Developing, enhancing and sustaining research skills in a diverse population of students undertaking a Masters in Public Health: an action research study

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Some Key Educational Strategies in UK:

Dearing Report (1997)

▸ UK needs to be "*at leading edge of world practice in effective leaning & teaching*"

Employability

▸ Graduates need to demonstrate high employability skills

▸ Jenkins et al (2007) – " *teaching students to be enquiring or research based in their approach [….] is central to the hard-nosed skills required for our future workforce*"

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Strategies (cont.)

Prime Ministers Initiative for International Education (PMI2, 2006)

➢ "secure the UK's position as a leader in international education"

➢ Imperative we maintain our reputation within the international arena

Estimated to be over ½ a million international students in the UK

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In 5 year period between 2004-2009 UoB
Has seen a rapid growth in international
Postgraduate students(Atlay et al, 2010):

▸ 11% increase in EU

▸ 33% increase in non-EU

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However, not without problems!

Perhaps we need to ask?

▸ Does the 'White & Eurocentric' curriculum meet the needs of the diverse cultures in UK Higher Education Institutes (HEI's)?
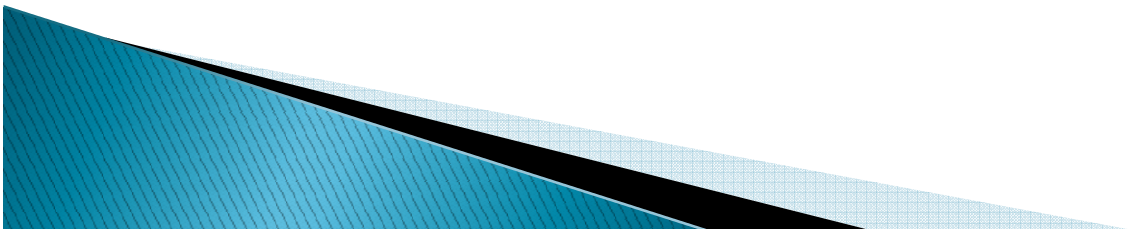
- Haigh (2008) suggests not and questions whether students are *"dumped into an educational system geared to meet the needs of home students"*

- He also suggests international students are disadvantaged by a system that assumes an understanding of local knowledge & convention to teaching, learning & language

- A system, Maguire (2001) advocates, students from non-traditional backgrounds can often struggle with

Therefore ....

▶ If internationalisation is to be successful HEI's must evaluate & adapt their pedagogy & practice in order to ensure there is constructive alignment between education mission, financial goals and management structure
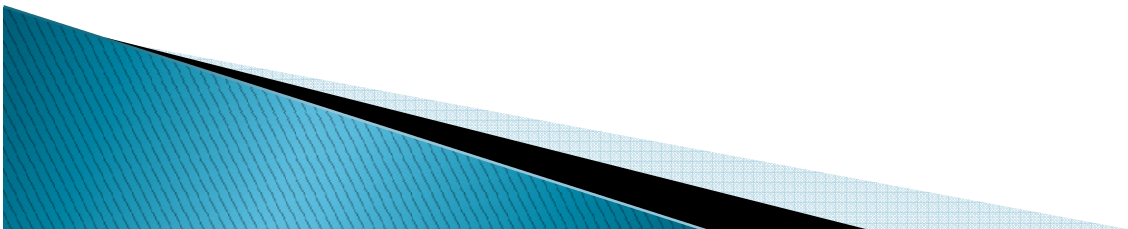
Student population

- Has changed dramatically. Schroeder (2004) suggests many:
  - Lack confidence in academic abilities
  - Are uncomfortable with abstract ideas
  - Have difficulty with abstract ideas
  - Have a low tolerance for ambiguity
  - Are less independent in thoughts& judgement
  - Are more dependent on ideas of those in authority
 - Exhibit difficulty with some basic academic skills
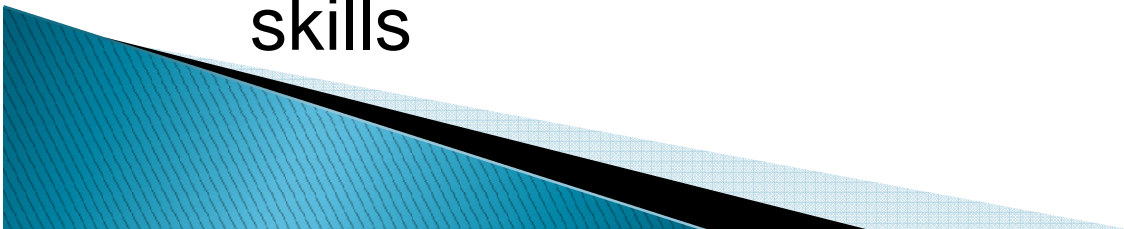
Public Health Masters

- Competencies clearly defined (Faculty of Public Health, 2009)
- Knowledge & understanding of research & evaluation is central
- Practitioners must have an understanding of research methods appropriate to public health. Including:

  Epidemiology, statistical methods, data handling,

  Interpretation skills, critical appraisal skills & other methods of enquiry including qualitative research methods
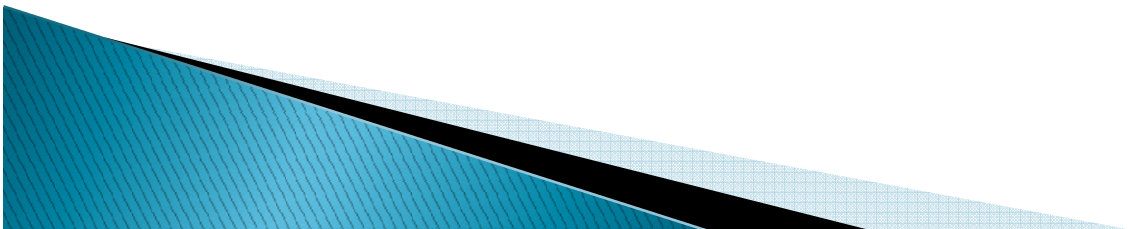
▸ It is essential that our curriculum prepares students for employment – be it in the UK or Internationally

Key driver for this research!
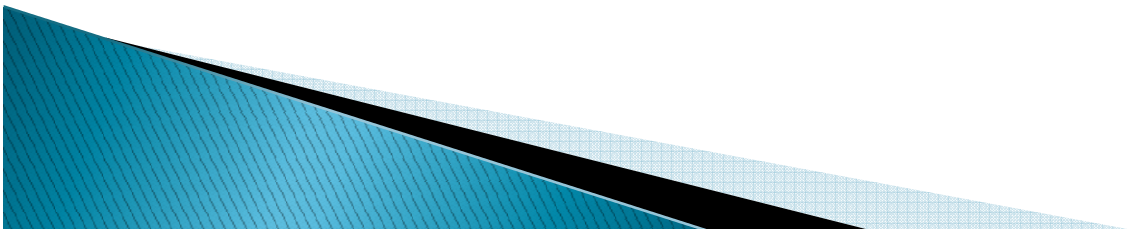
Methods – Action Research (AR)

- focuses on the effects of the researcher's direct actions on practice within a participatory community
- goal = improving the performance quality of the community or an area of concern (Reason & Bradbury, 2001; McNiff, 2002)

- Carr and Kemmis (1986: 162) *state* AR is:

  "Action research is a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out"

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Sampling

- All students enrolled on Public Health MSc between 2006 and 2010 (n 169)

- Questionnaires were either completed in the classroom or sent and returned electronically

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Data Collection:

- Both quantitative & qualitative-
  - quantitative (questionnaires)
- Student perception of research skills on entering the course and again on completion.
- Students were asked:
  - to rate on a scale of 0-10 their confidence of key research skills.
  - to identify which skills they specifically wanted to develop (on entry) and whether this has been achieved (on exit)
  - to state which teaching and learning strategies they found effective and what we could do differently.
  - Outcome measures – research methods assessment grades (1st assessment) and dissertation grades (final assessment) - ? any differences in attainment by student status.
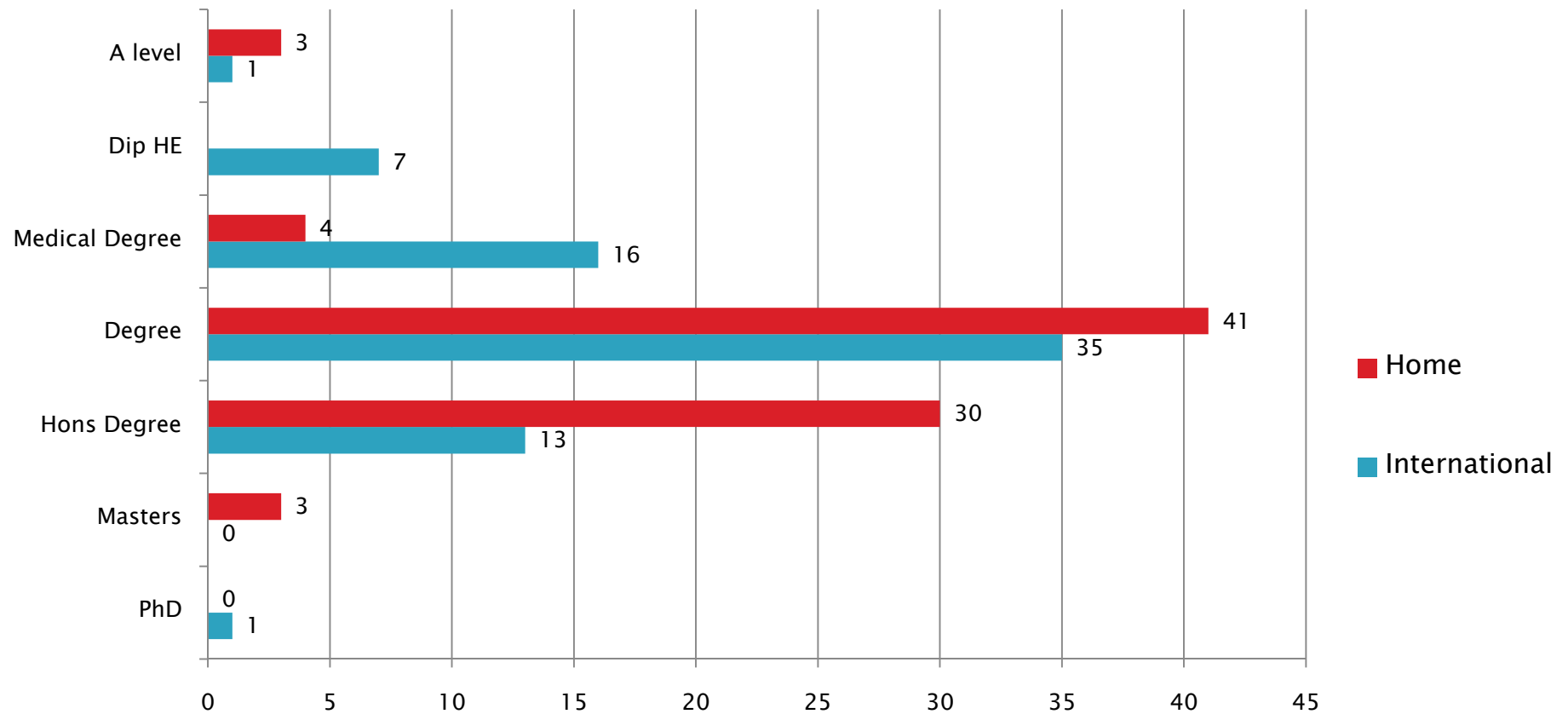
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- Qualitative data (guided / reflective) will be presented in another paper

- Data is exploratory as additional data is yet to be gathered and analysed (those yet to complete dissertation

- Data was analysed using SPSS (version 17)

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Demographic Data:

| Characteristics (n)	n (%)	n (%)	n (%)
Gender (169)	Male 88 (52.1)	Female 81 (47.9)	
Duration of study (169)	1 year 121 (71.6)	2 years 48 (28.4)	
Mode of study (169)	Taught 120 (71)	Online 46 (27.2)	Mix 3 (1.8)
Student Status (169)	International 79 (46.7)	Home 87 (51.5)	EU 3 (1.8%)
Prior research experience (105)	Yes 49 (46.7)	No 56 (53.3)	

Highest academic qualification at entry to the course by student status

A level: Home 3, International 1
Dip HE: International 7
Medical Degree: Home 4, International 16
Degree: Home 41, International 35
Hons Degree: Home 30, International 13
Masters: Home 3, International 0
PhD: Home 0, International 1

Legend: Home (red), International (blue)

no significant differences in dissertation scores by level of education (p, 0 .53).

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Mean Ratings of Student Perception of Research Skills on Entry to Course
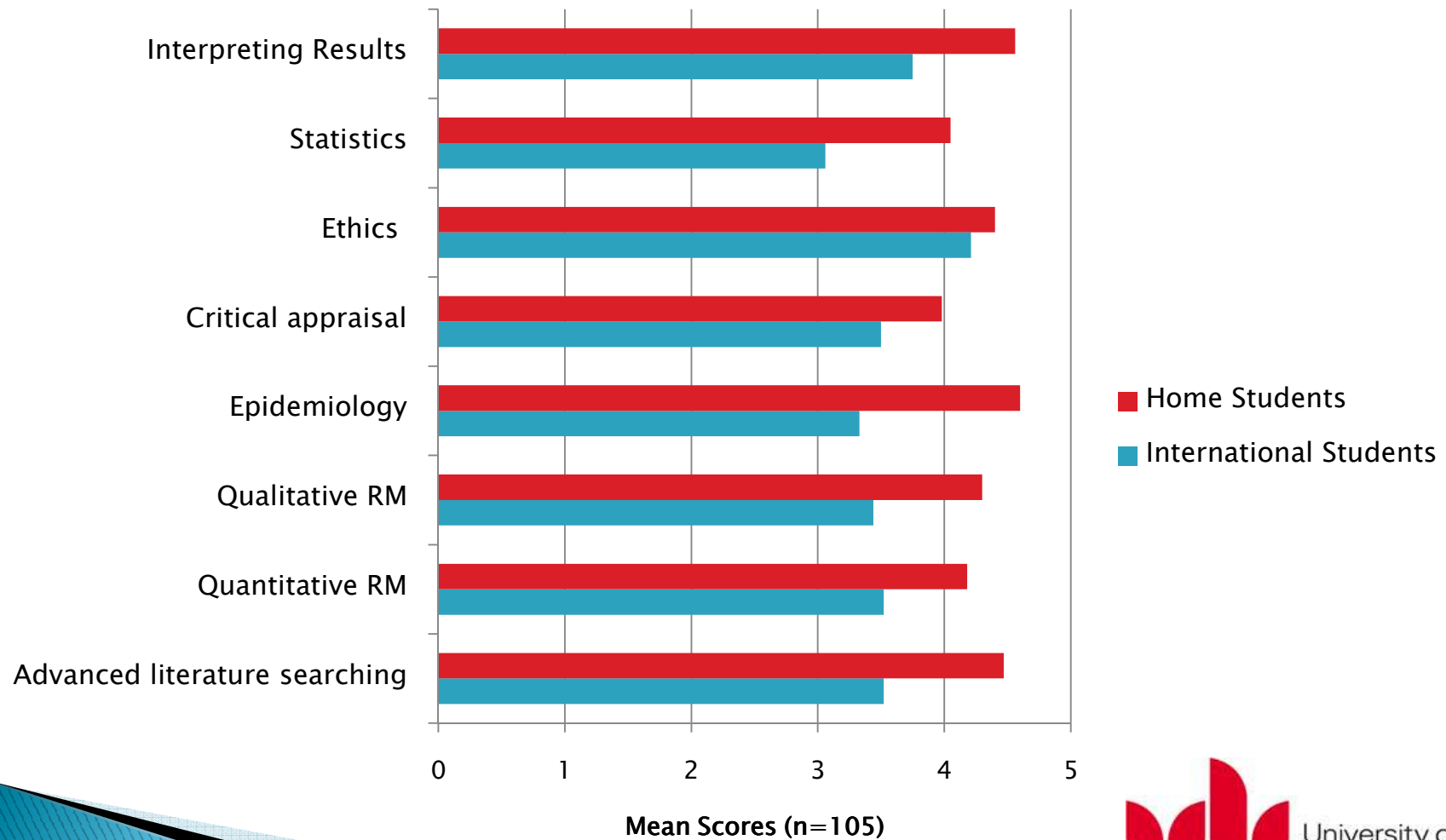
Mean Ratings of Student Perception of Research Skills on Entry to Course

▸ International students perceive themselves to be less confident with <u>**all**</u> the skills than the home students

Biggest differences in confidence were found with
- epidemiology (1.27, df 103, p, 0.010*),
- statistics (0.990, df 103, p, 0.025*)
- advanced literature searching (0.953, df 103, p, 0.0244*)

* none reached statistical significance

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Outcome measures:

Mean scores for RM assessment and dissertation were calculated

- Mean score for RM -

  ◦ international students = 8.53 (SD 3.05, n=77)

  ◦ home students = 9.92 (SD 2.8, n=86)

- Mean score for Dissertation (n=103)

  ◦ international students = 10.61

  ◦ home students = 10.31

- 2 way ANOVA with repeated measures shows that over time there was a significant improvement of grades from the early RM assessment to the final dissertation (F=23.12, df1,101, p<0.001)

- significant interaction shows that the improvement of grades from RM submission to dissertation submission is seen in the overseas cohort

- the between groups effects from the repeated measures ANOVA demonstrate no significant difference between overseas and home students on the combined average of the RM and dissertation scores
- (F1.30, df 1,1001, p,0 .25)

Discussion:

- We perceived that a significant number of our international students were entering the course without the underpinning knowledge base or experience of research methods
- On entry international students perceived themselves to be less confident with all research skills

Discussion (cont.)

▸ Perception that international students are not achieving as well partially supported by early assessment mean scores – although statistically not significant

▸ However, by the end of the course mean dissertation scores were slightly higher in the international student group – again not significant
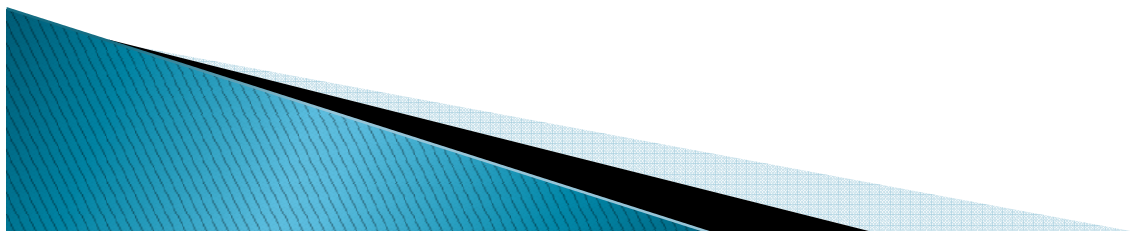
Key findings:

▶ Significant interaction with assessment scores demonstrating a significant improvement in international student grades over time.

But what does this mean?

Not straight forward!

Many things may impact on grades

▸ International students limited to number of hours they can work - ? More time to concentrate on study but lack necessary skills

▸ Many home students work full time so time management & not lack of skills may impact on their grades

Further investigation required

Implications for PH Team

- To develop areas students perceive as being particularly challenging that have been identified as not being sufficiently addressed in the curriculum
- Such as:
  - Statistics / data analysis
  - Interpretation of data
  - Critical thinking

- Olcott (2010) suggests: "poor fundamentals equals poor results"

- It is vital we rectify do not deliver 'poor fundamentals'

- AR cycle will need to be repeated & data gathering tools refined to allow new ideas to be implemented & evaluated

Implications for our Institution

▸ Analysis suggests qualifications on entry are not necessarily an indicator of outcome

▸ Is where they were educated & type of degree undertaken more important?
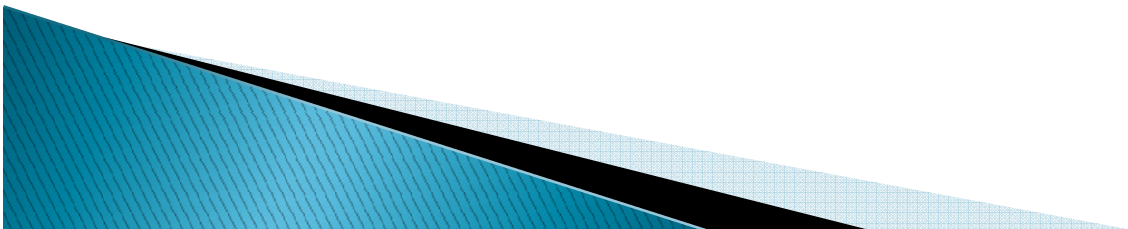
Thank you for listening…

Any questions?