

Research Competence and Skills: Techniques for Improving the Quality of the Undergraduate Dissertation

National Academy for the Integration of Research & Teaching
& Learning
Bologna Symposium – Integrating Generic Competences in
the Curriculum
UCC 30th September 2009

Dr Kay Mac Keogh DCU kay.mackeogh@dcu.ie

Dr Proinnsias Breathnach NUIM
proinnsias.breathnach@nuim.ie

Outline...

- Context: 'The shift to learning outcomes' and the focus on generic competences including research
- Advantages/Challenges of the undergraduate research project
- Online pedagogical techniques to support peer, group & collaborative supervision
- Implications...

Research: Irish National Framework of Qualifications – Level 8 Award Descriptors

- Knowhow & Skill – range:
...**skills & tools to conduct closely guided research**...
- Knowhow & Skill – selectivity:
appropriate judgement in...complex **planning, design, technical, management functions**....
- Competence – context: use **advanced skills to conduct research**, or advanced technical or professional activity, accepting accountability for all related decision making; transfer and **apply diagnostic and creative skills** in a range of contexts
- Learning to learn – learn to act in variable and unfamiliar learning contexts; learn to **manage learning tasks independently, professionally, ethically**

Advantages of Developing Undergraduate Research Competence

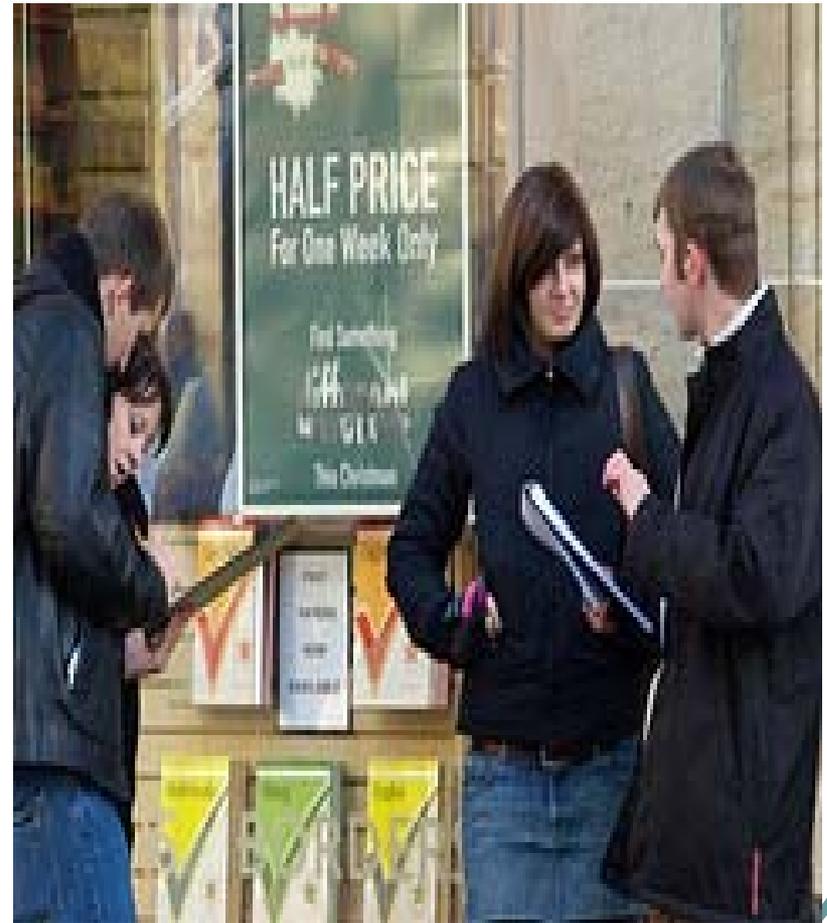
- Consolidates student **understanding** of the discipline
- Helps develop **deeper approach** to learning
- Demonstrates capacity as an **independent & autonomous** learner
- Develops **transferable skills**: problem definition & solving, project management, stats & research skills, analytical, evaluative, synthetic skills etc. especially for those who don't continue to postgraduate
- Demonstrates potential & prepares for **postgraduate** research
- A requirement for some **professional** bodies
- Provides a sense of **achievement**

Challenges to Final Year Undergraduate Research

- Energy directed to Fourth Level research & doubling PhDs – e.g. GREPS funded by PRTL/IRCHSS/IRCSET
- Declining emphasis on research training at undergraduate level:
 - Large numbers in final years – difficult to provide one to one supervision
 - How to develop/embed research skills?
 - Ethical considerations – over-researched groups; health, safety & insurance; police checks etc
 - Plagiarism – how do we know it's their work?
- Need to develop techniques and systems to cope with these issues without compromising quality or place additional workload on staff

NUI Maynooth Geography – Undergraduate Research Projects

- Over 200 students in 3rd year
- Groups of 20 in supervision groups
- Semester 1 skills workshops
- Semester 2 research project
- Minimal supervision possible
- Concerns about quality, ethics, skills



Pilot Project – NUIM and DCU Collaboration

- Apply pedagogical techniques developed for Oscail Distance Education BA research modules
- Develop blended format and assess feasibility for on-campus students
- One pilot group (all volunteers) 16 students 2008/9
- Jointly supervised



NUI MAYNOOTH
Ollscoil na hÉireann Má Nuad



Undergraduate Geography Research Projects – Review of Practice

- Different **terminology**: dissertation, thesis, projects
- **Reading lists**: where provided, mostly related to research skills; practice varies about the extent to which staff provide topic based readings
- Project **topic**: widely varied practice ranging from free choice to allocated topics; generally related to staff interests
- **Ethical approval**: practice varies from no supervision to use of Ethics Committees to review all proposals
- **Sign off** procedures: required in some universities, not in others
- Review of **literature**: varying degree of guidelines
- **Length**: 10k words generally in UK; range from 3000-10000 in Irish universities
- **Binding**: some universities require hard bound, some don't specify
- Interim deadlines: practice varies
- Online **support**: generally limited
- **Supervision**: ranging from no meetings to weekly meetings; number of students anything from 1:1 to 1:20+
- **Marking** arrangements: some marked by one, some double marked

Graduates' Experience of Research NUIM

- Main problem for graduates had been **lack of support** at the start in terms of choosing topic, identifying research question, methodology.
- Clash in **expectations** of level of supervision and reality
- Variations in level of **support**: some met supervisors once or twice, some not at all
- Lack of **feedback, direction**, set requirements, caused concern
- Students turned to **others for help**: family, friends
- Dislike that all marks awarded to one **report**
- Welcomed the idea of **collaboration**, although concerned about possible difficulties
- Welcomed the prospect of using **Moodle** (reaching supervisors during working hours a problem for some)

Oscail Approach to Research Skills & Supervision

- **Research skills** training in parallel with undergraduate dissertation process (building on work in previous modules, or introducing new skills)
- **Limited face to face** sessions – only where necessary (e.g. stats skills, oral presentations etc)
- Draw on **collective knowledge base** of students – tutor/supervisor then ‘scaffolds’ student learning where there are gaps
- All discussion on research in the **open forum** to enable students to learn from each other, avoid narrow focus on their own research topic/methodologies.
- Break up process into **stages**

Stages in Research Projects

- **Working title** – student posts working title on Moodle; general discussion for 2 weeks
- **Research outline** – post 2-300 word outline on Moodle; reviewed by 2 other students who discuss feasibility, relevance, additional sources etc
- **Research proposal & literature review** – feedback from supervisor/students
- **Research Approval Form** (no data to be collected before clearance):
 - Aims; methodology/design; instruments (questionnaire etc); participants – how recruited; risk assessment; method of obtaining informed consent; plain english statement; briefing/debriefing process; dissemination of results; confidentiality/anonymity protection; security/storage/disposal of data.
- Ongoing discussion with supervisor/fellow students in dedicated **Moodle** threads
- One **draft** (only) submitted to supervisor for comment
- **Slide presentation** online and/or at oral presentation
- Ongoing **reflective diary**
- Submission of final dissertation (10,000 words)

NUIM Geography Semester 1 – Structure & Tasks

- **Weekly skills workshops**

(face to face)

- Research planning
- SPSS
- Survey construction
- Ethics
- Literature Review
- Writing Skills

- **Online Moodle Course**

- Discussion Forums
- Resources – readings etc
- Glossary

- **Tasks & Assessment**

- Weekly contributions to discussion forums (15%)
- Research Proposal (5%)
- Research Proposal Peer Critiques (15%)
- Literature Review (40%)
- Research action plan (15%)
- Reflective evaluation (10%)
- Ethics Approval Form (not marked)

Module Handbook:

Detailed guidelines, outcomes & outputs, module schedule, assessment tasks, Criteria for assessment, Submission procedures.

7 Week 6 - Thursday November 6
Class Topic: Pilot Survey Analysis: Data Preparation
Resources/Documents:
Data Preparation Handout
Revised Codebook

8 Week 7 - Thursday November 13
Class Topic: Analysing Pilot Survey
Resources/Documents:
SPSS Getting Started - Guide to Inputting, Coding & Tr
Data Analysis Guidelines
Revised Datafile

9 Week 8 - Thursday November 20
Class Topic: Pilot Survey Review
Discussion Forums
Pilot Survey Analysis Forum
Readings:
How to Design a Questionnaire Wai-Ching Leung, U of East Anglia

10 Week 9 - Thursday November 27
Class Topic: Research Planning & Literature Review
Literature Search Exercise Guidelines
Discussion Forums
Task B: Research Proposal Forum - Task C: Post Research Proposal by 27 November; Appraisals Due 5 December
Readings:
Developing a Research Proposal Unit
Unit on Writing a Literature Review
Searching for Academic Literature
Guide to Reading Scholarly Sources
LITERATURE REVIEW AND RESEARCH PLAN GUIDELINES
Literature Review Preparation Guidelines
Research Action Plan Guidelines
Developing a Research Action Plan

11 Week 10 - Thursday December 4
Class Topic: Research Ethics
Discussion Forums
Research Ethics Forum
Task G: Ethics Approval Form -
Readings:
Research Ethics Unit
University of Hull Guidelines on Ethics in Geographical Research
Articles on Geographical Research Ethics (to read before 27th December)

Screen Shot from Moodle Semester 1

Research Proposal Forum
Student Posts Research Outline
Critiqued by at least two
other students

Research Proposals

Ethics

Weekly topics
Structure

Critique: "Your proposal is quite short so I can only go on the information given, I think your title is good and certainly grabs the attention of the reader. ...My concerns are that there seems to be **no geographical content**. Perhaps you intend to examine the differences in your results between rural or urban areas or intend to look at the spaces that people use when chatting online be it at home, cyber cafes etc...but from your proposal I see no geographical content."

telecommunications policy, volume 23, issue 3, June 2001, pages 231-247
Sharon Strover link: [http://dx.doi.org/10.1016/S0308-5961\(01\)00008-8](http://dx.doi.org/10.1016/S0308-5961(01)00008-8)

Mark Griffiths. CyberPsychology & Behavior, April 1, 2000, 3(2): 211-218. doi:10.1089/109493100016607.

thought this might be interesting to read to give you a few ideas: Michael Rice: Online addiction: 11/17/2005, Vol. 48 Issue 46, p32-33 in the databases section and then into search premier (1st option)

Internet addiction disorder: an Italian study: CyberPsychology & Behavior: Apr2007, Vol. 10 Issue 2, p170-175, 6p, 1 chart. link <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=25963765&site=ehost-live>

Outcomes of Semester 1

- Students received detailed feedback from peers and supervisor on research proposal and literature review
- Ethics issues addressed
- Students expressed most satisfaction (av 1.75) with peer critiques, teaching methods & support & feedback from fellow students (1.87)
- Students reported an increase in skills in SPSS, data analysis, ethical awareness, library databases, critical evaluation skills, questionnaire design, review of literature, Moodle
- Students reported that online discussions & deadlines helped to keep them on track
- Marks were on average 5% higher than other groups

Semester 2 – The Research Project

Learning Outcomes – Students will:

- Carry out a well-designed research study
- Analyse and report succinctly on their findings
- Work effectively as a **team member**, using Moodle as a vehicle for providing mutual assistance and support to fellow students in planning and carrying out their research projects
- **Function effectively as an independent and self-directed learner**
- Critically assess and reflect on their own work.
- Communicate their results to a wider audience

Assessment Tasks:

- Contributions to discussion forums (5%)
- Project report (80%)
- Powerpoint presentation (10%)
- Reflective evaluation (5%)

Student Support:

- All interaction via Moodle
- Supervisory discussion thread for each student
- All queries answered in Moodle either by students or supervisor
- No face to face sessions

Supervisory Discussion Threads

- Discussion thread set up for each student
- All questions, discussion about the project takes place in the same thread
- Students commented on each others' questionnaires
- Students provided suggestions on how to use SPSS to analyse data
- Students gave progress reports
- Supervisors checked in, and gave occasional responses & directions

“My **participants** for my survey were workers from a call centre in Co.Cork. I had connections with a supervisor in that call centre and I asked them for **permission** to survey 80 - 100 out of the 600 workers. After requesting permission, I **got clearance from the HR department to conduct the survey**. I posted 100 copies of the survey to the call centre and the supervisor agreed to distribute the survey among the workers. I have now nearly finished the **coding the surveys**. Seeing that I have a number of ranking questions in my survey, it is taking longer than I expected to code and analyse my results. Should we be adding **additional readings we have done to our literature review** or is our literature reviews to stay the same as our previously submitted ones in Semester 1? “

Extract from student posting..

Semester 2 Outcomes

- All students submitted on time
- Quality of reports has improved on previous years
- Satisfaction from students about group & online support “*not only did it help me but I think I helped others; not much communication can take place in class but at least online we could talk freely at any time*”
- Students commented that Moodle was an advantage for the group “*From talking to other students [in other groups] I am convinced I made the correct decision in choosing the course*”
- Students appreciated the link between semesters and felt better prepared to carry out their project
- Students noted that **technical skills had improved**: one student attributed acceptance onto a post graduate teaching course to experience with ICT in learning
- Mainstreaming approach

Summary...conclusions

- Online pedagogical support and peer and collaborative supervision has proved successful for adult students taking distance education programmes
- The blended approach with an on-campus student group demonstrates that the method can be adapted successfully
- Full-time student characteristics & background different: good at Powerpoint, less skilled in writing
- Need to review overall content of degree programme e.g. students taking sociology as a second subject appear to be better prepared than those taking languages
- The introduction of online support has reduced the isolation experienced by students & improved the learning outcomes without creating an excessive workload on the supervisor.

Further Implications

- Need to be very explicit in guidelines using a detailed module handbook (see Harrison & Whalley 2008).
- Feedback must be timely and appropriate – it can come from peers or supervisor
- Focus on pedagogical design rather than technology
- Outcomes must be clearly identified and assessed through ‘constructive alignment’ between teaching methods and assessment
- Research skills need to be built into the curriculum at all stages – not left to degree dissertation
- Is there a need to develop a coordinated approach to undergraduate research, UREP/GREP?

Thank You....Go raibh maith agaibh

Any questions?



Contacts

- kay.mackeogh@dcu.ie
- Proinnsias.breathnach@nuim.ie