

Systematic review datasets

Title: Datasets associated with a mixed method systematic review guided by the Joanna Briggs Institute

Description: A systematic review is a critical evaluation of the current evidence available on a topic to be researched. It is essential to systematically identify previous literature which have explored how the various components of the topic under review. The following data sets evolved as a result of a mixed method systematic review guided by the Joann Biggs Institute. It focuses on the search strategy, keyword search databases utilised, the PRISMA flowchart, appraisal processes, and diagrammatically demonstrating the emergence of the integrated findings of the review.

Date of Data Production: May 2020

Description: Would be of interest to researchers engaging in a systematic review within the research fields of social science, nursing, midwifery and education

Contact person: Brieger King

Data base search details: CINAHL Plus, Embase, Medline, PsychINFO, Scopus, British Education Index (BEI), ERIC and ProQuest Education were all searched systematically. Before commencing a review of primary literature, a search of the Cochrane Library database of systematic reviews and the JBI website occurred for existing reviews, with none identified. A three-stage search strategy ensued. Following consultation with nursing and education librarians regarding keyword search strategy, an initial search of the CINAHL Plus database occurred using the following keywords: situated cognition,

situated cognition learning theory, situated learning, situated learning theory, clinical skills, clinical competence, nurse, nursing, midwife, midwifery, blended learning, online learning, hybrid learning with Boolean connectors 'OR' and 'AND' used to combine search terms. Publications were limited from 1985-May 2020 as early writings on the development of the learning theory began in the late 1980s. The search was limited to peer-reviewed journals and English language publications. Subsequent searches were replicated based on the initial CINAHL Plus. Finally, reference lists of all the selected studies were screened for additional relevant studies prior to the critical appraisal stage.

CINAHL Plus Search strategy

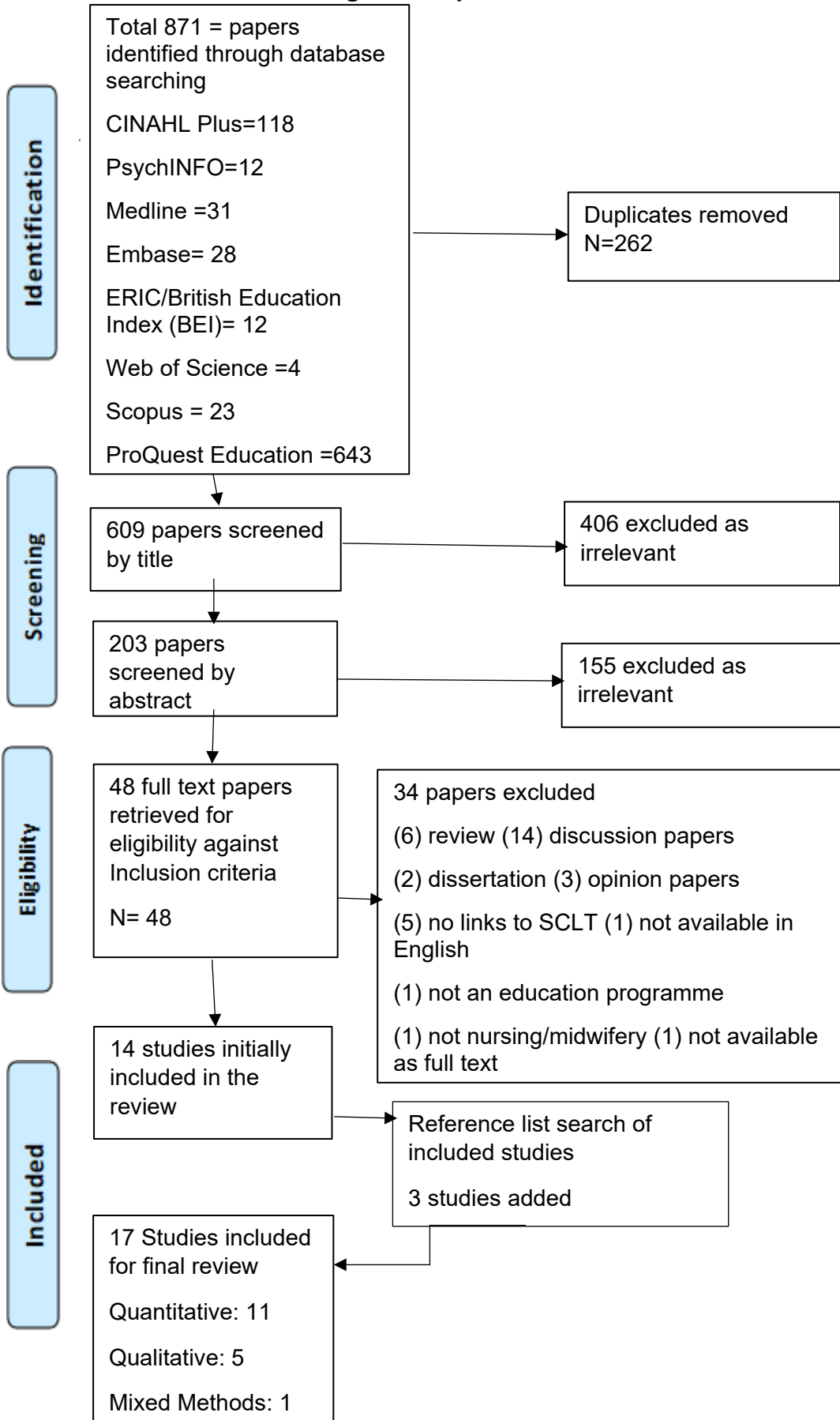
Search ID#	Search Terms	Search Options	Last Run Via	Results
S1	""situated learning""	Limiters - Published Date: 19850101- 20211231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	204
S2	"situated learning theory"	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	440
S3	"situated cognition"	Limiters - Published Date: 19850101- 20201231 Expanders - Apply	Interface - EBSCOhost Research Databases Search Screen -	29,032

		equivalent subjects Search modes - Boolean/Phrase	Advanced Search Database - CINAHL Plus	
S4	"situated cognition theory"	Limiters - Published Date: 19850101-20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	19
S5	"cognitive apprenticeship"	Limiters - Published Date: 19850101-20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	64
S6	MH (learning theory)	Limiters - Published Date: 19850101-20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	1,601
S7	S1 OR S2 OR S3 OR S4 OR S5 OR S6	Limiters - Published Date: 19850101-20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	30,794
S8	MH (clinical competence)	Limiters - Published Date: 19850101-20201231 Expanders - Apply equivalent subjects Search modes -	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database -	42,677

		Boolean/Phrase	CINAHL Plus	
S9	"clinical skill"	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	26,677
S10	S8 OR S9	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	48 441
S11	S7 AND S10	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	333
S12	"nurse"	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	518638
S13	"nursing"	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes -	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database -	740 ,967

		Boolean/Phrase	CINAHL Plus	
S14	"midwife"	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	39 768
S15	"midwifery"	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	44 192
S16	S12 OR S13 OR S14 OR S15	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	972 612
S17	S11 AND S16	Limiters - Published Date: 19850101- 20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	118

PRISMA flowchart illustrating search process



Summary of data extraction of included studies

	First Author, Country Objectives	Population, Setting, and Intervention	Design and Methodological Rigor (Strong/Moderate/Weak)	Key Results	Use of SCL Theory Contributing components /Teaching interventions used	Evidence related to sub-questions
1	Chen et al, (2017) Taiwan. Objective: To assess impact of an interactive situated and simulated teaching programme on novice nurses' competence, confidence and stress during orientation	Post reg nurses. Hospital based programme. Interactive simulated learning and non-interactive simulated leaning	Design: RCT pre-test post-test Randomized selection N=31 (15 control, 16 exp) exp standard orientation programme plus 1 interactive learning plus face to face follow up over 3 months. Control standard programme Rigour: Strong. clear blind randomisation clear objectives. Methodology described, ethical approval and considerations included. Short follow up period and small sample size. Skills (communication, physical assessment	Competency: increase in competency of all aspects of role, skills biggest increase Confidence increased pre 18.8% (exp) 26.7% (control); Post 82.25% (exp) 40% (control) Stress reduced in experimental group from pre-test. P=0.011 Control same at pre and post P>0.05 Learning satisfaction /experience: ISST helpful in improving competence Felt enhanced knowledge, better able to respond to emergencies. pre 23.13 exp 23.53 (c) post 26.75(exp) 23.73 (c)	Programme based on SL Principles simulations, expert teaching, reflection Teaching interventions used: Simulation, role-play simulated clinical environment. reflective debriefing	Student learning experience obtained. (y) 2. Effect on Skills (y) 3. Effect on knowledge (y) Communication same for both groups

			intro to medical illness and medication administration)			
2	Lai and Yen (2018) Taiwan Objectives: to explore student experiences and expectations of using mobile technology clinical nursing courses based on Cognitive Apprenticeship (CA model)	N=8 undergraduate nurses hospital setting	Design Qual case study: Data collection Focus group x4 with instructors interviewed following analysis of focus group to verify findings from the instructor's opinion purposive sampled from previous education programme Rigour: strong Clear methods description, no ethical considerations included, analysis (Content analysis) succinct	Mobile technology supports reflection, coaching, scaffolding, articulation. Less effective in modelling and exploration. Watching expert practice was effective way to learn Recommended to develop 'mimic' videos to enhance modelling. Skills included communication skills, physical care	Based on the model of CA. Video resources demonstrated by experts Modelling, coaching, articulation, reflection Teaching interventions used: Computer based demo modelling of patient assessment Access to expert practice in clinical environment recording interaction Coaching: recorded information sent to instructor for feedback	Student learning experience

					<p>Scaffolding: access to expert for feedback which was gradually removed</p> <p>Articulation: discussion forum, Reflection app submitted and discussed with instructor.</p> <p>Exploration: concept mapping student identifying learning and what they still needed to learn</p>	
3	<p>Cope et al., (2000)</p> <p>Objectives: to explore the placement experience of student nurses (last traditional cohort, 1st P2000 cohort) and</p>	<p>N=30. UK Scotland Hospital setting</p>	<p>Qualitative descriptive: semi-structured interviews.</p> <p>Rigour: (Moderate/strong) methodology described confidentiality discussed, no ethical approval discussed.</p> <p>Researchers role</p>	<p>Community of practice: both groups felt part of the nursing community on placement involved in activities that made you feel part of the team. Knowledge learned in college could be recontextualised in placement P2000 group</p>	<p>Strategies used in theory applied to clinical learning, Community of practice, coaching, expert practice, scaffolding, reflection</p>	<p>Learning experience</p>

	ascertain what aspects of the SLT were prevalent in their learning experience		discussed. Succinct discussion on thematic analysis, but no framework included.	had difficulty linking theory to practice Students felt they were provided opportunities to learn on placement. Placement provided them with the opportunity to reflect on theory studied in college. Learning support seen as coaching and scaffolding of learning as competence developed support was withdrawn	Teaching interventions used: Coaching/expert practice Community of practice Scaffolding through support of expert	
4	Finnerty and Collington, (2013). UK Objective: explore strategies used by mentors to mediate practice learning in midwifery practice	N= 19 student midwives 19 mentors hospital setting	Design: Qualitative multicentre. Data collection: interviews, diaries, observation, Rigour: moderate. Some information on methodology, data collection. ethical issues included no discussion re researcher's role. Small sample size results cannot be generalizable	Role modelling, expert practice and role reversal all assisted with the learning experience. CA can be used to mediate experiential learning but should be more structured	Role reversal Role modelling/expert practice Scaffolding Teaching interventions used: Mentors adopted Role reversal Role modelling/expert practice Scaffolding	Learning experience

5	Gonen et al., (2016) Israel. Objective: to evaluate the feasibility of a SL approach for IT by assessing student perception at the end of an education programme	N=55 UG nurses university setting	Quantitative pre –post-test course survey (64% response) post course survey (78.5% response) Data collection survey self-reporting of knowledge pre course post course test Final course grades included Rigour: weak. Limited information provided on all aspects of methodology, unclear on content of surveys,	98% Perceived increase in knowledge 96% reported Computer based simulations contributed to knowledge gain P<0.0001 Student perception about value of the course on their knowledge 90% r=0.33 p<0.05 reported simulations were useful to enhance learning but didn't stipulate specific details	Limited information re actual study and links to SCL Role modelling access to experts who coached Authentic learning through simulated scenarios Teaching interventions used: Simulated exercises based on clinical environment	Effect on Knowledge
6	Hickey et al, (2015), Qatar. Objective: To explore student perceptions on the utility of the situated learning approach, effective strategies for	N=9 Second year student nurses in university SL strategies to teach various clinical skills and maths	Mixed method case study. Questionnaire (Excel Data analysis) and FG (Thematic analysis, no framework identified). Rigour: Moderate Methodology clearly described. Ethical approval discussed.	SL Strategies adopted created 'real safe environment'. Felt more confident applying knowledge and skill to practice. Real environment felt less threatening Resources and bedside 'expert teaching' effective. Maths knowledge tested	Strong theoretical inclusion as a pedagogical resource Authentic learning and environment Access to expert practice Reflection	1.Student learning experience obtained. (Y) 2. Effect on Skills (no) 3. Effect on knowledge: maths instruction

	<p>maths instruction and student reflection on their learning</p>		<p>Content validity of data collection tool discussed. no ethical issues discussed</p>	<p>100% pass on MCQ 82% Short answer Instructors acted as facilitators to confirm practice Learning environment, tasks, and interactions should be as authentic and realistic as possible. Knowledge and skills develop through close collaboration between students and teachers. Learning takes place through shared tools and language, and is socially- and contextually-dependent.</p>	<p>Teaching interventions used: Clinical simulated scenarios, experts present for demonstrations and debriefing for reflection.</p>	<p>tested but no comparison made</p>
7	<p>Hoffman et al., (2011) Australia Objective: to assess the effect of an interactive computer decision support framework based on SL to improve clinical reasoning skills</p>	<p>N= 302 UG nurses University setting</p>	<p>Quantitative: experimental. Data collection survey, student written comments Rigor: weak programme described in detail. Limited detail on methodology, survey no content validity on survey. No ethical</p>	<p>84% Simulations useful for learning and to think like a nurse 83% Reflected real life scenarios, relevant to practice 72% Format motivated them to learn and maintain interest 78% Student satisfied with learning experience.</p>	<p>Authentic learning Expert practice Authentic environment Teaching interventions used: Computerised interactive simulations</p>	<p>Learning experience Effect on skill</p>

			considerations included. Limited information on analysis process	Technical issues were a difficulty.	based on SL principles expert practice 'real pts' 'real environment' Authentic learning	
8	Hold et al., (2015) USA Objective: examine the perceptions and experiences of nursing students on palliative care end-of-life programme based on 3 apprenticeship models	N= 19 purposive sample UG nurses university setting	Qualitative exploratory. Data collection: focus group, justification provided Rigour: Strong (Methods section articulate, ethics included, objectives clear. systematic discussion)	Cognitive apprenticeship (CA) link. Learning through real life stories provided by experts assisted with knowledge gain	CA used as one 'apprenticeship' model Expert practice who provided stories of real-life experience Teaching interventions used: Story telling from experts	Learning experience
9	Lee et al., (2018) Taiwan Objective: to evaluate the effect of situated teaching on empathy skills	N=103 48 (control) 55 (experimental) UG nurses University setting	Two centre Quasi experimental pre-post-tests, 4-month teaching programme involving role play, simulated learning reflection and OSCE control group classroom teaching on empathy	Intervention group had significant higher scores post intervention Self-assessed empathy increased with intervention p<0.001 OSCE Assessed empathy higher in experimental group by both assessors	Role-play, self-reflection, Teaching interventions used: Role-play Written reflections Simulated scenarios	Effect on skill

			<p>Data collection: Self completed questionnaire Jefferson scale of empathy health profession student scale used OSCE Rigour strong. Detailed discussion on methodology groups not randomly chosen but assessors were blinded to which group student had been assigned to. ethics included intervention detailed reliability and validity off instrument established. OSCE checklist had internal validation SPSS data analysis appropriate use of statistics</p>	and standardised patients P<0.0	OSCE on empathy skills	
10	Macdonald et al., (2013) UK. Objective: to evaluate the progress of student nurses	Longitudinal single cohort experimental study over 3 yrs. N=210 UG nurses	Pre-test post-test GCSE results, baseline numeracy assessment v Uni. admission criteria, exposure to virtual	(100% pass rate before registration) 72% on first attempt, 96% on second attempt 100% by 5 th attempt.	Modelling, coaching, scaffolding, articulation, reflection	Effect on Knowledge Effect on Skill

	medication dosage calculation problem solving competence	university setting	medication education programme.	No correlation between GCSE maths/other entry level maths results and number of attempts with final assessment. Slight correlation between foundation assessment and number of attempts	Teaching interventions used Virtual and simulated clinical environments for teaching and assessment	
11	McSharry and Lathlean, (2017) Ireland Objective: to explore clinical teaching and learning within a preceptorship model and identify when best practice based on theoretical professional and educational principles occur	N=13 UG nurses and 13 preceptors Hospital setting	Qualitative Data collection: purposive sampling semi structured interviews Rigour (Strong) Clear discussion on methodology, ethical issues, data analysis approaches)	Interactive dialogue and coaching were an effective approach for teaching and learning. Scaffolding occurred where students observed expert practice and then participated. Articulation occurred when students were questioned to develop critical thinking skills	Study based on SCL theory Strategies adopted Modelling, coaching scaffolding Communities Teaching interventions used: Community of practice working with mentor. Scaffolding: participating with care and reflecting with mentor	Learning experience

12	<p>Purpora and Prion, (2018) USA Objective: to explore nursing student perceptions of the value of student produced video assessment performance</p>	<p>N=72 UG nurses University setting</p>	<p>Quantitative: cross sectional convenience sample. Data collection: 34 item survey SPSS analysis Rigour: (moderate) methodology section discussed with ethical issues data collection and analysis included. No information on survey validation or distribution high response rate</p>	<p>4 Themes: 1. process and outcome knowledge and skill developed, video allowed skill development Cronbach alpha 0.87 2. Feedback and review: one to one feedback worthwhile Cronbach alpha 0.91 3. Support and confidence: increased independent 4. Barriers: few 90% response rate. Cronbach alpha .077 - .91</p>	<p>Modelling, coaching, scaffolding as teaching strategies Reflection Multiple roles Teaching interventions used: Written guidance Video recording skill for assessment of head-to-toe assessment. Re-watched until satisfied with performance</p>	<p>Learning experience Self-reported skill development and knowledge</p>
13	<p>Sabin et al., (2013). UK Objective: Evaluate a web-based authentic assessment environment compared to a simulated OSCE method.</p>	<p>N= 63 UG Nursing students UK university based</p>	<p>A counterbalanced design. Participants from 4 universities were assessed using both methods over 1 day Rigour: strong. Methodology clearly discussed ethical issues, data analysis detailed</p>	<p>Computer based assessment proved to be a valid and reliable method of assessment. Results for students were similar for both methods Both methods should be used. A standardised Rubric should be used for OSCE</p>	<p>Authentic scenarios on computer based and classroom scenario Authentic assessment via online and simulation Access to experts</p>	<p>Effect on knowledge Effect on skill</p>

14	<p>Sadhuwong et al., (2016) Objective: to examine the effect of a blended learning model integrating situated multimedia lessons and CA method on clinical reasoning skills</p>	<p>N= 56 UG Nurses Thailand</p>	<p>Quasi experimental pre-post-test control Rigour (Strong) Methodology clearly discussed ethical consideration included random selection, group comparability</p>	<p>Post test score for exp group was much higher following intervention face-to-face and online together is effective. significant difference between exp and control group $p < 0.001$ CA strategies used authentic environment expert practice, Face-to-face and online delivered together to ensure effective learning Repeated practice alone may not necessarily achieve learning but when facilitated by teacher proved an effective strategy</p>	<p>Expert modelling greatly influenced effect on skill, Role modelling Authentic assessment Authentic learning simulation Feedback Teaching interventions used: Computer based simulations of 'real' scenarios Coaching through face-to-face interaction Teachers as role models Practical Skills assessment</p>	<p>Effect on skill</p>
15	<p>Weeks et al., (2013a) UK/USA Objective: Exploring the relationship</p>	<p>N=44 (22+22) UK;32 +44 USA University and hospital based</p>	<p>Quantitative Experimental Baseline assessment, college-based programme, follow up</p>	<p>Exposure to computer prototype authentic learning environment assists in knowledge attainment</p>	<p>Authentic environment Modelling of expert practice Scaffolded support</p>	<p>Effects on knowledge</p>

	between exposure to authentic and transmission education environments in medication calculation skills		clinical assessment evaluation phase numeracy assessment (Clinical observation N=8) Rigour: Strong Methodology systematically discussed internal and external validity included	Application to practice assessment results predictive of clinical performance Less errors following computer based programme In comparison to classroom based learning 4.8% v 12.5% P<0.001	Articulation Reflection Teaching interventions used: Online simulations classroom-based practice	
16	Wu et al., (2012) Objectives: to examine the effectiveness of online learning based on CA support physical assessment skills learning	N=46 UG nurses Taiwan university setting	EXP (22) Cont (24) Data collection exams questionnaires x 2 skills assessment Rigour (weak) Methodology systematically discussed. No randomisation instruments developed by researchers no detail on content validity group not comparable form outset	Mobile learning framework had significant difference in knowledge gain compared to control group post intervention Skill competency was higher in exp group v control group. More opportunity to practice Mobile system easy to use and benefited personal learning Cognitive load less for exp group.	Learning framework based on CA but not explicitly discussed No specific detail given repeated practice Simulated authentic environment Teaching interventions used: Computer based interactive Mobile simulated physical assessment	Effect on learning Effect on skill

17	Wyrostop et al., (2014). Qatar. Objectives how can SCLT be used as a pedagogical approach to teach quality end-of-life simulation	UG nurses no numbers provided Qatar university setting	Pre-test post-test surveys of EOL simulation using silver hour model Data collection self-reflections, self-awareness inventory, self-efficacy scores reflective discussion on experience of EOL. Self-awareness inventory developed no detail provided by whom, no detail re validation and self-efficacy rating. Rigour weak. No details on methodology, data collection tools, sample size, ethical issues	EOL simulation provided an indelible learning experience raising awareness of cultural competence, patient centred Allowed them to experience nurses' role Role-play provided active learning Simulation caused anxiety, sadness, fear due to realism of the scenario Increased confidence levels to replicate in real clinical environment	Authentic environment Authentic learning Expert practice Modelling practices assisted to better understand what happens in 'real' events. Debriefing allowed participants to reflect. Teaching interventions used: Role-play expert role models , 'real' simulated clinical environment	Learning experience
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Methodological appraisal process

The methodological appraisal was carried out using the recommended JBI critical appraisal tools for non-experimental, quasi-experimental and Randomised Control Trial studies (RCT's). The extracted data was tabulated to include specifics regarding population, geographical location, setting, phenomena of interest, design and methodological rigour and key results related to review questions. At this stage of the review, data from quantitative studies contained quantified data associated with the review objectives, whilst qualitative studies included specified themes or subthemes relevant to the review objectives. To integrate findings for reporting purposes, quantitative data required to be qualited as per JBI guidelines (2020). Data transformation facilitated this process. Reviews using a convergent integrated approach recommend that the quantitative data be qualited whereby quantitative data is 'transformed' or 'converted' into themes, categories, or narratives (Stern *et al.*, 2020). For this review, extracted quantitative data was transformed into qualited data to facilitate the integration of the extracted data from both the quantitative and qualitative studies (Sandalowski, 2000). This process required data transformation into textual descriptions which allowed narrative interpretation of the quantitative results, which had direct linkage with the review question. The qualited data from quantitative studies was compiled and merged with the data extracted from qualitative studies. Recurrent examination of the collected data was repeated, to identify categories based on similarity in meaning. Where two or more qualitative data, qualited data or a combination of both emerged, resulted in the formation of a candidate category (JBI, 2020). Categories were then combined to produce the overall integrated review findings. Tables below identify the critical appraisal process using the JBI critical appraisal tools

Critical appraisal results: Qualitative Studies and Qualitative component of mixed method study

Author	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Cope <i>et al.</i> , (2000)	N	U	Y	Y	Y	N	Y	Y	N	Y
Finnerty and Collington, (2013)	N	Y	Y	Y	Y	N	N/A	Y	Y	Y
Hold <i>et al.</i> , (2015)	Y	Y	Y	Y	y	N	N/A	Y	Y	Y
Lai and Yen, (2018)	Y	U	U	Y	Y	N	Y	Y	N	Y
McSharry and Lathlean, (2017)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hickey <i>et al.</i> , (2015) Qualitative component of mixed method study	Y	Y	Y	Y	Y	N	Y	Y	Y	Y

Y-Yes, N- No, U- Unclear, N/A- Not Applicable

Critical appraisal results for Randomised Control Trial

Author	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Chen <i>et al.</i> , (2017)	Y	Y	Y	U	N	N	Y	Y	Y	Y	Y	Y	Y

Y-Yes, N- No, U- Unclear, N/A- Not Applicable

Critical appraisal results for Quasi-experimental and non-randomised experimental studies

Author	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Gonen <i>et al.</i> , (2016)	N	N	N	N	Y	Y	N	Y	Y
Hoffman <i>et al.</i> , (2011)	Y	Y	Y	N	N	N/A	Y	Y	Y
Lee <i>et al.</i> , (2018)	Y	Y	N	Y	N	Y	N	Y	Y
Macdonald <i>et al.</i> , (2013)	Y	Y	N	Y	Y	Y	Y	Y	Y
Purpora and Prion, (2018)	Y	N/A	N	N	N	N	N/A	Y	Y
Sabin <i>et al.</i> , 2013	Y	Y	N	Y	Y	Y	Y	Y	Y
Sadhuwong <i>et al.</i> , (2016)	Y	Y	Y	Y	N	Y	N	Y	Y
Weeks <i>et al.</i> , (2013a)	Y	Y	N	Y	Y	Y	Y	Y	Y
Wu <i>et al.</i> , (2012)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Wyrostok <i>et al.</i> , (2014)	N/A	N	N	N	Y	Y	N/A	Y	N/A
Hickey <i>et al.</i> , (2015) Quantitative component of Mixed method	N/A	N/A	N/A	N	N	N/A	N/A	Y	N

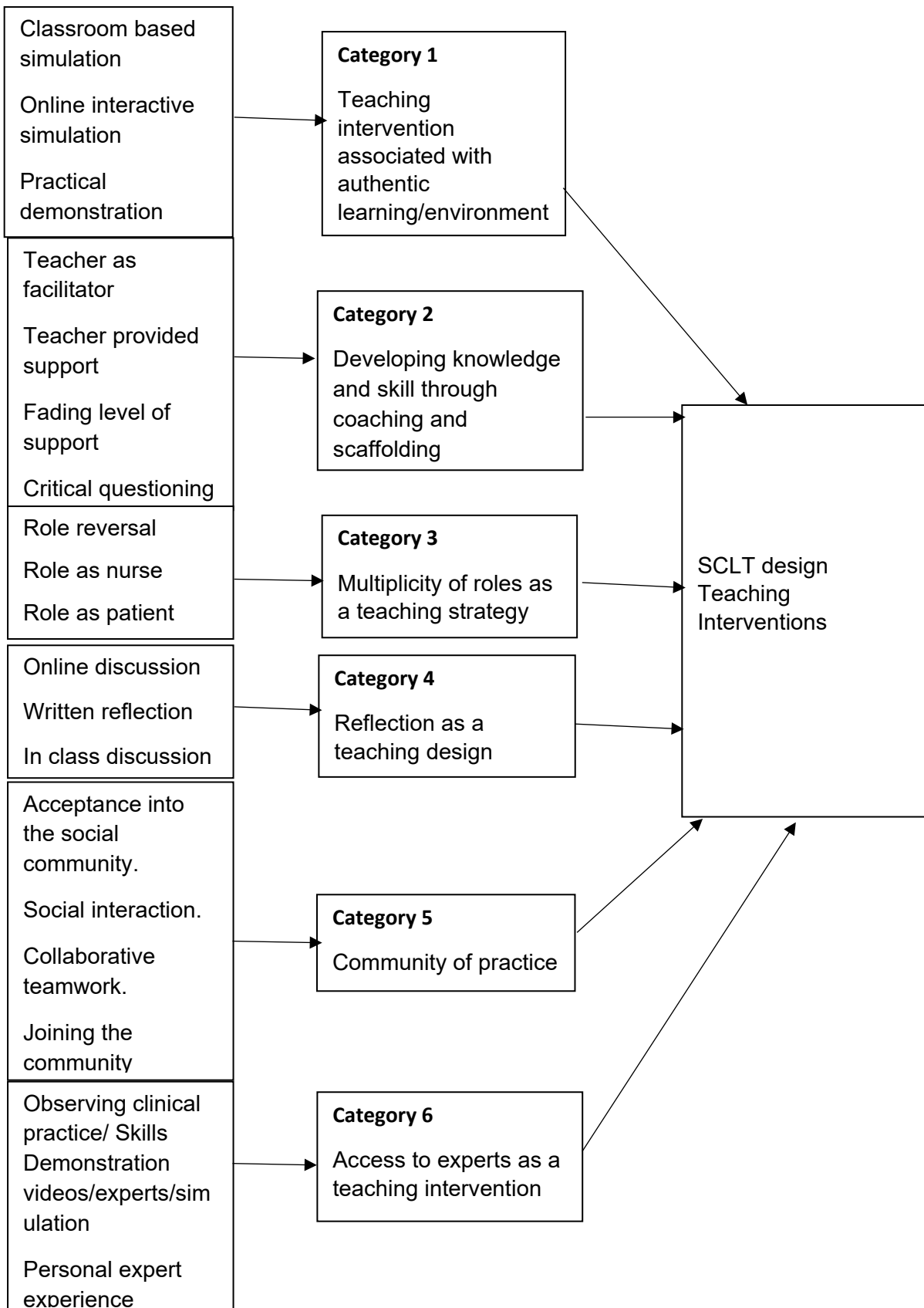
Y-Yes, N- No, U- Unclear, N/A- Not Applicable

The findings section is reported as per the JBI guidelines for the convergent integrated mixed-method systematic review. Four integrated findings emerged from the reviewed studies: SCLT influence in the design of teaching interventions, SCLT influence on learning achievement, SCLT designed teaching intervention on skills development and SCLT impact on the learning experience. Findings for each integrated finding are presented individually in the figures below, with an illustrated schema of the synthesis for each included with an associated figure which identifies the specific papers which have contributed to each theme.

Schema SCLT influence in the design of teaching interventions

Qualitised data

Integrated Findings



Papers contributing to SCLT influence in the design of teaching interventions.

Category 1: Teaching intervention associated with authentic learning /environment
Classroom based simulation: Chen <i>et al.</i> , 2017; Hickey <i>et al.</i> , 2015, Lee <i>et al.</i> , 2018, Wyrostok <i>et al.</i> , 2014 Purpora and Prion 2018 Online interactive simulation: Lai and Yen, 2018; Hoffman <i>et al.</i> , 2011; Gonen <i>et al.</i> , 2016, Wu <i>et al.</i> , 2012
Category 2: Developing knowledge and skill through coaching and scaffolding
Teacher as facilitator: Chen <i>et al.</i> , 2017, Cope <i>et al.</i> , 2000, Finnerty and Collington, 2013, Hickey <i>et al.</i> , 2015, Lai and Yen, 2018, McSharry and Lathlean, 2017, Purpora and Prion, 2018, Sadhuwong <i>et al.</i> , 2016, Weeks <i>et al.</i> , 2013a, Wu <i>et al.</i> , 2012 Teacher provided support: Chen <i>et al.</i> , 2017, Cope <i>et al.</i> , 2000, Finnerty and Collington, 2013, Hickey <i>et al.</i> , 2015, Lai and Yen, 2018, McSharry and Lathlean, 2017, Purpora and Prion, 2018, Sadhuwong <i>et al.</i> , 2016, Weeks <i>et al.</i> , 2013a, Wu <i>et al.</i> , 2012 Fading level of support McSharry and Lathlean, 2017; Cope <i>et al.</i> , 2000, Lai and Yen 2018, Finnerty and Collington, 2013 Critical questioning: McSharry and Lathlean, 2017 Cope <i>et al.</i> , 2000; Lai and Yen, 2018; Weeks <i>et al.</i> , 2013a Interactive dialogue Chen <i>et al.</i> , 2017, Cope <i>et al.</i> , 2000, Finnerty and Collington, 2013, Hickey <i>et al.</i> , 2015, Lai and Yen, 2018, McSharry and Lathlean, 2017, Purpora and Prion, 2018, Sadhuwong <i>et al.</i> , 2016, Weeks <i>et al.</i> , 2013a, Wu <i>et al.</i> , 2012)
Category 3: Multiplicity of Roles as a teaching strategy
Role reversal: Chen <i>et al.</i> , 2017, Finnerty and Collington, 2013, Lee <i>et al.</i> , 2018, Purpora and Prion, 2018, Hickey <i>et al.</i> , 2015, Wyrostok <i>et al.</i> , 2014 Role as nurse: Lee <i>et al.</i> , 2018, Purpora and Prion, 2018, Hickey <i>et al.</i> , 2015,
Category 4: Reflection as a teaching strategy

Online discussion: Chen *et al.*, 2017, Lai and Yen, 2018, Cope *et al.*, 2000, Hickey *et al.*, 2015, Lee *et al.*, 2018, Purpora and Prion, 2018, Weeks *et al.*, 2013a, Wyrostok *et al.*, 2014

Written reflection: Cope *et al.*, 2000, Lee *et al.*, 2018, Purpora and Prion 2018

In class discussion: Chen *et al.*, 2017; Hickey *et al.*, 2015; Wyrostok *et al.*, 2014

Category 5: Community of practice

Acceptance into the social community: Cope *et al.*, 2000, Hickey *et al.*, 2015, Chen *et al.*, 2017

Social interaction: Cope *et al.*, 2000)

Collaborative teamwork: Cope *et al.*, 2000; Chen *et al.*, 2017; Hickey *et al.*, 2015

Joining the community: Cope *et al.*, 2000)

Category 6: access to experts as a teaching intervention:

Observing clinical practice: Sadhuwong *et al.*, 2016, Hold *et al.*, 2015, Weeks *et al.*, 2013a, Wyrostok *et al.*, 2014, Hickey *et al.*, 2015, Finnerty and Collington, 2013, Cope *et al.*, 2000, McSharry and Lathlean, 201

Skills Demonstration videos/experts/simulation: Lai and Yen, 2018, Hoffman *et al.*, 2011

Personal expert experience: Hold *et al.*, 2015

Schema of impact of SCLT on learning achievement

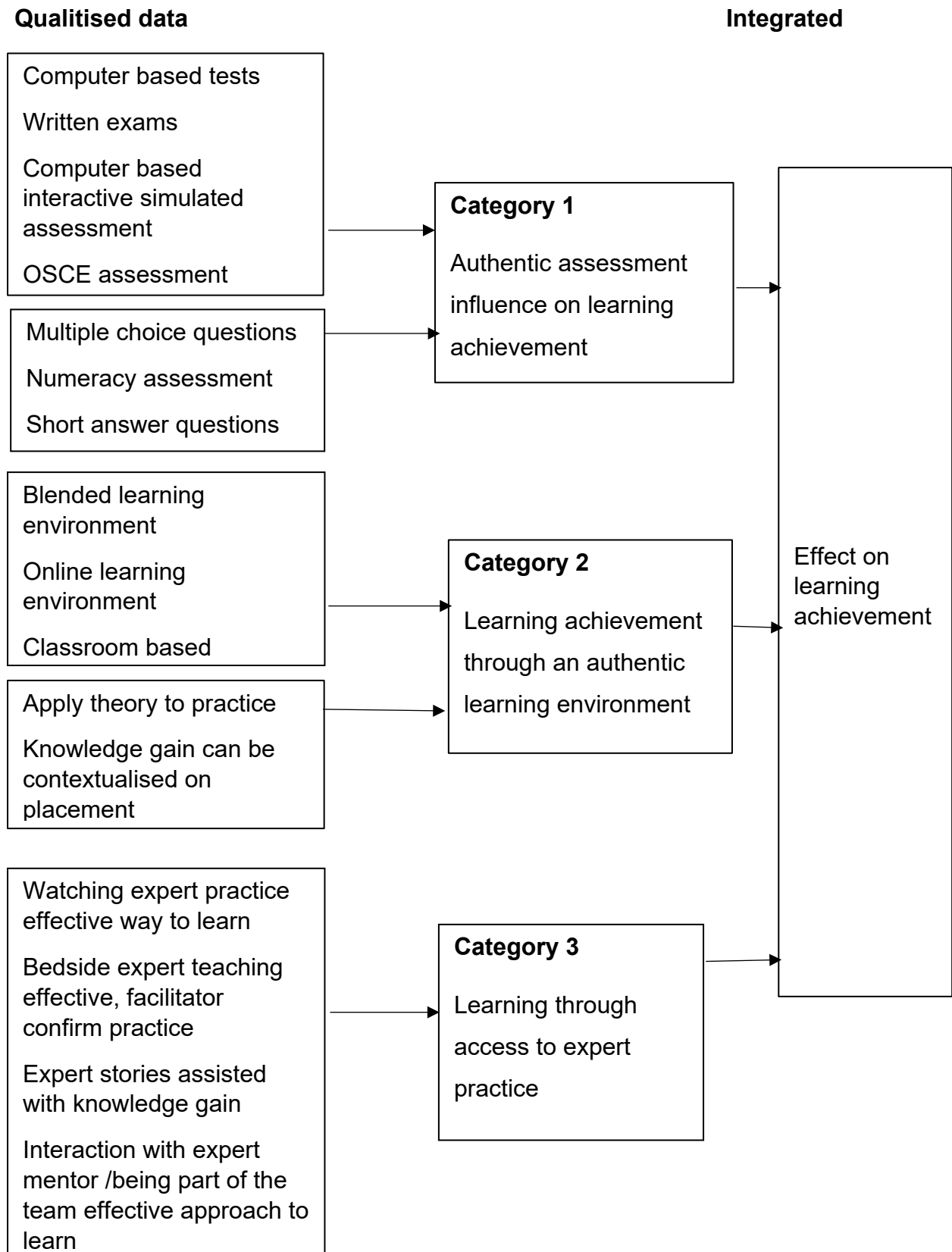
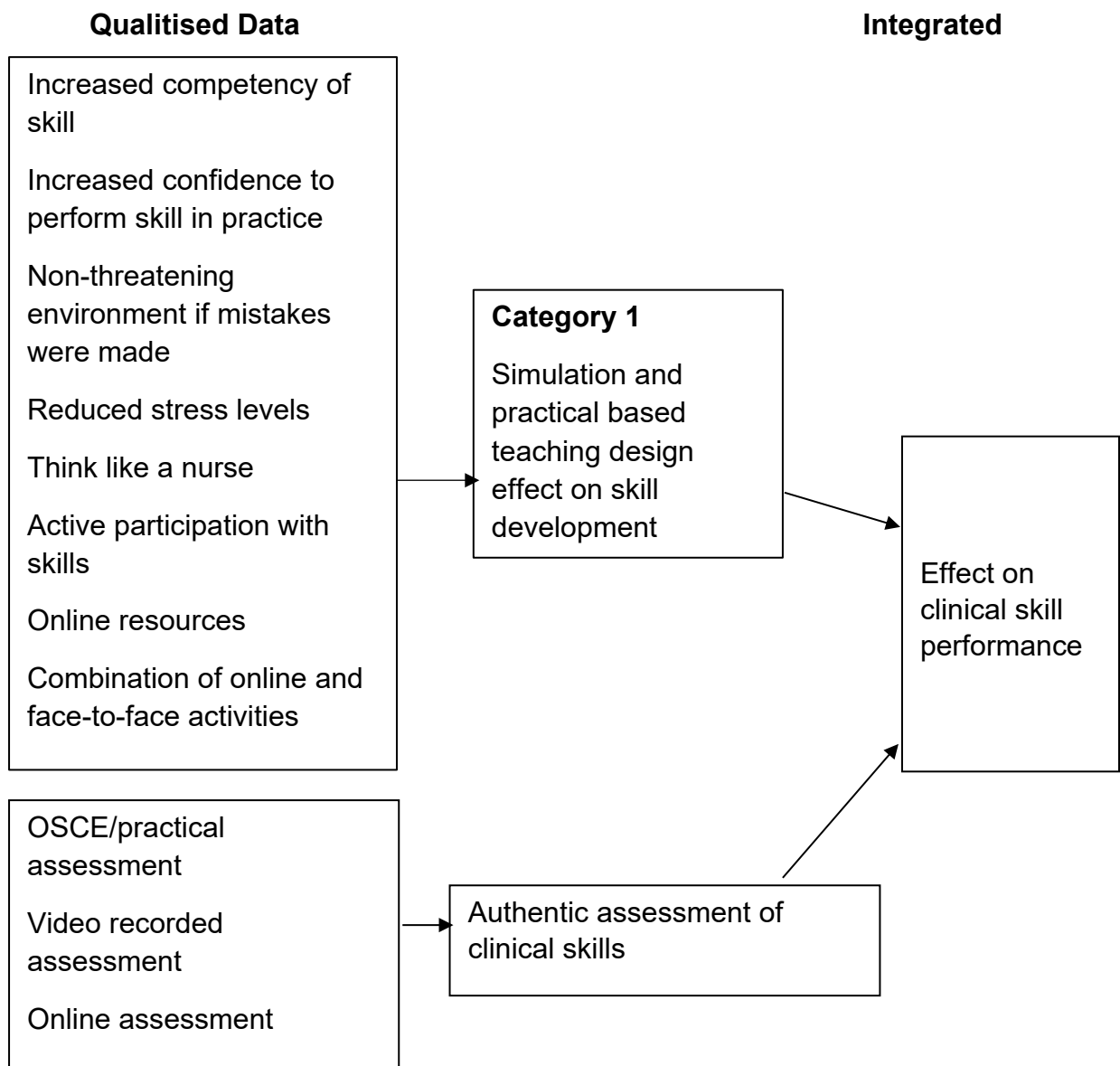


Figure 5a Papers contributing to impact of SCLT on learning achievement

Category 1: Authentic assessment influence on learning achievement
<p>Computer based tests Chen <i>et al.</i>, 2017, Gonen <i>et al.</i>, 2016, Hickey <i>et al.</i>, 2015, Macdonald <i>et al.</i>, 2013, Sabin <i>et al.</i>, 2013, Weeks <i>et al.</i>, 2013a, and Wu <i>et al.</i>, 2012</p> <p>Written exams Gonen <i>et al.</i>, 2016, Hickey <i>et al.</i>, 2015</p> <p>Computer based interactive simulated assessment Wu <i>et al.</i>, 2012</p> <p>OSCE assessment Sabin <i>et al.</i>, 2013</p>
<p>Multiple choice questions Gonen <i>et al.</i>, 2016, Hickey <i>et al.</i>, 2015</p> <p>Numeracy assessment Wu <i>et al.</i>, 2012</p> <p>Short answer questions Gonen <i>et al.</i>, 2016, Hickey <i>et al.</i>, 2015</p>
Category 2: Learning achievement through authentic learning environment
<p>Blended learning environment: Chen <i>et al.</i>, 2017, Gonen <i>et al.</i>, 2016. Lai and Yen, 2018, Macdonald <i>et al.</i>, 2013, Sadhuwong <i>et al.</i>, 2016, Weeks <i>et al.</i>, 2013a, Wu <i>et al.</i>, 2012</p> <p>Online learning environment: Hoffman <i>et al.</i>, 2011, Sabin <i>et al.</i>, 2013</p> <p>Classroom based: Hickey <i>et al.</i>, 2015, Hold <i>et al.</i>, 2015, Lee <i>et al.</i>, 2018, Purpora and Prion 2018, Wyrostok <i>et al.</i>, 2014</p>
<p>Apply theory to practice Cope <i>et al.</i>, 2000, Hickey <i>et al.</i>, 2015, Hoffman <i>et al.</i>, 2012, Weeks <i>et al.</i>, 2013a, Wyrostok <i>et al.</i>, 2014</p> <p>Knowledge gain can be contextualised on placement Cope <i>et al.</i>, 2000</p>
Category 3: Learning through access to experts
<p>Watching expert practice effective way to learn: McSharry and Lathlean, 2017, Purpora and Prion, 2018, Lai and Yen, 2018, Chen <i>et al.</i>, 2017, Finnerty and Collington, 2013, Cope <i>et al.</i>, 2000, Hold <i>et al.</i>, 2015, Sadhuwong <i>et al.</i>, 2016, Wyrostok <i>et al.</i>, 2014, Hickey <i>et al.</i>, 2015</p> <p>Bedside expert teaching effective, facilitator confirm practice: Cope <i>et al.</i>, 2000, Mc Sharry and Lathlean 2017, Lai and Yen, 2018, Finnerty and Collington 2013</p> <p>Expert stories assisted with knowledge gain: Hold <i>et al.</i>, 2015</p> <p>Interaction with expert mentor /being part of the team effective approach to learn: Cope <i>et al.</i>, 2000, Mc Sharry and Lathlean 2017, Lai and Yen, 2018 Finnerty and Colington 2013</p>

Schema: Effectiveness of teaching interventions using principles of SCLT on clinical skill performance



Papers contributing to Effectiveness of teaching interventions using principles of SCLT on clinical skill performance

Category 1: Simulation and practical based teaching design on skill development

Increased competency of skill: Gonen *et al.*, 2016, Hoffman *et al.*, 2011

Increased confidence to perform skill in practice: Chen *et al.*, 2017, Hickey *et al.*, 2015

Non-threatening environment if mistakes were made: Hickey *et al.*, 2015

Reduced stress levels: Chen *et al.*, 2017

Think like a nurse: Hickey *et al.*, 2015

Active participation with skills: Lee *et al.*, 2017, Chen *et al.*, 2017, Hickey *et al.*, 2015

Online resources: Weeks *et al.*, 2013a, Sadhuwong *et al.*, 2016., Gonen *et al.*, 2016, Hoffman *et al.*, 2011

Combination of online and face-to-face activities: Hickey *et al.*, 2015, Chen *et al.*, 2017, Lee *et al.*, 2017

Category 2 Authentic assessment of clinical skills

OSCE/practical assessment: Weeks *et al.* 2013a, Hickey *et al.*, 2015, Lee *et al.*, 2018, Sadhuwong *et al.*, 2016

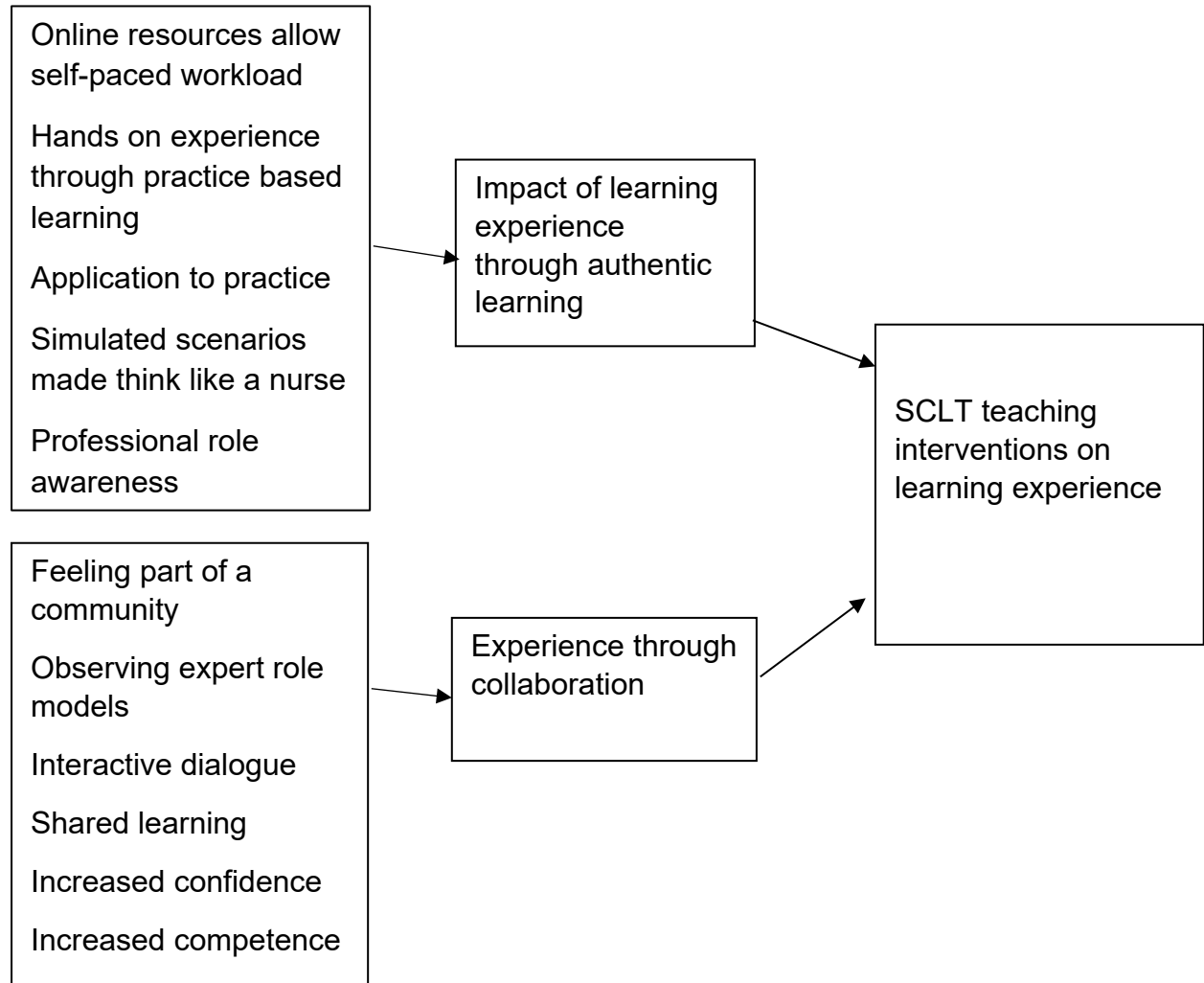
Video recorded assessment: Purpora and Prion 2018

Online assessment; Hoffman *et al.*, 2011, Gonen *et al.*, 2016, Weeks *et al.* 2013a, Wu *et al.*, 2012

Schema: Effectiveness of teaching interventions using principles of SCLT on the learning experience

Qualitised data

Integrated Findings



Papers contributing to effectiveness of teaching interventions using principles of SCLT on the learning experience

Category 1: Impact of learning experience through authentic learning

Online resources allow self-paced workload: Wu *et al.*, 2012, Hoffman *et al.*, 2011, Weeks *et al.*, 2013a

Hands on experience through practice based learning: Gonen *et al.*, 2016, Chen *et al.*, 2017, Hickey *et al.*, 2015, Wyrstok *et al.*, 2014, Hoffman *et al.*, 2011, Wu *et al.*, 2012

Application to practice: Hold *et al.*, 2015, Chen *et al.*, 2017, Hickey *et al.* 2015, Hoffman *et al.* 2011, Lai and Yen 2018, Purpora and Prion, 2018

Simulated scenarios made think like a nurse: Chen *et al.*, 2017, Hold *et al.*, 2015, Hickey *et al.*, 2015

Professional role awareness: Wyrstok *et al.*, 2014, Chen *et al.*, 2017, Hold *et al.*, 2015 Hickey *et al.*, 2015

Category 2: Experience through collaboration

Feeling part of a community: Cope *et al.*, 2000, Mc Sharry and Lathlean 2017, Finnerty and Collington, 2013

Observing expert role models: Hold *et al.*, 2015, Hickey *et al.*, 2015, Weeks *et al.*, 2013a, Lee *et al.*, 2018

Interactive dialogue: Cope *et al.*, 2000, Mc Sharry and Lathlean 2017, Finnerty and Collington, 2013, Wu *et al.*, 2012

Shared learning: Cope *et al.*, 2000, Mc Sharry and Lathlean 2017, Finnerty and Collington, 2013

Increased confidence: Cope *et al.*, 2000, Mc Sharry and Lathlean 2017, Finnerty and Collington, 2013

Increased competence Cope *et al.*, 2000, Mc Sharry and Lathlean 2017, Finnerty and Collington, 2013