

Supplemental Digital Appendix 1

Examples of Thematic Content Analysis

Narrative	Interpretation	Coding	Sub-theme	Main theme
I: And what about the whole session where you had to try on your own. What did that do for your learning?				
Participant A4: <i>“Uhm, yeah, I feel it helped my learning process, because of it [discovery]. It made me focus on the aspects of the procedure, which I had difficulties with. It helped me identify them. You know the difficulties I had. Early on. ”</i>	Participant feels that it made her focus her mind early on, which conceptual parts of the procedure, was difficult specifically for her to perform	GDL’s effect on attention to procedural detail Comparison to canonical solution	Effects on stimulus response. Effects with comparison to canonical solution	Immediate effects on knowledge structures

Narrative	Interpretation	Coding	Sub-theme	Main theme
Interviewer: Were there any parts of the course you found difficult?				
Participant B1: [...] just the whole sitting and starring at a surgical knot, and by the way being stressed out by that everybody else is probably better than I am, or has already figured out the solution.	Participant is intimidated by failure-learning, because of the people around her. She feels they are better or quicker.	Social context Difficulties engaging in learning approach	Failure-learning, social context Failure-learning, fear-of-being-bad Psychological safety, Procedural learning environment	Psychological Safety

Narrative	Interpretation	Coding	Sub-theme	Main theme
Interviewer: Can you related this course to other learning contexts?				
Participant B2: Uhm, yeah, well almost everything else. I learn a lot this way; I make some sort of mistake or some bad plan, which I then confer with a colleague, who might think that's not at all how you're supposed to do it. And even tough that sucks, and you feel you laid a bad plan, the next time you have the same type of patient, then because you've learned something from the failed process, you're able to shine, and make a really good plan.	Participant describes and compares the learning approaches and mechanisms of GDL to those she experiences throughout her clinical environment.	GDL in relation to clinical work and learning	Motivation Productive-failure, relation to clinical-learning-environment GDL relation to Clinical Learning	Dynamic effects on motivation.

Supplemental Digital Appendix 2

Examples of Observational Data

Time	Interaction with task	Interaction with other participants	Interaction with teacher	Other	Comment
16.35	B7 finishes suture and compares it with the example				Self-regulated, and reflective
16.36		B7 & B8 discuss the result and compare with suture learned last week			Collaborative learning and transfer

Time	Interaction with task	Interaction with other participants	Interaction with teacher	Other	Comment
18.10	A5 discussed final product with A6	Discussion with partner			Final product, importance
18.13	A6 deconstructs the final product			Explorative	Final Product, Explorative

Time	Interaction with task	Interaction with other participants	Interaction with teacher	Other	Comment
17.22			B2 discuss detail of procedure with teacher, discovered during GDL		Task reflection and focus due to GDL
17.35	B1,2,4& 6 use the logbook to practice their suture				More actively taking responsibility and self-regulating their learning.