

Supplemental Material. Data extraction form.

CLT Review Coding

Article ID What is the article ID number?

Reviewer Who are you?

- ☐ JLS (1)
- ☐ LAM (2)
- ☐ JQY (3)
- ☐ TvG (4)
- ☐ OtC (5)
- ☐ PSO'S (6)

Author What is the first author's last name?

Year In what year was the study published?

Continent In which continent(s) was study performed (select all that apply)?

- ☐ Africa (1)
- ☐ Asia (2)
- ☐ Australia (3)
- ☐ Europe (4)
- ☐ North America (5)
- ☐ South America (6)

Country In which countries was the study performed?

HPE yes no Were study subjects health professions education (HPE) learners, or non-HPE learners?

- ☐ HPE (1)
- ☐ Non-HPE (2)

Display This Question:

If Were study subjects health professions education (HPE) learners, or non-HPE learners?

HPE Is Selected

HPE prof What profession(s) was/were studied (select all that apply)?

- ☐ Medicine (1)
- ☐ Nursing (2)
- ☐ Pharmacy (3)
- ☐ Dentistry (4)
- ☐ Physical, occupational, or speech therapy (5)
- ☐ Veterinary (6)
- ☐ Other (specify) (7) _____

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Display This Question:

If Were study subjects health professions education (HPE) learners, or non-HPE learners?
Non-HPE Is Selected

NonHPE prod What profession(s) was/were studied?

Learner level What level(s) of learners were studied (select all that apply)?

- ☐ Pre-professional (i.e., undergraduate) (1)
- ☐ Professional (e.g., medical school) (2)
- ☐ Post-graduate training (3)
- ☐ Practicing professionals (i.e., continuing education) (4)
- ☐ Other (specify) (5) _____
- ☐ Can't tell (6)

Sample size What was the overall sample size (or note if unclear)?

Analysis unit What was the unit of analysis (if relevant)?

Aim clear Was/were the primary study aim(s)/purpose(s)?

- ☐ Clearly stated (1)
- ☐ Implied but not clearly stated (2)
- ☐ Could not determine primary study aim (3)

Display This Question:

If Was/were the primary study aim(s)/purpose(s)? Could not determine primary study aim Is
Not Selected

Aim What was/were the primary study aim(s)/purpose(s)?

Setting What is the study setting?

- ☐ Workplace (1)
- ☐ Simulation - primarily cognitive (2)
- ☐ Simulation - primarily psychomotor (3)
- ☐ Other (specify) (4) _____

Activity What specific activity was studied?

Methodology What was the primary study methodology?

- ☐ Quantitative (1)
- ☐ Qualitative (2)
- ☐ Mixed methods (3)
- ☐ Experimental (4)
- ☐ Other (specify) (5) _____

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Display This Question:

If What was the primary study methodology?<o:p></o:p> Qualitative Is Selected

Qual What was the specific qualitative study design? (Use what author says; add notes in "Other" if questions or disagree with authors).

- ☐ Case study (1)
- ☐ Discourse analysis (2)
- ☐ Ethnography (3)
- ☐ Grounded theory (4)
- ☐ Phenomenology (5)
- ☐ Thematic analysis (6)
- ☐ Other (specify) (7) _____

Display This Question:

If What was the primary study methodology?<o:p></o:p> Quantitative Is Selected

Quant What was the specific quantitative study design? Select all that apply. (Use what author says; add notes in "Other" if questions or disagree with authors).

- ☐ Descriptive (1)
- ☐ Inferential (including psychometrics) (2)
- ☐ Retrospective (3)
- ☐ Prospective (4)
- ☐ Other (specify) (5) _____

Display This Question:

If What was the primary study methodology? Experimental Is Selected

Exper What was the specific experimental study design? Select all that apply. (Use what author says; add notes in "Other" if questions or disagree with authors).

- ☐ Randomized controlled trial (1)
- ☐ Pre-test / Post-test (2)
- ☐ Single group, no comparison (3)
- ☐ Single group, repeated measures (4)
- ☐ Other (specify) (5) _____

Data sources What were sources for data (select all that apply)?

- ☐ Surveys (quantitative) (1)
- ☐ Surveys (open ended questions) (2)
- ☐ Objective observations/tests (3)
- ☐ Interviews (4)
- ☐ Focus groups (5)
- ☐ Documents/artifacts (6)
- ☐ Observations with field notes (7)
- ☐ Written texts (narratives, reflections) (8)
- ☐ Other (specify) (9) _____

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Concepts Which of the following are mentioned (select all that apply)? Consider searching in PDF with Ctrl-F.

- ☐ Cognitive load (1)
- ☐ Intrinsic load (2)
- ☐ Extraneous load (3)
- ☐ Germane load (4)
- ☐ Mental effort (5)
- ☐ Mental workload (6)

CLT measure Was CLT or mental effort or mental workload measured?

- ☐ Yes (1)
- ☐ No (2)

Display This Question:

If Was CLT or mental effort or mental workload measured? Yes Is Selected

Overall vs subtypes What aspects of cognitive load were measured (select all that apply) and how were these measurements operationalized?

- ☐ Overall cognitive load, mental effort, or mental workload (specify how) (1)

- ☐ Subtypes of cognitive load (i.e., intrinsic, extraneous, or germane load) (specify how) (2)

- ☐ Other (specify) (3) _____

Measure technique What methods were used to measure cognitive load (select all that apply and specify as needed)?

- ☐ Psychometric single item (Paas) (1)
- ☐ Psychometric single item (other) (2) _____
- ☐ Psychometric multi-item (3) _____
- ☐ Response time to secondary task (4) _____
- ☐ Physiologic measures (specify which ones) (5) _____
- ☐ Other (specify) (6) _____

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Kumasi How was CLT integrated into the study (based on Kumasi categorization)? (Enter notes afterward if appropriate.)

- ☐ Theory dropping (superficial mention of CLT without citations to primary literature) (1) _____
- ☐ Theory positioning (limited discussion of CLT with citations to primary work) (2) _____
- ☐ Theory diversification (CLT and other theories discussed but relevance to study not well-articulated) (3) _____
- ☐ Theory conversation (CLT discussed in detail and relevance to study is evident, but CLT not integrated into the study design) (4) _____
- ☐ Theory application (employs CLT throughout to inform research design and data analysis) (5) _____
- ☐ Theory testing/verification (study designed specifically to test tenets of CLT) (6) _____
- ☐ Theory generation (seeks to alter or modify CLT) (7) _____
- ☐ Other/unsure (specify) (8) _____

Outcomes Were primary study outcomes stated? If yes, specify what they were and whether/how they were met or not.

- ☐ Yes (1) _____
- ☐ No (2)
- ☐ Unclear (3)

Learn/performance Was learning and/or performance measured?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Unsure (3)

Display This Question:

If Was learning and/or performance measured? Yes Is Selected

Learn/performance how How was learning and/or performance measured?

Findings Summarize the primary study findings.

Imp workplace What are primary implications for workplace instruction & learning?

Imp CLT What are primary theoretical implications for CLT? Are findings consistent with, or contradictory to, primary tenets of CLT?

Frames If there were prominent theoretical frames other than CLT, please specify which ones.

Refs If there are any reference list that should be pulled for review please list them here.

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Exemplar Is this article a potential candidate for discussion as an exemplar?

- ☐ Yes (explain why) (1) _____
- ☐ No (2)

Exclude Should this article be excluded from the review?

- ☐ Yes (explain why) (1) _____
- ☐ No (2)

Comments If you have any additional comments or notes about this study, please specify here.