

Appendix B. Search strategy framework

Research cluster (Rcl) overview	Search strategy overview		RQ1 and RQ2 Research Cluster 1.	RQ1 and RQ2 Research Cluster 2.	RQ1 and RQ2 Research Cluster 3.	RQ1 and RQ2 Research Cluster 4.
<p>Initial search strategy:- mapping by research keyword (Affinity Diagram) to form 4 major research clusters (Rcl):</p> <p>Research cluster 1: Document discourse</p> <p>Research cluster 2: Significance in reflection (knowing)</p> <p>Research cluster 3: Learning and review of research methods</p> <p>Research cluster 4: Workplace-related activity, tasks, tools and capability</p> <p>Each research cluster is linked to the review question(s)</p>	<p>Terms / Vocabulary for searches:</p> <p>(synonyms, UK/US terminology, laymen's terms, acronyms/abbreviations, narrow search terms)</p> <p>Methods to be applied:</p> <p>phrase searching, proximity operators, truncation, wildcards, field qualification (e.g. text word)</p> <p>Cross reference subject terms/controlled vocabulary with:</p> <p>United Nations Educational, Scientific and Cultural Organisation (UNESCO) Thesaurus; ISO 25964-1 ISO 25964-2</p> <p>Seminal and influential research conducted over TWO stages</p>	<p>Concept Development</p> <p>[elements as keywords mapped to research cluster]</p>	<p style="text-align: center;">AND</p> <p>"document" OR "documentation" OR "Object* & Text*" OR ("Explicit* Knowledge") OR ("Implicit* Knowledge") OR "Psychology" OR ("Mental* Representation") OR "Social Semiotics" OR "Genre" OR "Discourse Analysis" OR "Figurative* Analysis" OR "Cognition & Perception" OR "Workplace Learning" OR "Communication Studies" OR ("Informal* Learning*") OR "Lifelong* Learning*"</p>	<p style="text-align: center;">AND</p> <p>"Visual* Rhetoric*" OR "Artefact* Analysis" OR "Visual* literacy*" OR "Visual* Metonymy*" OR "Meronymy" OR "Visual Mnemonics" OR "Genre" OR "Social Semiotics" OR "Object & Text" OR "Productive Reflection*" OR "Workplace Learning" OR "Communication Studies" OR "Visual Tropes" OR "Knowledge Organisation" OR "Systems Thinking" OR ("Tacit* Knowledge") OR "Implicit Knowledge" OR "Explicit Knowledge" OR "multimodality" OR "multimodal"</p>	<p style="text-align: center;">AND</p> <p>"Transdisciplinarity Research" OR "Pragmatic Thought" OR "Research Methodology" OR "Object & Text" OR "Discourse Analysis" OR ("Systems Thinking") OR "Pragmatism" OR "Informal Learning" OR "Lifelong Learning" OR "Knowledge Organisation" OR "Workplace Learning" OR "Productive Reflection" OR "Tacit Knowledge" OR "Explicit Knowledge" OR "Social Semiotics" OR "Implicit Knowledge"</p>	<p style="text-align: center;">AND</p> <p>"Conceptual map" OR "Channelling information" OR "instructional schema" OR "tools and design" OR "task and design" OR "design and instrument" OR "workplace and capability" OR "knowledge creation" OR "channel? information" OR "workplace and "work-based"" OR "strategy" OR "capability" OR "learning system" OR "tacit category" OR "transdisciplinarity" OR "systemology" OR "hetagogy" OR "learning schema" OR "faceted classification"</p>

^As above	Aug 2017-Apr 2020	July 20, 2020	Hand search of primary and secondary data (journals, abstracts and articles)	Library search engines: Rcl1 Rcl2 Rcl3 Rcl4 Google Scholar (RT4)	52 41 64 4 48			Seminal and influential studies
				Total (Rcl 1-4)	209	No?		
^As above phrase searching, proximity operators, truncation, wildcards, field qualification (e.g. text word)	May 15, 2020 May 22, 2020	July 20, 2020 ◆ ADDED to ALL searches where applicable ◆ (title OR author keyword OR abstract)	("implicit" OR "tacit" OR "document") AND ("systematic literature review") ◆ < ("learning") AND ("informal") AND ("workplace") > all words included (object* OR text* OR explicit* knowledge OR implicit* knowledge) AND ("productive reflection*" OR "workplace learning" OR "communication studies") AND ("document")	*Scopus *Web of Science JSTOR: Cambridge Core: Taylor & Francis online JSTOR Taylor & Francis online Ebsco Host Science Direct Ebsco Host (Megafile) Emerald Insight	138 193 0 17631 1787 56 1794 1539 502 15 1589	1 - - - 5 - - - - 2 -	All fields All fields Communication Communication Communication Anthropology/Social Sc Anthropology/Social Sc Psychology Education/Linguistics Construction Mgt	*2015-2020 / sys literature review 2015-2020 2015-2020; Subject: Engineering, Psychology, Language & Linguistics, Philosophy, Sociology; Tag: document (2); document analysis (0) 2015-2020 2015-2020 2015-2020 2015-2020 (remove wildcard*) 2015-2020 (peer reviewed journals) 2015-2020

(cont).	Date		Search strategy	Search Engine / Database	Number of search results		Field Search	Filters/Limits/Alerts
					*SR1.	*SR2.		
^As above phrase searching, proximity operators, truncation, wildcards, field qualification (e.g. text word) Science Direct – wildcards are not supported	May 22, 2020		("mental* representation" OR "social semiotics" OR "genre") AND ("visual* rhetoric*" OR "artefact* analysis" OR "visual* literacy*")	Ebsco Host (Megafile) Emerald Insight SAGE Journals Scopus Science Direct	104 53 49 55 88	- - 3 - -	*All fields * * Title-ABS-keys *	2015-2020 2015-2020 2015-2020 2015-2020 2015-2020
	May 22, 2020	Select limit to keyword due to string focus(discourse, tacit knowledge)	("cognition & perception" OR "informal* learning*" OR "lifelong* learning*") AND ("productive reflection*" OR "workplace learning" OR "knowledge organi?ation")	Science Direct Emerald Insight Ebsco Host (Megafile) SAGE Journals Scopus	146 1 302 89 139	1 - 10 - 2	*All fields * * * *	2015-2020 Alert 2015-2020 2015-2020 Alert 2015-2020 2015-2020 (peer reviewed journals)
	May 22, 2020 Jun 10, 2020		object* OR text* OR explicit* knowledge OR implicit* knowledge) AND ("productive reflection*" OR "workplace learning" OR "communication studies") AND ("trans? research" OR "pragmatic thought" OR "research methodology")	Ebsco Host (Megafile) SAGE Journals Emerald Insight Scopus Science Direct	132 49 0 1 55	1 2 - - 2	*All fields * * * *	2015-2020 2015-2020 2015-2020 2015-2020 (peer reviewed journals) 2015-2020
	May 22, 2020		("taskonomy") AND ("faceted classification scheme" OR "controlled vocabulary") AND ("capability")	SAGE Journals Science Direct Ebsco Host (Megafile) Emerald Insight	0 0 73 0	- - - -	*All fields * * *	2015-2020 2015-2020 2015-2020 2015-2020
	Jun 11, 2020		("instructional* schema*" OR "knowledge creation" OR "channel? information") AND ("workplace" OR "work-based") AND ("strategy*" OR "capability*")	Ebsco Host (Megafile) Emerald Insight SAGE Journals Scopus Science Direct	6 1098 157 10 420	- 0 1 0 3	*All fields * * Title-ABS-keys *	2015-2020 2015-2020 2015-2020 2015-2020 (peer reviewed journals) 2015-2020
	Jun 11, 2020	Added ("discourse analysis") to strings in Emerald	("tacit category" OR "transdisciplinarity" OR "systemology" OR "heutagogy") AND ("learning schema")	Emerald Insight SAGE Journals Ebsco Host (Megafile) Scopus Science Direct	0 3 27 0 0	- - - - -	*All fields * * * *	2015-2020 2015-2020 2015-2020 2015-2020 (peer reviewed journals) 2015-2020

(cont).	Date		Search strategy	Search Engine / Database	Number of search results	Field Search	Filters/Limits/Alerts
Grey Literature	2017-2020		<p>Dissertations/theses; conference proceedings; government and industry reports (academic and non-academic affiliated)</p> <p>Research theme keywords: “German industry”; “Mittelstand”; “Handwerk”; “skilled crafts”; “industry training”; “industry training and technology”, “industry policy Germany”; “vocational education and training”; “trade and confederation Germany”</p>	<p>Google Scholar Google Books Library search engines:</p>	<p>42 12 8</p>	<p>German industry; European industry</p>	
Research bias	2017-2020		<p>Including unpublished material in SRs, updating SRs periodically, searching more than one database, hand searching for additional material, and assessing for publication bias. Existing empirical evidence should be systematically reviewed. (Tricco et al, 2008)</p> <p>Research was undertaken using journal articles written specifically for development of, analysis of and evaluation of systematic reviews (and literature). Prisma (2015) ckecklists and diagrams together with the JBI’s Reviewer’s Manual (2020), Cochrane Handbook (2019) and Review methodologies were used as guiding methodologies for the undertaking of this scoping literature review.</p>				<p>Whist all efforts have been made to ensure non-bias in the choice of language used, some material that has only been written in German have been excluded from the findings</p>