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Coaching with Q-Methodology: Development of independent reflective learning in medical students

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Why are we doing this?

- Yearly analysis of assessment outcomes indicates a long “tail” of students with Low Pass outcomes (Just about getting through)
- Need to fulfil potential as a lifelong reflective learner - confidence, understanding and insight
- There was little academic support for Year 3 – 5 MB ChB students
- Introduction of the Medical Licensing Assessment (MLA) at finals
- Assessments and differential attainment
- Professional standards post-graduation, linked to earlier assessment outcomes

Why coaching ?

- **Completely different** to mentoring, advising, tutoring
- Is non-judgemental, but can poses questions, does not give advice or direct the coachee or intervene in a course of action
- Is primarily concerned with facilitating the coachee to reach their full potential
- In the context of our learner-led MB ChB this means full potential as an independent reflective learner
- Overall aim : student becomes their own coach

What's involved?

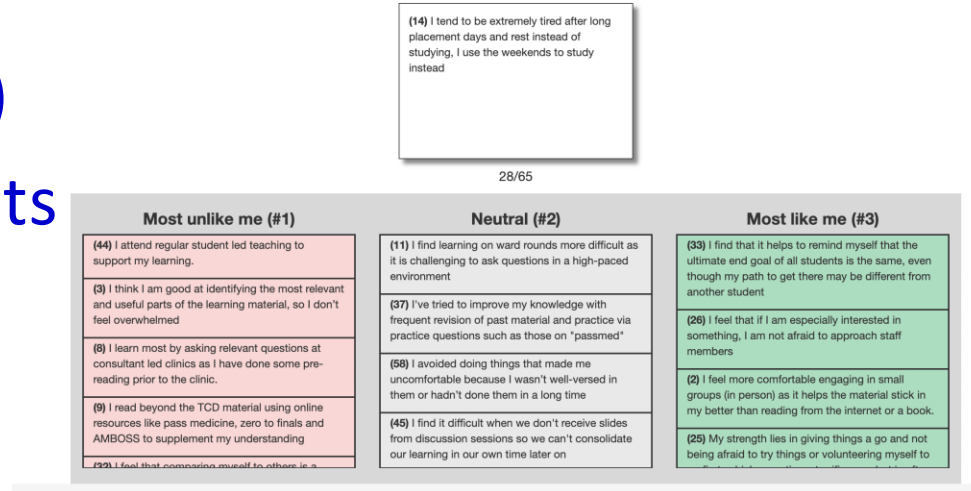
- 5 coaching sessions (each approx. 1 hour)
- ALL SESSIONS ARE ONLINE (Zoom)
- Individual sessions with coach
- Session 1: Introductions, explanation, contracting, boundary setting
- Session 2: Q-Sort statements with coach, accompanied by discussion
- Analysis with Q-Methodology software (performed by Enhanced Academic Support staff, not involved with coaching)
- Generates a report for the student and coach, displayed as a visual pattern (e.g. previous slide)
- Session 3: Planning for development – Student uses Q-sort outcomes, facilitated by coach, as a basis for their plans
- Sessions 4 and 5: Evaluation of plans, led by student, facilitated by coach

What is Q-Methodology?

- Originated with William Stephenson in 1950s
- Measure of subjectivity relative to a construct, topic, experience
- Representative shared perspectives of participants in organisation, common activity
- Starts by creating narrative word picture in the form of a set of statements of all that is sayable about the topic (Concourse)
- Participants sort the statements from the concourse to represent their perspective
- All sorts are analysed to find common patterns of perspective

Developing the Coaching Concourse

- First step: develop the Q Concourse, everything sayable about a topic as a discursive 'map' of the practice landscape
- Select Q-Set: a set of statements that comprehensively represent all themes in the concourse
- Statements came from student portfolios (selected by students) across the MB ChB programme (Easy and difficult about the MB ChB, barriers, how I overcame them)
- 65 statements selected and themed (Q-set)
- EDI verified and added additional statements

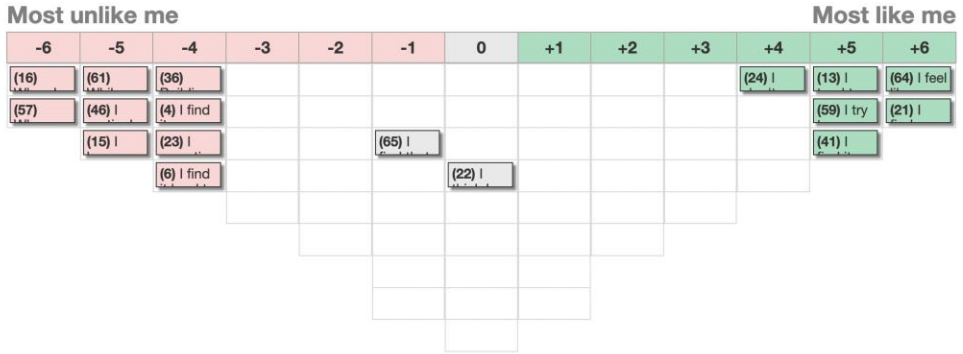


Building the Baseline

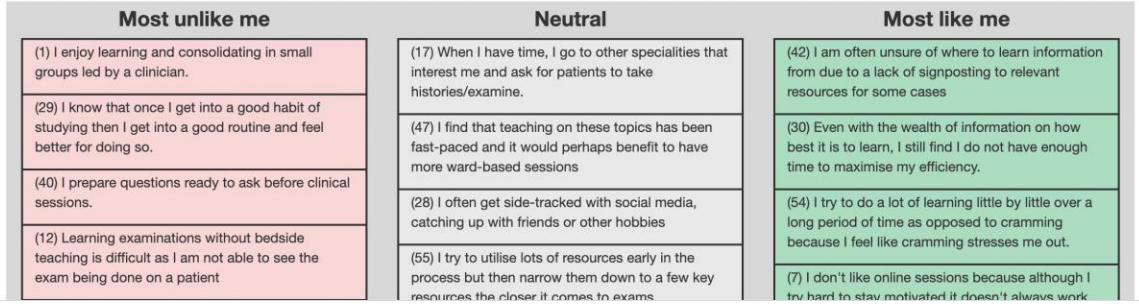
- P-Set (participants) performs Q sort with Q-Set: 18 students from across three grade boundaries
- Hypothesis: students within grade boundaries will share a perspective on what constitutes effective learning on the medical programme
- Analysis: true for upper and lower boundaries
- Output: representations of perspectives of the two groups, high and lower achieving students

Coaching Session 2

- Participants perform Q sort under condition of instruction:



"As a student of Medicine at UoM how do think about your learning experience?"



Most unlike me	Neutral	Most like me
(1) I enjoy learning and consolidating in small groups led by a clinician.	(17) When I have time, I go to other specialities that interest me and ask for patients to take histories/examine.	(42) I am often unsure of where to learn information from due to a lack of signposting to relevant resources for some cases
(29) I know that once I get into a good habit of studying then I get into a good routine and feel better for doing so.	(47) I find that teaching on these topics has been fast-paced and it would perhaps benefit to have more ward-based sessions	(30) Even with the wealth of information on how best it is to learn, I still find I do not have enough time to maximise my efficiency.
(40) I prepare questions ready to ask before clinical sessions.	(28) I often get side-tracked with social media, catching up with friends or other hobbies	(54) I try to do a lot of learning little by little over a long period of time as opposed to cramming because I feel like cramming stresses me out.
(12) Learning examinations without bedside teaching is difficult as I am not able to see the exam being done on a patient	(55) I try to utilise lots of resources early in the process but then narrow them down to a few key resources the closer it comes to exams	(7) I don't like online sessions because although I try hard to stay motivated it doesn't always work

- Coaches observe/ask without any leading or discussion…
  - why is a statement being placed in a particular way?
  - how is a statement being interpreted?
  - how are related statements being positioned – are there any contradictions that can be explored later?

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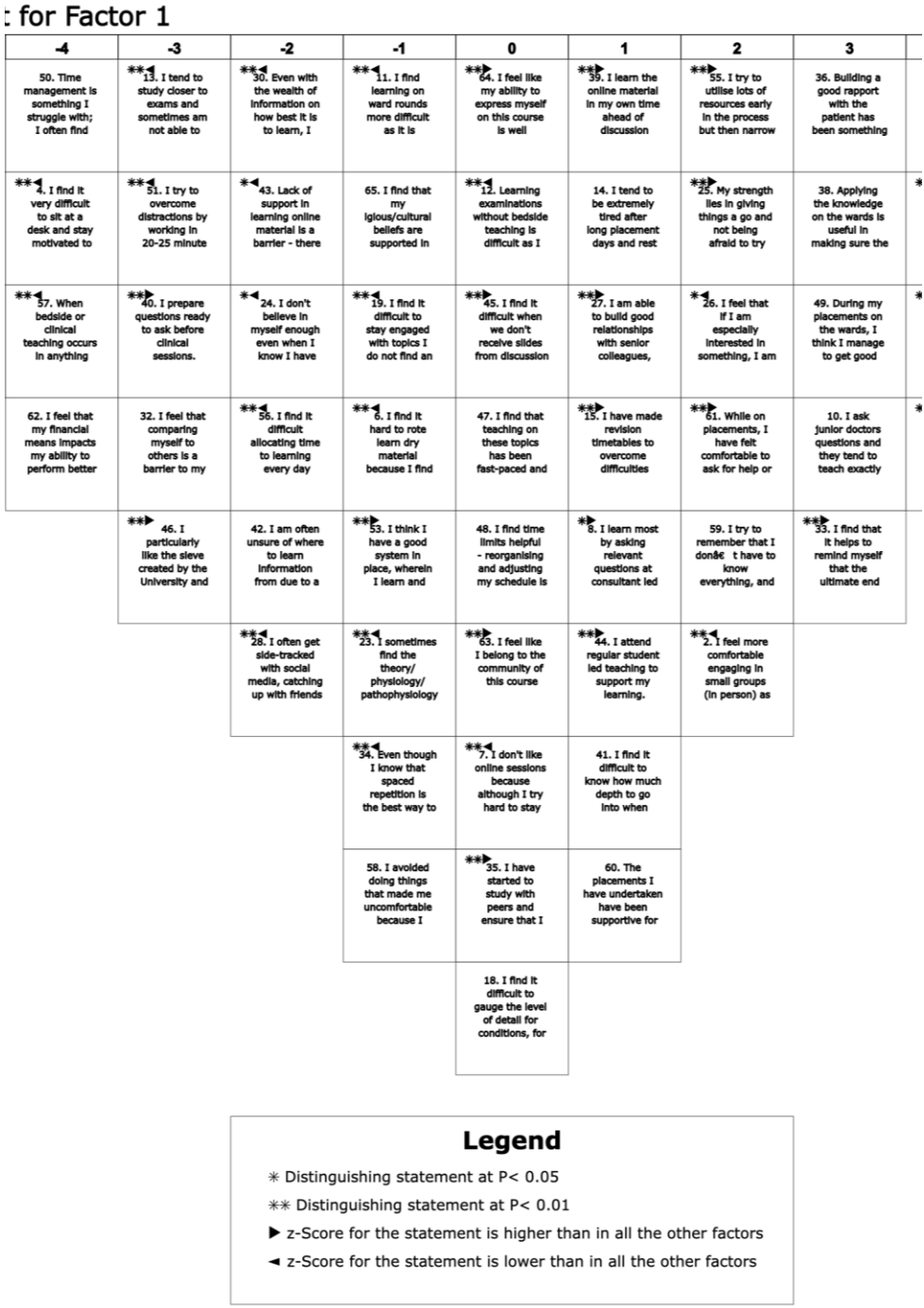
Analysis

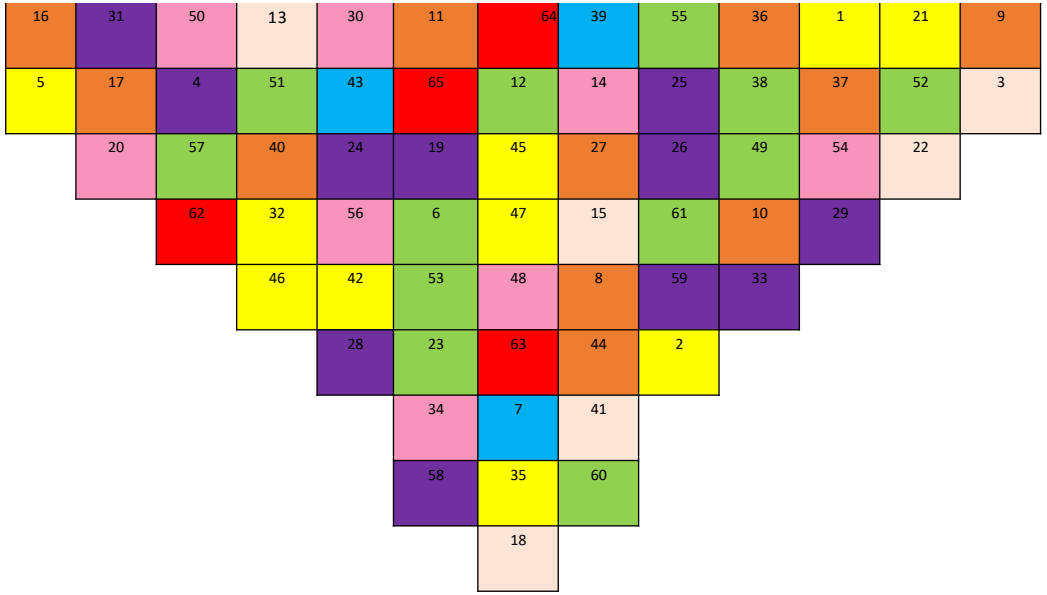
- Q Analysis uses a factor analysis approach
- Participants (students) are the variables relative to the concourse
- Data shows how statements are positioned relative to other statements by a participant and the relative positioning of these between/across participants
- Results show:
  - Shared/distinct exemplifying sort/perspective
  - Consensus statements
  - Distinguishing statements



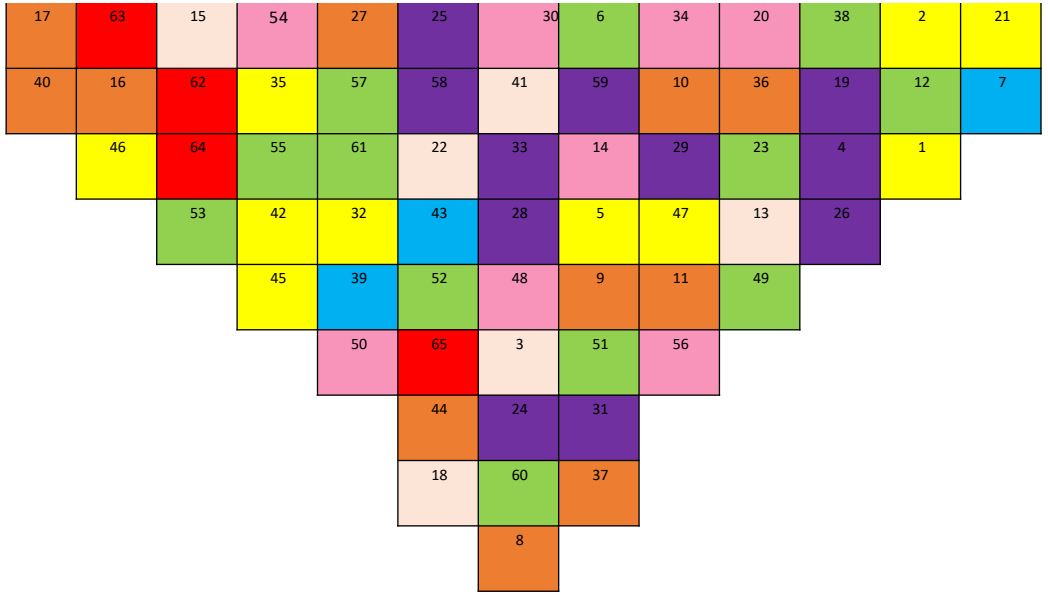
Report Output

- Themed visualization
- How statements are themed based on observed interpretation in the baseline development

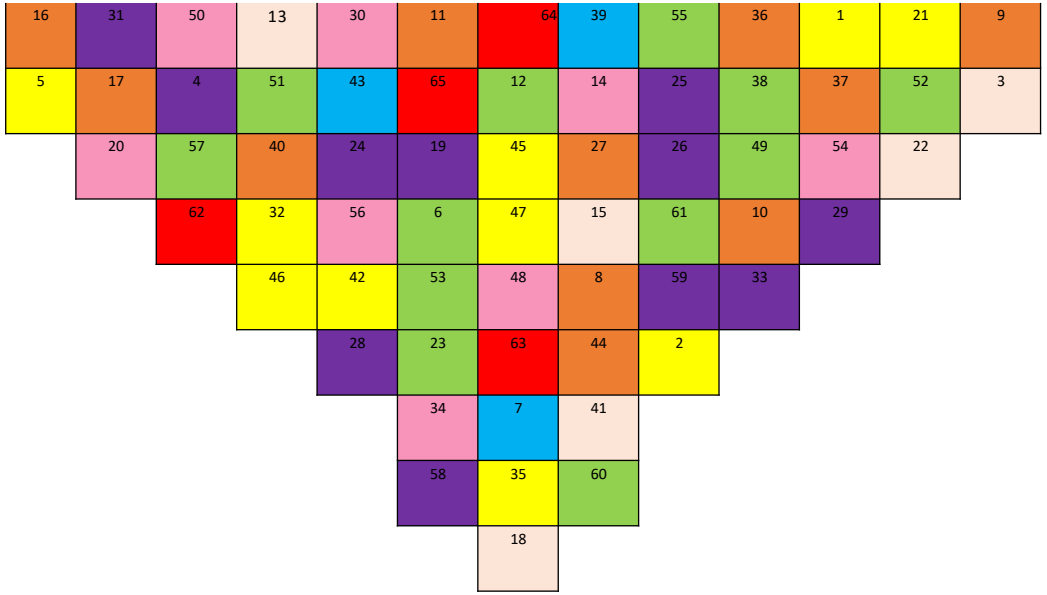
F1 Higher Grade Boundaries



F2 Lower Grade Boundaries



F1 Higher Grade Boundaries



(Factor 2 Loading)

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
17	22	3	16	40	4	7	2	1	8	14	30	24
28	46	15	33	42	6	13	5	10	9	18	32	50
	61	44	35	47	26	25	12	20	11	34	41	
		64	55	53	27	29	21	23	19	51		
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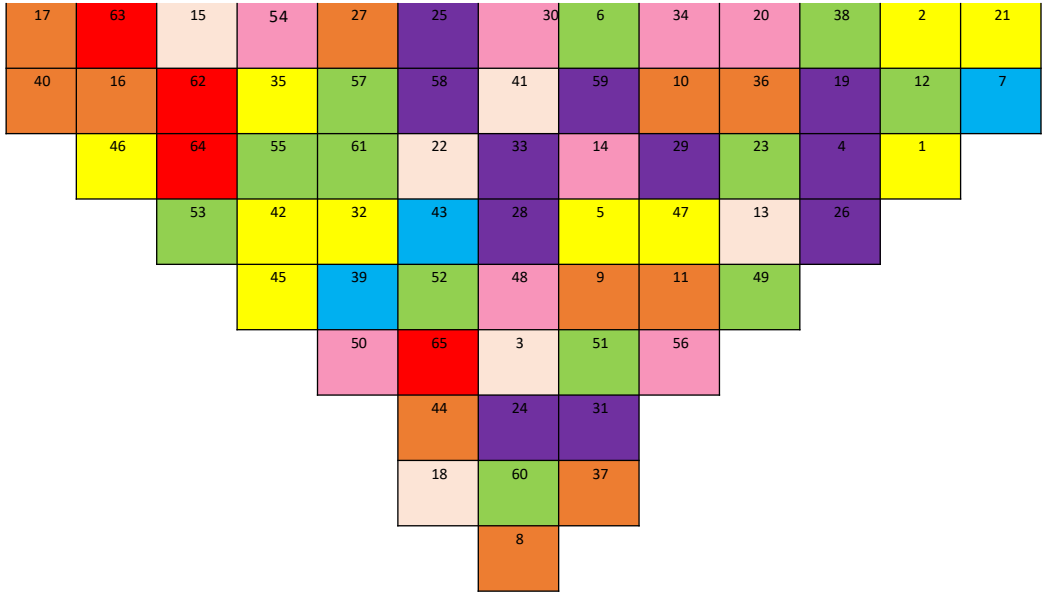
F2 Lower Grade Boundaries



Relationships to peers/teachers

Managing load

Focus/distraction

Placement learning generally

Online learning

How I engage with practice-based learning

Time

EDI

Coaching Session 3

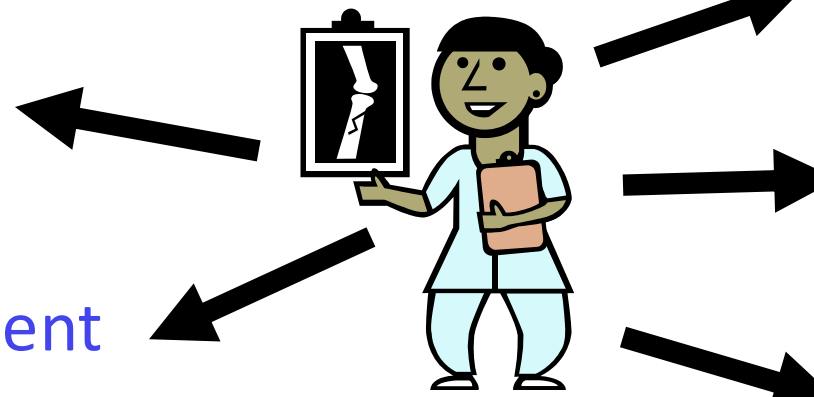
- Report provides a starting point for self -reflection:
  - Where does student's perspectives locate them relative to baseline students?
  - If a 'low achieving' student offers a 'high achieving' perspective, why is their learning practice not reflecting their perspective? What practices need to change?
  - If this student offers a 'low achieving' perspective, do they recognize the difference in perspective? What are the routes to transforming this perspective and therefore transforming practice?

Transferability

- Can be replicated in any subject area
- Currently pursuing a fully automated pipeline to create a baseline and produce reports
- Rationale for Q method:
  - Attitude to learning held by successful students becomes visible
  - Students represent their own perspective in relation to the perspectives of others and appreciate that this is not in any way the coach's opinion or based on grade performance
  - Students appreciate the opportunity for a human relationship with the academic coach: A.I. resilient!

Who is it for?

- Everyone!!



Develop further and make more progress

Become a more confident learner

Manage time better

Better decision making

Decide what's important

Improve assessment outcomes

Be in control of planning my learning

Who are our coaches?

- Clinicians - GPs
- Permanent members of academic staff
- All are trained as coaches
  - Basic training in coaching (University or other qualification)
  - Q-Methodology and EDI training
- Have a clear understanding of the purpose of each session in the context of our MB ChB

Informal Student Responses and Feedback – Years 3 and 4 irrespective of exam outcomes

- Felt more confident
- More in control of learning
- Enjoyed the sessions and found them interesting
- More insights into personal issues e.g. uncertainty and found ways of dealing with them.

- Benefitted from learning from other students
- Developed better use of time
- Took more initiative with patients
- More understanding of what is important and concentrate on that,
- Developed deeper understanding of reasoning within clinical contexts

- Valued specific role of coach
- Appreciated clarity of coaches
- Recognised the coaches' training and preparation
- Were grateful that coaches had time to listen to them
- Often regarded coaches as role models

- Enjoyed use of Q-Methodology
- Recognised that this provided evidence of their barriers to progress
- It enabled them to recognise other students had similar issues
- Learnt from the approaches to learning used by other students
- Recognised it as essential to the coaching sessions

Assessment outcomes

- Coaching seems to be particularly effective in increasing Progress test outcomes, especially for those students who have lower grades before they begin sessions
- 83% of students with U and LP grades who had coaching sessions increased their grades (n=12) compared with 62% of similar students with no coaching, with a relative “risk” of 1.34 (n=149) (CI(1.01 to 1.77 p=0.0046)
- So this means that students with these grades are >30% more likely to increase them if they engage with coaching
- Best to complete all 5 sessions

Questions?

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