

IMPERIAL

Building collective intelligence

**An intervention to promote
collaborative learning in Physics**

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(Physics)

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“raising a group’s collective intelligence”

Context

Physics cohorts: around 30% female, 50% international, significant numbers of neurodiverse students

Students in Physics describe an atmosphere of competitiveness

Amy Smith – longitudinal study of social norms for 2020-entry cohort ([PhD thesis on Spiral](#))

“Work hard”...”appear intelligent”...”lack of knowledge of peers”

What interventions are possible to seek to promote a positive culture?

Upskilling

Navigating and regulating emotion

Unhelpful competitiveness and negative behaviours arising as responses to difficult emotions

Skills for collaborating

Session design

“Pilot” session with the Physics Y1 cohort on Weds last week (13th Nov).
Two hours in Blackett LT1 (traditional lecture theatre, 250 capacity)

As part of a series of weekly sessions throughout term 1 “extended induction”

I designed and ran this session with Kate Ippolito

Highly interactive session; around half the time students discussing in small groups (3 or 4)

Aim: Build students’ emotional literacy and groupwork literacy

Session design “Building collective intelligence”

Aim: Build students’ emotional literacy and groupwork literacy

Session title taken from Duhigg article – Google study on characteristics of successful teams

They found successful teams shared some social norms:

- conversational turn-taking
- average social sensitivity

Introduction to recognising and handling emotions (Pekrun, Meyer, Gross)

Idea of “compassion” in working with others

Microskills to use in groupwork

Emotional awareness / literacy

Emotions as pleasant/unpleasant, activating/deactivating (Pekrun control-value theory, 2D grid)

Possibility to reframe unpleasant emotions as useful

Denise Meyer – emotions as drive / threat / soothing

Groupwork literacy – “Compassion” – Theo Gilbert

“Compassion” as noticing distress/discomfort in self/others and taking action to address it

Resources: video to build microskills for groupwork

the value of noticing non-verbal cues from others (e.g. via eye contact)

strategies to disrupt monopolisers / “alpha pairs”

Outcome

This seemed to be the first time students had discussed their emotions on the cohort scale.

Contributions immediately drew out:

Descriptions of students operating at “high level” or not
fixed mindset

Imposter syndrome

Student feedback - “Emotions are lowkey goated”

We asked student: **most useful idea you take away?**

- Building emotional awareness/regulation
recognition of role of unpleasant emotions
- Increased agency in relation to shaping group dynamics and norms
- Practical tips in relation to:
 - noticing others in the group (e.g. eye contact)
 - helping others in the group
 - disrupting monopolisers / alpha pairs

Key to improving Google's teams –
“Understanding and influencing group norms”
“Norms can be unspoken or openly acknowledged, but their influence is often profound.”

“The right norms could raise a group's collective intelligence.”

Two key group norms:

- conversational turn-taking
- average social sensitivity/empathy

= aspects of **psychological safety**

“shared belief held by members of a team that the team is safe for interpersonal risk-taking.”



“People would try to show authority by speaking louder or talking over each other, ...I always felt like I had to be careful not to make mistakes around them.”

References

Gilbert, T., (nd). Compassion in Education – Embedding and Assessing Compassion in the University Curriculum, <https://compassioninhe.wordpress.com>.

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Meyer, D.,(2020). Emotion Regulation for Learning on Vimeo, University of Portsmouth.