**Appendix I: Search Strategies**

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**Peer Reviewer**: Margaret Graton, MSc

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**Database / Study Registry (including vendor/platform):** Medline (via PubMed)

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| **Set #** | **Search Strategy** | **Results** |
| 1Metaverse | "Virtual Reality"[mesh] OR "Augmented Reality"[Mesh] OR "virtual reality"[tiab] OR "virtual realities"[tiab] OR VR[tiab] OR "simulated environment"[tiab] OR "simulated environments"[tiab] OR "Augmented reality"[tiab] OR "Augmented Realities"[tiab] OR "simulated reality"[tiab] OR "simulated realities"[tiab] OR "virtual simulation"[tiab] OR "virtual simulations"[tiab] OR "virtual technology"[tiab] OR "virtual technologies"[tiab] OR "virtual environment"[tiab] OR "virtual environments"[tiab] OR "simulation technology"[tiab] OR "simulation technologies"[tiab] OR "Extended Reality"[tiab] OR "extended realities"[tiab] OR "Mixed reality"[tiab] OR "Mixed Realities"[tiab] OR metaverse[tiab] OR metaverses[tiab] OR avatar[tiab] OR avatars[tiab] OR "Head Mounted Display"[tiab] OR "Head Mounted Displays"[tiab] OR "Immersive simulation"[tiab] OR "immersive technology"[tiab] OR "Immersive simulations"[tiab] OR "immersive technologies"[tiab] | 26,909 |
| 2education | "Teaching"[Mesh] OR "Education, Professional"[Mesh] OR "education"[Subheading] OR "Learning"[Mesh] OR "Students, Health Occupations"[Mesh] OR "Faculty"[Mesh] OR "Curriculum"[Mesh] OR "Schools, Health Occupations"[Mesh] OR teaching[tiab] OR teach[tiab] OR taught[tiab] OR educate[tiab] OR educates[tiab] OR educated[tiab] OR education[tiab] OR educational[tiab] OR educating[tiab] OR school[tiab] OR schools[tiab] OR "school s"[tiab] OR student[tiab] OR students[tiab] OR "student s"[tiab] OR faculty[tiab] OR "faculty s"[tiab] OR learning[tiab] OR learn[tiab] OR learns[tiab] OR learned[tiab] OR curriculum[tiab] OR curricula[tiab] OR course[tiab] OR courses[tiab] OR class[tiab] OR classes[tiab] OR "class s"[tiab] OR curriculums[tiab] OR pedagogy[tiab] | 3,119,936  |
| 3Systematic reviews | (systematic review [ti] OR meta-analysis [pt] OR meta-analysis [ti] OR systematic literature review [ti] OR systematic review [tw] OR (systematic review [tiab] AND review [pt]) OR meta synthesis [ti] OR meta-analy\*[ti] OR rapid review [tw] OR umbrella review [tw] OR scoping review[tw] OR practice guideline [pt] OR cochrane database syst rev [ta] OR jbi database system rev implement rep [ta] OR (clinical guideline [tw] AND management [tw]) OR ((systematic [tw] OR systematically [tw] OR study selection [tw] OR inclusion criteri\* [tw] OR exclusion criteri\* [tw]) AND (survey [tiab] OR surveys [tiab] OR overview\* [tw] OR review [tiab] OR reviews [tiab] OR search\* [tw] OR handsearch [tw] OR analysis [ti]))) AND (literature [tiab] OR articles [tiab] OR publications [tiab] OR publication [tiab] OR bibliography [tiab] OR bibliographies [tiab] OR published [tiab] OR pooled data [tw] OR unpublished [tw] OR citation [tw] OR citations [tw] OR database [tiab] OR internet [tiab] OR references [tw] OR scales [tw] OR papers [tw] OR datasets [tw] OR trials [tiab] OR meta-analy\* [tw] OR (clinical [tiab] AND studies [tiab])) NOT (letter [pt] OR newspaper article [pt]) | 376,189 |
| 4 | #1 and #2 and #3 | 368 |
| 5 | #4 AND english[LA] | 361 |

**Database / Study Registry:** Embase (via Elsevier)

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| **Set #** | **Search Strategy** | **Results** |
| 1Metaverse | 'virtual reality'/exp OR 'augmented reality'/exp OR 'virtual reality head mounted display'/exp OR 'virtual environment'/exp OR 'mixed reality'/exp OR 'immersive virtual reality'/exp OR 'virtual reality':ti,ab OR 'virtual realities':ti,ab OR VR:ti,ab OR 'simulated environment':ti,ab OR 'simulated environments':ti,ab OR 'Augmented reality':ti,ab OR 'Augmented Realities':ti,ab OR 'simulated reality':ti,ab OR 'simulated realities':ti,ab OR 'virtual simulation':ti,ab OR 'virtual simulations':ti,ab OR 'virtual technology':ti,ab OR 'virtual technologies':ti,ab OR 'virtual environment':ti,ab OR 'virtual environments':ti,ab OR 'simulation technology':ti,ab OR 'simulation technologies':ti,ab OR 'Extended Reality':ti,ab OR 'extended realities':ti,ab OR 'Mixed reality':ti,ab OR 'Mixed Realities':ti,ab OR metaverse:ti,ab OR metaverses:ti,ab OR avatar:ti,ab OR avatars:ti,ab OR 'Head Mounted Display':ti,ab OR 'Head Mounted Displays':ti,ab OR 'Immersive simulation':ti,ab OR 'immersive technology':ti,ab OR 'Immersive simulations':ti,ab OR 'immersive technologies':ti,ab | 44,956 |
| 2education | 'teaching'/exp OR 'education'/exp OR 'vocational education'/exp OR 'health education'/exp OR 'learning'/exp OR 'curriculum'/exp OR 'health student'/exp OR teaching:ti,ab OR teach:ti,ab OR taught:ti,ab OR educate:ti,ab OR educates:ti,ab OR educated:ti,ab OR education:ti,ab OR educational:ti,ab OR educating:ti,ab OR school:ti,ab OR schools:ti,ab OR 'school s':ti,ab OR student:ti,ab OR students:ti,ab OR 'student s':ti,ab OR faculty:ti,ab OR 'faculty s':ti,ab OR learning:ti,ab OR learn:ti,ab OR learns:ti,ab OR learned:ti,ab OR curriculum:ti,ab OR curricula:ti,ab OR course:ti,ab OR courses:ti,ab OR class:ti,ab OR classes:ti,ab OR 'class s':ti,ab OR curriculums:ti,ab OR pedagogy:ti,ab | 4,595,689  |
| 3Systematic reviews | ([cochrane review]/lim OR [systematic review]/lim OR [meta analysis]/lim OR 'systematic review':ti OR meta-analysis:pt OR meta-analysis:ti OR 'systematic literature review':ti OR 'systematic review':ti,ab,kw OR ('systematic review':ti,ab AND review:pt) OR 'meta synthesis':ti OR meta-analysis:ti OR meta-analyses:ti OR 'rapid review':ti,ab,kw OR 'umbrella review':ti,ab,kw OR 'scoping review':ti,ab,kw OR 'practice guideline':pt OR ('clinical guideline':ti,ab,kw AND management:ti,ab,kw) OR ((systematic:ti,ab,kw OR systematically:ti,ab,kw OR 'study selection':ti,ab,kw OR 'inclusion criteria':ti,ab,kw OR 'inclusion criterias':ti,ab,kw OR 'inclusion criterion':ti,ab,kw OR 'inclusion criterions':ti,ab,kw OR 'inclusion criterium':ti,ab,kw OR 'exclusion criteria':ti,ab,kw OR 'exclusion criterias':ti,ab,kw OR 'exclusion criterion':ti,ab,kw OR 'exclusion criterions':ti,ab,kw OR 'exclusion criterium':ti,ab,kw) AND (survey:ti,ab OR surveys:ti,ab OR overview:ti,ab,kw OR overviews:ti,ab,kw OR overviewed:ti,ab,kw or review:ti,ab OR reviews:ti,ab OR search:ti,ab,kw OR searches:ti,ab,kw OR searched:ti,ab,kw OR handsearch:ti,ab,kw OR analysis:ti))) AND (literature:ti,ab OR articles:ti,ab OR publications:ti,ab OR publication:ti,ab OR bibliography:ti,ab OR bibliographies:ti,ab OR published:ti,ab OR pooled data:ti,ab,kw OR unpublished:ti,ab,kw OR citation:ti,ab,kw OR citations:ti,ab,kw OR database:ti,ab OR internet:ti,ab OR references:ti,ab,kw OR scales:ti,ab,kw OR papers:ti,ab,kw OR datasets:ti,ab,kw OR trials:ti,ab OR meta-analysis:ti,ab,kw OR meta-analyses:ti,ab,kw OR (clinical:ti,ab AND studies:ti,ab) OR 'treatment outcome'/exp OR 'treatment outcome':ti,ab,kw) | 483,963 |
| 4 | #1 and #2 and #3 | 487 |
| 5 | #4 AND [english]/lim | 475 |

**Database / Study Registry:** CINAHL (via Ebsco)

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| **Set #** | **Search Strategy** | **Results** |
| 1Metaverse | MH "Virtual Reality+" OR MH "Augmented Reality+" OR TI("virtual reality" OR "virtual realities" OR VR OR "simulated environment" OR "simulated environments" OR "Augmented reality" OR "Augmented Realities" OR "simulated reality" OR "simulated realities" OR "virtual simulation" OR "virtual simulations" OR "virtual technology" OR "virtual technologies" OR "virtual environment" OR "virtual environments" OR "simulation technology" OR "simulation technologies" OR "Extended Reality" OR "extended realities" OR "Mixed reality" OR "Mixed Realities" OR metaverse OR metaverses OR avatar OR avatars OR "Head Mounted Display" OR "Head Mounted Displays" OR "Immersive simulation" OR "immersive technology" OR "Immersive simulations" OR "immersive technologies") OR AB("simulated environments" OR "Augmented reality" OR "Augmented Realities" OR "simulated reality" OR "simulated realities" OR "virtual simulation" OR "virtual simulations" OR "virtual technology" OR "virtual technologies" OR "virtual environment" OR "virtual environments" OR "simulation technology" OR "simulation technologies" OR "Extended Reality" OR "extended realities" OR "Mixed reality" OR "Mixed Realities" OR metaverse OR metaverses OR avatar OR avatars OR "Head Mounted Display" OR "Head Mounted Displays" OR "Immersive simulation" OR "immersive technology" OR "Immersive simulations" OR "immersive technologies") | 10,194 |
| 2education | MH "Teaching+" OR MH "Education+" OR MH "Learning+" OR MH "Curriculum+" OR MH "students+" OR MH "Faculty+" OR TI(teaching OR teach OR taught OR educate OR educates OR educated OR education OR educational OR educating OR school OR schools OR "school s" OR student OR students OR "student s" OR faculty OR "faculty s" OR learning OR learn OR learns OR learned OR curriculum OR curricula OR course OR courses OR class OR classes OR "class s" OR curriculums OR pedagogy) OR AB(teaching OR teach OR taught OR educate OR educates OR educated OR education OR educational OR educating OR school OR schools OR "school s" OR student OR students OR "student s" OR faculty OR "faculty s" OR learning OR learn OR learns OR learned OR curriculum OR curricula OR course OR courses OR class OR classes OR "class s" OR curriculums OR pedagogy) | 1,538,703 |
| 3Systematic reviews | MH "Systematic Review" OR MH "Meta Analysis" OR TI ("systematic review" OR "systematic reviews" OR "meta-analysis" OR "meta-analyses" OR "systematic literature review" OR "meta synthesis" OR "umbrella review" OR "scoping review" OR "practice guideline" OR "rapid review" OR ((systematic OR systematically OR "study selection" OR "inclusion criteria" OR "inclusion criterias" OR "inclusion criterion" OR "inclusion criterions" OR "inclusion criterium" OR "exclusion criteria" OR "exclusion criterias" OR "exclusion criterion" OR "exclusion criterions" OR "exclusion criterium")) AND (survey OR surveys OR overview OR review OR reviews OR search OR searches OR handsearch OR analysis))) OR AB ("systematic review" OR "systematic reviews" OR "meta-analysis" OR "meta-analyses" OR "systematic literature review" OR "meta synthesis" OR "umbrella review" OR "scoping review" OR "practice guideline" OR "rapid review" OR ((systematic OR systematically OR "study selection" OR "inclusion criteria" OR "inclusion criterias" OR "inclusion criterion" OR "inclusion criterions" OR "inclusion criterium" OR "exclusion criteria" OR "exclusion criterias" OR "exclusion criterion" OR "exclusion criterions" OR "exclusion criterium") AND (survey OR surveys OR overview OR review OR reviews OR search OR searches OR handsearch OR analysis))) AND (ZT "journal article" OR ZT "systematic review" OR ZT "meta analysis" OR ZT "meta synthesis" OR ZT "review) | 230,162 |
| 4 | S1 AND S2 AND S3 | 202 |
| 5 | S5 AND english  | 194 |

**Database / Study Registry:** Web of Science (via Clarivate)

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| **Set #** | **Search Strategy** | **Results** |
| 1Metaverse | TS=("Virtual Reality" OR "Augmented Reality" OR "virtual reality" OR "virtual realities" OR VR OR "simulated environment" OR "simulated environments" OR "Augmented reality" OR "Augmented Realities" OR "simulated reality" OR "simulated realities" OR "virtual simulation" OR "virtual simulations" OR "virtual technology" OR "virtual technologies" OR "virtual environment" OR "virtual environments" OR "simulation technology" OR "simulation technologies" OR "Extended Reality" OR "extended realities" OR "Mixed reality" OR "Mixed Realities" OR metaverse OR metaverses OR avatar OR avatars OR "Head Mounted Display" OR "Head Mounted Displays" OR "Immersive simulation" OR "immersive technology" OR "Immersive simulations" OR "immersive technologies") | 114,622 |
| 2education | TS=("Teaching" OR "Professional Education " OR "education" OR "Learning" OR "Health Students" OR "Faculty" OR "Curriculum" OR "Health Occupations Schools" OR teaching OR teach OR taught OR educate OR educates OR educated OR education OR educational OR educating OR school OR schools OR student OR students OR faculty OR learning OR learn OR learns OR learned OR curriculum OR curricula OR course OR courses OR class OR classes OR curriculums OR pedagogy)  | 5,491,757 |
| 3Systematic reviews | TS= ( ( "systematic review" OR "meta-analysis" OR "meta-analyses" OR " meta-analytic" OR "systematic literature review" OR "systematic review" OR ( "systematic review" AND review ) OR "meta synthesis" OR meta-analyses OR meta-analytic OR "rapid review" OR "umbrella review" OR "scoping review" OR "practice guideline" OR ( "clinical guideline" AND management ) OR ( ( systematic OR systematically OR "study selection" OR "inclusion criteria" OR "inclusion criterias" OR "inclusion criterion" OR "inclusion criterions" OR "inclusion criterium" OR "exclusion criteria" OR "exclusion criterias" OR "exclusion criterion" OR "exclusion criterions" OR "exclusion criterium" ) AND ( survey OR surveys OR overview OR overviews OR overviewed OR review OR reviews OR search OR searched OR handsearch OR analysis ) ) ) AND ( literature OR articles OR publications OR publication OR bibliography OR bibliographies OR published OR "pooled data" OR unpublished OR citation OR citations OR database OR internet OR references OR scales OR papers OR datasets OR trials OR "meta-analysis" OR "meta-analyses" OR ( clinical AND studies ) OR "treatment outcome" OR "treatment outcomes" ) ) | 606,559 |
| 4 | #1 and #2 and #3 | 864 |
| 5 | #4 AND english | 839 |

**Database / Study Registry:** Education Full Text (via Ebsco)

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| --- | --- | --- |
| **Set #** | **Search Strategy** | **Results** |
| 1Metaverse | TI("Virtual Reality" OR "Augmented Reality" OR "virtual reality" OR "virtual realities" OR VR OR "simulated environment" OR "simulated environments" OR "Augmented reality" OR "Augmented Realities" OR "simulated reality" OR "simulated realities" OR "virtual simulation" OR "virtual simulations" OR "virtual technology" OR "virtual technologies" OR "virtual environment" OR "virtual environments" OR "simulation technology" OR "simulation technologies" OR "Extended Reality" OR "extended realities" OR "Mixed reality" OR "Mixed Realities" OR metaverse OR metaverses OR avatar OR avatars OR "Head Mounted Display" OR "Head Mounted Displays" OR "Immersive simulation" OR "immersive technology" OR "Immersive simulations" OR "immersive technologies") OR AB("Virtual Reality" OR "Augmented Reality" OR "virtual reality" OR "virtual realities" OR VR OR "simulated environment" OR "simulated environments" OR "Augmented reality" OR "Augmented Realities" OR "simulated reality" OR "simulated realities" OR "virtual simulation" OR "virtual simulations" OR "virtual technology" OR "virtual technologies" OR "virtual environment" OR "virtual environments" OR "simulation technology" OR "simulation technologies" OR "Extended Reality" OR "extended realities" OR "Mixed reality" OR "Mixed Realities" OR metaverse OR metaverses OR avatar OR avatars OR "Head Mounted Display" OR "Head Mounted Displays" OR "Immersive simulation" OR "immersive technology" OR "Immersive simulations" OR "immersive technologies") | 3,203 |
| 2education | TI("Teaching" OR "Professional Education" OR "education" OR "Learning" OR "Students, Health Occupations" OR "Faculty" OR "Curriculum" OR "Schools, Health Occupations" OR teaching OR teach OR taught OR educate OR educates OR educated OR education OR educational OR educating OR school OR schools OR "school s" OR student OR students OR "student s" OR faculty OR "faculty s" OR learning OR learn OR learns OR learned OR curriculum OR curricula OR course OR courses OR class OR classes OR "class s" OR curriculums OR pedagogy) OR AB("Teaching" OR "Professional Education" OR "education" OR "Learning" OR "Students, Health Occupations" OR "Faculty" OR "Curriculum" OR "Schools, Health Occupations" OR teaching OR teach OR taught OR educate OR educates OR educated OR education OR educational OR educating OR school OR schools OR "school s" OR student OR students OR "student s" OR faculty OR "faculty s" OR learning OR learn OR learns OR learned OR curriculum OR curricula OR course OR courses OR class OR classes OR "class s" OR curriculums OR pedagogy) | 916,573  |
| 3Systematic reviews | TI("systematic review" OR "systematic reviews" OR "meta-analysis" OR "meta-analyses" OR "systematic literature review" OR "meta synthesis" OR "umbrella review" OR "scoping review" OR "practice guideline" OR "rapid review" OR ((systematic OR systematically OR "study selection" OR "inclusion criteria" OR "inclusion criterias" OR "inclusion criterion" OR "inclusion criterions" OR "inclusion criterium" OR "exclusion criteria" OR "exclusion criterias" OR "exclusion criterion" OR "exclusion criterions" OR "exclusion criterium") AND (survey OR surveys OR overview OR review OR reviews OR search OR searches OR handsearch OR analysis))) OR AB("systematic review" OR "systematic reviews" OR "meta-analysis" OR "meta-analyses" OR "systematic literature review" OR "meta synthesis" OR "umbrella review" OR "scoping review" OR "practice guideline" OR "rapid review" OR ((systematic OR systematically OR "study selection" OR "inclusion criteria" OR "inclusion criterias" OR "inclusion criterion" OR "inclusion criterions" OR "inclusion criterium" OR "exclusion criteria" OR "exclusion criterias" OR "exclusion criterion" OR "exclusion criterions" OR "exclusion criterium") AND (survey OR surveys OR overview OR review OR reviews OR search OR searches OR handsearch OR analysis))) AND (PZ article OR PZ review article) | 12,007 |
| 4 | #1 and #2 and #3 | 46 |