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SCHOOL OF HEALTH &
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Integration in mixed methods research (MMR): Principles and practice in a study investigating assessment decisions of undergraduate nursing student competence

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The integration challenge in MMR

Integration central to the rigorous execution of MMR *(Bryman 2007, Fetters et al 2013)*

A priori assumption that integration is theoretically & practically feasible *(Uprichard & Dawney 2019)*

Intentional process of bringing quantitative & qualitative processes together to:

- Elaborate / enhance / clarify different facets of a phenomenon
- Synthesise findings & investigate contradictory findings *(NIH 2018, Topping & Timmins 2019)*

BUT

ongoing debate about how best to conduct integration, with discrepancies between principles for integration and real world practice noted resulting in an extensive discourse that integration in MMR is not well practiced, is under theorised and underdeveloped. *(Gütterman et al 2015, NIH 2018, Uprichard & Dawney 2019)*

Successful integration requires an integration strategy which takes account of both theoretical and empirical integration

(Fetters et al 2013, Tunarosa & Glynn 2017)

THEORETICAL INTEGRATION: use of theoretical frameworks as lenses to bring together empirical elements into an understanding of patterns in data. Considered an important way of integrating epistemological concerns with research design in order to build explanations.

EMPIRICAL INTEGRATION: the logistical processes of ordering the sequence of data collection & analysis methods underpinned by the research questions and purpose of integration. Commitment to mixing and matching methods determined at the design stage.

Planning for integration in MMR

(Burke Johnson & Onwuegbuzie 2004 , Fetters et al 2013)

Level and stages of integration	Description of theoretical and empirical integration processes
Design level	
1. Research question	Research question located in a theoretical framework which justifies need to collect data from more than one paradigm, and determines the priority of each data strand.
2. Purpose of MM study	Study aim developed with respect to current theoretical understanding and identifies the study purpose as either convergent, exploratory or explanatory.
3. Selection of methodology	Design identifies the relationships between the data strands with respect to independence or interaction and details empirical processes of timing, data prioritisation and mixing.
Methods level	
4. Data Collection	Methods selected address the qualitative and quantitative components of the research question and support systematic integration of data sets through connecting, building, merging and embedding approaches.
5. Data analysis	Data analysis plan identifies paradigm specific analysis techniques for individual data strands and techniques for transforming and merging data to support inference development.
Interpretation and reporting level	
6. Data interpretation & validation	Meta-inferences developed through synthesis of narratives and data transformation from each data set and evaluated for quality and logic against general MMR principles and theoretical framework used.
7. Conclusion drawing & reporting	Conclusions presented in a way that demonstrates the connectedness of qualitative and quantitative data strands through integrative narrative and joint displays.

Case study

Burden S.E. (2014) ‘Fit for Registration’. Mentor judgements and decision making regarding student competence in practice. A mixed methods study. Unpublished PhD thesis. University of Huddersfield. [online] Available at http://eprints.hud.ac.uk/23853/

Burden S, Topping AE, O’Halloran C. (2018) Mentor judgements and decision-making in the assessment of student nurse competence in practice: A mixed-methods study. J Adv Nurs. 2018;74:1078–1089. https://doi.org/10.1111/jan.13508

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Integration in research questions and purpose

Principal Research Question (PRQ):
What factors underpin mentor judgements of student nurse competence in practice and how do mentors reach a decision to pass or fail a student in practice?
Supplementary Research Questions (SRQ):
1. What evidence do mentors gather and use to inform their judgements about a student nurse's practice? (QUAL/quan)
2. What effect do assessment strategies, including documentation, have on mentor judgements and decisions about a student's practice? (QUAL/quan)
3. How do mentors make judgements and reach a decision to pass or fail a student in practice? (QUAL/quan)

'The purpose of the study is to identify individual mentor practices and the cognitive processes used by mentors to form judgements and reach an overall decision on a student's achievement at the end of an assessed practice experience'

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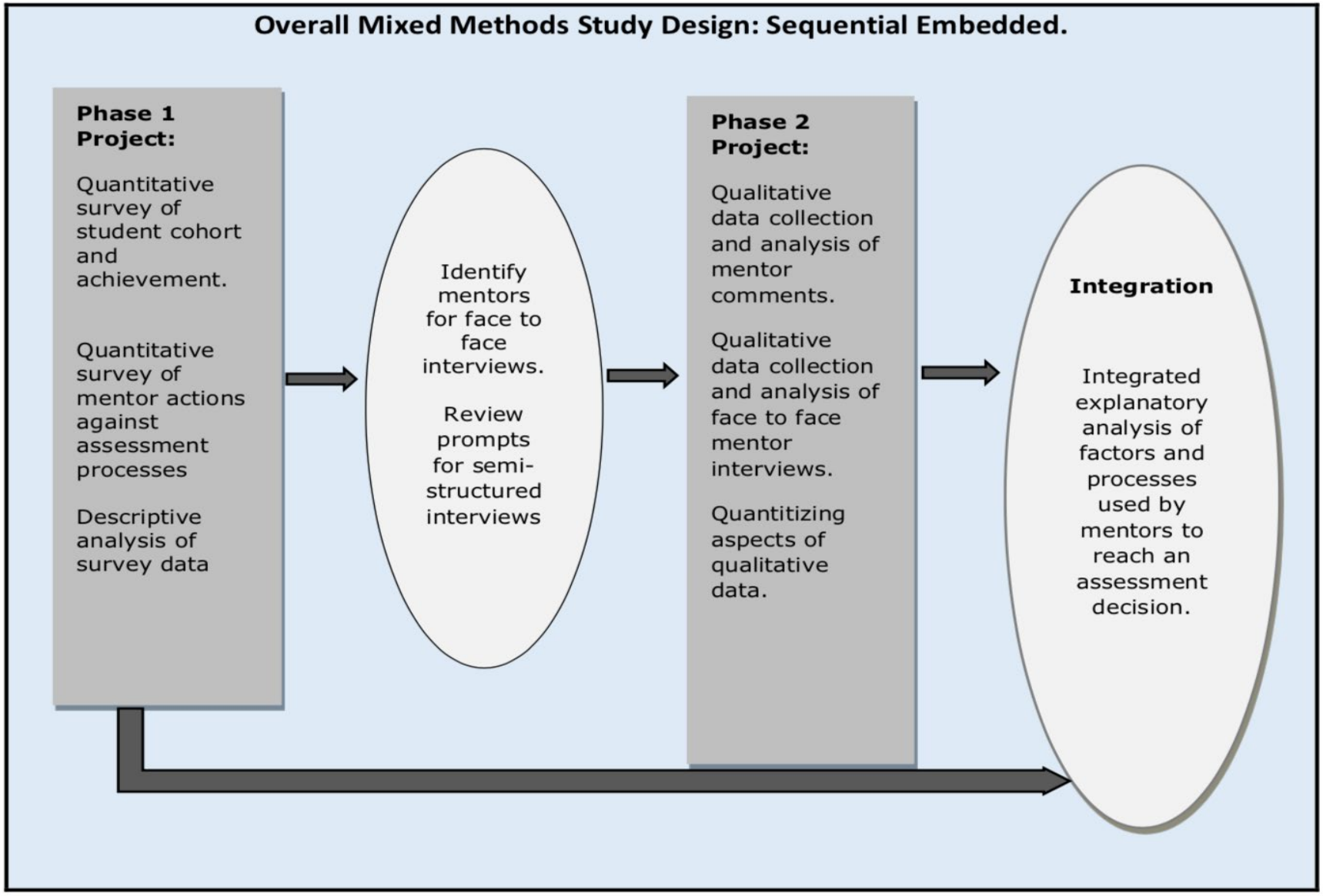
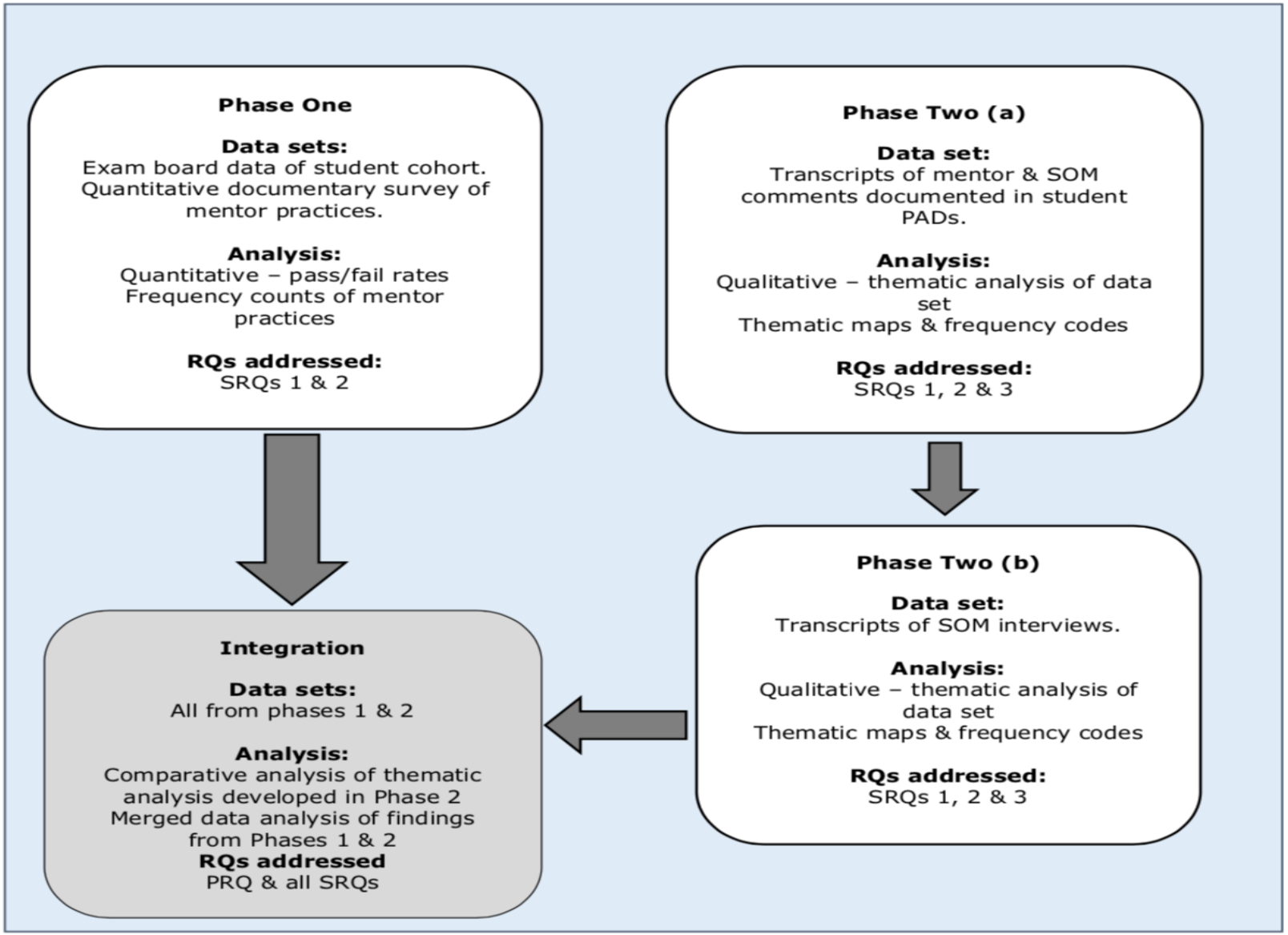
Integration at design level



Integration in data analysis



Integration at interpretation & reporting level

- **Synthesis of narratives**
- **Data transformation**
- **Joint Displays** *(Gütterman et al 2015, Kuckartz 2017)*
- **Theorisation**

Integration through synthesis of narratives

Thematic Analysis Integration: telling the same story?

Comparative analysis of the findings from thematic analysis in Phase 2 of the study consolidated and developed understanding of similarities, differences and relationships in the following areas:

- **Similarities**: the consistency of criteria underpinning mentor judgements.
- **Differences**: increasing importance of the theme ‘Student as a deliverer of care’ in the final three placements of the programme.
- **Relationships**: student as a competent practitioner but with limitations, student practice and consideration of the student as a member of the team, and the link between NMC proficiencies and a mentor decision

Integration through data transformation

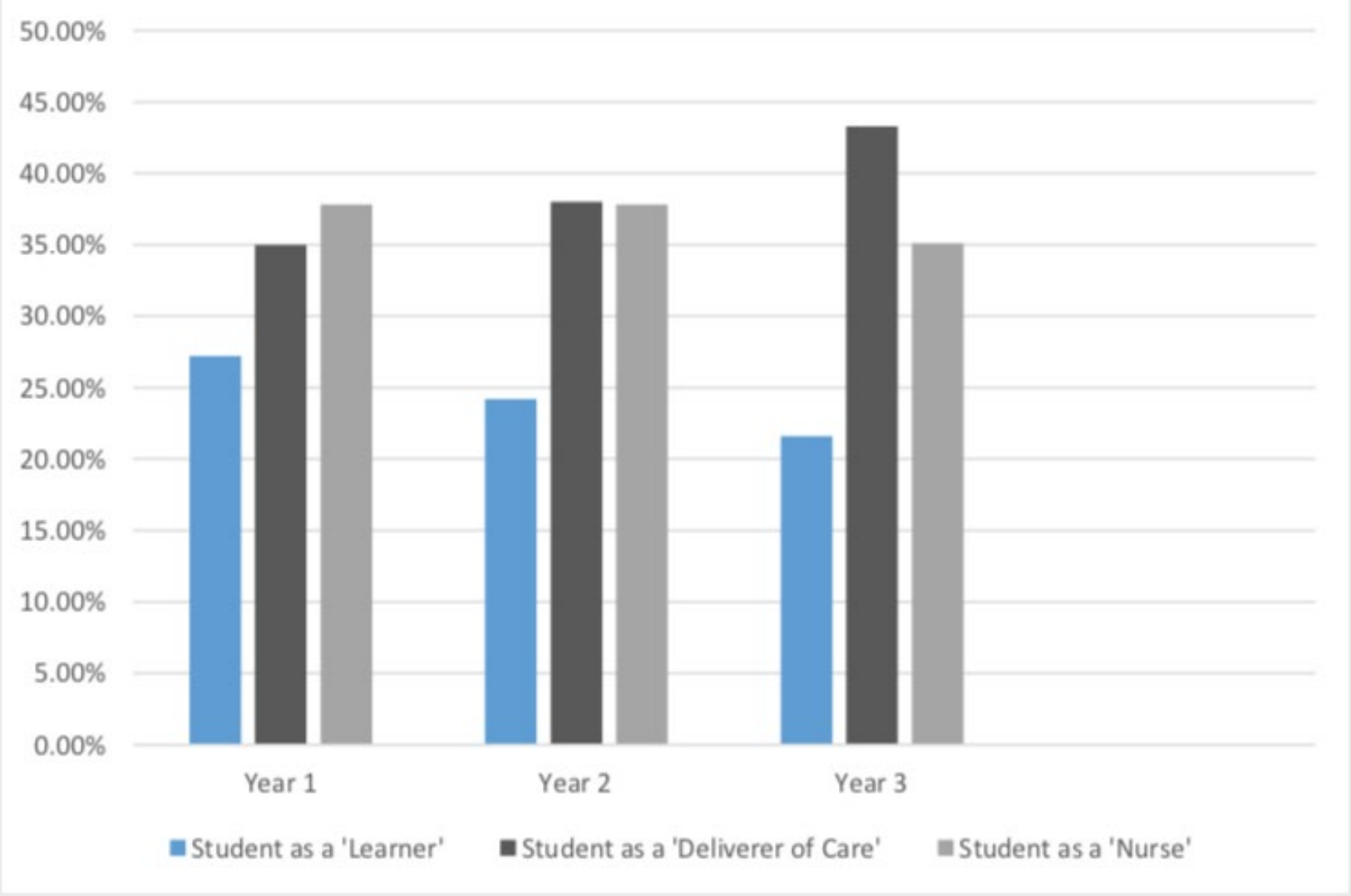


Figure 27: Significance of organising themes by programme year

Integration through data transformation SRQ 1 & 2

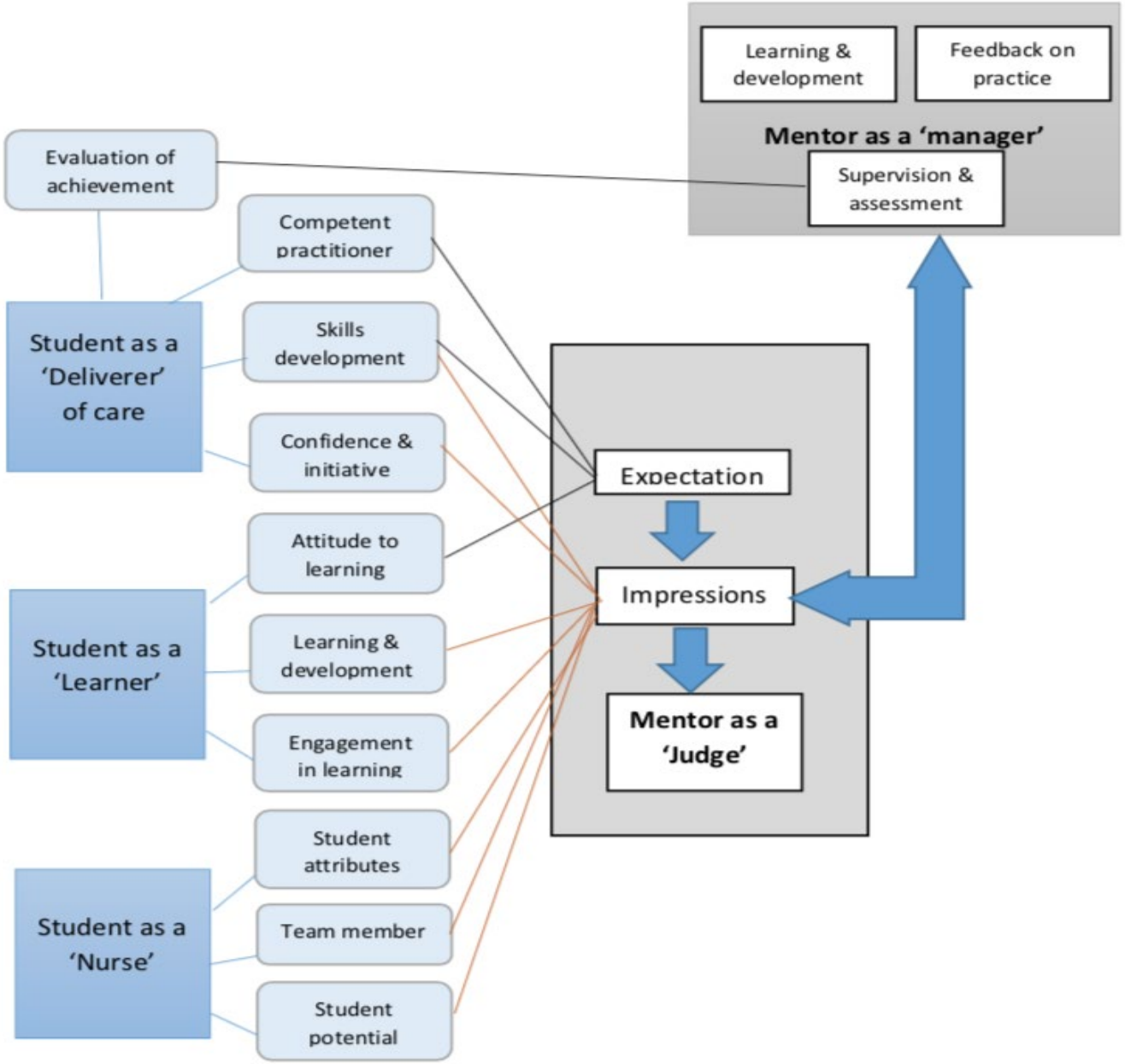


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Figure 29: A model of mentor decision making – managing assessment

Integration presented in a joint display SRQ 2

Finding:	Source of findings		
Assessment strategy & documentation effect	**Documentary survey Phase 1**	**Student PADs Phase 2**	**SOM interviews Phase 2**
Mentor conduct of assessment process may not comply with programme guidance	*Fig 14 & 15:* late preliminary interviews (PI) especially in 1st placement (63.4% not in week 1) *Fig 17 & 18:* late midpoint interviews *4.4:* insufficient SOM weekly meetings *4.4* 30.3% of interviews more than one mentor *4.5.1* No written mentor feedback at midpoint in year 1 (36.6-50%)	*5.3.2* Mentor comments on limitations to learning opportunities due to lack of mentors & general staff shortages. Disruption of mentorship due to ward moves.	*6.2.1* Reasons for midpoint interview delay. Concerns trigger earlier interview. *6.3.1* first years low expectations & not a priority *6.2.1* Students being supported by more than 1 mentor.
Limited apparent use of NMC proficiencies in the decision making process.	*Fig 16:* 5-23% of assessments not recording proficiency achievement at midpoint interview.	*5.4.4* Outcomes agreed by student & mentor guide evaluation Only 23 (n =2030) text segments extracted	*6.2.2 & 6.2.3* informal chats, not everything documented *6.2.1* Proficiencies reviewed outside interviews *6.2.1* Failing students not writing up
Non-achievement of skills / proficiencies or documented concerns, are not managed in a consistent manner.		*5.4.3* Comments (for AK & E) not followed up by other mentors *5.4.3* Comments in Z final interview not reflecting midpoint concerns *5.5.1* concern re X picked up between placements	*6.3.2* gaps in skills workbook or proficiency review may or may not be a cause for concern

Table 18: Integration table showing the effect of assessment strategies and student documentation (SRQ 2)

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Conclusion drawing: integrative synthesis & theorisation

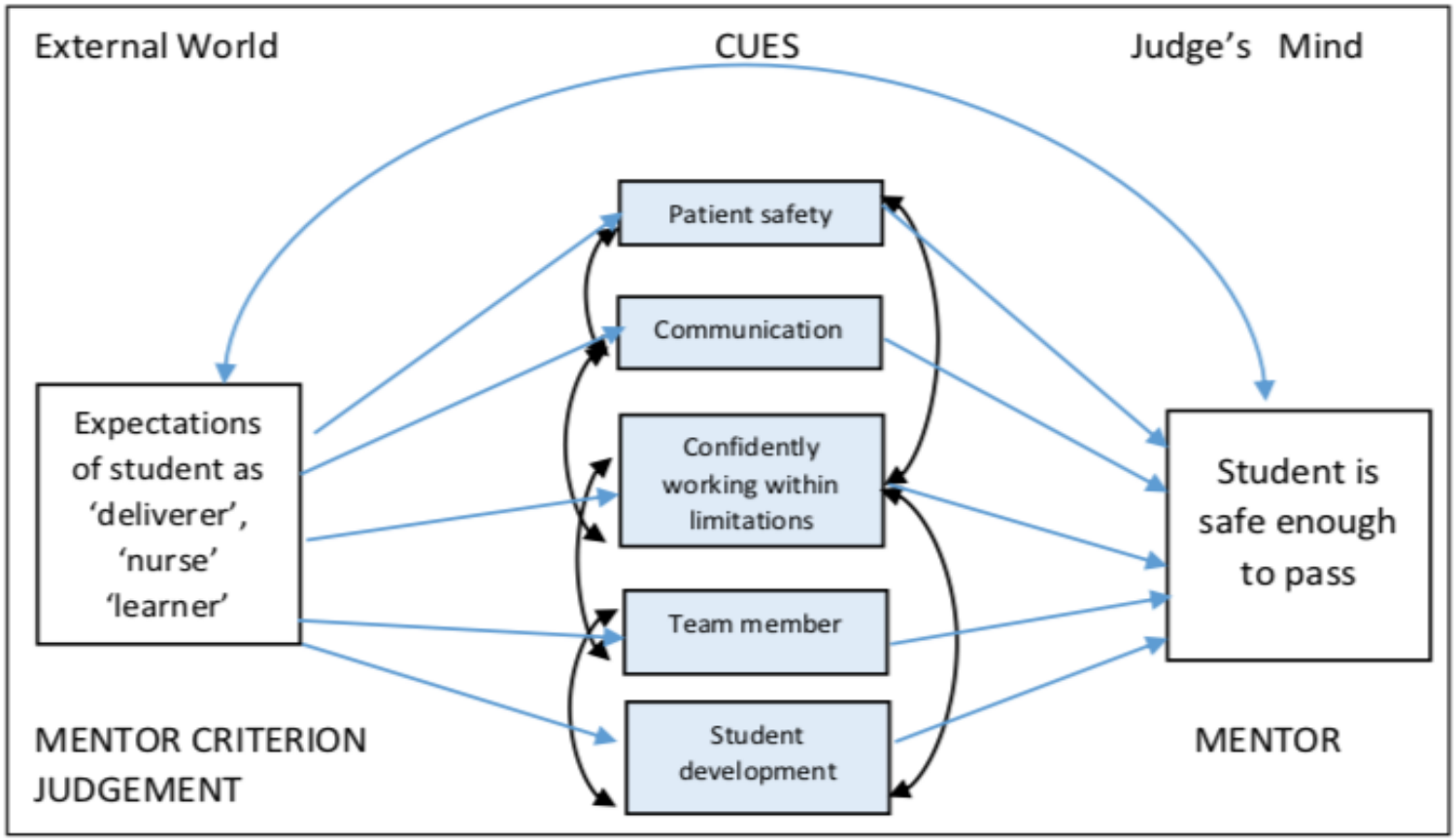

Figure 31: Schematic diagram conceptualising mentor judgements based on Brunswik's lens model (1952)

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