
1
0
Each 'X' represents 0.7 cases
Some parameters could not be fitted on the display


Characteristic Curve(s) By Category
Weighted MNSQ 0.98
item:35 (35)
Legend
Item 35: 1
Item 35: 2
Item 35: 3
Item 35: 4
Item 35: 5
Item 35 Model Probability Category 2
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)
Delta(s): 0.97

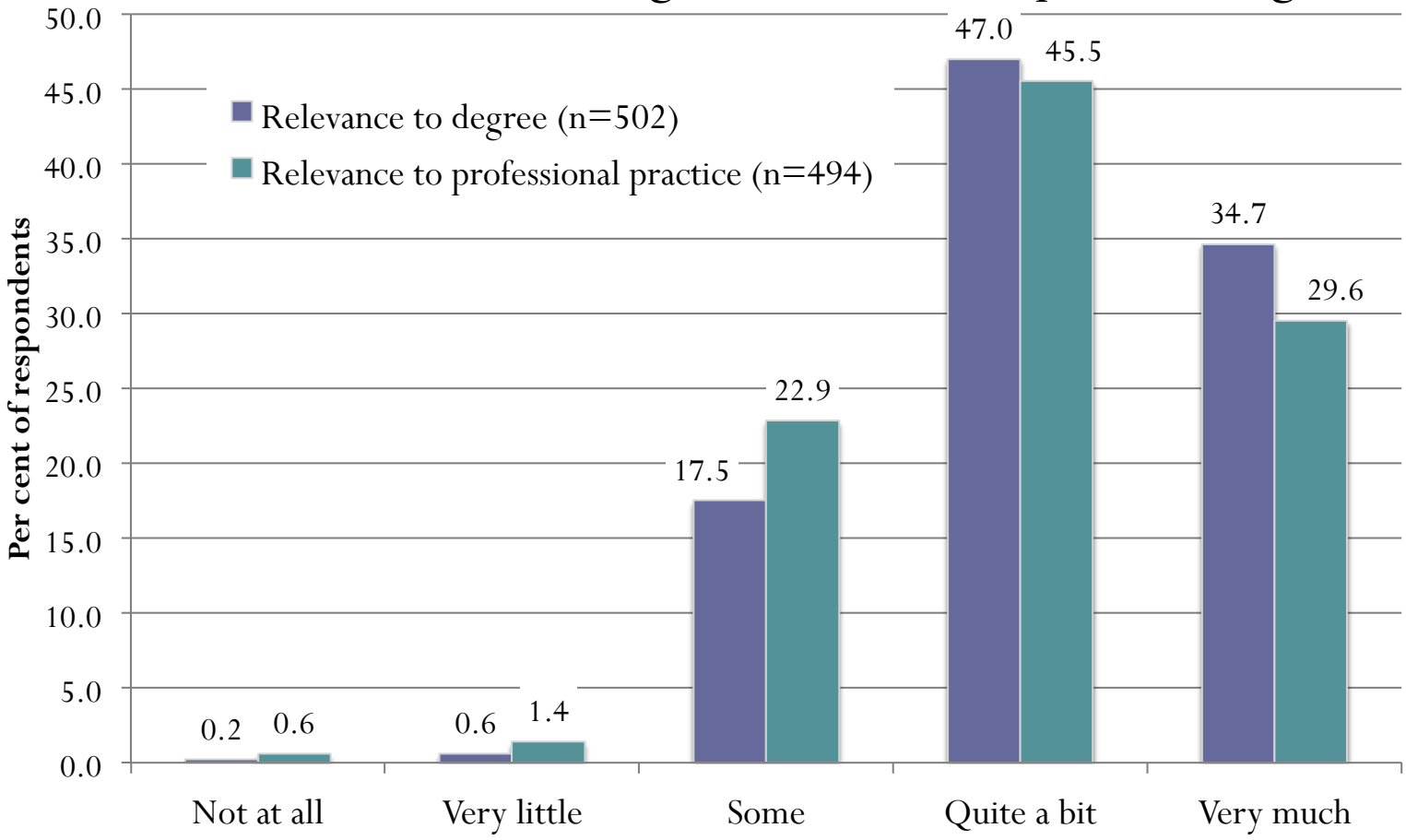

Characteristic Curve(s) By Category
Weighted MNSQ 0.98
item:94 (94)
Legend
Item 94: 1
Item 94: 2
Item 94: 3
Item 94: 4
Item 94: 5
Item 94 Model Probability Category 2
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)
Delta(s): 2.03

AMAC Pilot – 2012 by institution



AMAC Pilot

- Pilot sample Student Feedback:
  - Relevance of test to degree (left), future practice (right)



Stude

May 30, 2012

Thank you for participating in the 2012 pilot of the Australian Medical Assessment Collaboration (AMAC). Your involvement in this pilot is valued and will contribute substantially to the development of AMAC.

AMAC is a project funded by the former Australian Learning and Teaching Council (ALTC), now the Office for Learning and Teaching. It is a research project being jointly developed by The University of Queensland, Monash University and the Australian Council for Educational Research. Further detail about the project can be found here: www.acer.edu.au/amac.

Your results in the pilot test are provided below. They offer an overview of your outcomes on the test disaggregated to a number of categories. They also provide a 'benchmark' score which is an average of the full cohort who participated in this pilot. In total, 508 final year MBBS students from seven institutions in Australia and New Zealand form this cohort.

It is important to note that your outcomes on this pilot test have no impact on your university results. The cohort of students for benchmarking purposes is not a representative sample of all medical students in Australia and New Zealand. In addition, the questions in each category are not designed to be representative of the entire category. As such interpretation of outcomes here should be undertaken with caution. The cohort scores in the table below offer the mean percentage correct outcome for all students who participated, as well as the 95 per cent confidence intervals for each category (in square brackets).

Category	Your Score	Your % correct	Cohort % correct* [95% confidence interval]
Respiratory	7 of 8	88%	57% [55,59]
Circulatory	6 of 10	60%	54% [52,56]
Gastrointestinal	4 of 11	36%	45% [44,46]
Musculoskeletal	4 of 5	80%	49% [47,51]
Neurology	5 of 8	63%	58% [56,60]
Urology	4 of 4	100%	75% [73,77]
Immunology	4 of 5	80%	70% [68,72]
Pharmacology and Toxicology	5 of 5	100%	65% [63,67]
Haematology and Oncology	7 of 10	70%	59% [57,61]
Endocrinology	7 of 9	78%	66% [64,68]
Women's health	5 of 9	56%	62% [60,64]
Psychiatric and Mental Health	4 of 6	67%	75% [73,77]
Other	9 of 10	90%	65% [63,67]
Overall	**71 of 100**	**71%**	**60% [59,61]**

* Cohort scores are based on all administered items for this student's particular test rotation. Mean percentage correct are listed alongside 95% confidence intervals (displayed in square brackets).
Note: 'Other' category includes Dermatology, Neonatal, Ear Nose & Throat and Ophthalmology.

If you have further questions or feedback about the project, please contact:

Institution Reports

- To offer overall outcomes and provide benchmark figures
- Benchmarks based on data from all participating institutions
- Outcomes disaggregated by content areas and by student characteristics (gender, language, international status, age) – where sufficient numbers exist
- No individual students identified in institutional report
- Feedback sought from institutions on reporting and on implementation in general

Relevance for ICT Learning & Teaching

- Feasible to assess learning outcomes across institutions (and across countries) in a specific discipline
- Consortium arrangement with iterative framework and test development?
- Collaborative arrangement between ICT departments?
- Valid and reliable data on student learning outcomes
- Versatile assessment: what do you want?
- Formative or summative?
- Core areas? Application of knowledge?
- Self-regulation, self-auditing, continuous improvement

Improving Learning & Teaching in ICT: Findings from the UES and collaborative assessment

ACDICT Learning and Teaching Academy Forum
Victoria University
April 4 2013

Ali Radloff & Jacob Pearce
highereducation@acer.edu.au

Australian Council *for* Educational Research