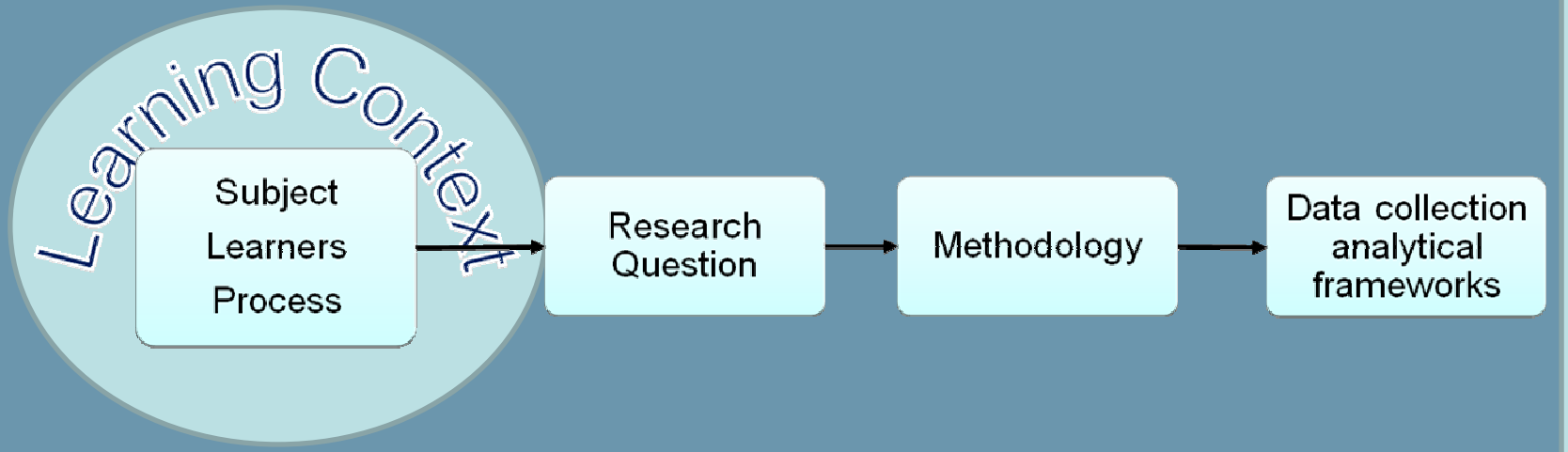
University of Salford
A Greater Manchester University

Communication in a Problem Based Learning tutorial group: a longitudinal observational case study

Balancing social and cognitive goals

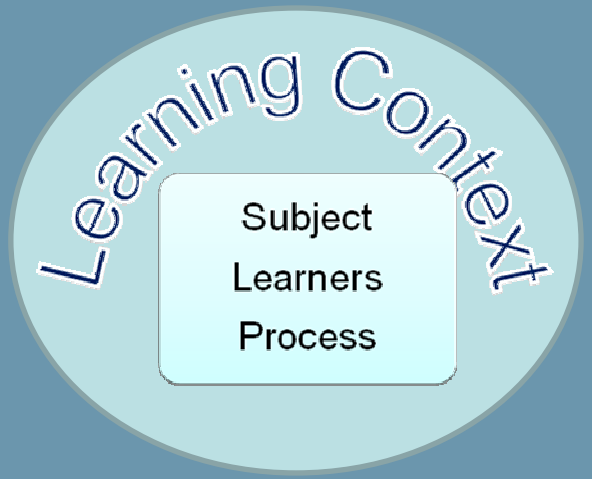
Leslie Robinson
Senior Lecturer, Diagnostic Radiography
University of Salford

University of Salford
A Greater Manchester University



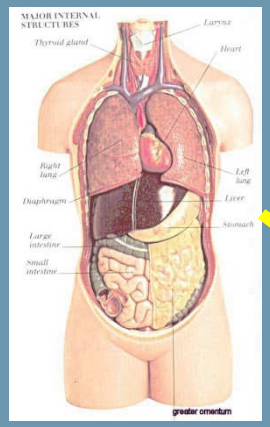
Preliminary Results

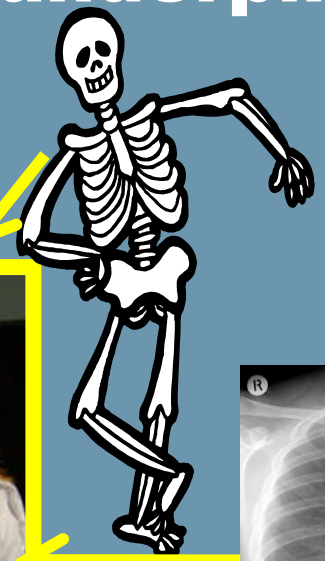
University of Salford
A Greater Manchester University

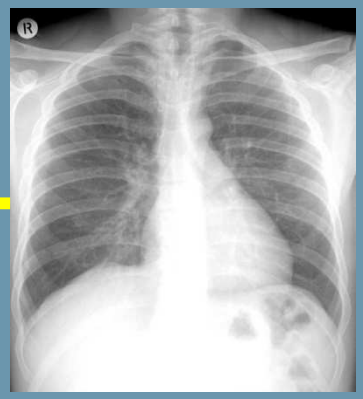


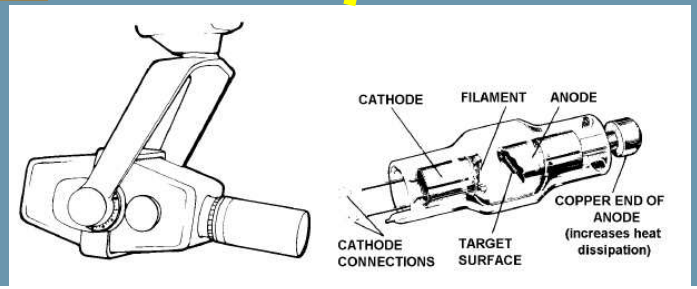
University of Salford
A Greater Manchester University

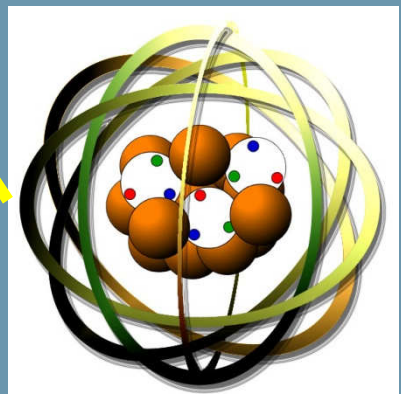
Context subject
Diagnostic Radiography: underpinning knowledge











University of Salford
A Greater Manchester University

Learners

Curriculum structure	*Weekly three-hour PBL tutorials, over two academic semesters, under the guidance of a facilitator*

University of Salford
A Greater Manchester University

The process – Problem Based Learning

Day 1

Presentation of problem

Group brainstorm

Set learning objectives for independent study

Days 2-6

Independent study, lectures and tutorials

Day 7

Social constructed learning interaction

Sharing and synthesising learning

University of Salford
A Greater Manchester University

PBL – Social demands

- **PBL distinguished** by[1]

a) Problem **prior to** the learning (to provide impetus for subsequent learning)

- Requires students to
  - Admit ignorance in identifying gaps in their knowledge

b) (Following a period of individual learning) construction of new knowledge through a synthesis of their individual effort.

- Requires students to
  - Verbalise understandings
  - Reveal misunderstandings
  - Engage in discussion
  - Explain concepts
  - Contradict/be critical of others' input

1.Barrows, H. S. (1986).

University of Salford
A Greater Manchester University

Threat to face and group rapport

- These PBL learning interactions can be **Face Threatening** and tricky to negotiate

University of Salford
A Greater Manchester University

Notion of Face[1]

- Face is the positive social value a person claims for themselves based on two wants
  - Self esteem (to be liked/admired)
  - Autonomy (not to be imposed upon)

1 Goffman E (1967) in Miller and Fox (2004)

University of Salford
A Greater Manchester University

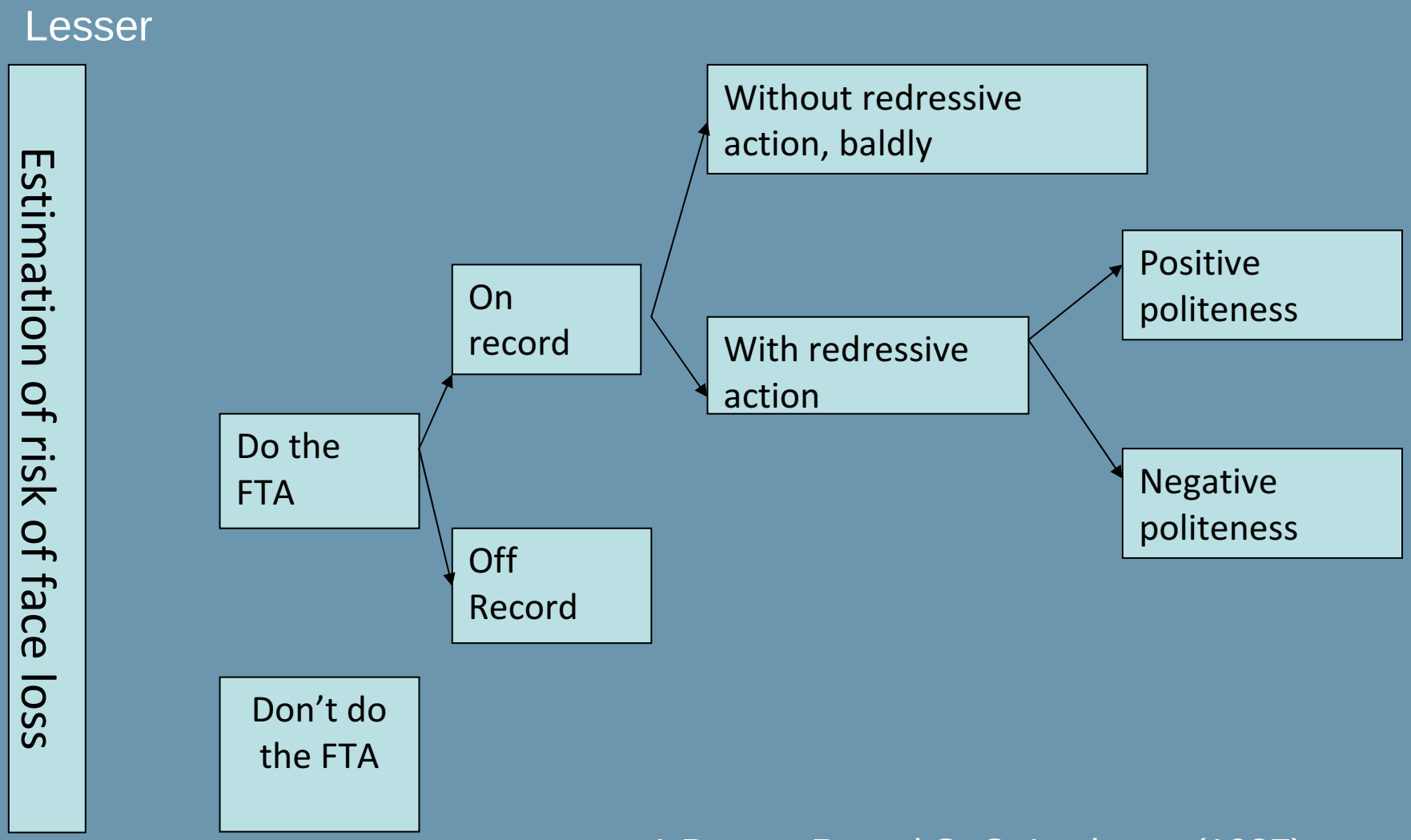
Face Threatening Acts and Face Work (Politeness Principles[1])

- FTAs are interactions which threaten these basic wants
- Face work and social interaction strategies limit the impact on own and other's face

1 Brown, P. and S. C. Levinson (1987).

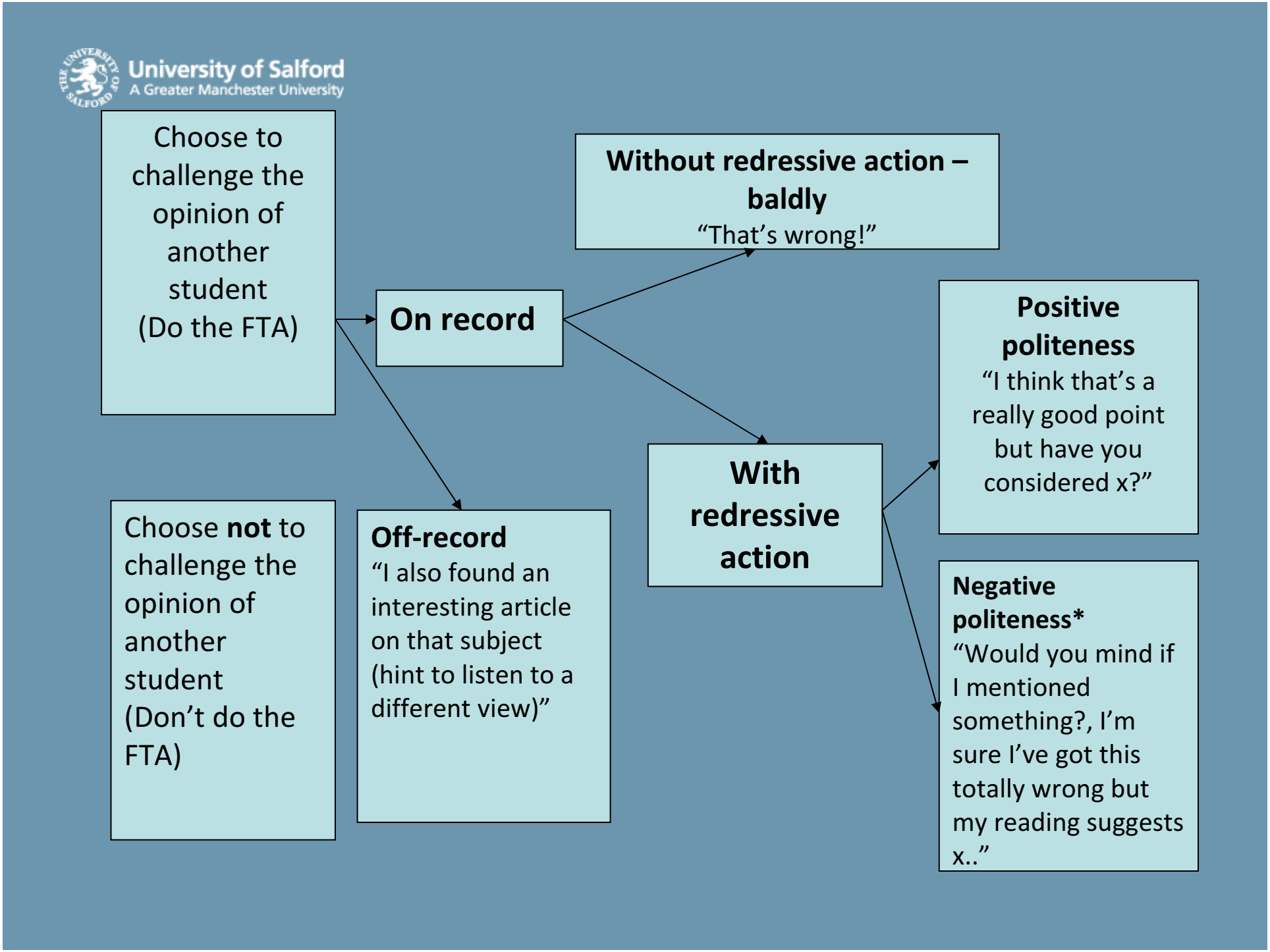
University of Salford
A Greater Manchester University

Strategies for doing FTAs[1]



1 Brown, P. and S. C. Levinson (1987).

University of Salford
A Greater Manchester University



University of Salford
A Greater Manchester University

Managing Rapport in diverse groups

- FTAs are more difficult to manage when
  - **Social distance** is large
  - Asymmetrical **power** relationship between collaborators is large
  - The **weight** of the imposition is great
- Strategies to **manage rapport** can differ based on historical and cultural background of those involved in interactions Grice, H. P. (1975), Leech, G. (1980), Brown, P. and S. C. Levinson (1987), Spencer-Oatey, H. (2008).

University of Salford
A Greater Manchester University

Diversity in student cohorts

University of Salford
A Greater Manchester University

Theoretical questions

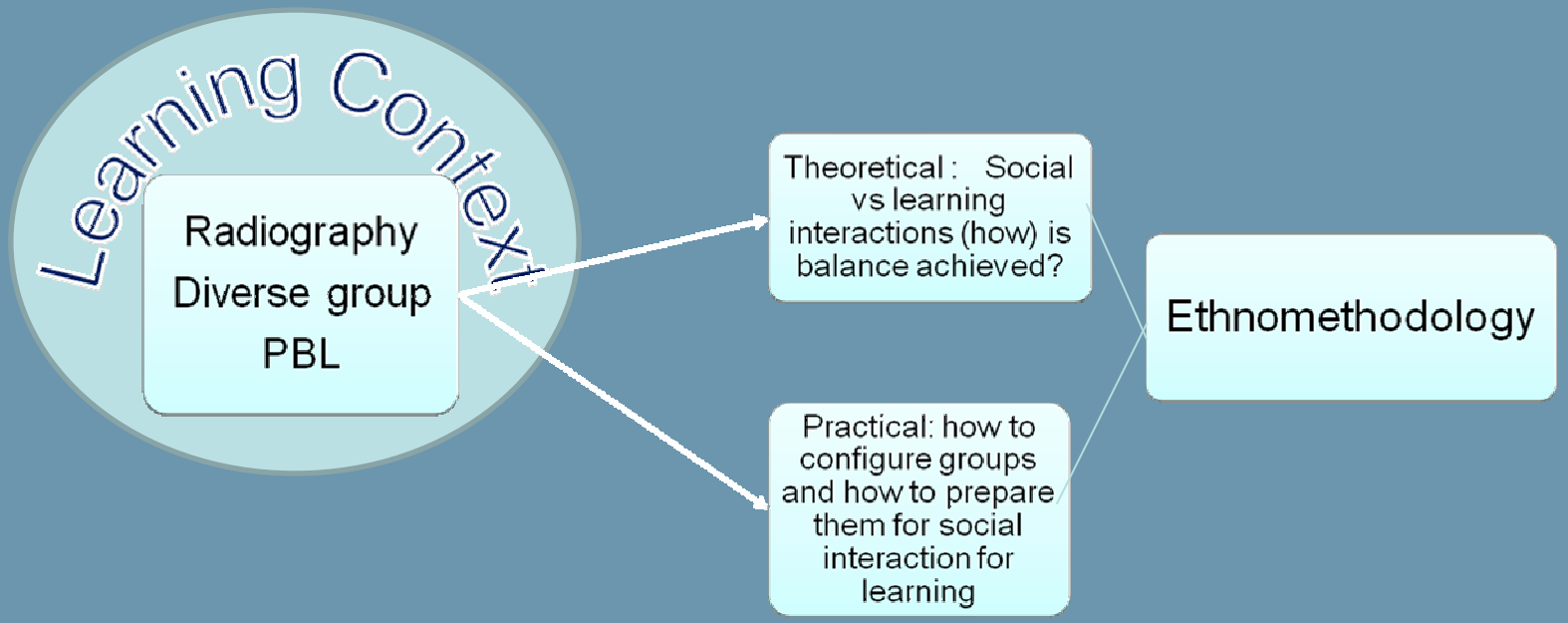
1. Do adult students **diverse** in background engage in **critical learning** transactions during collaborative learning (in the situated context of this study) or are the **social skills required to manage conflict too tricky** to negotiate?
2. How does the communication ethos being established by the group help or hinder individual students?

University of Salford
A Greater Manchester University

Practical questions

1. How should PBL groups be configured, especially in the first year?
2. What additional skills do we need to give to students to support them through the social and cognitive requirements for PBL?

University of Salford
A Greater Manchester University



University of Salford
A Greater Manchester University

Methodology

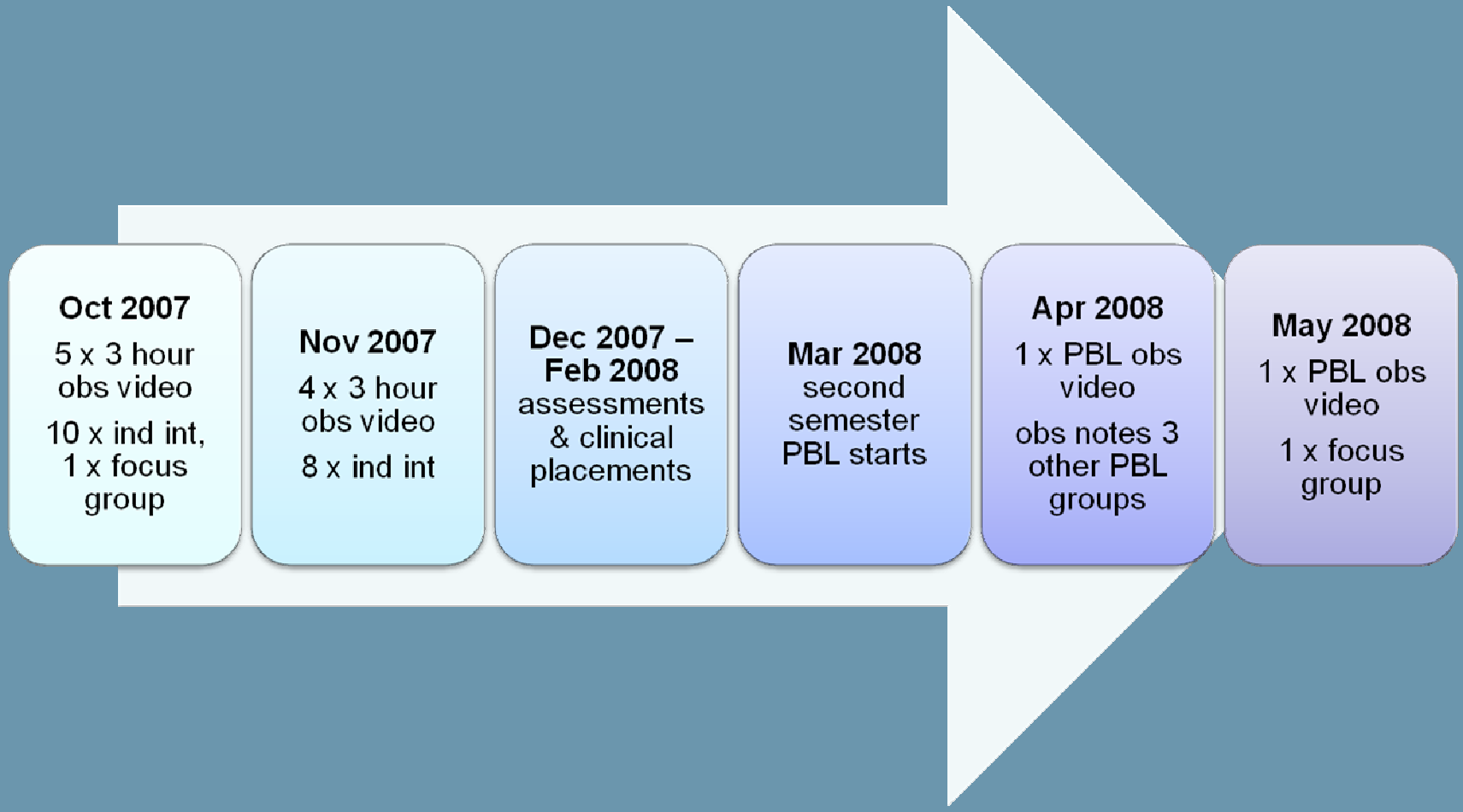
Ethnomethodology and conversation analysis

"The ways in which social realities and relationships are constituted through persons talk in interaction"

(Sacks et al 1974)

University of Salford
A Greater Manchester University

Data collection in the context of the groups' academic year



University of Salford
A Greater Manchester University

Analysis – 3 strands

What do individuals and the group talk about?

1. Discourse analysis interviews and PBL sessions

How do they talk about these things?

2. Conversation analysis of PBL social interactions

How do the social interactions impact on the quality of learning interactions?

3. Analysis of cognitive behaviours in PBL

University of Salford
A Greater Manchester University

Coding schemes (Nvivo 8)

1. Discourse analysis

   Free nodes grounded in data (*researcher coding*)

2. Conversation analysis

   Pre-determined based on face work and politeness[1] (*analyst coding*)

3. Cognitive behaviours[2,3]

   Grounded but influenced by taxonomies described in literature e.g. Bloom (*researcher/analyst coding*)

1 Spencer-Oatey, H (2008), 2 Bloom et al (1956), 3 Barrows 1986

University of Salford
A Greater Manchester University

Some results from the first PBL Session and interviews

University of Salford
A Greater Manchester University

Differential experiences based on diversity

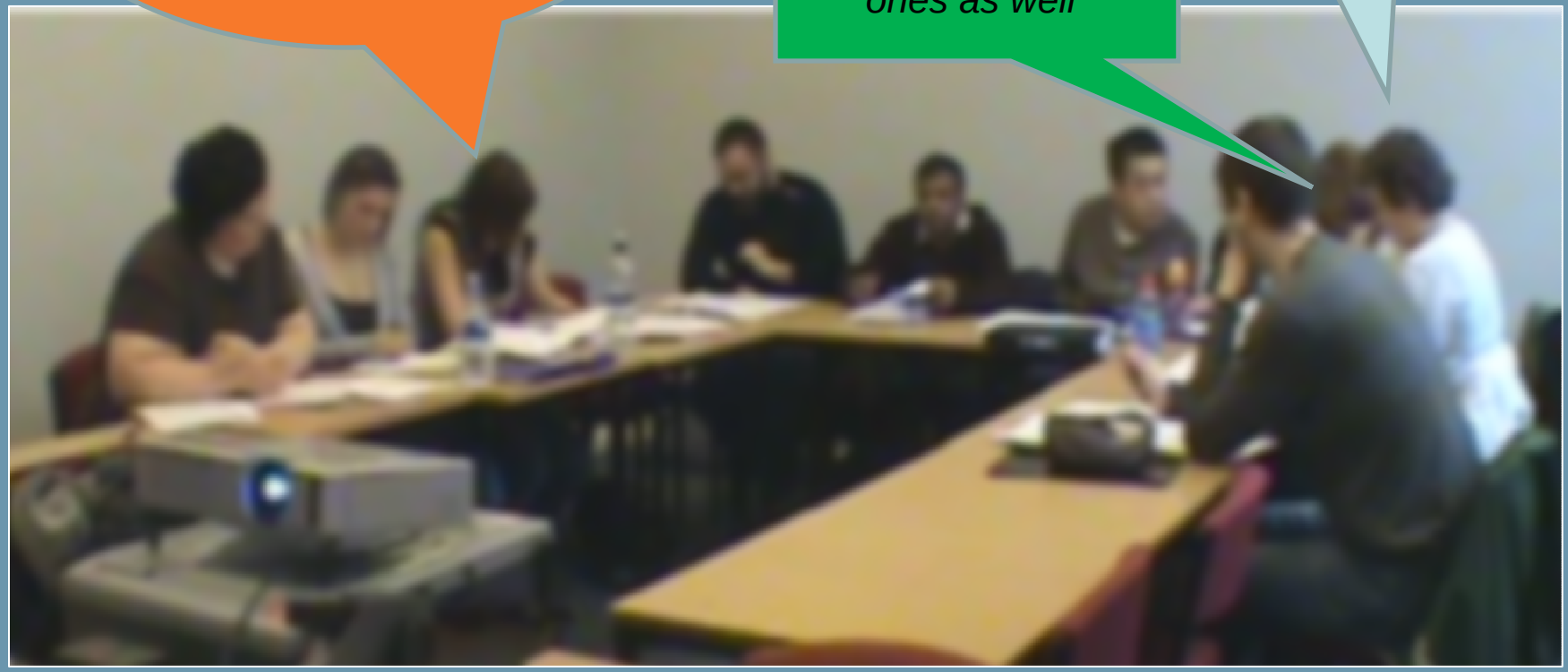
Age was the only differential talked about by the group

"it's just like they have different views and experiences

… I'll say what I think and I don't feel like I couldn't have to hold back or anything."

"but in some ways because they are as young as my kids, I can see where ey're coming from in some ways"

"it shouldn't really make any difference cause it's nice being with the younger ones as well"



Although age is identified it is not perceived to be a problem

Anne *we might need to know what joint it is as well (laughter)*

Emma *well it's a knee joint isn't it (tone down voice)*

Ian *which joint?*

Emma *a knee [[joint]]*

Joyce *[[knee]]*

Ian *definitely a knee joint?*

Joyce *yeah definitely a knee joint*

Anne *is it*

Emma *oh well it could be an elbow then*

Laura *do you think it's strange that it it might be cut off on the side but it's got the other one but it's not on that other image maybe it's because it's [[maybe they only put it on one]] I don't know*

Joyce *[[they may have forgot to put it on the other one]] (0.5) if it's on the same film they only need it put it on one cos it's on the same*

Laura *yeah I was thinking that*

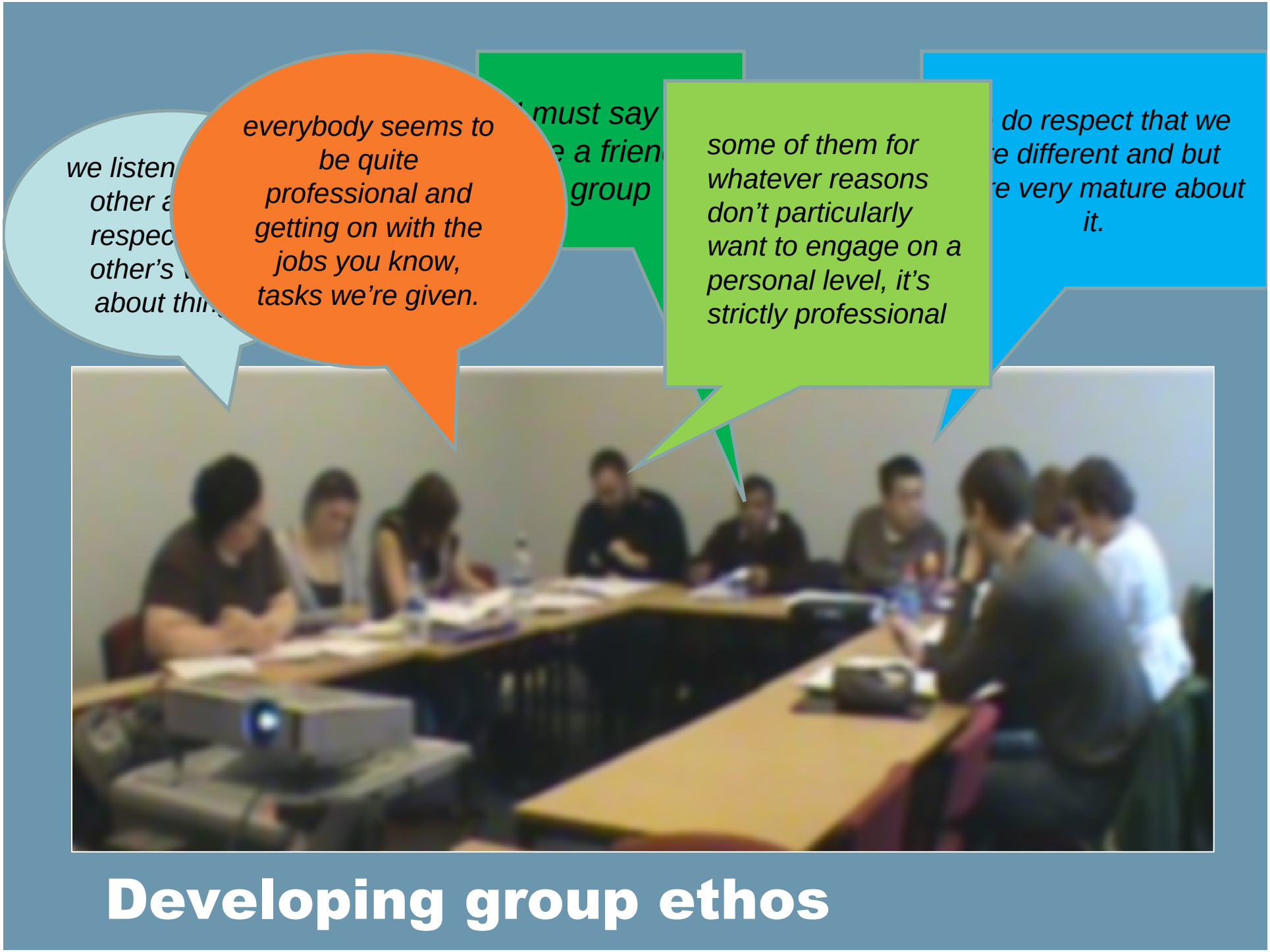
University of Salford
A Greater Manchester University

"The common thing I have is I'm a student like the others so we are all in the same boat. We start together we're doing the same course and all the rest of it. So I feel on sort of on equal footing on those terms with them"

Over-whelming agreement for commonality rather than difference

University of Salford
A Greater Manchester University

Communication style and group ethos



Developing group ethos

University of Salford
A Greater Manchester University

"yeah ok yeah that was good and erm thank you very much I think everybody contributed really well and I think we've had a good discussion and a good feedback session and thank you"

Facilitator influence in establishing a style

University of Salford
A Greater Manchester University

"yeah we've got the opportunity that we're gonna like get to know each other really well so we can can work together and we'll know each other and we're gonna like learn like at the end we're gonna work together so well"

Interdependent style

("Describe PBL team-working skills")

Ian *"erm I've got listening, respect each other's opinions, co-operating, communication (laughs)"*

Harry *"Problem solving"*

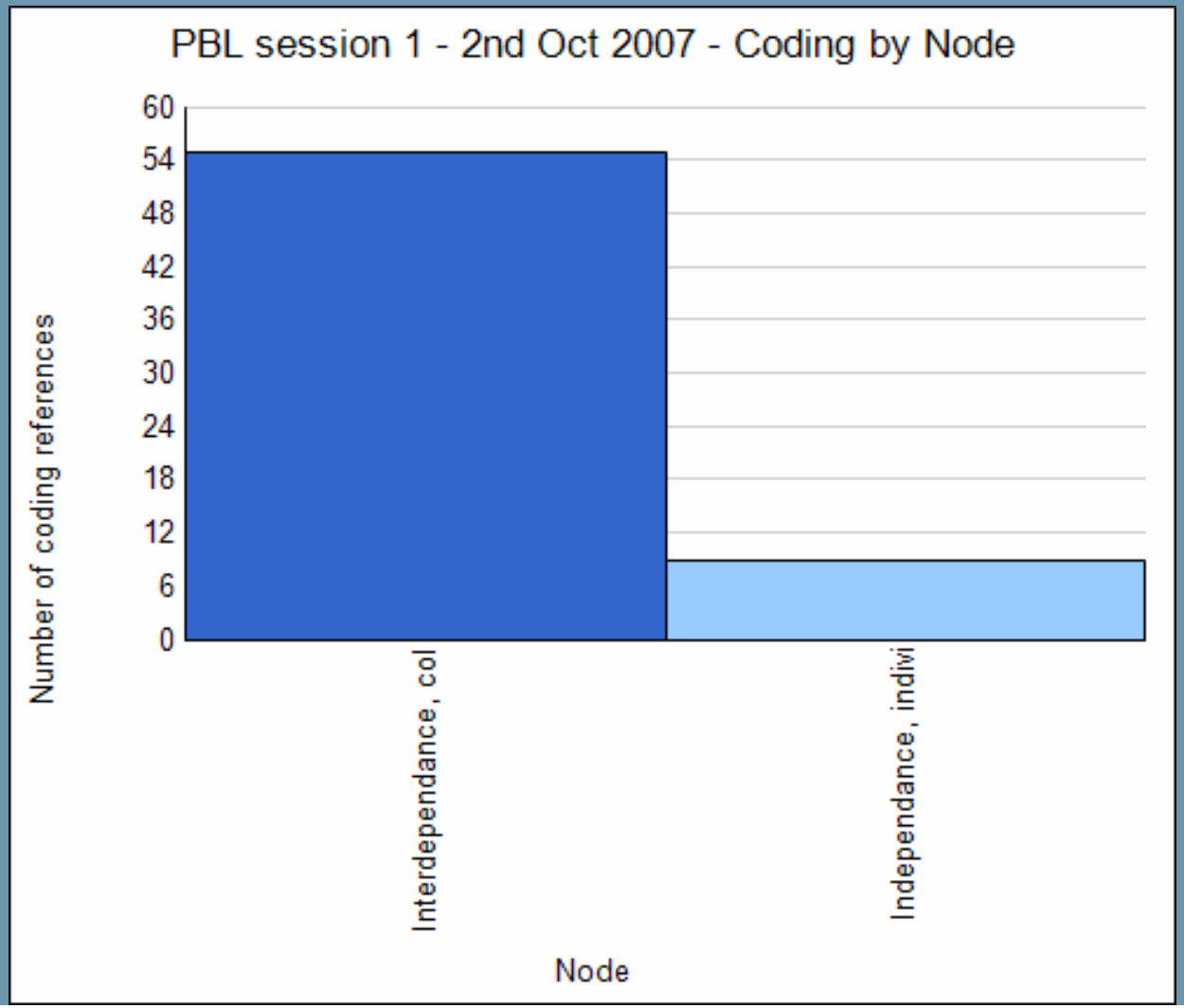
Marian *"Problem solving "*

Harry *"Management, managing time (yeah yeah Marian) organisation (revision?)"*

Independent style

University of Salford
A Greater Manchester University

Independent vs interdependent ethos



University of Salford
A Greater Manchester University

Preference for group ethos

	Independence, individualistic	Interdependence, collective
Ian	3	4
Joyce	3	7
Laura	4	5
Harry	5	3
Facilitator	0	4
Anne	2	3
Den	3	2
Emma	4	4
Marian	4	5

University of Salford
A Greater Manchester University

% participation week 1

(Marian Chair, Ian scribe)

University of Salford
A Greater Manchester University

The group

- Respectful/professional
- Group cohesion and harmony
- Age differential acknowledged
- Social distance acknowledged
- Impact on learning interactions?

Quality o

	Ian	Joyce	Laura	Harry	E : Facilitator 1	Anne	Den	Emma	Marian
Stating	4	4	0	2	0	0	0	4	0
Paraphrasing	0	0	0	0	0	0	0	2	2
Questioning	2	0	3	2	5	3	2	2	2
Answering	2	4	3	4	4	3	2	4	4
Seeking clarification	2	3	3	0	0	2	0	2	2
Clarifying	0	3	2	0	2	0	2	3	2
Adding	4	4	0	2	0	2	5	3	2
Elaborating	0	0	2	2	2	2	0	2	0
Re-questioning	2	0	0	0	0	2	0	0	0
Postulating	0	3	3	2	0	2	2	2	2
Applying	2	0	0	0	2	0	0	0	0
Reflecting	0	0	2	0	2	2	2	2	2
Returning or repeating	0	0	0	0	2	0	3	3	0
Contradicting	0	3	2	0	3	3	2	3	0
Arguing	0	0	2	0	0	2	2	2	0
Challenging	2	0	0	0	0	2	2	0	0
Defending	0	0	2	0	0	0	0	2	0
Conceding	0	0	0	0	0	0	0	2	0
Critically analysing	0	0	0	0	0	0	0	0	0
Summarising	2	0	2	0	2	0	0	2	0
Linking	2	0	2	0	0	2	0	2	0
Suggesting learning actions	2	0	3	2	2	2	2	2	3

University of Salford
A Greater Manchester University

Conversation analysis of rapport management

	FTA avoided	Off record (hint)	On-record redressive	Without redressive, baldly
Ian	3	4	4	2
Joyce	0	4	5	3
Laura	0	0	5	3
Harry	0	0	2	3
Facilitator 1	3	3	4	3
Anne	0	0	3	3
Den	0	2	5	2
Emma	0	4	2	3
Marian	4	2	4	2

Radiographic discourse and avoiding FTA

Harry erm (*gets up and goes over to screen*) erm that's the femur I think it was and if that's the front I think that's the tibius there that's the fibius, the patella's here and I don't know what's at the front (*laughs and runs back to his seat*)

Fac do people agree with that?

Emma (nods) yeah

Fac hm mm

University of Salford
A Greater Manchester University

Summary to date

- Little evidence of differential participation as a result of ‘difference’
- Age may be an issue
- Group characterised by respect, priority of work over social thus maintaining social distance
- Respect and politeness may result in avoiding FTAs which threaten quality of learning interaction

University of Salford
A Greater Manchester University

References

- Barrows, H. S. (1986). "A Taxonomy of Problem-Based Learning-Methods." Medical Education **20(6): 481-486.**
- Bloom, B.S. et al. (1956) Taxonomy of Educational Objectives Handbook I: Cognitive Domain. *N.Y.:*McKay.
- Brown, P. and S. C. Levinson (1987). Politeness: Some universals in language use. Cambridge, UK, Cambridge University Press.
- Grice, H. P. (1975). Logic and conversation. Syntax and semantics III - speech acts. P. Cole and J. J. Morgan. New York, Academic Press**: 41-58.**
- Leech, G. (2005). "Politeness: Is there an East-West Divide?" Journal of Foreign Languages **6: 1-30.**
- Miller, G. and K. Fox, J (2004). Building Bridges: The possibility of analytic dialogue between ethnography, conversation analysis and Foucault. Qualitative Research Theory, Method and Practice. D. Silverman. London, Sage publications Ltd.
- Spencer-Oatey, H., Ed. (2008). Culturally Speaking: Culture, Communication and Politeness. London, Continuum.