Emotion emerging in biomedical science laboratory group work

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Emotions in a social context and implications for group work

- Emotions are social and situated (about something or someone) (Manstead, 2005; Parkinson 2006)

The interaction with others during a task (or the task/situation per se) is a source of positive and negative emotions

- Emotions are constructed in response to internal or external signals and by comparison to similar previous lived experiences stored in our memory circuits (Barrett, 2017)

Students experiencing the same situation/social context may have different emotional responses based on their previous lived experiences
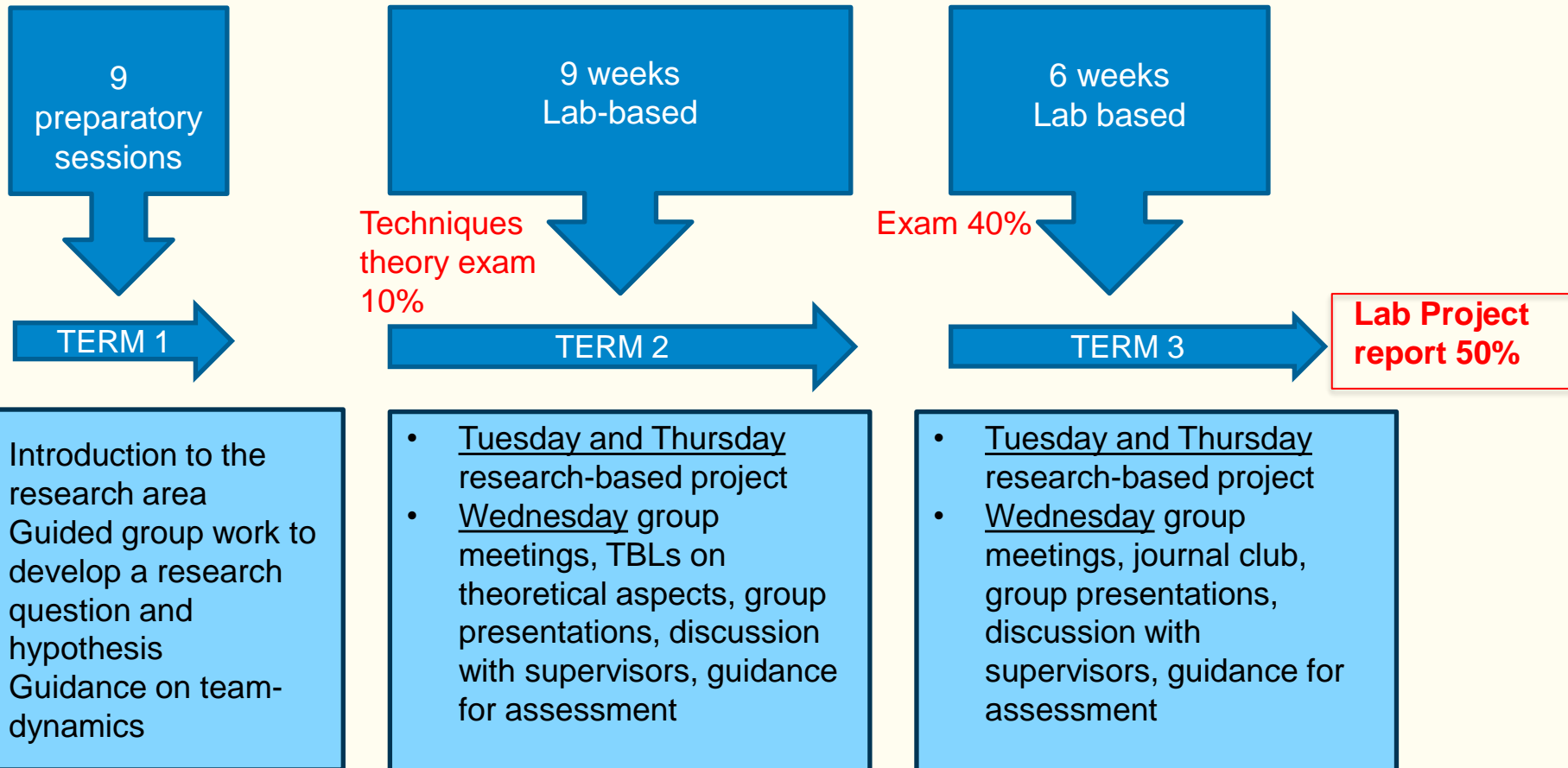
- Emotions are a form of communication (Parkinson, 2006)

Understanding what type of information others communicate when expressing emotions and learning to express emotions correctly is at the base of effective communication and group work.

- Emotions are goal-based (Pekrun & Perry, 2014)

Each individual in a group may have very different goals, drives and motivations; Separating individual versus group goal, may be challenging and a cause of conflict

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BSc Medical Bioscience Lab Pod 2 module setting

9 preparatory sessions

9 weeks Lab-based

6 weeks Lab based

Techniques theory exam 10%

Exam 40%

TERM 1

TERM 2

TERM 3

Lab Project report 50%

- Introduction to the research area
- Guided group work to develop a research question and hypothesis
- Guidance on team-dynamics

- Tuesday and Thursday research-based project
- Wednesday group meetings, TBLs on theoretical aspects, group presentations, discussion with supervisors, guidance for assessment

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- Wednesday group meetings, journal club, group presentations, discussion with supervisors, guidance for assessment

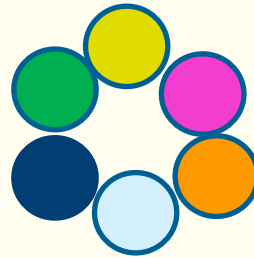**AY 23-24 183 students 31 groups**

Team of 10 Teaching Fellows closely supervising 3 groups each

Lab Pod 2 group setting

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Groups of six students

Term 1

Term 2 and 3
Split in the lab

Tuesday
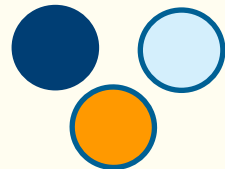
Thursday

Wednesday

Whole team
In lab meetings

Examples of emotion emerging in group work in LP2
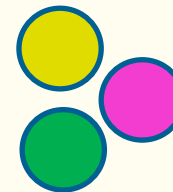
- The complexity and novelty of tasks in the lab
  Curiosity, confusion, frustration

- Students are in charge of organising task allocation and completion
  Excitement, feeling valued, frustration, anxiety

- Research-based, not staged, and prone to errors. Students can repeat experiments as many times as they need
  Frustration, confusion, curiosity, pride&excitement (when overcoming failure).

- Communicating about conflict, for example, unequal contribution,
  Frustration, hopelessness, embarrassment

- Goal
  Drive, motivation, pressure, frustration, anxiety, happiness, excitement

Emotion emerging in group work in the lab: ~~setback~~ or opportunity for learning?

- The dynamics evolving in group work in the lab are no different to any other teamwork

- Whilst learning science students learn valuable transferable skills: emotional intelligence, teamwork, people management, leadership and communication

- Given the opportunity (situation and social context), students experience emotional instances and become capable of regulating their own and peers' emotions

- The group provide emotional scaffolding in challenging situations (empathy, trust in each other, motivation)

Peer emotional scaffolding

… [we] *all are like feeling overwhelmed and all in the same ship and all doing the same experiment...put things into perspective and be like, OK, I'm overwhelmed, but so is every person in this lab*" (James)

"*…When a certain member of my group walks into the labs, it's almost like it's quite warming… They can say the right things and it will make me feel a bit more secure*" (Luca)

"*…Everyone in the group is frustrated, so we can support each other and also we share the responsibility of the failure of an experiment*" (Grace)

The group provide emotional support in challenging situations

Peer emotional regulation

"Anyone can ask if you're OK. but it takes a bit more to ask with meaning, and even ask a second time…social interaction is about letting yourself into that, you know, overlapping emotion that people can bring in…" (Luca).

Students learn to recognise emotional instances and regulate peers' emotions

Areas for intervention

Not all students are emotionally literate or feel equipped to regulate emotions or deal with challenging situations

"I see my teammates, feeling pretty sad then I really don't know what to do" (Corinne)

Social emotion learning (SEL) activities:

- Include activities that promote reflection and communication (anonymous peer feedback, reflective journals).

- Signpost experiences that are already occurring in the lab that promote SEL.

Communication in challenging situations

"In a polite manner [I would say] things that they could work on, but I guess that's the hardest part without sounding too above the other person and sounding too full of yourself" (Luca)

"I don't wanna be the person who kind of brings up something that's an issue… my preference has actually been not mentioning anything… I would definitely struggle in that sort of situation" (Anthony)

Students struggle to voice concerns emerging from group work

Anonymous peer feedback

"Definitely having that sort of feedback [exercise] part for Lab Pod 2 obviously allows that sort of capacity to mention things" (Anthony)

"...It was brought up in the peer feedback and I tend to have quite exaggerated reactions to lab failures" (Luca)

Anonymous peer feedback is a good tool for voicing concerns constructively and becoming aware of one's own behaviours

Role of an empathetic teacher

Having a teacher that was…making sure you know, this was a mistake. But being very understanding…Without that sort of understanding section part, it's a bit more just like you've done this wrong rather than you have done this wrong, but…" (Anthony).

- The teachers/supervisors are part of the group, and their emotions influence (and are influenced by the team dynamics)
- Teachers' emotional literacy must be developed

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Group work in the lab is a good setting to promote Social-emotional learning (SEL)

Key features promoting SEL are:

- Authenticity (research-based, student-led)

- Social (group-work)

- Longitudinal (the extended time allows the iteration of social-emotional regulation strategies and development of social-emotional skills)

Limitation

- Empathy versus emotional contagion (emotional contagion can have negative implications)

- Cultural differences and neurodiversity (normalising how emotions must be perceived, communicated, and dealt with is the wrong approach)

- The role of the teacher is fundamental for SEL but not everyone is willing to embrace SEL in their practice