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Leeds
Nov 2005

Slide 1

Betweening How to put the “and” between Music and Technology

Challenges and Opportunities for Music Technology Education

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Introduction: “Betweening” – the questions

- There is substantial complexity involved in providing genuinely interdisciplinary degrees
- ? how do existing educational frameworks allow interdisciplinary degrees, such as music technology, to be taught
- in general degree curricula of multidisciplinary nature tend to be given as if they fit seamlessly into our traditional, mono-discipline-based academic structure
- ? How can we face the interdisciplinary challenge of “betweening”, existing on all levels of academic endeavour: from teaching and learning to administration and research
- a case study – “Music Technology”



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 II - The Degrees V - ? VIII - Glasgow: a case study
 III - The fourth Generation VI - Interdisciplinarity is hard IX - Conclusion



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Introduction: Aim and Objectives

- “Betweening” – funded by Palatine. Nov 2005 – May 2007.
- Aim of “Betweening” will be
 - to acquire quantitative and qualitative data
- ... in order in the long term to be able to
 - to compare different approaches, (internationally, institutionally, departmentally, disciplinary, etc)
 - raise an awareness of different existing models,
 - point towards common models that define a norm or flag up exceptions,
 - and discuss examples that indicate aspects of excellence

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Introduction: First Studies and Publications

- First publications have given rise to discussions around different models and different supporting academic frameworks
- This presentation will present these and specifically compare the placement of music technology in Higher Education between Britain and Germany.
- Publications
 - Carola Boehm, Music Technology in Higher Education, in: The Idea of Education, ed. by Tom Claes Inter-Disciplinary Press, Vol. 12. 2005. ISBN1-904710-11-5.
 - Carola Boehm, Music Technology: Opportunities and Challenges, In: Proceedings of the International Computer Music Conference, ICMA, ICMC 2002, Sweden. ISBN 91-89262-04-2
 - Carola Boehm. Between Technology and Creativity, Challenges and Opportunities for Music Technology in Higher Education. in: CIRCUS 2001 - New Synergies in Digital Creativity. Proceedings of the Conference for Content Integrated Research in Creative User Systems.(ed. by Carola Boehm, David Garcia and Hubertien Schuter). University of Glasgow 2001. ISBN 0 8 526 1746 1. p.55-72

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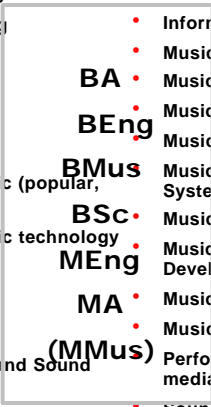
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The Degrees: what's in a name

- Arts and Media Informatics/Music
- Audio and Music Technology
- Audio and Video Engineering
- Audio Electronics
- Audio Engineering
- Audio Technology
- Computational Musicology
- Computer Science with Music (popular, digital, etc)
- Computer systems and music technology
- Computing and Music
- Computing with Music
- Creative Music Technology
- Creative Music Technology and Sound Recording
- Digital Music
- Electronic and Audio Engineering
- Electronic music
- Electronics with Music
- Information systems/music
- Information technology and multimedia
- Music Composition and Technology
- Music Informatics
- Music Multimedia and Electronics
- Music Technology and Innovation
- Music Technology and/or with Audio Systems design
- Music Technology
- Music Technology Software Development
- Music Technology with Popular Music
- Music with Computing
- Performance based Arts with digital media/music technology
- Sound Design Technology
- Sound Engineering
- Sound Engineering and Production



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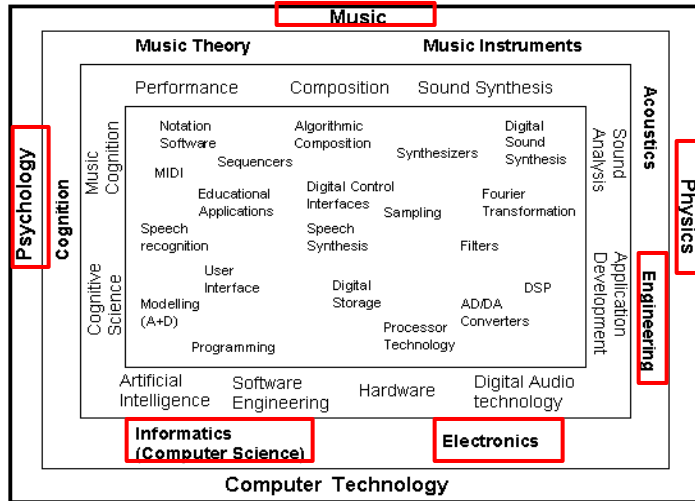
A bit of History: "Music Technologists - The Fourth Generation"

- **First Generation 50s + 60s: The Experimenters**
 - Pierre Schaeffer, Karlheinz Stockhausen, Herbert Eimert, John Cage, Robert Moog, Donald Buchla, Max Mathews, Lejaren Hiller, etc
- **Second generation 70s + 80s: Building on a basis**
 - Pierre Boulez, J.C. Risset, Barry Vercoe, Trevor Wishart, Miller Puckett, Gottfried Michael Koenig, John Chowning, Morton Subotnik, etc
- **Third Generation 90s and 00s: Becoming multidisciplinary**
 - Roger Dannenberg, Stephen Travis Pope, Todor Todorov, etc
 - **Third generation: First time a critical mass of individuals who have a background in more than one field, i.e. multidisciplinary**
- **Fourth Generation? The students we teach Music Technology as a (ONE) discipline in itself**

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**A bit of Interdisciplinarity:
Music Technology- Music, Psychology, Physics and Computer Technology ?**



Philipp Ackermann, Computer und Musik, Springer Verlag, New York, Wien 1991

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That's is great
..... so what's the problem???

**This area is not being exploited to its full potential
due to a number of barriers.**

So what
.....who suffers???

**Well, ... students and staff, with it Universities and future
businesses, as well as cultural and creative industries.**

**In a much broader sense, we still haven't learned how to
successfully incorporate interdisciplinarity into our HE.**

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Interdisciplinarity is hard

• Pedagogical Considerations

- Fitting the whole curriculum into 3-4 years
- Unifying Assessment models (grade scales) between units
- Advising students between Units (2 advisers or one?)
- Methodological pedagogical conflicts

• Administration

- Timetabling between departments / faculties / schools / FE-HE units
- Funding Models for staff and facilities involving more units
- Negotiating class sizes between units
- Assessing Teaching and Learning, External Examiners examine what ? Both units, one?
- RAE & QAA and other assessment/evaluation schemes
- Accreditation schemes (IEE)

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Interdisciplinarity is hard

• Staff Development

- Falling between the chairs...
- Isolation of staff from own unit or adjunct units
- Confusion regarding lines of management
- Barriers for pg development
- Lack of supporting/collaborating staff (technical, artistic, etc)
- Confusion over progress mechanisms

• Research

- Falling between the chairs...
- Unclear who the relevant funding bodies are
(EPSRC or AHDS? Sony or Leverhulme? Engineering or Arts?)
- Unclear is the relevance for funding bodies (assessors) themselves
(Epsrc's 49/51 clause; AHRC's ICT inclusion, etc)

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Interdisciplinarity is hard

- **Cultural Barriers (Discipline Culture)**
 - **Misunderstanding/Ignorance/disrespect of different methodologies of teaching or research** (how to present a paper....)
 - **Communication problems** (style is not style is not style; music technology = computational musicology = music informatics = electro-acoustic music?)
 - **Conservatism/Preservationism of older mono-disciplin subjects**
 - **Fear of Trojan Horses**
 - **Philosophical Differences**
- **Conflicting Interests**
 - **Interdisciplinary subjects have two potential vulnerable sides**
 - **Staff tend to be divided between different units**
 - **Existing new potential for conflicts: Ex. acceptance of EComp** (quote LCM "classical Electro-acoustic composition")
 - **How to add value with new interdisciplinary activities in departmental long term strategic plans without compromising needs of more traditional sub-disciplines**

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The trials of Institutional Frameworks Music

- **Music has the added difficulty**
 - **Is in itself not as homogenous as possibly other disciplines**
 - **Incorporates a wide diversity of methodologies and requirements** (performance, composition, history, sociology, psychology, ethnology, technology)
 - **Different research/practice approaches**
 - **Different requirements** (class sizes, experience/knowledge acquisition, etc)
- **This diversity allows critics (for whatever reason) to use and come from different angles of argument**
 - More students/income through humanities style courses
 - more practise based courses for composition/per performance
 - Composition/performance = "learning by doing" activity or is the goal
 - ==> **Mergers and closures in an economically tight environment**

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The trials of Institutional Frameworks Music in the Humanities / Arts

- **Music and Music Technology**
 - Both are practice based disciplines (in Britain)
 - Pedagogical methodologies tend to differ from traditional Arts/Humanities
(continual assessment, learning by doing, etc)
 - More in common with vocational disciplines and sciences
(like design, practical arts, also engineering and computer science with its lab based approaches to learning (project based work, collaborative work, etc)).
- **Practice based activities**
 - composition and performance have finally been accepted as activities of research (since RAE2001) and with it electro-acoustic activities.....
(... but not always music technological activities)
 - BUT performance and composition is not always understood as a “learning by doing” activity
 - this can make it difficult to justify these “seemingly” costly activities in degree curricula

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The trials of Institutional Frameworks Music Technology and Music

- **Ö** Music Technology and its practice based elements are well understood within Music
(....but not within Arts/Humanities)
- **But:** Music Technology Research has methodologies more similar with the sciences. These include
 - emphasis on team work and collaborative projects (and publications)
 - multi-institutional R&D projects
 - commercialisation aims and industrial collaborations
 - involvement in technology developments with more wide-reaching uses, such as standards development, basic research, long-term research
 - Research can be long term..... Very long term. (Ex. CD-player)
 - ... feeding back into teaching: large team projects, industry relevant assignments, industry placement, etc

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The trials of Institutional Frameworks Separation of Practice and Theory (Germany)

- The “German approach”:
‘Musicology at Universities’ vs ‘Music in Conservatories’
 - Systematic musicology can encompass a large part of Music Technology.

Major and important exceptions:
electro-acoustic composition.
 - More cost-efficient (for universities)

(Not traditional within Britain)
 - Historical and theoretical learning approaches are understood more easily within traditional arts/humanities sectors.
 - Practice based approaches are more understood in a conservatorium/music college setting
 - Although this can have advantages

(producing high calibre musicologist, critics, philosophers, etc)
- major disadvantage simply:
Theory separated from Practice

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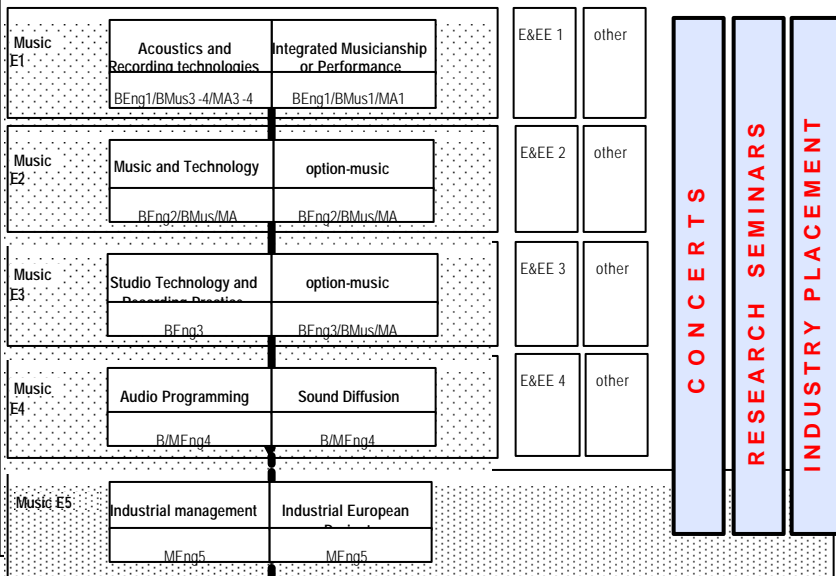
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Glasgow – a Case Study Horizontal-ness and Vertical-ness



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Glasgow – a Case Study Pedagogical Considerations

- **Accreditation - Fitting the whole curriculum into 3-4 years**

- Able to fit all curriculum content into a 4 year course

Music part is almost entirely ignore by the IEE accreditation scheme

- Three year-degrees generally find it difficult getting IEE accreditation

Ex: Total of ca 400 multi-disciplinary degrees round MT by 62 British Universities, only 7 have BEng degrees.

Only 2 (Glasgow/Coventry) have input from Music Departments

University of Brighton (B72)	Audio Electronics (H642)	3FT Hon BEng
University of Central England in Birmingham (C25)	Electronic and Audio Engineering (HJ69)	3FT Hon BEng
Coventry University (C85)	Music Technology (J830)	3FT/4SW Hon BEng
The University of Essex (E70)	Audio Engineering (H603)	3FT Hon BEng
University of Glamorgan (G14)	Sound Engineering (H340)	3FT Hon BEng
University of Glasgow (G28)	Electronics with Music (H6W3)	4FT Hon BEng
University of Glasgow (G28)	Audio and Video Engineering	4FT Hon MEng/BEng
University of York (Y50)	Electronic Engineering with Music Tech Systems (H667)	3FT/4SW Hon BEng
University of York (Y50)	Electronic Engineering with Media Technology (H645)	3FT/4SW Hon BEng
University of York (Y50)	Media Technology (H642)	3FT/4SW Hon BEng

- **Unifying grade scales between units**

Only in 2004 did Glasgow unify grade scales across the university. Before E&EE worked with a 100 point scale, going all the way up to 100. Arts used a 100 point scale only ever going up to 75.

Between 2001 – 4 we had a 100 point scale in E&EE and a 20 points scale in Music.

- **Two advisers for BEng + Music Students**

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Glasgow – a Case Study Administration

- **Timetabling**

- Start in June finish in November (2nd month of teaching!) and never stop
- students not turning up to upto a third of some courses!
(We are constantly bending our rules without making this explicit)
- Difficulties with short/fat semester courses. Difficulties with labs in E&EE.

- **Funding Models for staff and facilities involving more units**

- Who pays the upgrade for studios?
Continual tug-of-war who has more say and who has paid more.
- Who pays for which GTAs?
- My position (salaried out of E&EE but located in Music) is fraught with difficulties.
Similar situations occur across and beyond the country

- **Negotiating class sizes between units**

- According to a colleague from another University, one BEng degree does not have the planned Music Department input, as no compromise on class size was able to be decided upon.

(Engineering tends to want larger class sized in the age of falling student numbers, Performance/Compositional heavy Music Depts smaller)

- Glasgow has a quota of 25

- **External Examiners**

What are the Ext Examiners examining?

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Glasgow – a Case Study Staff Development

- **Isolation of staff**
 - We have one technician, one RDO. Technician is isolated, in Engineering there are ca 8 technicians who can collaborate with each other. (RDO is part Humanities part Music)
 - Lecturers in one Unit tend to find it difficult to stay in touch with PG body of other Unit. In Glasgow most MT PhD students are in E&EE (funding available), difficulty for staff placed in Music
 - Unbalanced technical support
- **Confusion regarding lines of management**
 - Promotion Procedure is fraught with difficulties, as boards can have huge conflicts of interests

(I.e. Unit A decides, Unit B pays;
Unit A can say something about progress and management, Unit B pays)
- **Barriers for pg development**
 - Engineering has a different methodology and different culture for funding doctorates
 - Staff progress tends to be evaluated by also number of pg students. **This can be difficult for interdisciplinary staff.**

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Glasgow – a Case Study Staff Development

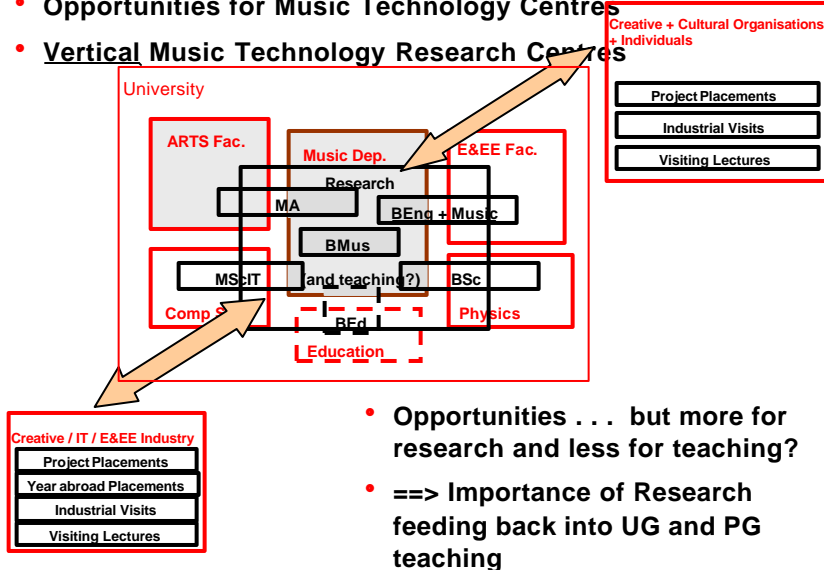
- **Lack of supporting/collaborating staff (technical, artistic, etc)**
 - Lack of support and critical mass limits size and type of projects
 - Arts cannot do large developmental projects
- **Research**
 - Ex.: Standing of Standards work
- **Etc**

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Glasgow – a Case Study A possible solution

- Creativity & Technology vs institutionalised frameworks
- Opportunities for Music Technology Centres
- Vertical Music Technology Research Centres



- Opportunities . . . but more for research and less for teaching?
- ==> Importance of Research feeding back into UG and PG teaching

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Conclusion

- Putting the “and” between “Music and Technology” is hard
- Institutional Frameworks still offer a challenge for teaching of interdisciplinary disciplines such as music technology
- **“Mono-disciplinic Barriers”**
Pedagogical Barriers, Administrative Barriers, Staff Development Barriers, Research Barriers, Cultural Barriers, Financial Barriers, Accreditation Barriers, Conflicting Interests
- Over the next two years “Betweening” will hopefully acquire enough quantitative and qualitative data in order to have a informed discussion about the facilitation of providing interdisciplinary music technology degrees by providing
 - a comparison of different approaches,
 - an awareness of different existing models,
 - presenting models that define a norm or flag up exceptions,
 - discussing examples that indicate aspects of excellence

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The End

If you want to stay in touch with the project “Betweening” or contribute to our upcoming questionnaire send me and email or visit our website at

<http://www.music.gla.ac.uk/CMT/projects/betweening>

carola@music.gla.ac.uk

Thank you

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