

# Learning in groups

## Students conceptions and the impact on learning

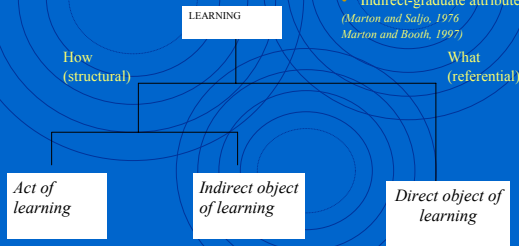
Research into:  
Group based learning (GBL)  
In the Faculty of Veterinary Science

## Research on learning

- **Aim:** Investigate impact on learning
- **Context:**
  - Group based learning (GBL)
  - Yr 2 VAP2A Veterinary neuroanatomy/physiology
- **Methods:**
  - Survey- conceptions, approaches
  - Survey- preference for team/individual work
  - Interviews, phenomenographic analysis
  - Reflections on experience of learning in groups

## Phenomenographic model of learning

- What- content
  - How-
    - Act- approach
    - Indirect-graduate attributes
- (Marton and Saljo, 1976  
Marton and Booth, 1997)



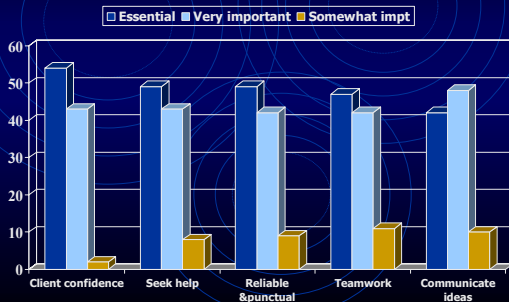
## Group based learning (GBL) aims:

- Engage learners actively in group activity
  - (U turn –engage in contribution vs acquisition)
  - “Time on task”
- Stimulate deep, inquiry-based approaches
- Challenge understanding through interaction with peers
- Support variety in learning styles
- Create learning community
- Provide social support
- Develop professional communication skills
- Manage large group interactions

## Key graduate attributes

Professional communication and team work-  
employers priorities

(Heath and Mills, 2000)



## VAP2A – Context for learning in groups

Scenario: A relaxed cat falls from 1 metre and safely lands on the ground.

*Task: Work with your group to research the pathways involved and explain the neural processing required. Post your summary on WebCT for feedback. Present your answer as an oral presentation in class which will be peer and staff assessed.*

*Series of group activities, not assessed with online discussion board and tutorial presentations*

*Aligned to open book assessment format  
Reflections on experience of learning*

## Fragmented conceptions of GBL

- A. Passive acquisition
  - Learning information in an interesting way
  - Meeting assessment requirements
  - Sharing work to get it done
- B. Contributing to group product
  - Finding and applying information from various sources
  - Working with others to go into more depth

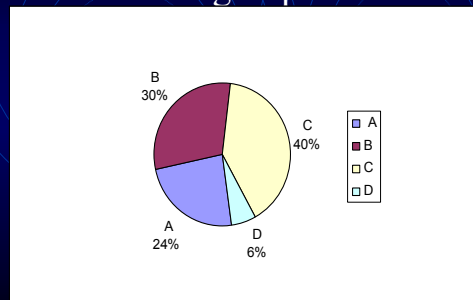
## Cohesive conceptions of GBL

- C. Constructing understanding through collaboration
  - Challenging and clarifying misunderstandings through discussion and interaction
  - Applying concepts to real life situations to solve problems
  - Developing skills in contributing to team
- D. Learning to work like a vet
  - Developing advanced skills for clinical problem solving
  - Confidently resolving problems (content and process) to create a high performing team
  - Conceptual change

## Conceptions

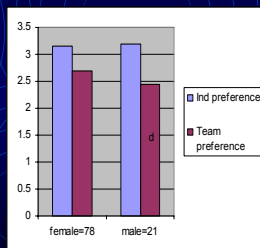
Category	Descriptions	Representative Quotations
A	Group-based learning as a way of passively acquiring information	"Not having to do the work yourself"
B	Group-based learning as a way of collecting information from a variety of sources	"We actually learned quite a lot through this because we had to... first we had to digest all the information that we researched, and we had to talk through it with our other group members and in that way we... refreshed our information." "Learning the information from the case studies itself, and probably the researching, how to research different stuff. Basically co-operation skills and probably presentation skills as well."
C	Group-based learning as a way of using theoretical knowledge to solve authentic problems	"It was problem solving - you were presented with a case and you had to make educated guesses about why it was happening and integrate it with the knowledge you were learning in the lecture."
D	Group-based learning as a way of learning how to think and act like a professional veterinarian	"...we were given scenarios and we actually took it a step further and had to act as an imaginary vet, saying what you would do and study the anatomical structures and say what was infected, or how it was affected and how you could manage or treat the whole scenarios."

## Conceptions of learning in groups



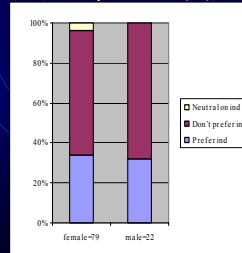
## Preferences for group/individual work (score)

- All students preferred team work (lower score) over individual work
- A substantial group preferred individual effort, however

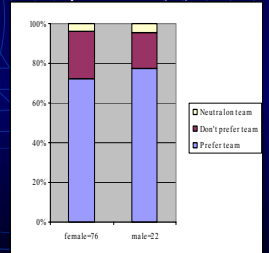


## Students preferred team over individual work

Individual preference (%)

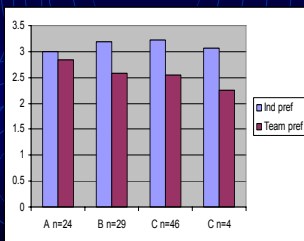


Team preference (%)



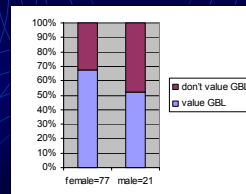
# Conceptions and preferences for group based learning

- Students with more holistic conceptions of GBL had stronger preference for team work
- Stronger preference for individual work in students with more fragmented conceptions of GBL



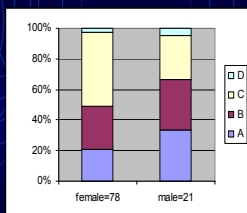
# Gender and preference for GBL

- Females valued learning in groups more than males



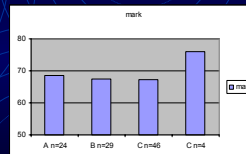
# Conception of GBL and gender

- More females had moderately to more highly developed (cohesive) conceptions of group based learning compared to males



# Conception and mark

- A,B,C, No difference in average mark
- D, few students with holistic conceptions of learning in groups had best performance



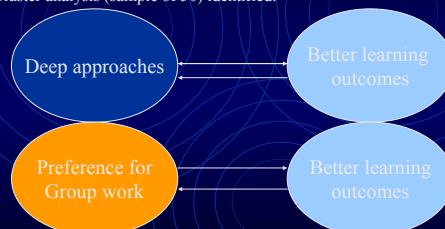
How did students approach learning in groups?.....

# Approaches

Category	Descriptions	Representative Quotations
A	Engaging in group-based learning in order to find and recall information	"...we just often didn't come together as we planned, so we ended up just sort of sticking together then writing out a good copy then."
B	Engaging in group-based learning in order to get information to answer the questions	"We went through the information and just wrote out the actual information we had, for the case study question, and then we wrote that out and then we found some time together, probably lunch time or some time in the morning before the lectures, and we just go as a group and we discussed the information that we had found."
C	Engaging in group-based learning in order to develop integration and understanding of relevant knowledge	"Generally we'd talk about our part and what we'd written in it and we'd ask everybody else if they had anything else to add and we'd make a decision about what was important and what wasn't, what kind of diagrams to put in."
D	Engaging in group-based learning in order to develop the skills to solve problems the way a practicing veterinarian would.	"I tried to think of how I would explain it to my friends" It was relevant to what we will be doing when we leave, because a lot of the time we only study the anatomy part or the physiology, not knowing the clinical relevance, but that was really helpful in a way, we really got to see ourselves and what kind of situations we will be involved in and what we will need to do.

# Learning approach and outcome

Cluster analysis (sample of 50) identified:



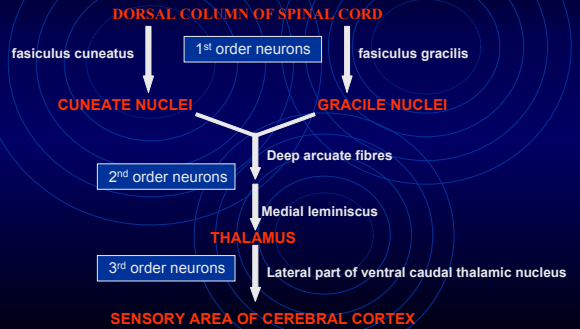
But no direct relationship between deep approaches and preference for group work identified

## Quality of learning outcomes

- Students prepared innovative and engaging presentations with all group members participating (assessed)
- Non assessed component was completed by all students, but with more variation in quality and presentation
- Consistently strong performance of whole group in final assessment task (open book test)

Examples...

## Spinal Cord → Brain



## Key findings in GBL

- Variation exists in students conceptions of GBL
- **Fragmented conceptions**: dividing workload, meeting requirements
- **Holistic conceptions**: challenging understanding, solving problems, commitment to group, model professional behaviour

## GBL ctd

- **Surface approaches**: Not engaging in group or mainly intending to collect information
- **Deep approaches**: Practising working and learning as part of a professional team

## Key findings

- Tension between individual learning effort and commitment to group process/product
- GBL can improve learning by;
  - stimulating collaboration, contribution and application to problem solving
  - providing different perspectives in a social setting that stimulates interaction, discussion
  - providing framework of group-monitored tasks that necessitates continuous "time on task"
- Framework for improved GBL (*Tiberius 1995*)

## Conclusions

- **Group work:**
- Develops more than “generic” skills
- Produces variation in students conceptions and approaches to learning
- Challenge to manage well, particularly assessment components

## Thanks

- Rob Ellis, ITL
- Gerard Marcus, FVS
- Our students who collaborate in developing and improving learning in the Faculty
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