



University
of Glasgow

Inclusive Constructive Alignment

- Reducing barriers to student engagement with assessment

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In this resource you'll find...

- A brief introduction of the core concepts
- A brief description of the example course used to demonstrate this method
- Step by Step methods complete with
 - A description of what the educator does at every stage
 - Tools and prompts to help you complete each stage
 - An exemplar of the method in action at each stage
- An example of a final output generated by this method
- Bibliography



Introduction of fundamental concepts

The goal of inclusive constructive alignment is to make the learning experience more inclusive and effective by introducing changes to the “message” that is instructional design. The changes should attempt to “cancel out” what is referred to as the “Exclusion Influence” (*the part of the experience where exclusion is most likely to occur*) while simultaneously “turning up the volume” on the verb in the compromised learning outcome.



About the Course used in the Exemplar

- Case study:
 - Course: Experimental Design 3, Psychophysiology.
 - Programme, Developmental Psychology, year 2,
 - Assessment Topic: basics of psychophysiological responses and how they're measured.
- Inclusivity Goal: In this case, the lecturer is choosing to engage in inclusive constructive alignment not to build inclusivity for a marginalized group, but to build inclusivity for marginalized academic skills, i.e. self-care. He proposes that the material could be more inclusive to all students and that doing so will have a positive impact on how they benefit from the material on an academic level as well as a personal and professional level. This means that this re-design method is being used proactively, rather than targeting specific problems raised by students. This has implications for the use of the Inclusive Constructive Alignment methodology. Specifically, the crucial stages of identifying the “Target Learning Outcome” and “Exclusion Influence” are determined by the opportunities that may result more effective engagement with the material, rather than the symptoms of current ineffective engagement with the material.



Step 1: Take a Situation Inventory (Write an Assessment Biography)

Examine the contingent factors of the learning experience, i.e.

- **Contingent Factors** such as length of lesson, technology, space, number of students, location in the programme
- **Content Factors** such as student experience with delivery and content, reflections on student engagement, challenges raised by the student(s) or lecturer regarding inclusivity (or any other matter) with the content or delivery
- **Conventional factors** that must remain in the lesson content, such as assessment alignment, session length, resource, links to other part of the programme, or programme teaching standards.



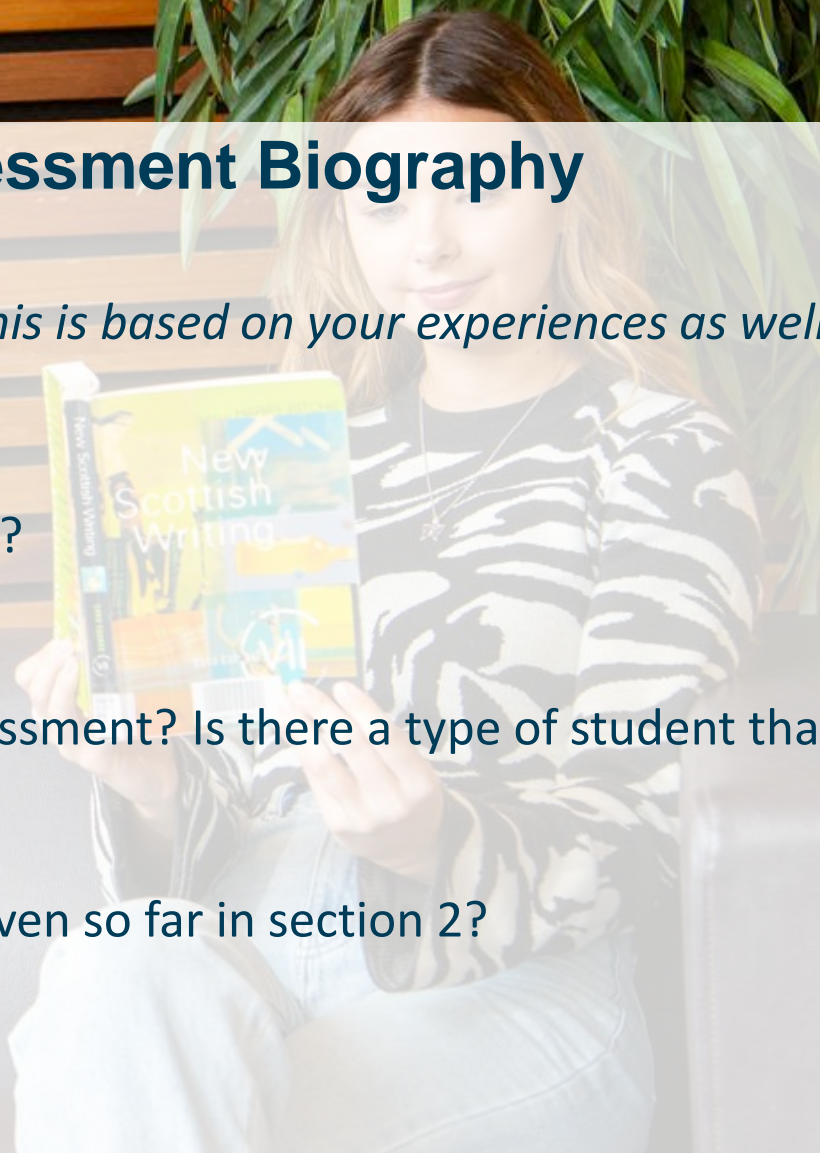
Step 1a: Prompts to help you write your Assessment Biography

- **Facts about the assessment:** Information and history about your assessment.
 - When does the assessment run? Where is it in the semester? Where in the programme?
 - What space does the assessment take place in? What is it like - how would you describe it?
 - What materials and technology do you use?
 - How many students?
 - Why does the assessment exist? How did it come to be the way that it is?
 - What content is covered? What is the assessment like?
 - In an ideal world, what would you like the assessment to be?



Step 1b: Prompts to help you write your Assessment Biography

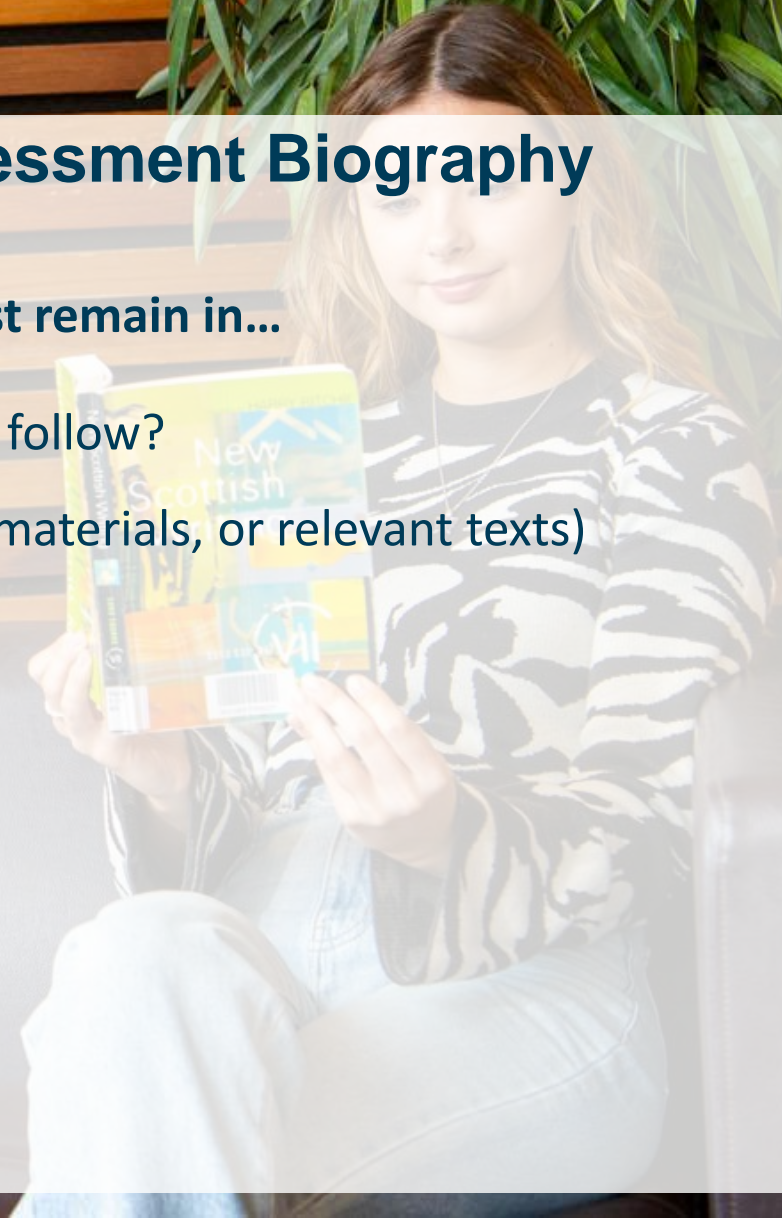
- **Reflections on student expectations/experience/reactions:** *This is based on your experiences as well as student feedback, and includes:*
 - What do your students normally say about the assessment?
 - What is your students' performance is typically like?
 - What problems have your students have had with the assessment? Is there a type of student that usually has a hard time?
 - What do you think is the cause of all the answers you've given so far in section 2?





Step 1c: Prompts to help you write your Assessment Biography

- **No matter what changes or new designs you make, what must remain in...**
 - ...how the assessment currently supports the courses that follow?
 - ...the time and related resources (i.e. assessment length, materials, or relevant texts)
 - ...links to other parts of the programme
 - ...ambitions you have for the session





A Condensed Assessment Biography (Expect roughly one page of text when you write your own)

- **1) Contingent Factors**

- Final content lecture of the semester, two weeks before the break for holidays, 1hr 45 minutes long
- Lecture theatre for ~90 students, 70-90 in attendance, using Projector, laser pointer/slide advancer, PC
- It covers research methods that are often neglected in methods modules but are particularly relevant to developmental research (e.g. access to internal states in participants that cannot answer questions about their internal states)
- The session is a brief background about emotion regulation and arousal are presented, then the physiological processes that govern arousal, then techniques to measure arousal, then a break. We resume with a discussion of stress and specific ways to measure stress before wrapping up on issues that need to be considered when approaching a study of arousal and stress.
- The ambition is to have students understand the role physiology and health play in psychological functioning.

- **2) Content Factors**

- Haven't had direct feedback (although indirect feedback has been relatively positive)
- This topic hasn't been a favourite of exam responses. Students also don't carry this content forward in their year three projects.
- No clear problems with the content thus far – "might be my own *–unfounded–* biases"
- They often feel this isn't an aspect of psychology that's important to them. It's not where they want to put their focus. There are a lot of slides and the biology "throws" them

- **3) Conventional Factors**

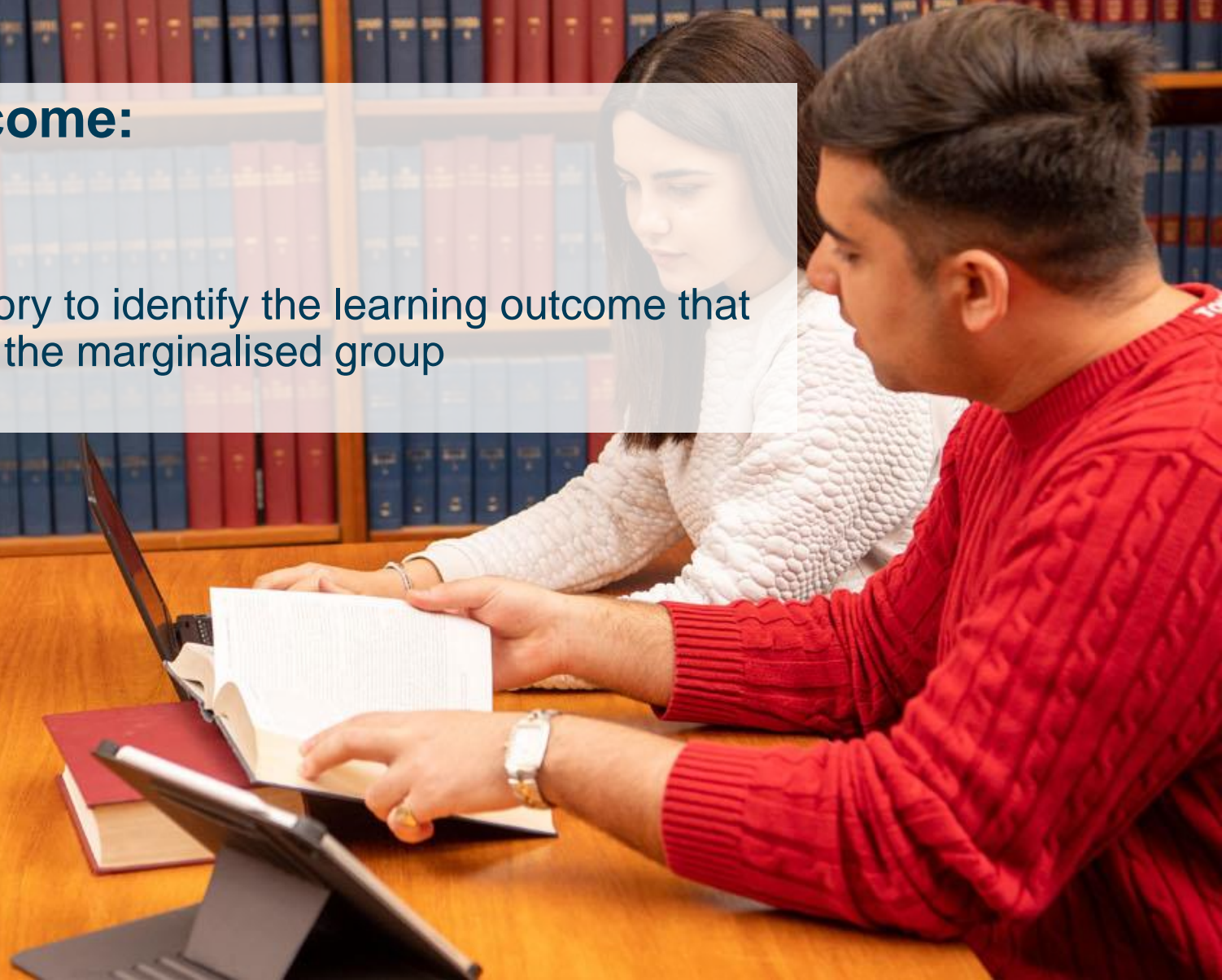
- *elements of the methodological approaches, links to other parts of the programme*



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Step 2 Target Learning Outcome:

The lecturer uses the situation inventory to identify the learning outcome that is most likely/often underachieved by the marginalised group





Step 2 Target Learning Outcome:

“Lo4, Demonstrate mastery and skills needed to conduct developmental research”

The lecturer has reflected on this learning outcome and why it needs to be the focal point of inclusive constructive alignment. This is because the lecturer has concluded that high quality achievement of this learning outcome is...

- Particularly challenging for students in general (rather than an inequity associated with a specific group)
- Key to high quality achievement of the other learning outcomes
- A way of supporting long-term learning for students' next level of study, and employability
 - These skills open up possibilities for exam success, and year 3 projects
 - The skills are essential for high-level professional practice
- A way of supporting students in managing their own wellbeing during their learning on the programme
 - This knowledge can help them manage their own emotions, particularly stress, which can help in their personal and academic lives



$$x_{1m}^{(2)\pm} = \pm H_m^{(2)} + \varepsilon f_m \mp \frac{1}{2} H_m^{(2)} \varepsilon^2 d(t_m, t_{2m}) \pm \frac{3}{8} H_m^{(2)} \varepsilon^4 (d(t_{10}, t_{2m}))^2 + \dots$$

Step 3 Exclusion Influence Location

The lecturer uses the situation inventory, to identify the ways in which the current content delivery may inhibit engagement with /achievement of the target learning outcome. These fail-points need to be identified in as succinctly and conceptually as possible. Possible Exclusion Influences need to be sought in three different dimensions...

- The Academic Dimension: Why the inherent qualities of the material make it hard to learn
- The Logistical Dimension: Why the situation makes the material hard to learn
- The Identification Dimension: Why the students' personal relationship with the material makes it hard to learn. How much do they identify with the material, and what affect does that identification have on their learning?

$$x_{1m}^{(2)} = \pm H_m^{(2)} + \epsilon f_m \mp \frac{1}{2} H_m^{(2)} \epsilon^2 d(t_m, t_{2m}) \pm \frac{3}{5} H_m^{(2)} \epsilon^4 / \psi(t_{10}, t_{2m})^2 + \dots =$$

$$= \pm H_m^{(1)} + \epsilon f_m + \sum_{k=1}^{\infty} (-1)^k \epsilon^{2k} a_{2k} \left(\frac{\partial f_m}{\partial t_{10}} \right)$$

Step 3 Exemplar

Logistical Influences to Exclusion:

– “it’s late in the year and students already have ideas for their year 3 project”

Structural Influence: **Lifeload** (low energy)

Psychosocial Influence: **Motivation** (progress on year 3 project)

Academic Influence to Exclusion:

– “The biology requires some background that not all students have or feel confident with. It’s not in their YR-3 projects. They don’t do the exam questions, and I’m telling them everything they need to know. They’re not used to hearing about psychological concepts in biological terms, or thinking about them in terms of numbers”

Structural Influence: **Background** (Biological sciences)

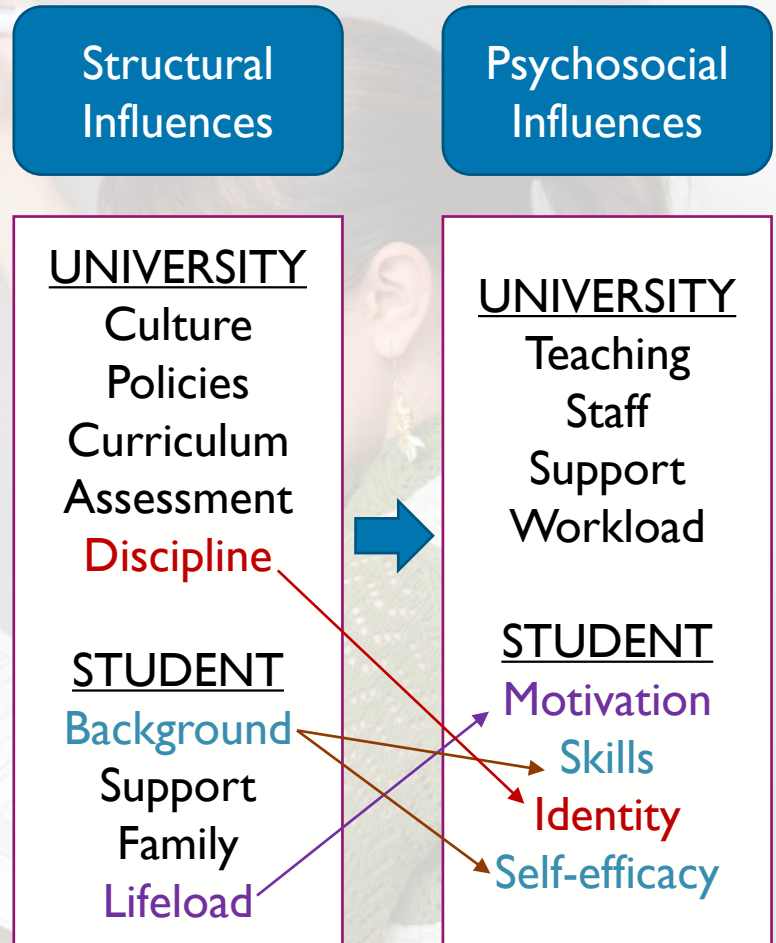
Psychosocial Influence: **Skills/Self efficacy** (abstraction)

Identification Exclusion Influence:

– “They don’t see how it relates to them or their career. It’s not their idea of psychology. They also don’t see this content is happening inside them. and help them in day-to-day life.”

Structural Influence: **Discipline** (Unclear Professional Relevance)

Psychosocial Influence: **Identity** (Unclear personal Relevance)





Step 4 Aligned Dimensionalising of the Target LO

For LO's written using verbs from the cognitive domain of Bloom's Taxonomy (as is most common in the UK). The target LO must be informally re-written to describe the learning outcome using a comparable verb from the affective and psycho-motor domains in bloom's taxonomy. Effectively creating a 3-part LO that allows the lecturer to describe what the idealised achievement of the learning outcome looks like on a cognitive, behavioural, and emotional level.



Step 4 Aligned Dimensionalising of the Target LO

The following 3 slides include the materials needed to complete this stage.

Following these materials, you'll see an exemplar of Step4 across three slides



The COGNITIVE Domain

The cognitive domain deals with how we acquire, process, and use knowledge. It is the "thinking" domain. The table below outlines the six levels in this domain and verbs that can be used to write learning objectives.

Cognitive Domain Levels

-----Increasing Complexity----->

Remember	Understand	Apply	Analyze	Evaluate	Create
Retrieve relevant knowledge from long-term memory	Construct meaning from instructional messages, including oral, written, and graphic communication	Carry out or use a procedure in a given situation	Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose	Make judgments based on criteria and standards	Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure
Arrange Cite Choose Count Define Describe Duplicate Identify Label List Locate Match Name Outline Recall Recite Recognize Record Repeat Restate Review Select State	Abstract Associate Categorize Clarify Classify Compare Conclude Contrast Exemplify Explain Extrapolate Generalize Illustrate Infer Interpret Map Match Paraphrase Predict Represent Summarize Translate	Apply Carry out Demonstrate Determine Develop Employ Execute Implement Operate Show Sketch Solve Use	Analyze Attribute Deconstruct Differentiate Discriminate Distinguish Focus Organize Outline Parse Select Structure	Argue Assess Check Conclude Coordinate Criticize Critique Detect Evaluate Judge Justify Monitor Prioritize Rank Rate Recommend Test	Assemble Build Combine Compose Construct Create Design Draft Formulate Generate Hypothesize Integrate Plan Produce

The AFFECTIVE Domain

The affective domain deals with our attitudes, values, and emotions. It is the "valuing" domain. The table below outlines the five levels in this domain and verbs that can be used to write learning objectives.

-----Increasing Complexity----->				
Receiving	Responding	Valuing	Organization	Characterization
Openness to new information or experiences	Active participation in, interaction with, or response to new information or experiences	Attaching value or worth to new information or experiences	Incorporating new information or experiences into existing value system	Full integration/ internalization resulting in new and consistent attitudes, beliefs, and/or behaviors
Ask Choose Describe Follow Give Hold Identify Locate Name Select Reply Use	Answer Assist Aid Compile Conform Discuss Greet Help Label Perform Practice Present Read Recite Report Select Tell Write	Complete Demonstrate Differentiate Explain Follow Form Initiate Join Justify Propose Read Share Study Work	Adhere Alter Arrange Combine Compare Complete Defend Formulate Generalize Identify Integrate Modify Order Organize Prepare Relate Synthesize	Act Discriminate Display Influence Listen Modify Perform Practice Propose Qualify Question Revise Serve Solve Verify Use

The PSYCHOMOTOR Domain

The psychomotor domain deals with manual or physical skills. It is the "doing" domain. The table below outlines the five levels in this domain and verbs that can be used to write learning objectives.

-----Increasing Complexity----->				
Observing and copying another's action/skill	Reproducing action/skill through instruction	Accurately executing action/skill on own	Integrating multiple actions/skills and performing consistently	Naturally and automatically performing actions/skills at high level
Adhere Copy Follow Repeat Replicate	Build Execute Implement Perform Recreate	Calibrate Complete Control Demonstrate Perfect Show	Adapt Combine Construct Coordinate Develop Formulate Integrate Master Modify	Design Invent Manage Project Specify



Step 4a Exemplar Aligned Dimensionalising of the Target LO

Original Learning Outcome

- Demonstrate mastery of the skills needed to conduct developmental research; Cognitive Domain, Analyse Category, Verb “demonstrate”

This outcome is being re-written with new verbs in order to specify how the lecturer wishes to achieve the original LO in the learning experience in question

- Criteria for Cognitive Learning Outcome: *“I want to build their confidence by getting them to go a little past ‘demonstrating’ That’s an ‘analyse’ verb and I want them to be able to do this stuff. Its not exactly about telling the difference between things, it should be more constructive than that. I want them to be able to organize these systems, and know what they’d need to do. Its about structuring an experiment”*

- Category of Cognitive Learning: **Apply**; Apply Verb(s): **Organise/structure**



Step 4b Exemplar Aligned Dimensionalising of the Target LO

- Criteria for Affective Learning Outcome: *“The Valuing Or responding category of verbs seems most appropriate. They need to start internalizing what this stuff is and why its useful, but really they need to interact with it. Again, its about making sure they can make the right choices about the right method for the right question. I have to do that all the time as a professional for papers and studies - I have to be creative and ask questions. They’re not quite there yet, but there’s a version of that at their level that they can do.”*
 - Category of Affective Learning: **Respond**; Valuing Verb(s): **Select**



Step 4c Exemplar Aligned Dimensionalising of the Target LO

- Criteria for Psycho-motor Learning Outcome: *“Again, they need to make connections. Between the methods, the physical reaction, and the nervous systems. They need to build those relationships in their mind, so they can implement studies on top of that knowledge. But at a very basic level. They just need to be able to reproduce what they’re seeing at this point.”*
- Category of Psycho-motor Learning: **Manipulation**; Manipulation
Verb(s): **Implement/ Build**



Step 5 LO/Exclusion Influence Alignment

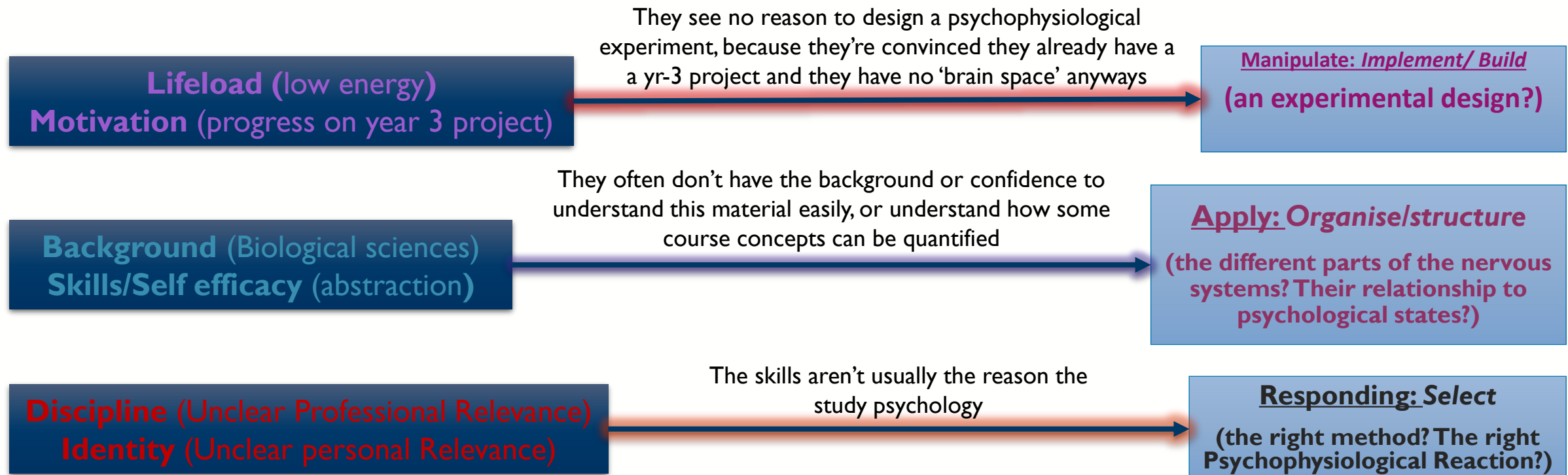
With the Target LO now in three domains, and the Exclusion Influence in three dimensions, the Lecturer must determine which domain of the learning outcome is compromised by which fail-point dimension. I.e. Is the affective domain of the learning outcome compromised by the Academic dimension of the Exclusion Influence? The Identification Dimension? Lecturers must use their Situation Inventory to make an informed decision.



Step 5 Exemplar

LO/Exclusion Influence Alignment

With the Target LO now in three domains, and Exclusion Influence in three dimensions, the Lecturer must determine which domain of the learning outcome is compromised by which Exclusion Influence. I.e. Is the affective domain of the learning outcome compromised by the Academic dimension of the Exclusion Influence? The Identification Dimension? Lecturers must use their Situation Inventory to make an informed decision. **A proposed alignment is suggested below...**





Step 6 Solution Criteria

The LO/Fail-point alignment provides an initial criteria for the changes necessary to make the lesson more inclusive and constructively aligned.

Example: The lecturer has dimensionalised his target learning outcome to include the cognitive, **affective**, and psychomotor verbs “demonstrate”, “**question**”, and “build” respectively. The lecturer has also identified one of the fail-points in the **identification dimension: students over-identify with the material causing them to feel overly confident**. The lecturer has aligned the dimensions of their learning outcome and their failpoints, and proposed that **the intended affective verb “question” is typically compromised by student’s over-identification with the material**. Thus, the lecturer now knows that they must get students to engage with the material via questioning, but that activity must reduce student’s identification with the material, i.e. encourage them to question but in a more distanced and dissocioated way. This provides a clear parameter for an inclusive and constructively aligned learning experience.

Step 6 Exemplar Solution Criteria

They see no reason to design a psychophysiological experiment, because they're convinced they already have a yr-3 project and they have no 'brain space' anyways



They often don't have the background or confidence to understand this material easily, or understand how some course concepts can be quantified



The skills aren't usually the reason the study psychology



Possible Design Solutions: Psycho-Motor

Psycho-motor Criteria:

They need to *Manipulate*,
i.e. Implement/ Build (an experimental design?) as an activity where the influences of *Lifeload (low energy) and Motivation (progress on year 3 project is an advantage or not problematic)*

Activities:

- Students can practice the skills for mastering experimental design in a way that's quick and easy such as mix & match activities.
- Students can contribute to an existing experiment that doesn't have psychophysiological measurements. Either one that the lecturer pre-selects, or one of the student's current ideas for a year-3 project. "Who here is planning on doing a project that features these key concepts for arousal? What measurement could help this current design? How, why?" Key powerpoint slides could be altered during the discussion to visualize the students progress as they pitch measurements for the study in question.
- In one of your slides, you identified things that anyone can do to manipulate psychophysiological responses, such as drinking water etc, Students can have a quick opportunity to pick which one is most relevant to their year-3 project interest, and be given 5 minutes in class to do it, and explain why. (it could be funny)

Possible Design Solutions: Cognitive

Cognitive Criteria: So, they need to Apply , i.e. Organise/structure (the different parts of the nervous systems? Their relationship to psychological states?) as an activity where the influences of Background (Biological sciences) Skills/Self efficacy (abstraction) is an advantage or not problematic

Activities:

Mix and Match activities would also be appropriate here, but can focus on multiple-part matching, such as Psychological concept/Physiological response/Appropriate Measurement. This will be particularly useful if the terms are simplified and familiar. Students don't have to do this for all the concept/response/measurement relationships. They can pick one based on which Psychological concept they're most familiar with.

Possible Design Solutions: Affective

Affective Criteria:

So, they need to *Respond*, i.e. *Select (the right method? The right Psychophysiological Reaction?)* as an activity where the influences of *Discipline (Unclear Professional Relevance)* *Identity (Unclear personal Relevance)* is an advantage or not problematic is an advantage or not problematic

Activities:

- Psychophysiological responses could be placed in the context of familiar and impactful experiences that are relevant to all students in their studies, or chosen carriers. i.e. Asking students, “lets say you’re in a really hard exam, which of these responses are you going to experience?” and let them answer – either personally or through something like mentimeter. You can then ask them which exercise would help based on specific answers. Or recommend the exercise yourself, and ask them why they think it would work, allowing you to suggest the measurement tool that would prove that.

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