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Exploring Constructivist Grounded Theory Methodology in Educational Research: A Systematic Review from the Perspective of a Novice Researcher in Malaysia

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Abstract

This systematic literature review (SLR) aims to provide insights into how Constructivist Grounded Theory (CGT) methodology, as a qualitative methodology, is implemented in educational research and how CGT contributes to developing substantive theory to help understand complex social interactions in educational academic settings. Data collected from ProQuest, consisting of three databases: ProQuest Dissertations & Theses Global, Publicly Available Content Database, and Research Library, were used for the synthesis. Using the PRISMA-SWiM protocol as the review method, 24 articles were included in the final synthesis to identify how CGT was being used to understand different social phenomena in the field of education. With flexibility embedded in the Grounded Theory Methodology (GTM), differences are bound to occur, and heterogeneity and homogeneity were documented in tables and compared in charts for each article using narrative analysis. The review highlights that Constructivist Grounded Theory (CGT), underpinned by a pragmatic worldview and leveraging both inductive and abductive reasoning, is well-suited to exploring specific social phenomena in Malaysia's diverse, multiethnic, and multicultural educational landscape, with grounded theorists actively participating in co-constructing the substantive theory.

Keywords: Literature Reviews, Research Methodology, Qualitative Research, Educational Research, Constructivist Grounded Theory

Introduction

Inductive reasoning is one of the most important approaches for working from the ground up in research because it allows logicality to serve as an anchor in the process of gathering data (Shrestha, 2024) when we are working with intricate human actions and the rationales behind them. Despite working predominantly in quantitative analysis, Paul Lazarsfeld, a renowned Austrian-American sociologist and mathematician, proposed using questioning techniques to uncover data more freely, in the form of a relaxed, impartial conversation, in 1933 (Jeřábek, 2022). Therefore, for researchers working with teachers and students in the educational sector are working with a large group of humans with shared visions and missions, inductive reasoning gives researchers a tool to study the social world (Sauce & Matzel, 2017) which in

this particular case, within the realm of education in the hope that it will help to alleviate the overall understanding of the educational sector. With the co-construction of knowledge between the researcher and participants and a solid philosophical tenet of reflexivity in using the Constructivist Grounded Theory (CGT) as a methodology, this review aims to identify the usage of CGT amongst educators and researchers through a Systematic Literature Review (SLR) which utilises the PEO (Population, Exposure, Outcome) and SWiM (Synthesis Without Meta-analysis) framework (a complement and extension to the PRISMA [Preferred Reporting Items for Systematic Reviews and Meta-analyses] framework), hopefully, to identify the suitability and key advantages of utilising the CGT methodology in Malaysian education (Kabir et al., 2023, & Campbell et al., 2020).

Background of the Study

As knowledge continues to expand, the enthusiasm of in-service teachers for professional development training remains less robust (MOE, 2013). Among all the different types of research, Action Research (AR), which is widely encouraged and practised amongst teachers in Malaysia, empowers ordinary people to engage in reflective thinking, discussion, decision-making, and action through collective research (Adelman, 1993). To encourage a culture of research and lifelong learning, the introduction of research methodologies, such as Action Research (AR), has been a significant focus among pre-service and in-service teachers in Malaysia. However, the research culture is still uncommon (Kho & Brayon Mathew, 2024). This concludes the mindset of teachers towards viewing research as an additional task rather than an integral part of professional development, especially when this initiative comes from the top administration and trickles down to the field level (MOE, 2013).

The Ministry of Education Malaysia (2016) stated that Malaysia has a centralised education system, with all transformations, policies, decision-making, directions, and educational goals implemented by schools nationwide. Thus, student-centred education with a Standards-Based Curriculum is a key emphasis in Malaysian education, ensuring that students acquire the knowledge and skills needed for success in the 21st century. This raises eyebrows as to how one teacher or educator decides whether the “Standard-Based” Curriculum suits each student in Malaysia. Eventually, most resorted to teaching-to-the-test pedagogy and in 2024, headlines like ‘Time to abolish exams, stop the obsession with grades’ and ‘National education system labelled “dismal failure”’ (Mallow, 2014; Morhan, 2024) are still prevalent even till today, even with the Malaysian Education Blueprint 2013 stating the obvious problem we have had since then.

Perhaps it is time to reconsider the purpose of education and what inclusivity means from the perspective of the students, the main stakeholder, and their level of participation within the system (MOE, 2013), and also the teachers’ and parents’ viewpoint, together with the many other participants like NGOs and the ministry. It is to be noted that in a country like Malaysia, where multi-ethnicities and multiculturalism are proudly celebrated, a “Standard-Based” Curriculum will be a challenge for all the educators and schools to implement because the legacy of unequal economic status and separate cultures from the history of British colonisation still happens in almost every other sector here (Noor, 2024). Therefore, a one and only ‘reality’ does not exist in such a vast society. Researchers do not enter research with a *tabula rasa* or a blank slate (Strauss & Corbin, 1996; 2015; Charmaz, 2006; 2014; Charmaz & Thornberg, 2020). Therefore, the researchers do not and cannot exist outside of the

interested research area, especially when it comes to an understanding of social interactionism within the context of education, and this is where CGT shines (Charmaz, 2008; 2014) with the researcher's reflexive stance and active participation during the research. Rather than forcing teachers to adopt a robust research culture via AR, perhaps with the introduction of CGT to the different stakeholders in education, it enables the researchers within the educational field to reflect upon themselves by looking into the data obtained directly from the participants and generating the grounded theory from the data, which can explain the distinctive phenomena that the researchers and participants which they are situated in.

Historical Development of Grounded Theory (Glaserian, Straussian, and Constructivist), Definitions, and Key Concepts

There are three significant schools of thought in the field of Grounded Theory (GT) studies or Grounded Theory Methodology (GTM): Glaserian (Classical), Straussian, and Constructivist. In 1967, *the Discovery of Grounded Theory* was published by Glaser and Strauss, and the Glaserian GT (GGT) focuses on developing theory from data obtained in social research through a positivist lens. The rationale for adopting a grounded theory approach was to enable both sociologists and laypeople to handle research data and to provide conceptual frameworks for describing and explaining phenomena in social contexts. Laypeople would understand the theory that emerged from the categories discovered by examining the data, and sociologists working in other areas would also recognise the theory linked to the data of a given area (Glaser & Strauss, 1967). Why do researchers choose to use qualitative instead of quantitative approaches? Strauss & Corbin (1996) expressed that the reasons for adopting qualitative approaches were to explore the inner experiences of participants, to explore how meanings are formed and transformed, to explore areas not yet thoroughly researched, to discover relevant variables that later can be tested through, and to take a holistic and comprehensive approach to the study of phenomena. To help new researchers, Strauss and Corbin (1996; 2015) proposed a more systematic approach by introducing a *conditional matrix* to aid with the constant comparative analysis in their version of GT.

In Straussian GT (SGT), it is noted that Strauss was not trying to create a new method over Glaser. Still, his worldview, pragmatism, interactionism, and experiences have led Straussian GT to adopt a more elaborate coding procedure (Kenny & Fourie, 2015). It introduced a *conditional matrix* for novice researchers and a more intricate, guided process for conducting grounded theory research. At the same time, when Charmaz was working under Glaser and Strauss, she was deeply influenced by both the roots of grounded theory in mid-century positivism and Chicago school sociology, with a foundation in pragmatist philosophy. Moving forward, she adopted a constructivist grounded theory (CGT) perspective, which retains the flexibility, fluidity, and open-endedness of grounded theory as described by Strauss. In CGT, Charmaz argued that the previous approaches suppressed the researcher's creativity due to a rigid framework (Kenny & Fourie, 2015). Memo writing during the research process is also essential for researchers, as it enables reflexivity and the generation of a grounded theory grounded in the phenomenon. Therefore, the coding procedure is much more flexible than GGT and SGT, with open and refocused coding to create categories and substantive theories (Kenny & Fourie, 2015).

GTM started with Glasser & Strauss's Glaserian Grounded Theory (1967; 2006), then Strauss and Corbin's Straussian Grounded Theory (1996, 2015), and eventually Charmaz's Constructivist Grounded Theory (2008; 2014), went through different phases of ontological and epistemological development and should always be included in research especially when researchers coming from different schools have different worldviews because the worldviews or beliefs or philosophical stances will affect the overall research design significantly. Although not explicitly mentioned in the book Discovery, positivist beliefs, especially for Glaser, emphasised the role of researchers as objective, as he came from a background of rampant quantitative research during his time (Kenny & Fourie, 2015). Later, in their book *Basic,* Strauss and Corbin looked at their grounded theory through the lens of realism and interpretivism via a post-positivistic lens, which acknowledged the active involvement of research through symbolic interactionism with a systematic approach via the use of a conditional matrix in constructing the grounded theory (Strauss & Corbin, 1996, 2015). In the third wave of grounded theory development, Charmaz (2008, 2014) fully embraced the active participation of researchers in co-constructing substantive theory with participants, grounded in relativism and interpretivism.

Problem Statements and Purpose of the Review

Because of the different whorls of Grounded Theory Methodologies, many novice researchers are confused with the ontological and epistemological understanding of the GT methodologies. This systematic literature review aims to identify the application of the grounded theory methodology, Constructivist Grounded Theory (CGT), within educational research from the perspective of a novice researcher in Malaysia. Its emphasis on the active role of researchers and the co-construction of knowledge with participants within the research area allows researchers to dive deep into the data and better understand a particular subset of society. The prevalent use of quantitative methodologies to understand complex human interactions, and the claim that such models or frameworks can scientifically predict certain behaviours, limits the worldview's cognisance. This sythensis aims to identify the gap of knowledge on the technical aspects of utilising CGT in educational knowledge in order to help with the process of applying CGT in educational research. As cited in Ejnavarzala (2019), Giri argued that researchers should be more empirical in understanding the multilayered reality without confining it to a very narrow sense of reality. Human actions (Mises, 1949) in a setting of social interactions, and the rationales behind those actions, are way too labyrinthine to be elucidated by the 'hard science' method, as we have seen in the realm of natural science, or, more appropriately, experimental science. Therefore, to understand the impact of using CGT in educational research with the inductive reasoning method learning directly from the data, this SLR on CGT within educational research helps to summarise the state of knowledge via a comprehensive, transparent, and objective way of synthesising and integrating the current literature on this particular topic (Webster & Watson, 2002 as cited in O'Mahony, 2024).

Systematic Literature Review (SLR) Framework and Review Questions

The main goal of this SLR is to present a comprehensive review of the application of CGT in educational research, regardless of the primary research interest of the researchers. Compared to Glaserian and Straussian Grounded Theory Methodology (GTM), flexibility is a significant component of CGT. Therefore, conducting an SLR on this allows the researcher to examine how the researchers in their studies carried out their 'flavours' of CGT, as GT

researchers always need to reflect on their own ontological and epistemological beliefs during the research process (Charmaz, 2008, 2014). To efficiently review the qualitative nature of CGT application in educational research, the PEO framework was used to frame the review questions. The Boolean search strategy was also incorporated into the systematic literature review and screening. The breakdown of the PEO framework is as follows (Kabir et al., 2023):

(1) P (Population): teachers, researchers, and educational researchers;
(2) E (Exposure): Constructivist Grounded Theory (CGT) methodology;
(3) O (Outcome): applications, insights, challenges, and contributions of applying CGT in educational research.

With the PEO framework used as a guideline to identify and search for suitable qualitative literature (Kabir et al., 2023), the review questions are framed as follows:

(1) What are the key advantages of employing constructivist grounded theory (CGT) in educational research?
(2) In what ways does constructivist grounded theory (CGT) contribute to the development of substantive theories in educational research?
(3) How does Constructivist Grounded Theory (CGT) enhance understanding of complex phenomena in educational settings?

Methods

PRISMA-SWiM guidelines (Kabir et al., 2024; Campbell et al., 2020) are used to *identify, searchfor, and assess eligibility and inclusion.* For GT research, the SWiM framework is more appropriate for the SLR. Kabir et al. (2024) stated that when study data are unsuitable for meta-analyses or for alternative statistical synthesis methods in the SLR, additional reporting frameworks, such as SWiM, can be used. They also noted that, regardless of the chosen synthesis methods, sufficient details about the individual studies must be provided to assess the appropriateness of the methods used in the SLR. The table below highlights the comparison between the two frameworks:

Table 1
Identification, Searching, Eligibility, and Inclusion are used in the PRISMA-SWiM framework.

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)	**SWiM (Synthesis Without Meta-analysis)**
Title	***Methods***
(1) Identify the report as a systematic review	1. Grouping studies for synthesis
Abstract	● Participants, CGT, theories, Study design of CGT
(2) Check the Abstracts checklist	● Mention their variations within the tenets of CGT
(3) Describe the rationale of this review	2. Describe the metric and transformation methods used
(4) Specify the review's objectives or research questions	● Memo writing
Methods	● Literature review
(5) Specify the inclusion and exclusion criteria	● Initial coding and refocused coding
(6) Specify information like databases, dates, sources, et cetera	3. Describe the synthesis methods
(7) Present the complete search strategies	

(8) Specify methods used to include or exclude a study
(9) Specify the methods used to collect data from reports
(10) List and define all outcomes and variables of the study
(11) Specify the bias assessment in the individual studies
(12) Specify the outcomes of the individual studies
(13) Describe the process and methods of synthesising the individual studies and mention the rationales.
(14) Address the risk assessment due to missing results in the synthesis
(15) Specify the evidence of the outcome of the studies

Findings

(16) Specify the results of the search and selection process
(17) Cite included studies
(18) Present assessments of the risk of bias
(19) Present summary statistics and an effect estimate and its precision for each study using tables or plots
(20) Summarise the characteristics and risk of bias
(21) Present assessments of the risk of biases due to missing results
(22) Present assessments of confidence in the outcome of the study

Discussion

(23) Provide a general interpretation of the results, limitations, and future research.

Registration and protocol

(24) Provide registration information about the publications

Support, Competing interests, and availability of data

(25) Specify sources of financial or non-financial support for the individual studies
(26) Declare competing interests of review authors in the review findings
(27) Report the sources of the data

- Narrative analysis
- Identify the process of application of CGT in the research
- Evaluate the process of coding

4. Criteria used to prioritise results for summary and synthesis
   - Based on the application of CGT in education research
   - Inability to evaluate the risk of bias due to CGT's ontological and epistemological beliefs
   - Evaluate the studies based on CGT's application, advantages, challenges, and impacts
5. Investigation of heterogeneity in the reported effects of the studies
   - Evaluate the process of application of CGT
   - Evaluate the reflexivity in various aspects: personal reflexivity, interpersonal reflexivity, methodological reflexivity, and contextual reflexivity (Olmos et al., 2022)
   - Evaluate the coding process
   - Evaluate the use of constant comparative analysis
   - Evaluate the outcome
6. Certainty of evidence
   - Constant comparative analysis is used to identify the linkage between the application of CGT and the research questions of this SLR.
   - Identify direct evidence of the application of CGT methodology, which answers the review questions.
7. Data presentation methods
   - Tables
   - Charts

Results

8. Reporting results

Discussion

9. Limitation of the synthesis

The process of this SLR was as follows:

(1) In ProQuest, three databases were identified for the screening: ProQuest Dissertations & Theses Global, Publicly Available Content Database, and Research Library. There were several steps in carrying out an SLR; as a reference, Tedja et al. (2024) utilised the PRISMA (Matthew et al., 2020) for their SLR, and this study also

aims to achieve the same result, which is to review the literature of how CGT is being applied in educational research and therefore the chosen framework was PRISMA with the extension of the SWiM framework (Campbell et al., 2020). The first step in the SLR was *Identification*. The Boolean search string focused on the methodology and the research area of interest to keep the literature manageable.

Identification using a Boolean search string*:*

("constructivist grounded theory") AND ("educational research" OR "education")

(2) The second step was *searching.* Filters were applied in ProQuest, with access to the University Pendidikan Sultan Idris's ProQuest databases.

Searching

a. Filters applied:

i. *Source type:* Scholarly Journals

ii. *Publication date:* Last 5 Years

iii. *Subject:* qualitative research OR students OR learning OR teaching OR teaching methods OR interviews OR education OR grounded theory OR teachers

iv. *Document type:* Article

v. *Language:* English

vi. *Publication title:* Education Sciences AND The Qualitative Report AND Education and Information Technologies AND Eurasia Journal of Mathematics, Science and Technology Education AND Educational Technology Research and Development AND Forum: Qualitative Social Research AND Cogent Education AND Early Childhood Education Journal AND Higher Education AND International Electronic Journal of Mathematics Education AND International Journal of STEM Education AND Physical Review. Physics Education Research AND South African Journal of Childhood Education (SAJCE) AND Information and Learning Science AND International Journal of Sustainability in Higher Education AND Perspectives in Education AND International Journal of Educational Technology in Higher Education AND Issues in Educational Research AND Education Research International

(3) All articles with the filters were assessed for ***Eligibility*** (n=536). The inclusion criteria are that the titles and descriptions in the abstract and content include the words 'constructivist grounded theory' (n=492), as this SLR focuses on the methodology and its application in education research.

(4) ***Inclusion****:* (n=44). The final list of literature includes 44 articles with 'constructivist' in the title, abstract, keywords, or content, and are within the field of education research. The PDF containing 44 articles was exported from ProQuest on 19/10/2024. Articles that were not uploaded to ProQuest's databases are excluded.

(5) The full-text screening identified ten aspects of the 44 included studies and listed them in a table.

As shown below, Figure 1 was organised in a bottom-up direction to simulate the nature of CGT and inductive reasoning from the ground up. By making identification and searching from the plethora of literature, starting from the bottom and working way up towards identifying eligibility and including the literature, this process coincides with how GT works with a bottom-up approach from collecting the data first, analysing it, and repeating the process until theoretical saturation is reached compared to how most quantitative research starts with hypotheses and verification at the end of the research (Glaser & Strauss, 1967; 2006,

Charmaz, 2008; 2014, Creswell, 2013). The search and screen results identified 44 articles across the three ProQuest databases.

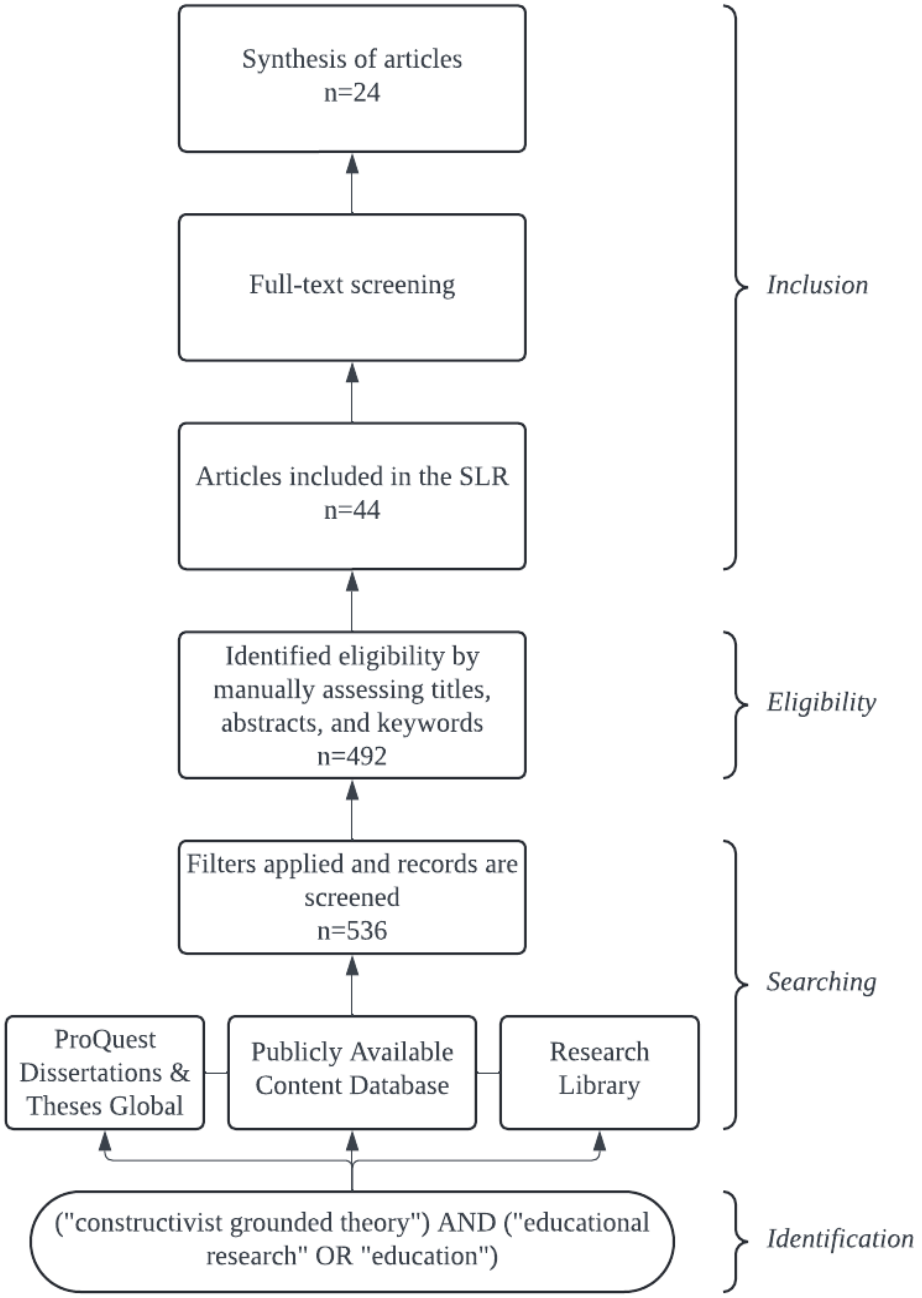

Figure 1. Identification, Searching, Eligibility, and Inclusion are used in the PRISMA-SWiM framework.

All 44 articles were then re-screened for full text to identify additional inclusion criteria for the review. The full-text screening was carried out using a table (Table 2). The articles were analysed using a narrative analysis, looking at the names of authors, locations, date of publishing, title, sampling method, participants, demographic information, methodology of CGT (Charmaz, 2008; 2014), data collection and data analysis, findings and emerging theory,

limitations, and the rationale of inclusion or exclusion. The standardised metric (Table 2) used in the grouping synthesis was standard in both quantitative and qualitative research (Creswell, 2013). Still, the synthesis's main focus was on applying the CGT methodology in the research to answer the stated review questions. For the excluded articles, Table 3 provided the reasons for exclusion. The reason why the PRISMA-SWiM protocol was used is that a meta-analysis aims to combine and synthesise quantitative data from different studies to find out the weighted average of the effect sizes from the individual studies (Schober, 2020), but grounded theory research is used to explain and generate a substantive theory or theories within a very specific phenomenon. Therefore, a weighted-average and effect-size comparative analysis could not be used in this SLR. To examine homogeneity and heterogeneity across all 44 articles, a comparative table was used to identify similarities and differences, especially regarding the application of CGT. To summarise the inclusion or exclusion of the articles, a standard matric as follows was used to identify critical features of the application of CGT in the studies: Author=, Title =, Participants=, Frequency of interviews=, Ontology and Epistemology=, CGT=, Literature Review=yes/no, Data collection=, Data analysis=, Rigour=yes/no, Researcher's positionality=yes/no, Findings=yes/no, Constructured theory=yes/no, and Remarks=. Table 1, which contains the comparative analysis, was included in the appendices.

Results and Findings

Figure 1 shows that this SLR emulates the overall GTM, working inductively from the ground up, beginning with a broad structural analysis to reach decontextualised generalisations that contribute to the result (Charmaz, 2008, 2014). After reducing the initial 536 papers identified from the database, as shown in Figure 2, 44 articles were included in the final full-text screening, and 24 (54.55%) of these utilised the CGT methodology in educational research.

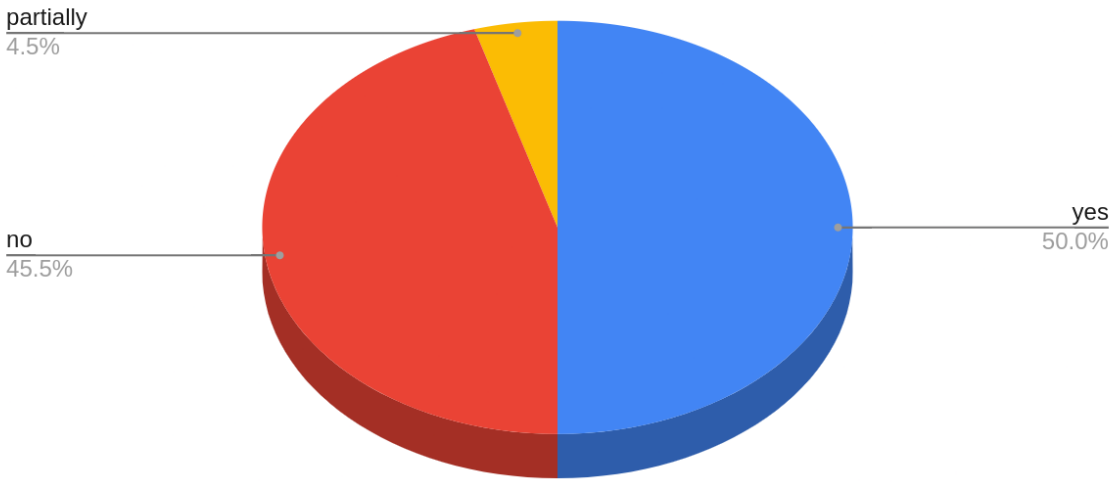

Figure 2. A count of CGT was used in the screening results.

The other 20 articles (45.5%) were not included due to various reasons, such as only the abstract was included in the database for subscription, no CGT methodology was used, or the articles or research designs were case studies, ethnographic studies, action research, SLRs, peer review papers, or methodological review papers. As mentioned above, this SLR aims to identify the implementation of CGT in educational research, regardless of the field in which the researcher or researchers are working. Throughout the process of conducting this SLR,

using the word 'constructivist' to look for eligibility and further inclusion of the articles, they also included some of the non-related articles due to the different meanings of the word 'constructivist' in 'constructivist learning theory' (Tsulaia, 2023) which stated that constructivism is a learning theory based on how individuals learn and construct knowledge. This was an oversight during the construction of the screening and searching process. Nevertheless, of the 44 articles, 24 (22 yes/50%, 2 partially/4.5%) utilised the CGT methodology as the research design, and this SLR yielded valuable insights.

The remaining 24 articles utilised the CGT methodology to develop a substantive theory to understand an area of interest in depth. However, two did not mention 'Constructivist Grounded Theory' or CGT in their papers. Instead, they used 'constructivist inquiry' or 'constructivist approach' for data collection and analysis. Hence, the two articles, Chhetri et al. and Catarina & Elsa, were labelled as partial applications of the CGT methodology because they used 'qualitative inquiry' rather than explicitly citing the CGT methodology. However, they did execute the research from a 'constructivist philosophical' standpoint. Before diving into their application of the CGT methodology in the research, despite not being included after the full-text screening, Articles (31) by Hewit et al., Article (22) by Issat et al., and Article (43) by Morga,n which were ontological, epistemological, and methodological articles, did raise interesting viewpoints. Expressing the ontological and epistemological beliefs of the researchers is important, as it helps solidify the research process with coherence (Issac et al., 2023) among the important components of the research (Morgan, 2020), regardless of the research design. To help new researchers adopt the CGT methodology, Charmaz and Thornberg (2020) proposed a 13-step guideline to ensure the quality of grounded theory research, regardless of which version of GT they choose. The first step is to strive for methodological self-consciousness and an understanding of the chosen GTM, because the ontological and epistemological assumptions and beliefs are crucial for researchers to position themselves within the research when the three major schools of GT differ in these respects. Citing Morgan (2020) as an example, he emphasised the importance of integrating pragmatism into the abduction inquiry in GT, as it fits with and is compatible with its ontology and epistemology, as well as its alternating and cyclical process of inquiry and philosophical bases. When a researcher decides to take up research to understand a subset reality of a particular population, CGT provides a 'pragmatic root and relativist epistemology' lens to serve as the basis of the research by first observing the situation, reflecting and defining the nature of the problem, searching for possible solutions, reflecting again the possible consequences, and taking actions (Dewey, 1933, 1938 as cited in Morgan, 2020). The emphasis on the structure of the inquiry in research aligns with Charmaz and Thornberg's (2020) proposal for pursuing quality in grounded theory through checklists and guidelines. 'Trust the process,' stated Charmaz (2008; 2014). When flexibility is a significant component of GTM (Glaser & Strauss, 1967, 2006; Charmaz, 2008, 2014), it allows the researcher to take the liberty of investigating a particular field using their own versions of CGT, as long as they engage deeply with their method and data.

With flexibility as a tenet in GTM, similarities and differences could be discerned (Charmaz & Thornberg, 2020) across the 24 articles that underwent full-text screening at the last stage of the SLR using the PRISMA-SWiM protocol. All 24 utilised the CGT methodology, as mentioned before. Still, they needed to clarify it further by providing the rationale for adopting the CGT methodology over the other GTMs. For instance, despite the literature review being disputed

by Glaser and Strauss (1967; 2006) and Charmaz (2006; 2014), as shown in Figure 3, 58.3% of the articles still included a literature review, though the process might have invited preconceived opinions and ideas and either directly or indirectly imposed them on the worldview. Hence, Glaser and Strauss (1967; 2006) and Charmaz (2006; 2014) suggested explicitly that delaying the literature review process encourages the researcher to articulate the ideas directly from the data obtained from the participants of grounded theory research, while Strauss and Corbin (1996; 2015) advised on using literature review carefully, or it might be a waste of time. The authors did not specifically identify the rationale for including the literature review, but it was most likely required by their educational institutions. Understandably, researchers do not enter research as a tabula rasa, or blank slate, but rather as a person with a recent literature review bias. Delaying the literature review allows the researchers to review the collected data more clearly and identify patterns and themes as they develop codes and categories. Only once theoretical saturation has been reached does the literature review complete the theory, as it helps the researchers cite the most significant points of convergence and divergence (Charmaz, 2008, 2014). A good example would be Rudrakumar et al. (Article 26) and Mulolli & Gothberg (Article 28), who used the existing literature to compare the data after analysis and to fill gaps.

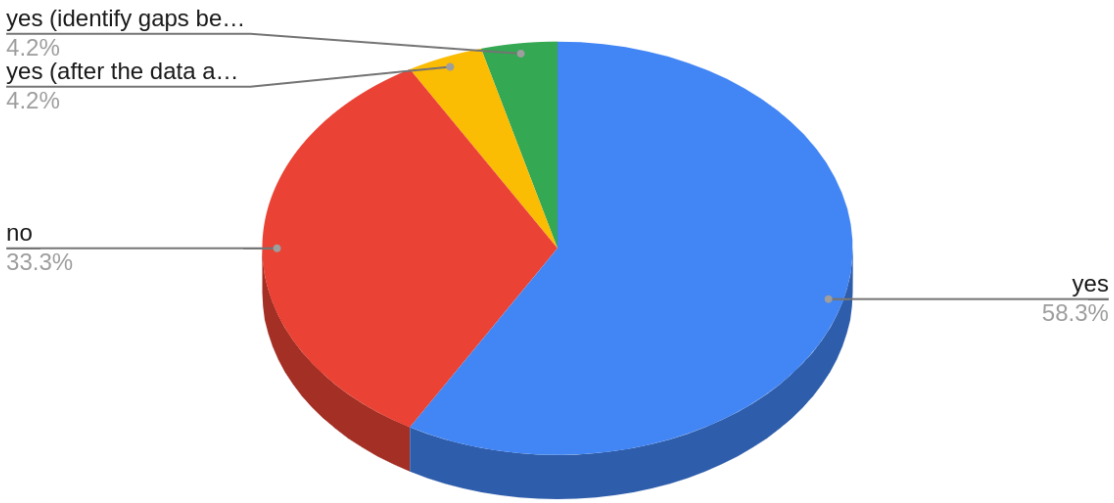

Figure 3. A count of literature reviews was used among the 24 articles.

The third guideline mentioned in the article 'The Pursuit of Quality in Grounded Theory', Charmaz and Thornberg (2020), states that one should take an open, non-committal, critical, and analytic view of the existing literature in the field and establish a defensible rationale for the study while avoiding reinventing the wheel. They, however, did not specify when one should conduct the literature review, unlike Charmaz (2008; 2014) in her book *Constructing.* Thus, it is sufficient to state that a researcher must understand and explicitly articulate the rationale for conducting a literature review. Logically speaking, what Charmaz (2008, 2014) suggested is still the ring to the truth that literature review in grounded theory research should be engaged after the data collection and analysis, although researchers, with all sorts of preconceived ideas, are most certainly being influenced before doing grounded theory research, but as long as the researchers are being transparent and providing justifications for the methods used in the research, quality of the grounded theory research is attainable (Guideline 5, Thornberg, 2012 as cited in Charmaz & Thornberg, 2020) and that was what lacking in the reviewed articles as only two of them explained the rationale on including an

early chapter of literature review. The other 22 articles included a literature review without justification, most likely because they were instructed or trained in a conventional research setting. The articles that did not include a literature review might have risked reinventing the wheel and failing to compare notions of quality with the broader literature as concepts were developed and their relation to the theoretical framework was explored (Charmaz & Thornberg, 2020). Therefore, a delayed literature review, or before or even during the data collection and data analysis while doing CGT research, is permissible as long as the researcher can provide justifications and clear positionality in the study, especially when pure induction is almost impossible, and it undermines the researchers' ability to reflect on their analytical prowess. Therefore, utilising the lens of pragmatism (Morgan, 2020; Thornberg, 2012) and theoretical agnosticism enables grounded theorists to think critically and question existing assumptions while practising a sceptical attitude towards the literature throughout the study.

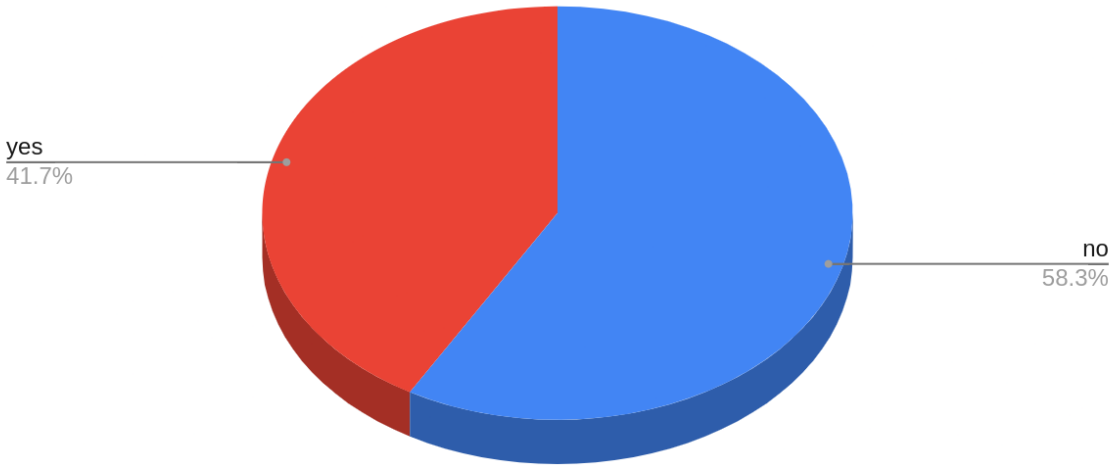

Figure 4. Count of Researcher's Positionality mentioned in the 24 articles.

The researcher's positionality matters in CGT studies. While positionality was not a term Charmaz (2006) used in Constructing, the researcher's positionality was implied and emphasised throughout the book because the role of the researcher is equally essential as the data collected fromparticipants in the process of co-constructing a substantive theory. 41.7% (10 articles) of the researchers disclosed their positionality within their researched areas by talking about their professional backgrounds and personal experiences with the reflexive stances; only two of the articles (Oldham & Bradley and Kennedy & Moore) included the epistemological view and how it shaped their worldview and the direction of the research. It is of utmost importance for researchers to declare their positionality in qualitative research, especially the ones in which CGT methodology is used, and this includes ontological assumptions, epistemological assumptions, and assumptions about the interactions within the social circle because these values and beliefs are shaped individually (Sikes, 2004, Wellington, et al., 2005 and Marsh, et al., 2018 as cited in Holmes, 2020).

When the other eight articles and their respective researchers talked about their backgrounds within the setting, they did not explicitly acknowledge their positionality regarding how their epistemological beliefs and assumptions were shaped. Ontology and epistemology affected the entire research process (Morgan, 2020). Guideline 1, as outlined by Charmaz and Thornberg (2020), states that methodological self-consciousness should be sought at all times when conducting a quality inquiry or constructing a grounded theory study. Therefore,

researchers who adopt the CGT methodology should strive to disclose their positionality (Savin-Baden & Major, 2013, as cited in Morgan, 2020) which includes (1) locating themselves and their influences on the subject, (2) locating themselves about the participants, (3) locating themselves about the research context and process, and Morgan (2020) added a fourth component which is (4) locating themselves about time as novice researchers, especially, need the time to explore their positionality through some considerable time of 'soul searching'. To summarise, the CGT methodology emphasises the importance of the researcher in the participation of the co-construction of substantive theory with the interviewed participants; the researcher's positionality then becomes a significant element in the CGT methodology, especially during the interviews where the researcher as an interviewer actively helping the participants to articulate their complex intentions and meanings behind their actions (Charmaz, 2008; 2014).

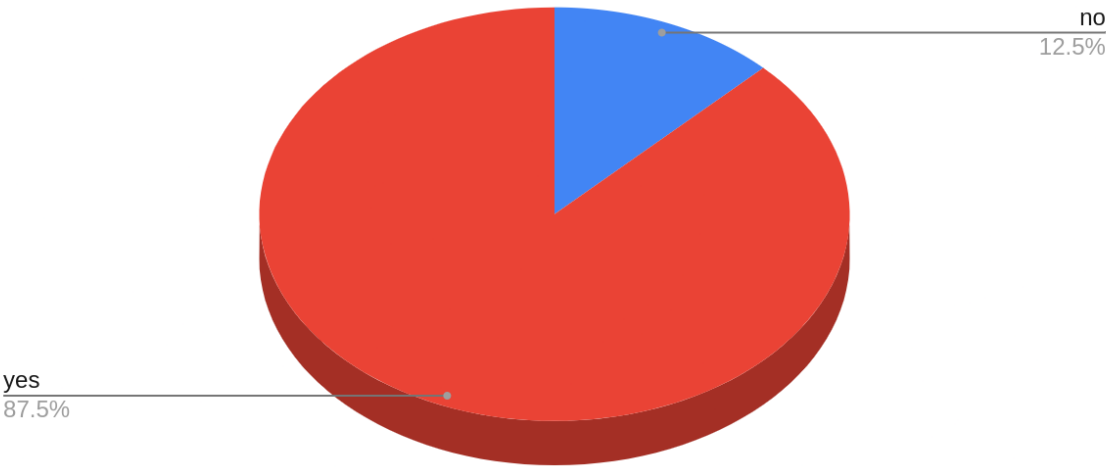

Figure 5. Count of rigour mentioned in the 24 articles.

After the authors determine their positionality, rigour can be achieved through a meticulous examination of the process itself. While quantitative rigour is impossible to achieve in most qualitative research, qualitative rigour can be evaluated using criteria proposed by Glaser & Strauss (1967, 2006), Strauss & Corbin (1996, 2015), and Charmaz (2006, 2015). Figure 4 shows that of the 24 articles, only 3 explicitly mentioned rigour. At the same time, the rest of them talked about how the rigour of the research was achieved via reflexive memo-writing and constant comparative analysis during line-by-line initial coding and focused coding (Uwajeneza et al., Luedke et al., Catarina & Elsa, Bally, et al., Chiriac, et al., Farrell, et al., Boisvert, et al., Shamburg, et al., Straughair, et al., Shokeen, et al., Lavanti, et al., Rudrakumar, et al., Mulolli & Gothberg, Deepa, et al., Rogers, et al., Lewis, Muthanna, et al., Sun, Ostovar-Namaghi, et al., Parveen, and Velardo & Elliot), thematic, interpretative analysis and coding (Chhetri et al., Straughair, et al., Oldham & Bradley, and Muthanna, et al.). Twenty-three articles and their researchers used the coding methodology that Charmaz (2006; 2014) suggested. However, memo writing and constant comparative analysis are part of how GTM achieves rigour; the authors should have included a section on rigour and discussed how they achieved it. Kennedy and Moore adopted a more flexible CGT analysis methodology in duoethnography to explore the two researchers' shared nostalgia intuition. Despite using dialogic and conversational methods for data collection and analysis, and the product of grounded duoethnography does not aim to provide a comprehensive description of the topic, the researchers mentioned that the trustworthiness of the research depends on how the data

was a sensitising conceptualisation containing a deep self-reflection and total transparency of the research process. This aligns with Guidelines 5 and 6, which call for transparency in the research process and for going back and forth between the collected data to develop analyses and fill out emerging analytic categories. After coding, the researchers constructed a substantive theory about a particular phenomenon. When the researchers wanted to investigate the phenomena they were interested in, they went straight into the source of those experienced within the area, in this case, the people. To answer the first and second review questions of this SLR, Charmaz (2006; 2014) posited that grounded theory adventure begins with the researcher entering the field, gathering data by stepping forward with their disciplinary perspectives, tools, and provisional concepts developed within their professional backgrounds and experiences. By focusing on the educational sector, CGT provides a set of tools for gathering rich, thick descriptions of empirical data from research participants. This is the most significant advantage of implementing the CGT methodology over quantitative research: grounded theorists add new pieces to the research puzzle or, sometimes, conjure new puzzles while gathering data. The flexibility and reflexivity in the CGT methodology allow researchers to follow the leads that emerge (Thornberg, 2013, as cited in Charmaz & Thornberg, 2020).

Therefore, the three articles (Chhetri et al., Oldham & Bradley, and Muthanna et al.) should have included a chapter containing how the researchers achieved rigour despite mentioning constant comparative analysis in the content because rigour or as Glaser & Strauss (1967, 2006), Strauss & Corbin (1996, 2015), and Charmaz (2006, 2014) put it, is the criteria of evaluation for grounded theory studies, or trustworthiness (Bryant & Charmaz, 2007). This is particularly useful for thinking about how researchers constructed substantive theory. When the CGT methodology is well documented, the quality of the grounded theory can be verified regardless of which version was used. Of all the articles, Velardo and Elliot wrote the most comprehensive chapter on methodological rigour, where they use different means, methods, and practices from lists that were not fixed, rigid, or predetermined (Smith & MacGannon, 2018, as cited in Velardo & Elliot, 2021). Following Charmaz's (2006) suggested evaluation criteria, *credibility, originality, resonance,* and *usefulness,* they added another means for adopting various methods and practices to achieve *sincerity.* When the researchers follow the methodology with a reflexive stance and the general guidelines proposed by Charmaz and Thornberg (2020), the constructed substantive theories can fit, extend, or challenge leading ideas in the particular field, as shown by the articles included in this SLR.

Overview of Application of CGT in Educational Research

Despite Glaser and Strauss (1967, 2006) holding a positivist position, generating grounded theory is a way of arriving at a theory suited to its supposed uses: (1) to enable prediction and explanation of behaviour, (2) to be helpful in theoretical advance in social interactionism, (3) to be usable for practitioners' understanding and control, (4) to provide a perspective on social behaviours, and (5) to guide and provide a tool for research to research on particular areas of behaviours. In CGT, Charmaz (2014) recognised the epistemological and ontological importance of the inductive, comparative, emerging, and open-ended approach of Glaser and Strauss's (1967) grounded theory while emphasising the constructivist turn, which highlights the flexibility of the authoritative voice of the researchers. Consequently, all 24 articles included in the final full-text screening were the products of constant comparative analysis, initial and open coding, and co-constructed grounded theories, which could interpret and

explain the fascinating phenomena in the educational context that intrigued them. The 24 articles were categorised into the following themes: early childhood (2), informal learning (3), nursing (3), higher education (8), teachers and schools (6), and community (2).

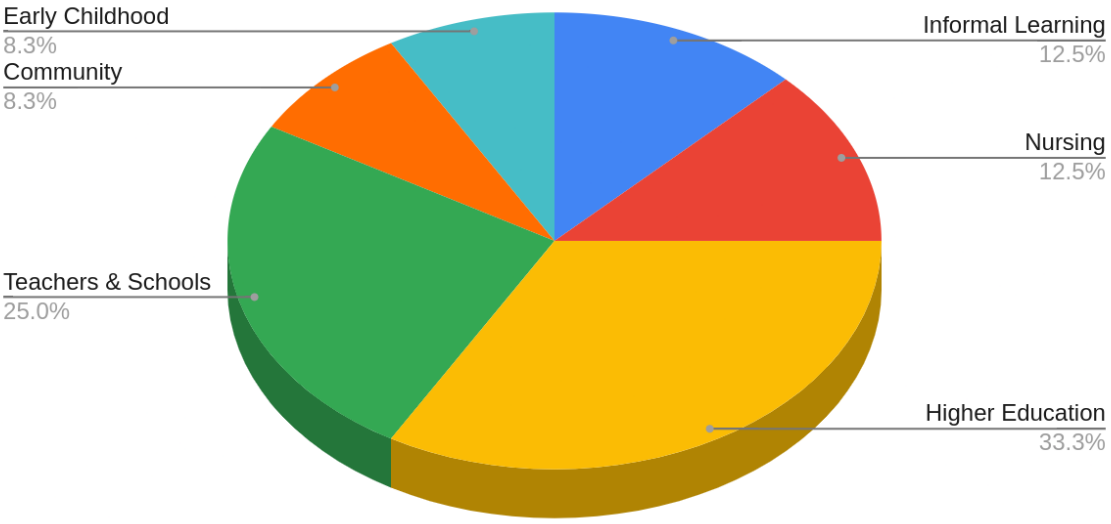

Figure 6. Thematic categorisation of the 24 articles based on their titles.

To reach theoretical saturation in constructing grounded theories, researchers use theoretical sampling in GT research to gather more robust evidence to support the codes and theories (Glaser & Strauss, 1967, 2006; Strauss & Corbin, 1996, 2015; Charmaz, 2006, 2015). Figure 5 shows the range of the interviews included in the articles, which was from 5 to 43, and the only article that utilised focus group interviews conducted 14 interviews with the focus groups. The mean number of participants across the 24 articles is 15.08, and the mean interview frequency is 14.08. Most researchers conducted a single interview with participants, except Chhetri et al., Luedke et al., and Bally et al., who conducted two interviews, and Chiriac et al., who conducted 14 focus group interviews with 73 participants. Kennedy and Moore did not conduct interviews; instead, they used grounded duoethnography, a dialogic, conversational method for data collection. Therefore, they were not included in the synthesis as an interview. This is considered a Modified Grounded Theory (MGT) approach, in which flexibility enables its implementation. Although the articles did not explicitly state how they reached theoretical saturation, the participants' average of 15.08 indicated that the mean sample size for saturation was consistent with the findings of Hennink and Kaiser (2022). Saturation can be achieved in a narrow range of interviews (9-17) or focus group discussions (4-8). The bubble plots below (Figure 6) indicate that the articles included in this SLR are commensurate with Hennink and Kaiser (2022), reaching theoretical saturation with 9-17 participants and 4-8 focus group discussions. The outlier is shown in the bubble plots, with Lavanti et al. and Lewis leaning towards the left, as they had 54 participants and 54 interviews. Lewis had 50 participants at the beginning, but due to a technical error, he lost 7 audio files that needed to be transcribed for data analysis. Nevertheless, it would be better for them to include the rationales for stopping their theoretical sampling at the particular number and for achieving theoretical saturation of the codes and categories.

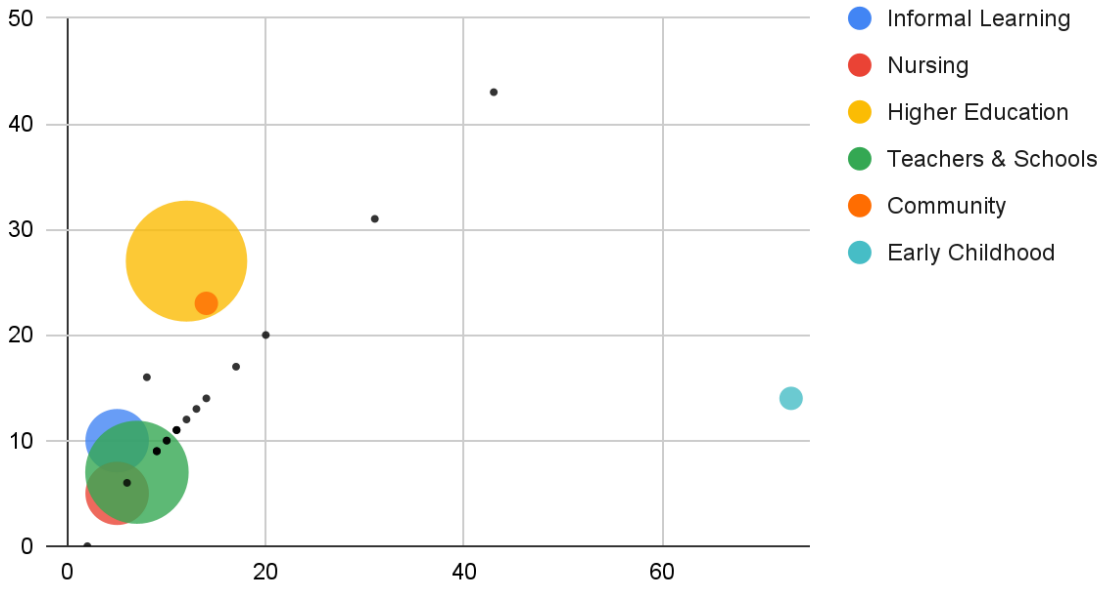

Figure 7. Bubble plots of CGT in educational research. The bubbles represent the themes identified in the SLR. The X-axis represents the frequency of interviews. The Y-axis represents the number of participants.

GTM started with a history of Glaser and Strauss (1967, 2006), carrying out research trying to understand what patients went through on the deathbeds in hospitals called 'The Social Loss of Dying Patients'. Having distanced themselves from the research with a positivist worldview, they were trying to understand the meaning of 'social loss' of different demographics, the VIPs, and the lower-class Negroes and later, establishing the generality of empirical generalisations. The research was confined to the context of dying patients. Since the focus of this SLR is on discovering the usage of CGT methodology in the educational context, articles from Uwajeneza et al. (Article 3), Bally et al. (Article 11), and Straughair et al. (Article 19) will be used as examples as they were within the field of nursing education, a homage paid to Glaser and Strauss with the use of GT started in the field of nursing. All three articles have talked about their constructed grounded theories. However, the three articles did not explicitly address the researcher's positionality, although they followed the CGT methodology, including constant comparative analysis, coding procedures, and reflexive memo writing. This somehow blurs the essence of the CGT methodology, without the researchers' or authors' emphasis within the research context. For example, Uwajaneza et al. constructed the codes of teaching family planning to nurses and midwives into three stages: *Preparing, Facilitating,* and *Evaluating* and how the stages are being affected by *Influential Factors.* Lastly, they also constructed a code, *Overcoming Challenges,* to include the experiences of how the participants tried to tackle the difficulties, such as the frustration they faced because of insufficient time, unaligned teaching curriculum, and inadequate resources, that they had encountered during the process of teaching family planning in the nursing/midwifery schools in Rwanda. While the constructed theories have seemed to be captured with complex phenomena, it is difficult to know precisely how much was from the researchers without a segment of writing about the researcher's positionality. The same goes for Bally et al. and Straughair et al.

In comparison, Mulolli and Gothberg (2023) stated their positionality well by discussing their own experiences and how these experiences shaped their stance on conducting the research. The research examined how doctoral students with low Graduate Record Examination (GRE) scores succeeded, and Mulolli faced the same challenge during his doctoral program. He knew his subjectivity would be infused into the research, so he retained his reflexivity through memo writing and constant comparative analysis during the authors' coding process. Two major themes emerged and were constructed by Mulolli and Gothberg: *(1) intrinsic factors: self-determination and work-life balance, and (2) extrinsic factors: emotional and financial support and university climate.* When the author was a low-GRE doctoral student, he could empathise with the research participants and understand the doctoral students' underlying struggles. When the existing literature left a gap in this phenomenon, this study identified the possibility of low-GRE doctoral students succeeding in the future by considering intrinsic and extrinsic challenges and success factors. This shows the importance of the researcher's positionality in deeply understanding the problems students were facing and in utilising their experience to interpret and construct the codes and categories.

Articles (27) by Mathia et al. and (20) by Henrik et al. summarised the SLR well, although they were not included in the final full-text screening results. Educational studies can benefit from the CGT methodology rather than having teachers or educators limit themselves to AR. Eight of the 24 articles in this SLR did CGT research related to higher education. As shown in Figures 4 and 5, out of the eight articles, four articles, which include Luedke et al. (Article 6), Mulolli & Gothberg (Article 28), Rogers et al. (Article 30), and Sun (Article 36) mentioned rigour, researcher's positionality, constructed substantive theories, and discussed the phenomenon extensively in the findings—for instance, the authors of Luedke, et al. talked about their background meticulously where neither of the first author's parents graduated from high school, later when she was in high school, her family members supported her throughout the university journeys. Her unique experience made her research this area—reciprocity between family members during higher education. The second and third authors shared the experience of having family members care for them while they obtained a university degree. Although the authors did not talk about their ontology and epistemology, through their words describing their personal experiences, it could be seen that their experiences affected the construction of the codes and categories: *(1) Genuine Reciprocity through Action and Conversation, (2) Emotional Reciprocity That Uplifts and Encourages Students, (3) Temporal Reciprocity: Investing in Family Time and Mutual Support, (4) Financial Reciprocity: If We Can, We Will, (5) Resistant Reciprocity: Complicated Family Ties, (6) Resistant Reciprocity: Complicated Family Ties, and (7) Harnessing Family Challenges as Motivation.* The authors mentioned that the work illuminated the inner workings of familiar ties for students of colour and their struggles throughout their tertiary education. This grounded theory research aims to inform the universities about the overlooked personal dynamics to improve support strategies. When the research area is limited to a particular target population, generalisation should no longer be a concern. Instead, it is the product of a 'multifaceted reality' using the tools of grounded theory methods without subscribing to a prescribed theory of knowledge or view of reality (Charmaz, 2006; 2014). The goal of grounded theory research is not generalisation, but the articles mentioned limited generalisability to a larger population. This is not a bug but a feature of a mature CGT method that aims to gain theoretical sensitivity within a compound of interest.

From the examples above, the grounded theory emerged and was constructed through the interactions between the researchers and the participants. Hence, a short conclusion can be made that the application of CGT within the educational context by a teacher, student, graduate student, professor, or any other stakeholder in education reflects the choices of codes and categories the authors make consciously (Charmaz, 2006, 2015) to understand the particular phenomenon experienced by a specific subset of researchers and participants, can be beneficial to the overall educational field especially when Malaysian education is deemed to be diverse and complex. The SLR shows that CGT was mainly used in higher education and in contexts related to teachers and schools. CGT can provide tools for working from the ground up to show how the analysis fits, extends, and challenges existing ideas in the field (Charmaz & Thornberg, 2020). Educators from varied fields can utilise the strengths of CGT's implementation to obtain in-depth analysis. Drawing on Charmaz (2006, 2014), the generality of the phenomenon of interest emerged from the analytic process, and the researchers constructed a conceptual analysis of patterned relationships through the interactions. The lens of pragmatism and abduction encourages one to make comparisons from the data, reach up to build abstractions, and simultaneously reach down to connect the abstractions around the gathered data. With an open mind and transparency from the beginning of the grounded theory exploration, a door to the empirical world will be opened for those willing to understand people's different experiences (Charmaz & Thornberg, 2020). Also, Dey (1999) noted that theme generation is finalised only when newer perspectives emerge, meaning there is no ending to the day but only a pause in the never-ending process of generating theory in grounded theory investigation. This symbolises the non-stop journey of discovering the fragmented and ever-evolving truths experienced daily by different populations, namely the various stakeholders in education.

Limitations and Challenges

The synthesis of the articles contains only studies that utilised the constructivist grounded theory methodology by Charmaz (2006, 2014). After a full-text screening of 44 articles, 24 were included in the synthesis. Firstly, the major limitation of this SLR was the oversight of screening articles by using only the keyword 'constructivist' and by assessing only eligibility for the final full-text screening. Twenty articles in the screening were not included because of the words 'social constructivism' and 'constructivist learning theory', which means something different from 'constructivist' grounded theory. Secondly, flexibility is essential to the CGT methodology because different truths emerge across segmented social interactions. Hence, it was challenging to use blanket statements to evaluate the heterogeneity and homogeneity of the research, given the grounded theory methodology's aim to explore and gain a deep understanding of particular social phenomena. Therefore, this SLR only aims to evaluate the methodology, not the findings. Bryant and Charmaz (2007) argued that justification of methodological flexibility and indeterminacy is needed at the outset of the research to avoid undermining CGT's integrity and to retain coherence. This also means that the researcher's transparency regarding research progress is at the mercy of the researchers' final reporting on the collection and, especially, on data analysis, due to the co-construction of substantive theory.

Conclusions

From the synthesis and comparison of the 24 articles, it can be seen that there were some inadequacies in rigour and in the researchers' positionality, despite their data collection and

analysis, which helped them construct substantive theories about the particular research area of interest. Suddaby (2006) stated that many researchers needed clarification during GT research, including the extent of the literature review, the depth of data interpretation, and the rigid application of formulaic techniques to the data. He also mentioned that some researchers use grounded theory as an excuse for lacking methodology while claiming it is one of the easiest ways to conduct research. To counter the criticisms of qualitative research, especially CGT, largely due to the subjectiveness of the researchers during the co-construction of the coding process, a solid philosophical stance and justifications for each decision made during the research are very much needed to reach methodological and contextual reflexivity (Bryan & Charmaz, 2020; Olmos et al., 2022). Constructivist grounded theory approaches have become widely used within the discipline of education (Bogdan & Biklen, 2007, as cited in Stough & Lee, 2021), but they remain rare in Malaysia. This synthesis has identified the key advantages of employing CGT in educational research and how the active involvement of researchers during the research contributes to the overall understanding of complex phenomena in academic settings. It is hoped that more educational research in Malaysia can be carried out by adopting the CGT methodology.

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