

**A systematic review of critical thinking skills
in social work**

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Research outline and preface

This dissertation of limited scope is submitted in partial fulfilment of the requirements for the completion of the degree Master of Social work in Child Protection. It was prepared for submission in article format in accordance with the 2018 version of the General Academic Rules (A4.1.1.1.4 and A4.4.2.9) of the North-West University.

The dissertation consists of the following sections:

Section 1: Background and orientation

Section 1 presents the approved research protocol with reference to supporting documents such as ethics approval (included as addenda). The section serves as an orientation to the study and includes an in-depth discussion of the planning and methodology followed in preparation of Section 2.

Section 2: Manuscript in article format

Section 2 consists of a manuscript in article format. The manuscript titled, *A systematic review of critical thinking skills in social work*, was compiled in adherence to the editorial guidelines of the *Journal of Social Work Education*. The manuscript will be submitted to this journal for possible publication.

Section 3: Conclusions, limitations, future recommendations, policy brief and personal reflections

Section 3 concludes the dissertation with a summary of the research findings and the conclusions, limitations and future recommendations. A policy brief was drafted and this document will be circulated to universities, the Council for Social Service Professions, the National Department of Social Development and other service providers in the welfare sector. The dissertation concludes with a personal reflection on the entire research process and learning experience.

Author and co-author contributions

Mrs S Khan

Mrs Khan is a master's student enrolled for the degree Master of Social Work in Child Protection. The student was responsible for the development of the proposal and served as the primary researcher of the systematic literature review process. She also wrote up the entire dissertation of limited scope.

Prof. Alida G Herbst

Prof. Herbst served as a supervisor and guided the student during the research process.

Mrs T Sayed

Mrs Sayed served as a co-supervisor and as the second reviewer for the systematic review.

Letter of permission and declaration of each person involved in this dissertation of limited scope

This declaration of the supervisor and co-supervisor serves as an official statement confirming the contributions each researcher made to the study and manuscript. The authors hereby grant permission that the dissertation of limited scope and manuscript titled *A systematic review of critical thinking skills in social work*, may be submitted for examination.

Declaration by the Supervisor

I, Prof. Alida G Herbst, grant permission for the student to submit this dissertation of limited scope for examination purposes.



Prof. AG Herbst

Declaration by co-supervisor

I, Tasleem Sayed, grant permission for the student to submit this dissertation of limited scope for examination purposes.



Mrs T Sayed

Declaration by student

I, Shakera Khan, ID no: 7705160092083, hereby declare that this dissertation of limited scope is a product of my own work and that I correctly acknowledged all authors and sources consulted for this mini-dissertation. I also declare that this dissertation of limited scope has not been submitted to any other university for examination purposes.



Mrs S Khan

Executive summary

Title: A systematic review of critical thinking skills in social work

Problem statement: The very nature of social work, especially when it comes to the protection of vulnerable groups such as children, requires of social workers to act timeously and make radical decisions to serve the best interest of vulnerable clients, sometimes without much information. Professional social work practice further requires social workers to analyse, assess, interpret, communicate, evaluate and intervene on a continuous basis. Underlying these skills is the ability to think critically. Further research to explore the factors and skills that can enhance critical thinking in social work education and practice can greatly enhance efforts to develop these skills among social workers.

Aim: The aim of this study was to systematically review literature on all aspects related to critical thinking in social work. The general goal of the study was to explore the level of critical thinking present among social workers and to explore guidelines for the enhancement and further development of critical thinking skills among social workers.

Methodology: This study involved a systematic review as this design is considered helpful for locating, appraising and synthesising the evidence that is available in the literature on a certain matter. In this case, the aim was to answer the question: *What factors or skills contribute to critical thinking in social work?* Boland, Cherry and Dickson's (2017) ten steps were used to guide the review process.

Results and discussion: The results of this review indicate that the development of critical thinking skills should be a crucial component of social work education to enhance social work practice. A number of themes emerged from the nine studies included in this review. The emerging themes include the following factors and skills: self-awareness, education and learning/sources of knowledge, decision making, reflection, technology and socio-economic status.

Conclusion and recommendation:

The results of this review highlight specific themes related to the skills required in the development of critical thinking in social work education and practice and other factors that affect critical thinking. These factors and skills can guide relevant key role players in social work education and the broader welfare sector.

Keywords

Critical thinking, child protection, assessment, social work practice, social work education, decision-making, intervention, reflection

Section 1: Background and orientation to the study

Section 1 provides an overview of the study and discusses the measures taken to ensure ethical research. The study was approved by the relevant scientific committee (see Addendum 1) and the Health Research Ethics Committee (HREC) of the Faculty of Health Sciences of the North-West University (NWU) (see Addendum 2). Section 1 includes the approved research proposal, a brief literature review and a detailed discussion of the methodology that was followed.

Approved research proposal

A systematic review of critical thinking skills in social work

Background to the study

The very nature of social work, a field where the protection of children and decisions in the best interest of these children are prioritised, requires of social workers to act timeously and often with limited information. The fast paced and weighty decisions that social workers routinely make, means that critical thinking is an essential process skill (PART, 2012). Professional practice further requires social workers to be able to analyse, interpret, assess, communicate, evaluate and intervene when presented with multiple sources of knowledge and information in a manner that respects the dignity and diversity of the people served (Samson, 2016).

This research answers to the need to highlight the importance of critical thinking in all facets of social work as drastic decision making on behalf of children and families is required on a daily basis. This study aims to systematically review literature on critical thinking in social work. This chapter gives an overview of the rationale of the study, the methodology that was followed and an outline of study.

According to Brookfield (2012), critical thinking entails "...the identification of assumptions that frame critical thinking and determine our actions, evaluating the degree of accuracy and validity of such assumptions, critical reflection on ideas and decisions from various different perspectives and taking informed actions after careful consideration."

It is important to note that critical thinking does not simply mean being logical, solving problems, or being creative, although some or all of these aspects could be involved (Brookfield, 2012). The hallmarks of critical thinking include being clear versus unclear, accurate rather than inaccurate, deep versus narrow, adequate for purpose versus inadequate,

fair versus biased and one-sided, and logical versus illogical. Critical thinking goes hand-in-hand with using evidence when making decisions about the intervention offered to the client. Gambrill (2013) proposes that “critical thinking is a unique kind of purposeful thinking in which we use standards such as clarity and fairness to evaluate evidence related to claims about what is true and what is not” (EPPI Toolkit, 2017:2).

Samson (2016) elaborates further by emphasising that the main components of critical thinking involve analysis, evaluation and the construction of an argument. The other key activities that have been identified as crucial to critical thinking include having openness to diverse ideas, identifying and challenging taken-for-granted assumptions and exploring and imagining alternatives (Vandsburger, Duncan-Datson, Akerson & Dillon, 2010). Critical thinking is definitely not a new idea, as its roots date back to the ideas of the ancient Greek philosopher Socrates. He is credited with pioneering a questioning and rational approach to problem solving, while encouraging people to reject statements based on confused meanings and inadequate evidence.

Critical thinking is important for the development of social work skills in direct practice. According to the *Encyclopaedia of Social Work*, direct social work practice is the application of social work theory and/or methods to resolve or prevent the psychosocial problems individuals, families and groups may experience. A definition in the *Oxford Dictionary of Social Work and Social Care* states that direct practice can be defined as “...face-to-face social work with service users as opposed to activities carried out on behalf of or with regard to service users”. There has been growing concern about the decreasing amount of time social workers spend in direct practice as the administrative burden grows. Gambrill (2013) states that “Critical thinking in social work is purposeful, responsive, supports humility, integrity, perseverance, empathy and self – discipline, self -assessing results in a well-reasoned answer and recognising opposing views”. Social workers help people from all walks of life and they come across people or populations with experiences, ideas and opinions that often vary from their own. According to

Vardi (2000), thinking critically includes the synthesis, comparison and evaluation of ideas from a variety of sources such as texts, direct observation, experience and social dialogue. It involves more than an in-depth examination of knowledge sources; it requires us to reflect on knowledge by way of a different and wider way of thinking. All of these are crucial elements in the development of a treatment plan or intervention in social work, but particularly in the high impact field of child protection.

When formulating a treatment plan or intervention for a client, the social worker first has to consider the beliefs, thoughts or experiences that underlie the client's actions without making a snap judgement. Critical thinking can help the social worker to objectively examine these factors and to consider their importance and effect on the course of action while maintaining a professional, non-biased attitude. In order to develop critical thinking skills as a social worker, one has to have the ability to self-reflect and observe one's own behaviours and thoughts about a particular client or situation. Islam (cited in Miller, 2016) suggests that self-awareness, observation and critical thinking are closely intertwined and affect the ability of a person to be an efficient social worker.

Furthermore, critical thinking is about taking a step back and thinking logically and carefully about the information one has, rather than believing everything one reads, sees and hears. A number of commentators have observed that social workers are generally good communicators and skilled with gathering information about families and their circumstances, but they have difficulty in processing the material they have collected. The difficulties seem to lie in the critical thinking skills social workers have and how these skills are applied in drawing conclusions in practice (Brown, Moore & Turney, 2012). Critical thinking is particularly important for all professionals working with human beings. In child protection, social work critical thinking not only involves the cognitive process of applied thinking, but also requires action that is consistent with the cognition. Objective and accurate assessment is crucial in child protection work and is directly linked to critical thinking.

According to Holland (2010) and Munro (2008), a good assessment is a complex activity that includes the systematic and purposeful gathering of information, but it is more than simply a process of collecting facts. It requires a range of knowledge and skills. Mumm and Kersling (1997) explain that the skills necessary for critical thinking include the development of cogent arguments, clear definitions, problem-solving strategies, information organisation and creativity. Critical thinking allows the child protection social worker to look beyond the surface of a client's problem and, in the words of Zastrow and Kirst-Ashman (2010), to "...carefully examine and evaluate the beliefs and actions and to establish an independent decision about what is true and what is not".

Two distinct conceptual discourses emerge from theoretical discussions on the importance of critical thinking for social work. Each strain attempts to use the concept of critical thinking to address a different perceived challenge in social work practice. The first, which focuses on the challenge of avoiding logical errors in clinical decision making, is best represented in the work of Mathias (2015). This author is of the opinion that critical thinking is synonymous with scientific reasoning and that it should be employed as a complement to evidence-based practice as it aims to maximise the likelihood of making good decisions. The second strain focuses on the application of social work values in dealing with complex problems (Mathias, 2015). Social workers' critical thinking influences various professional decisions that may greatly affect the lives of clients. One example of such a decision would be whether a child should be removed from a family or not. Social workers are expected to be problem solvers, no matter what the situation. They must be professional at all times, abide by the professional code of ethics and respect the diversity of their clients.

Critical thinking is therefore of utmost importance when facing issues and dilemmas related to ethics. Ethics dilemmas are situations where there is a conflict between competing ethics principles, and a solution cannot be found (Zastrow & Kirst-Ashman, 2010). Good ethics and professional skills include being critical about the information received regarding the clients served, and not

collecting information for the sake of information gathering, but with purpose and integrity (PART, 2012). From the previous discussions it is clear that critical thinking is an integral part of generic social work practice, but even more so in the high-responsibility and fast-paced environment of child protection. The abilities and attitudes of critical thinkers are summarised in Figure 1 as an exploration.



Figure 1: Critical thinkers' abilities and attitudes (PART, 2012)

Figure 1 shows that critical thinkers are able to look for flaws in arguments and resist claims that have no support. Critical thinking is about questioning and evaluating the information available. Literature provides evidence of this, but on the personal level, they may include changing or inhibiting internalised patterns of dominance and oppression and expanding consciousness of the oppressive aspects of one's life (Fook, 2002). On the societal level they may include a strengthening sense of community, expanding awareness of oppressive practices

among communities and changing public discourse on oppressed social groups (Dominelli, 2002:55-64; Strier, 2009:1063-1081). Drawing on critical theory for social work, practice implies a focus on the structural causes of individual problems, promoting clients' rights, challenging inequality and recognising disadvantages.

Samson (2016:148) points out that scholarly literature and research on critical thinking in social work is still quite scarce. In this study the critical thinking skills of social workers are explored. The study is based on the assumption that the critical thinking skills of social workers may not be adequately or optimally developed and the results of this study may provide a profile of what specific critical thinking skills are required for social workers to make informed decisions.

A keyword search produced only 125 articles or dissertations published between 1980 and 2011 containing the terms critical thinking and social work in the titles, abstracts or indexes. Studies have found that critical thinking encourages rational and thorough assessments, but research and literature on the use of critical thinking skills in social work is limited. Existing literature emphasises the importance of critical thinking to assist social workers in making accurate judgements, but the literature is limited when it comes to the implementation of how to acquire and use critical thinking skills. This study aims to make the following contributions:

- This study contributes towards knowledge that may influence and enhance social work curricula focusing on critical thinking skills in social work. The findings will be made accessible by means of a published academic article.
- Researchers with an interest in this topic or policy makers and key role players can use the results of this study.
- The study can enhance social work practice in South Africa by offering recent research to help improve services to clients through the development of critical thinking.

Review question

What factors or skills contribute to critical thinking in social work?

Aim

The aim of this research was to systematically review literature on all aspects relating to critical thinking in social work. The general aim of the study was to explore the level of critical thinking that exists in social work and to explore guidelines for the enhancement and further development of critical thinking skills in social work.

Conceptual definitions

Social work can be defined as a “Practice-based profession and an academic discipline that promotes social change and development, social cohesion, and empowerments and liberation of people. Principles of social justice, human rights, collective responsibility and respect for diversities are central to social work. Social work engages people and structures to address life challenges and enhances well-being” (International Federation of Social Workers, (IFSW) (2014).

The APA Delphi consensus definition of **critical thinking** is that it is “The process of purposeful, reflective judgement focused on deciding what to believe or what to do” (CCTST User Manual and Resource Guide, Insight Assessment, 2017).

Study design and method

This study was conducted by means of a systematic review. Boland, Cherry and Dickson (2017) describe a systematic review as “a literature review that is designed to locate, appraise and synthesise the best available evidence relating to a specific research question in order to provide informative and evidence-based questions.” In this study the systematic review was done according to the ten steps set out in Boland et al, (2017). The steps were followed to ensure research quality. Figure 2 below provides an illustration of the steps.



Figure 2: Ten step process followed for the systematic review

Step 1: The systematic review included an extensive exploration of the current data of the research question posed. The reviewer made use of manual and electronic searches to obtain data. From this data a review question had to be created that would be understandable to readers.

Step 2: Performing scoping searches, identifying the review question and writing the protocol.

During this step, an extensive search of all literature was carried out. The search started with a basic search using Google as a search engine and followed to use the NWU library portal for more academic and professional literature and information. The ultimate goal of this literature search was

to determine the need for a systematic review on this topic. The final conclusive searches for adequate articles used in this systematic review were identified after the inclusion and exclusion criteria had been established.

Step 3: Literature search

This step aimed to identify evidence-based publications using reliable databases to address the review question. The emphasis was on designing a thorough list of key terms pertinent to each integral of the SPICE criteria to determine all applicable articles for the systematic review (Davies, 2011). According to Boland et al. (2017), Boolean operators were used to restrict searches and limit search parameters.

S (Setting)	What is the context of the question? The research evidence should reflect the context - the research findings may not be transferable.	The setting will include any context in which social workers are participants
P (Perspective)	Who are the users, potential participants, or stakeholders of the service?	This study will mostly consist of literature containing information on critical thinking in social work
I (Intervention)	What is presented to participants, potential participants, or stakeholders?	Studies to be included in this research review will be related to critical thinking skills for social work
C (Comparator)	Do alternatives exist that might uphold the status quo and change nothing?	None.
E (Evaluation)	What measurement will determine the intervention's success? In other words, what are the results?	None

Figure 3: SPICE Criteria) **Search Strategy**

The reviewer conducted a preliminary scoping search on the NWU's library catalogue (OneSearch portal) on 12 November 2018. The OneSearch portal browses 252 databases.

The keywords for the search strategy are outlined in Figure 4.

“Social work*” AND “Critical thinking” OR “reflective judgement+” OR “logical thinking” OR skill+” OR “problem solving” OR “divergent thinking”

Figure 4: Search strategy

Step 4: Screening titles and abstracts

In this step titles and abstracts were identified and the relevant ones were identified according to the inclusion and exclusion criteria.

CRITERIA	INCLUDE OR EXCLUDE? PROVIDE BRIEF JUSTIFICATION
Full text journal studies	Include, valuable information could be found from these studies since a scientific method was used to conduct the studies.
Peer reviewed studies	Include, peer reviewed studies could deliver valuable information with regards to this study since the studies would have been reviewed by different professionals with different scientific methods.
Non-peer reviewed studies	Include, even though the studies are not peer reviewed there may still be information pertaining to this study that would be left out if not included.
Quantitative studies	Include, as the SPICE criteria can be used in both Qualitative and Quantitative Protocols
Qualitative studies	Include, qualitative studies may have beneficial approaches/methods other than quantitative studies that may be missed if not included.
Mixed method studies	Include, mixed method studies may render opinions of participants and evidence based science that may be useful to this review.
Review studies	Include, however primary sources would be consulted if review studies are to be used.
PhD theses	Include, recommendations may have been made with regards to ethical codes by PHD's students nationally or internationally
Masters' dissertations/mini-dissertations	Include, recommendations may have been made with regards to ethical codes by Master's students nationally or internationally
Conference proceedings	Include, international conference proceedings may have meaningful information that could be of assistance to this study.
Studies published in languages other than English and/or Afrikaans	Exclude unless a translated version exists

Method of determining quality/ quantity appraisal

This research followed a systematic literature review approach according to the ten steps described by Boland et al. (2017) and Uman (2011). The steps were followed rigorously to ensure quality. Two reviewer were involved in the quality appraisal. The second reviewer's role was to guide the student in the method and to make sure of the student's search strategy.

This systematic review was conducted by two reviewers, Shakera Khan and Tasleem Sayed. The first reviewer conducted all ten steps of the systematic review process and wrote up the report. The second reviewer ensured quality and assisted the student during the process.

For the purpose of the quality appraisal, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) (see Addendum 3) was used to improve the reporting of the systematic review and meta-analyses. It consists of a 27-item checklist and a four-phase flow diagram (Moher, Liberati, Tetzlaff, & Altman, 2009) presented in Figure 4.

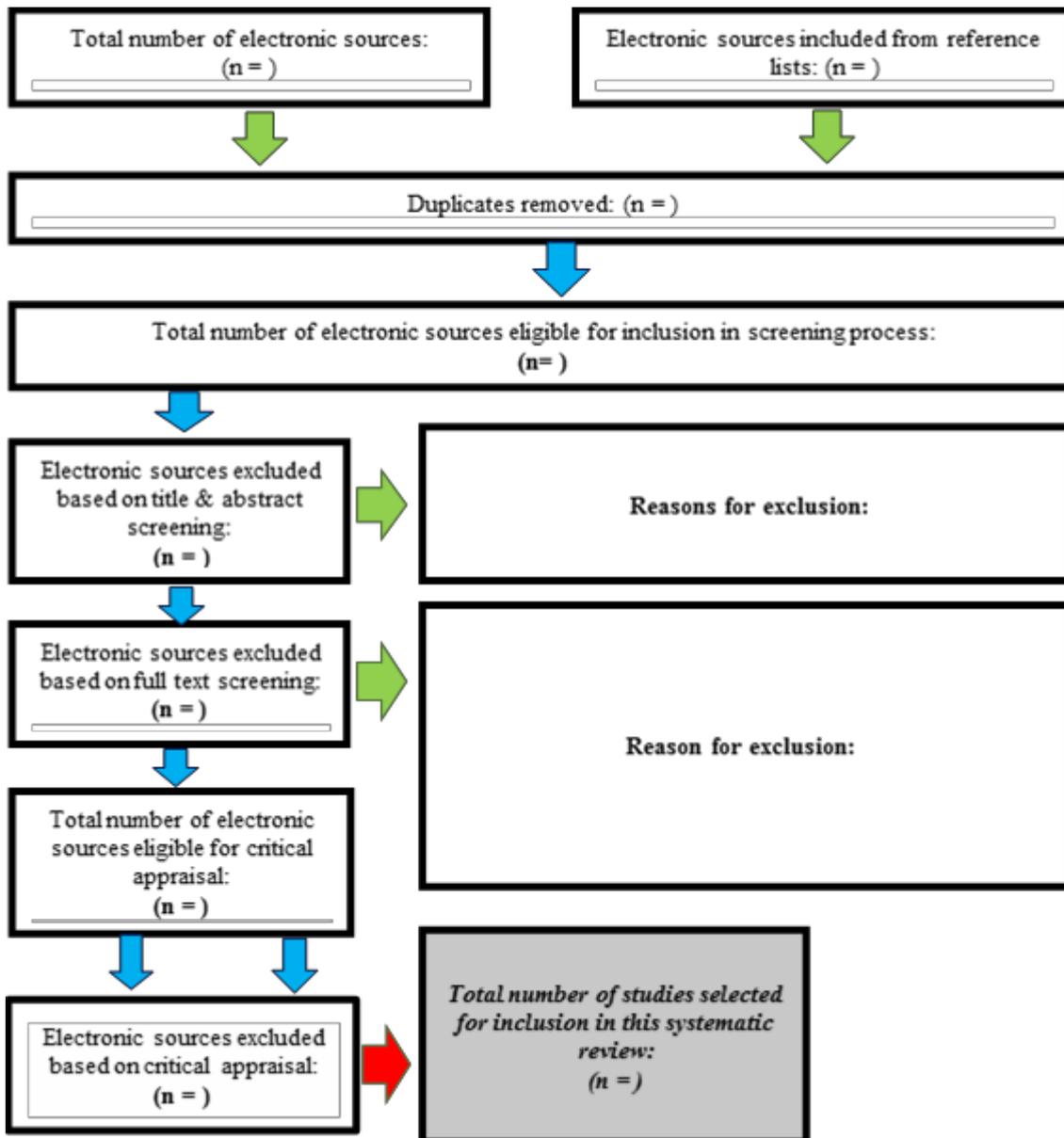


Figure 4: PRISMA flow diagram

Step 5: Obtaining papers

This step involved obtaining full-text papers of evidence found in Step 4.

Step 6: Selecting full-text papers

The reviewer's inclusion and exclusion criteria were applied as part of this step.

Step 7: Data extraction

This step included identifying the relevant data from each paper and summarising using forms or tables. The reviewer used the inclusion criteria when searching for articles, followed by the data

extraction phase and the critical appraisal phase. To ensure that each article reviewed adhered to the same standard and principles, an extraction form served as a control mechanism is advised by Uman (2011). The NOTARI and MASTARI data extraction forms were utilised as data extraction tools (Joanna Briggs Institute, 2011) (see Addenda 4 and 5). The extraction tools assisted the researcher with the evaluation and synthesis of the collected data since the information had to be presented in the similar format (Boland et al., 2017).

Step 8: Quality assessment

A quality assessment tool was used to assess all included full-text papers. Once the relevant studies were identified for inclusion in the review, they were critically appraised with the assistance of the Critical Appraisal Skills Programme (CASP, 2017) for qualitative studies and the Effective Public Health Practice Project (EPHPP) for quantitative studies (see Addendum 6). The tools assisted the researcher to evaluate the trustworthiness of the studies and whether or not studies offered deliberate answers relating to the review question (Boland et al., 2017).

Step 9: Analysis and synthesis

In this step data were scrutinised and synthesised through meta-analysis. Specific themes were identified during this stage.

Step 10: Writing and disseminating

This is the last step that brought all the information together. All information was written up and a conclusion was drawn for the review. The reviewer made use of the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-analysis tool to ensure that the reporting and quality of the systematic review were enhanced. PRISMA consists of a 27-item checklist and a flow diagram (Moher et al., 2009) (see Addendum 3).

Data extraction

Data to be extracted	Brief motivation
Author	This is important to include in the data extraction since once themes emerge, the researchers knows which article to identify / read
Title	For referencing purposes
Year	For referencing purposes
Journal	For referencing purposes
Sample size	A larger sample adds to the quality of the article
Study design	This determines what quality appraisal tools to use
Main objectives of the study	This adds to the themes
Main findings	This adds to the themes
Authors' conclusions	May form part of recommendations

The reviewers selected the NOTARI and MASTARI (Joanna Briggs Institute, 2011) data extraction forms that were adapted and used for the data extraction (see Addenda 4 and 5).

Data analysis/ synthesis methods

Data synthesis was conducted by both reviewers who independently extracted data by means of the NOTARI and MASTARI data extraction tool from the Joanna Briggs Institute (2011) for qualitative and quantitative studies respectively.

Ethics Considerations

The estimated risk of this study was low as the study did not make use of human participants. However, the reviewer ensured that there was no use of derogatory, insulting or disrespectful terms used at any time during the study. Original authors were acknowledged by means of proper citing of original sources according to the referencing style of the American Psychiatric Association (APA). To further ensure trustworthiness, the proposal was submitted to a panel of experts who shared their knowledge of the topic and the methodology. The study was approved by the scientific

committee of the COMPRES (Community Psychosocial Research) entity and the HREC of the NWU for approval.

Choice and structure of report

The research report is written in article format and will be submitted to the *Journal of Social Work Education* for possible publication.

Closing of Section 1

Section 1 provided an overview of the 10-step process followed for a systematic review. In the next section, the reviewer³² presents the findings of the systematic review from the included articles in the format of a manuscript, and this will be submitted for possible publication to the *Journal of Social Work Education*.

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Section 2: Manuscript in article format

Orientation to Section 2

Section 2 presents a systematic review of critical thinking skills in social work. This manuscript was prepared according to the author guidelines of the *Journal of Social Work Education* (see Addendum 8). The researchers are referred to as the reviewers, throughout the manuscript.

A systematic review of critical thinking skills in Social Work

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Abstract

The purpose of this systematic review was to review literature on all aspects relating to critical thinking in social work. A comprehensive search was conducted by two independent reviewers using the One Search Portal of the NWU. A ten-step methodology was followed that allowed for analysing and critiquing a total of nine identified studies that met the set inclusion and exclusion criteria. Results from this review indicate that the development of critical thinking skills is imperative in social work education to enhance social work practice. The following themes related to factors and skills associated with critical thinking emerged from the results: self-awareness, education and learning / sources of knowledge, decision making, reflection, sources of knowledge and socio-economic status. These factors and skills can be considered by key role players in social work education and the broader welfare sector.

Keywords: Social work, critical thinking skills, decision making, reflection, self-awareness, social work education

Funding details: This study was partially financed by an NWU post-graduate bursary.

Introduction

Martin Luther King Junior (1947), a civil rights leader, once said that education must enable one to sift and weigh evidence, to discern the true from the false, the real from the unreal, and the facts from the fiction. The function of education, therefore, is to teach one to think deeply and to think critically.

The function of critical thinking in social work links with Martin Luther King's (1947) assertion. Critical thinking is imperative to social work as this profession is dedicated to working with humanity. Critical thinking skills in education and practice can serve as a foundation based on which people can deliberate over issues of social justice, inequality and oppression and advocate for social change that can lead to transformation. Social work is a profession that works with individuals, families, groups and communities. The profession of social work enables social work practitioners to engage and work with individuals, families, groups and communities in either statutory or voluntary sectors to foster positive human growth and development, initiate and support change, and fight for social justice (Teater, 2014). Social work practice principles in South Africa are contained in a professional code of conduct that all social workers and social work students must adhere to. Practitioners are sanctioned by the South African Council for Social Service Professions (SACSSP, 2003).

Social workers aspire to certain values, beliefs and skills in practice. An important skill in social work is critical thinking. Critical thinking is an intellectually disciplined process of actively and skilfully conceptualising, applying, analysing, synthesising and /or evaluating information gathered from an observation, experience, reflection, reasoning as a guide to belief and action (EPPI toolkit). In social work, Gambrill (2013) proposes that "critical thinking is a unique kind of purposeful thinking in which we use standards such as clarity and fairness to evaluate evidence related to claims about what is true and what is not. It involves careful

examination and evaluation of claims and arguments and related actions to arrive at well-reasoned ones.”

The Foundation for Critical Thinking Skills provides the following definition for critical thinking:

that mode of thinking-about any subject, content, or problem-in which the thinker improves the quality of his or her thinking by skilfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them. This will result in a critical thinker who is able to question, formulates, gathers, analyses all information which will result in good solutions. In short critical thinking is self-directed, self-disciplined, self-monitored and self-corrective thinking (Foundation for Critical Thinking Skills).

Wilkins and Boahen (2013) suggest that there is a link between critical thinking and critical analysis. It involves examining the elements of something; gaining a better understanding of it; and then selecting a course of action. Critical analysis highlights the need “to think about and weigh up different elements of information rather than accepting everything at face value” (Wilkins & Boahen, 2013). Therefore, critical thinking offers the social worker an opportunity to reflect and discuss serious matters with clients and children in an understandable manner.

The ultimate goal in social work is to assist vulnerable groups such as children and their families in the best way possible. The reviewer is of the opinion that social workers have to become more focused in their planning, assessments and interventions with clients to deliver quality service.

Purpose of the study

To the best of the reviewers’ knowledge, no systematic reviews or meta-analysis studies focusing on critical thinking skills in social work have been discovered. Existing studies on critical thinking skills focuses on education as there is a strong indication that critical thinking skills have to be included in higher education sectors. The Educational Policy and Accreditation Standards (EPAS)

of the Council of Social Work Education (CSWE) (2008) reflects this national interest in the importance of critical thinking by identifying critical thinking as one of the ten core competencies social work students must master during professional education (Deal & Pittman 2009). The ability to think critically has direct relevance for competent social work practice. Thus, the purpose of this article is to systematically review studies that contribute to critical thinking skills in social work, as well as to further influence and enhance social work curricula on teaching critical thinking skills in social work.

The aim of this study was to review the best available evidence in respect of critical thinking skills in social work.

Methods

For the purpose of this study, a systematic literature review was selected as the best available method to critically review and synthesise the best available evidence regarding critical thinking skills in social work. A systematic literature review was identified for the nature of this study to fill the gap in the existing research. To the best knowledge of the reviewers, no systematic review of such nature has been conducted before. This systematic review was conducted by two independent reviewers following the ten-step process as suggested by Boland, Cherry and Dickson (2017).

In order to provide a wide variety of literature on critical thinking skills in social work, the reviewers did not limit articles to any specific designs. Therefore, all designs were viewed as inclusive as part of this review. For the purpose of this systematic review, all studies published up to January 2019 formed part of the inclusion criteria. Since few articles were found, the reviewers included hand-searching. However, no studies were found by means of hand-searching.

Study selection and characteristics

The initial search selection was broad to include a comprehensive search of relevant studies. Thereafter, the reviewers established a search strategy to include all the relevant terms that would form part of the inclusion criteria. The reviewers made use of the institution's OneSearch engine.

This search engine includes 252 databases. Figure 1 represents the search strategy that was used to obtain the results.

“Social work*” AND “Critical thinking” OR “reflective judgement+” OR “logical thinking” OR skill+” OR “problem solving” OR “divergent thinking”

Figure 1. Search strategy

Inclusion and exclusion criteria

Initially, the review process began with the reviewers searching a wide variety of search engines. Thereafter, pre-defined inclusion and exclusion criteria were developed using the SPICE (S-setting, P-perspective, I-intervention, C-comparison, E-evaluation) method as recommended by Boland, et al. (2017).

Articles were included if they met the following criteria:

- Articles on social workers, social work students
- Articles that reported studies on critical thinking in social work
- Articles that reported studies on critical thinking in social work education

Articles were excluded based on the following criteria:

- Article published in languages other than English and/or Afrikaans, unless a translated version was available.

Selection of studies

The titles and abstracts of each article were screened independently by the first and second reviewer. The third reviewer was consulted if discrepancies occurred. After the titles and abstracts were screened thoroughly, it was then screened against the inclusion and exclusion criteria. The reviewers screened the full texts of each article to establish its suitability for the review.

Critical appraisal and data extraction

Critical appraisal was done once the data extraction tables were complete. The NOTARI and MASTARI (The Joanna Briggs Institute, 2014) data extraction tools were used as a baseline to develop a data extraction table. Detailed and relevant information from each article was extracted, which served as a point of departure to interpret the results of the study. Data extraction was done independently by the first reviewer, with the second and third reviewer evaluating the content and eligibility of each article. All articles were critically appraised for methodological quality by both reviewers independently by making use of The CASP (CASP, 2018) for qualitative articles and the quality assessment tool for quantitative studies (developed by the EPHPP (Brownlee et al., 2013)). Once the quality appraisal was completed, eight articles were identified that were not suitable and they were discarded on the basis of not fitting the inclusion criteria. Reviewer one and two independently rated the risk of bias for each included article following the guideline of the Cochrane Collaboration risk of bias tool (Higgins et al, 2011).

Data analysis and data synthesis

Once data had been extracted onto the data extraction form, it was studied by all three reviewers. Both qualitative and quantitative articles were analysed. To analyse the data that was extracted, thematic synthesis was used as suggested by Thomas and Harden (2008) to combine the results of all included articles. Thematic synthesis is a means of identifying key themes from a specific body of research (Nicholson, Murphy, Larkin, Normand, & Guerin, 2016). The existing critical thinking skills framework formed a guideline for the reviewers to develop their own illustration based on the findings from this study.

Results

A representation of findings according to the Preferred Reporting Items for Systematic Reviews (PRISMA) is presented in Figure 2.

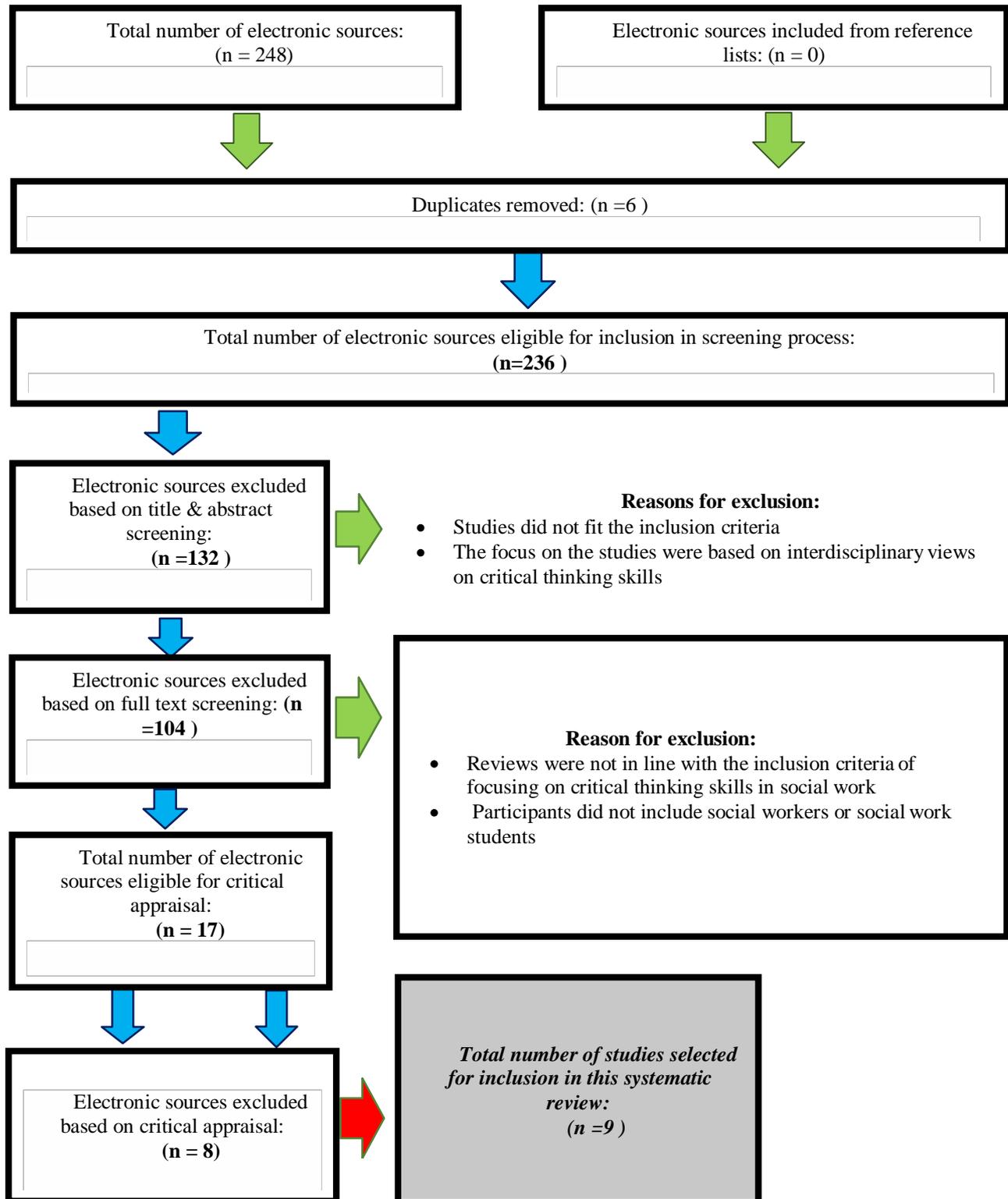


Figure 2. PRISMA flow diagram

From the initial 248 electronic sources identified, the reviewers removed six articles due to duplication. A number of sources were removed based on title and abstract screening. More sources were excluded after the reviewers screened the full texts of each source. Reasons for excluding certain sources are provided in Figure 2. The reviewers critically appraised the remaining nine sources for methodological quality and ethical soundness (Brownlee et al. 2013), by using the Critical Skills Appraisal Skills Program (CASP) tool (CASP, 2006) for qualitative studies, and the EPHPP tool for quantitative studies. Thereafter, each article was evaluated for possible risk of bias (refer to Table 2), using the Cochrane Collaboration risk of bias tool.

Demographic characteristics

A summary of the demographic characteristic are outlined in Table 1.

Table 1. Demographic characteristics of included sources

Author	Title of article	Journal	Sample size	Research design	Country
1. Kathleen Holtz Deal & Joan Pittman (2009)	Examining Predictors of Social Work Students' Critical Thinking Skills	Advances in Social Work Vol.10 No 1 87-102	72 respondents	Quantitative Study	United states of America
2. Yarneccia D. Dyson & Tanya Smith Brice (2016)	Embracing the Village and Tribe: Critical Thinking for Social Workers From an African Centred Approach	Journal of Social Work Education Vol 52, No 1, 106-117	16 participants	Qualitative Study	United States of America
3. Gibbons & Gray (2004)	Critical thinking as integral to Social Work Practice	Journal of Teaching in Social Work 24, 19-38	N/A	Quantitative	Australia
4. John Mathias (2015)	Thinking Like A Social Worker: Examining the Meaning of Critical Thinking in Social Work	Journal of Social Work Education, Vol 51, 457-454	34 records of studies carried out	Evaluation design	United states of America
5. Shari E Miller, Diane M Harnek Hall, & Carolyn J Tice (2009)	Assessing Critical Thinking: The Use of Literature in a Policy Course	The Journal of Baccalaureate Social Work, Vol 14, No 2,	124 respondents	Quantitative Study	United States of America

6. Janet I Pray (2001)	Enhancing Critical Thinking and Professionalism Through Use of the Discussion Forum in Social Work Practice Courses	Journal of Technology in Human Sciences Vol 18, NO 1-2 P65-75	N/A	Qualitative Study	United states of America
7. Debbie Plath, Brian English, Louisa Connors & Alex Beveridge (1999)	Evaluating the outcome of intensive critical thinking instruction for social work students	Social Work Education, Vol 18, No 2, 207-217	21 respondents	Quantitative Study	Australia
8. Samson Patricia Louise (2018)	Critical Thinking in Social Work Education: A Delphi Study of Faculty Understanding	Dissertation Abstracts: International Section A: Humanities and Learning Volume 79 (7-A) (E) Publisher ProQuest	122 participants	Qualitative Study	Canada
9. Michael Sheppard & Marian Charles (2017)	A longitudinal comparative study of the impact of the experience of social work education on interpersonal and critical thinking abilities	Social Work Education, Vol 36 No 7, 745-757	337 respondents	Quantitative Study	United Kingdom

Assessment of methodological quality

The quality of each article was assessed using the Cochrane Collaboration risk of bias tool (Higgins et al., 2011). This tool was adapted to suit qualitative and quantitative studies. Rajendran (2001) suggests that tools can be adjusted to suit the review question.

A summary of the different aspects regarding the methodological quality of included studies is addressed in Figure 3.

Electronic sources by author & date	Kathleen Holtz Deal & Joan Pittman (2009)	Yarneccia D. Dyson & Tanya Smith Brice (2016)	Gibbons & Gray (2004)	John Mathias (2015)	Shari E Miller, Diane M Harnek Hall, & Carolyn J Tice (2009)	Janet I Pray (2001)	Debbie Plath, Brian English, Louisa Connors & Alex Beveridge (1999)	Samson Patricia Louise (2018)	Michael Sheppard & Marian Charles (2017)
Selection bias									
<i>(Bias in the participant selection process, taking into account the sampling size & sampling method)</i>	-	-	-	-	-	-	-	-	-
Attrition bias									
<i>(Completeness of outcome data)</i>	-	-	-	-	-	-	-	-	-
Reporting bias									
<i>(Selective reporting in the sense of significant & non-significant results)</i>	-	-	-	-	-	-	-	-	-
Other sources of bias									
<i>(Interviewer / researcher / interviewee bias)</i>	-	-	-	-	-	-	-	-	-
Key									
Low risk – Possible bias unlikely to seriously alter results.	-								
High risk – Possible bias raising some doubt about the results.	+								
Unclear risk – Possible bias seriously weakening result confidence.	?								

Figure 3. Cochrane collaboration risk of bias tool

All relevant studies were appraised for methodological quality based on the criteria of the CASP (CASP, 2006) for qualitative studies and EPHPP (Brownlee et al., 2013) for quantitative studies. Both reviewers independently appraised the relevant studies for methodological quality and inclusion or exclusion from the systematic review to improve the reliability and validity of this study.

Figure 3 provides a summary of the bias identified in all included studies. No bias was found and therefore, no studies were discarded after risk of bias was assessed.

Table 2 provides a summary of the main findings of the included studies.

Table 2. Main findings of each study

Author	Title of article	Main findings	Author conclusion
1.Samson (2018)	Critical Thinking in Social Work Education: A Delphi Study of Faculty Understanding	<p>The study found the following:</p> <ul style="list-style-type: none"> • There is a need to include critical thinking skills in social work education to inform curriculum developments in support of next generation professional social workers. • Curricula for social work education can serve as foundations for deliberations on issued of social injustice, inequality and oppression and advocating for social change. Social work plays a key role as it is a helping profession. • The author highlights the importance of critical thinking skills as essential for professionals working with human beings to engage in effective practice and decision making within relevant social work practice codes and guidelines. • The author emphasises the use of multiple sources of knowledge to make informed decisions for clients. 	There is a need for more focus on critical thinking skills in university education gearing for social work practice.
2.Gibbons & Gray (2004)	Critical thinking as Integral to Social Work Practice	<p>The authors of this article examined a programme that focused particularly on the development of critical thinking skills in students over the four years of study.</p> <p>The study found:</p> <ul style="list-style-type: none"> • In the <i>first year</i> of study, the dominant themes were learning how to look for the best possible resources on particular issues, reviewing important media events and how to critically appraise them, respecting each other's differences, similarities, facts and 	The understanding of this study is for critical thinking skills to be incorporated into university education as students indicated this as a major strength.

		<p>beliefs, and always substantiating facts with evidence. Students were also encouraged to focus on their creativity by engaging in an activity that allowed them to think of new ideas, attitudes and knowledge.</p> <ul style="list-style-type: none"> • During the <i>second year</i> of study, the focus shifted to a broader ideology of thinking. Students are expected to understand different concepts, compile assignments for varied sectors, debate, critically review literature in one of the core modules presented and understand that listening is an essential skill in the critical thinking process, and lastly to enter into a field placement. • During the <i>third year</i>, students are expected to apply the skills they learned in areas of casework, group work and community work. During the <i>fourth year</i>, students critically evaluate and demonstrate practice decisions. • The programme was evaluated on an ongoing basis and it was found that critical thinking did make students more aware, but they still remained unsure of how to apply critical thinking in practice. <p>In respect of field educators/qualified social workers in practice the author found:</p> <ul style="list-style-type: none"> • They related critical thinking to communication, redoing and conveying information. • Critical thinking was also seen as working within a set of principles or boundaries and as the development of oneself. 	
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		<ul style="list-style-type: none"> • Field educators/social workers were not always clear on how to use critical thinking skills in practice and also how to assist the students in the decision-making process. • Field educators depended on the university to provide sessions to develop their critical thinking ability. • 	
3. Deal & Pittman (2009)	Examining Predictors of Social Work Students' Critical Thinking Skills	<p>This study found:</p> <ul style="list-style-type: none"> • There is a correlation between critical thinking and socio-economic status. • Students who have parents with college degrees had higher levels of critical thinking. • There was a clear indication that as academic achievement increased, so did critical thinking skills. • The study also found a correlation between critical thinking skills and an openness to new experiences, which has implications for social work due to the diversity. • This factor also has implications for admission for social work study. 	Students with higher academic levels will be more prone to thinking critically; a solid parental foundation is also a contributing factor in critical thinking.
4. Sheppard & Charles (2017)	A longitudinal comparative study of the impact of the experience of social work education on interpersonal and critical thinking abilities	<p>This study found:</p> <ul style="list-style-type: none"> • Social workers have to have interpersonal skills to work challenging cases and that it only works in practice by engaging intellectual and critical functions. • The capacity to embrace the criticality is central to the use of self. 	Further studies are needed to understand how interpersonal relationships affect critical thinking ability.

		<ul style="list-style-type: none"> • Critical thinking is fundamental and the ability to make and maintain relationships is a skill. Social work cannot be practiced without it. • A longitudinal comparative study was carried out at two universities, focusing specifically on the extent to which interpersonal and critical thinking abilities are developed during the lifetime of qualifying social work training. 	
5. Mathias (2015)	Thinking Like A Social Worker: Examining the Meaning of Critical Thinking in Social Work	<p>This study found the following:</p> <ul style="list-style-type: none"> • Critical thinking in social work is different to critical thinking in philosophy, education or even nursing. • The use of critical thinking in social work sheds light on purposes, problems and conflicts unique to the field. • The primary data source was the Social Service Abstracts Database. The bibliographic details of publications on social work research, education and practice was provided. • Another notable finding is all of the purposes critical thinking serves in social work. They all aim at the correct action of social work practitioners. Within this broad consensus there is tension between avoiding making errors in decision making and in practicing according to social work values, referred to as two distinct strains that emerged during the study. • A consensus that critical thinking in social work is a form of practical reasoning. 	Further research in the field of critical thinking in social work is necessary for effective practice. A concise definition for critical thinking, specifically in social work, is also required.

6. Dyson & Brice (2016)	Embracing the Village and Tribe: Critical Thinking for Social Workers From an African Centred Approach	<p>This study found the following:</p> <ul style="list-style-type: none"> • Preparation of social workers is needed to serve diverse populations. • The focus was not only on critical thinking skills, but Afrocentricity and African Centred Education. • The main focus is to create a safe space for sharing in the classroom as the course would divulge into the life's and cultures of the students. • The importance of what it meant to be African was emphasised during teaching as well as tapping into their thinking and changing mindsets from being socialised in a specific manner to being more open to addressing issues as an African. • Critical thinking is required so that students can address their own personal baggage prior to entering a profession where they are tasked to help solve the problems of others and to make decisions for others. This will ultimately ensure that they are sensitive to the plight of minority people and can assist in the elimination of discrimination and social injustice. 	<p>In order for students of different race/ ethnicity to be critical thinkers, they have to address past prejudices that contribute to effective decision making in practice.</p>
7. Pray (2001)	Enhancing Critical Thinking and Professionalism Through Use of the Discussion Forum in Social Work Practice Courses	<p>This study found the following:</p> <ul style="list-style-type: none"> • The use of technology in enhancing teaching and learning in different professions is beneficial. • The focus was on online courses and the emphasis they place on critical thinking and discourse. • It was found that online courses encouraged more constructive dialogue and criticism. • Online education redirects learning towards a constructivist and experiential learning mode on a 	<p>Technology is needed to enhance learning in different profession. Students with disabilities will benefit from this.</p>

		<p>large scale. A diverse group of students enrolled for the course.</p> <ul style="list-style-type: none"> • Students who are deaf, hard of hearing or have a learning disability benefitted. In this way barriers are eliminated, allowing students who are normally shy to freely engage in debate to share what they feel. • It was also found that the chances of employment are also enhanced. • The author found at least 7500 child welfare workers online in California and was trained at a considerable expense. • Social workers who are comfortable with offering counselling online will have more technological resources at hand. 	
8. Miller, Hall, & Tice (2009)	Assessing Critical Thinking: The Use of Literature in a Policy Course	<p>This study emphasises:</p> <ul style="list-style-type: none"> • The importance of educator's role in teaching of critical thinking skills. • The intrinsic link between critical thinking and competent social work practice is undisputed as evidenced by the revised EPAS of the Council on Social Work Education. However, it does not provide standards against which to measure specific outcomes. • It was also found that frequent mention is made of the importance of critical thinking in social work there still remains a dearth of systematic research in these areas. • The author felt that if we as a profession and a discipline can establish a clear sense of what critical 	Competent social workers require critical thinking skills. The link between the two is critical to measurable outcomes in practice.

		thinking means for us, students will also be better positioned to use CTS, and the better prepared we will be to foster it.	
9. Plath, English, Connors & Beveridge (1999)	Evaluating the outcome of intensive critical thinking instruction for social work students	<p>This study found the following:</p> <ul style="list-style-type: none"> • The focus is on how best to instruct students in social work courses to acquire critical thinking skills. • One of the major debates with regard to critical thinking is whether the abilities are general or domain-specific. • Is critical thinking a general skill or must it be developed with practice. • An immersion approach would be employed during the three-year period of study. • Critical thinking and reasoning have to be included in all mediums of instruction and used as a criterion for marking exams and assignments. 	Critical thinking at university level is vital for practice.

According to Table 1, of the nine articles three were qualitative in nature, five were quantitative in nature, and one was an evaluation design. The quantitative articles made use of questionnaires and different scales.

Discussion

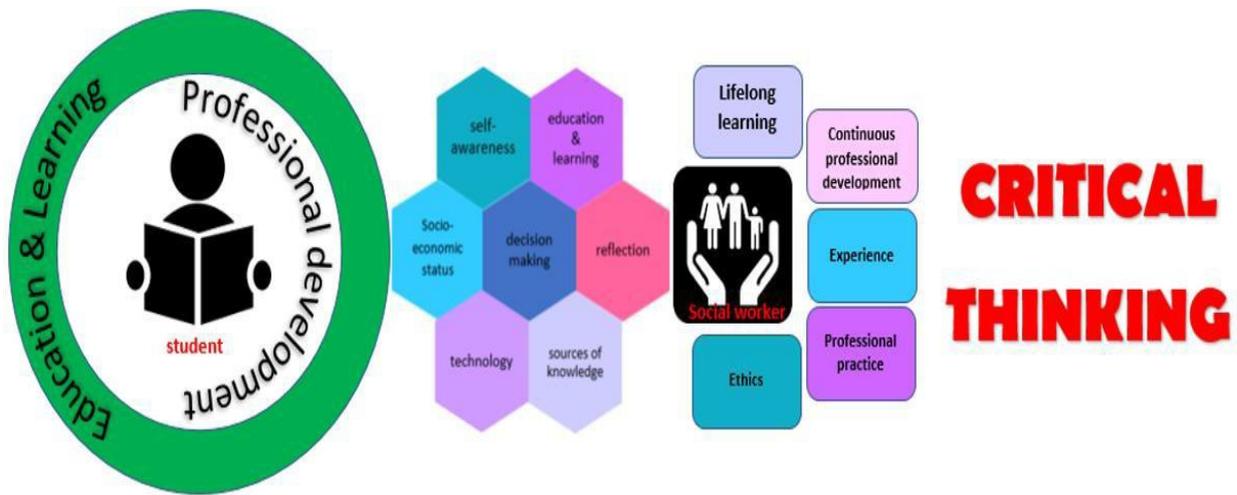
The aim of this systematic review was to highlight the importance of critical thinking skills in social work. Based on the number of studies included in this systematic review, it can be said that literature on critical thinking skills in social work is limited, greater emphasis is placed on critical thinking in social work education.

Socrates (c. 470-399 BC), a Greek philosopher, believed that the best way to teach and learn was through disciplined, rigorous questioning. By using questioning, he helped people see either that what they said they believed, they did not in fact believe (as their beliefs were inconsistent with their behaviour), or that what they said they believed was sound or logical. Socrates set the agenda for critical thinking by carefully questioning common beliefs and explanations, distinguishing those that are reasonable and logical from those that lack a solid rational foundation (Paul & Elder, 2012).

Critical thinking is particularly important in social work. It is essential for social workers to have a sense of self-awareness. They have to understand how their assumptions, beliefs and intuitions affect their practice and how the use of evidence and assessment may impact on their client system.



According to PART (2012), critical thinking involves six distinct elements, namely the ability to seek new information, that stress and opinions may distort thinking, the ability to consider information from various resources, practicing self-awareness, the ability to recognise faults and lastly, to be able to draw accurate conclusions. In this review the aim was to gather information on the most important elements of critical thinking in social work. However, the results of this review produced significant materials that could contribute to critical thinking in social work education. Therefore, for the purpose of this discussion, the reviewer grouped the various findings by combining the identified themes and creating an illustration that includes all critical thinking skills in social work and in social work education.



Critical thinking: Self-awareness

In child protection, social workers are faced with high caseloads and they often have to make rash and quick decisions in respect of the cases they are faced with. Social workers have to take a step back and think before life-changing decisions are made. This is where critical thinking plays an important role. The social worker is in a position to present a well-formulated solution to the presented problem by making informed decisions. For example, parents are able to understand why certain decisions are made and they are also given the opportunity to be part of the process by examining the problem with the social worker. The results from this review indicate that social workers have to be skilled to work on challenging cases and to make the correct decisions (Charles & Sheppard, 2017). Critical thinking is about embracing yourself. Social workers must be aware of their own religion, culture, diversity, before decisions can be made in respect of others with varying beliefs and systems.

Self-awareness is a core element in the development of critical thinking skills. It can develop with supervision, coaching and mentoring, reflective writing, discussion, and training.

Critical Thinking: Education and Learning/Sources of knowledge

The review found that critical thinking has been successfully developed at one institution during the four years of social work training (Gibbons & Gray, 2004). Each year of training focused on

different elements of critical thinking, such as new ideologies, the knowledge base and the level of understanding of the student in terms of concepts and practices. In this study, the authors also found that field educators are not always equipped on how to use critical thinking in practice and relied on the university to provide the necessary guidelines and information to assist the students. In addition, students regarded the inclusion of critical thinking in their four-year practice course as a major strength in preparing them for practice. It is important for social work educators to incorporate into the classroom the components necessary to teach students to think and reflect and to support the concept of learning as a lifelong process (Samson, 2018). The International Association of Schools of Social Work (IASSW) and the IFSW released *Global Standards for the Education and Training of the Social Work Profession* in 2004 at a joint conference. Curriculum standards were set to “ensure curricula helps social work students to develop skills of critical thinking and scholarly attitudes of reasoning, openness to new experiences and paradigms, and commitment to lifelong learning” (IASSW, 2016, p.5). The theme of education and learning was highlighted in all nine articles included in this review, which suggests that education and learning forms the foundation of critical thinking skills in social work education and the development thereof is imperative for practice and service delivery.

Critical thinking: Decision Making

Ethical decision making in social work practice is defined as “a complex problem-solving activity that requires the application of critical thinking, as well as an ability to make judgements on the basis of knowledge, theories, practice experience, and values of both practitioner and client” (Gray & Gibbons,). In this review, decision making surfaced as one of the core factors related to critical thinking skills in social work (Gray & Gibbons, 2007), as a social worker is guided by certain principles and values. However, the context of each client’s circumstances varies. Therefore, a social worker would need to apply the factor of decision making to provide quality service delivery. Another study found that it is important for social workers to question their decisions to enhance the helping relationship between the social worker and the client (Samson, 2018). These questions

should include the interventions to be considered, the belief system of the client, the problems that surface and how to deal with these problems in a professional and ethical manner. These questions will guide the social worker to make informed decision which ultimately impacts on the life of the client.

Many decisions social workers make have life-changing and lifelong consequences for children and families. Critical thinking underpins sound judgement and well-reasoned decision making by helping social workers and service users “make informed decisions to select options that, compared to others, are likely to help them attain outcomes they value” (Gambrill & Gibbs, 2009).

Critical thinking: Reflection

Critical reflection in social work is where the social worker is engaged in ongoing reflection and critical enquiry regarding social work practice in actions as well as in thinking processes. This review reveals that reflection plays a vital role in the development of critical thinking as a social worker, and a student would need to take into consideration the beliefs and cultural practices of their client system and subsequently reflect on their social system (Dyson, 2016). Dyson further reiterates that students have to be able to address their own personal baggage prior to entering a profession where they are tasked to help solve the problems and make decisions for others

Critical thinking: Technology

Technology plays a vital role in our lives today. We have access to multiple sources to obtain information. Social workers have to make use of different tools in obtaining information for informed decision- making. Figure 1 refers to critical thinkers being open to new information, seeking and considering alternative hypotheses, even drawing information from difficult sources (PART, 2012). Social workers have to think about outcomes more clearly and link them to the client’s needs. It is necessary for social workers to make use of libraries, social media portals, family, friends, neighbours, schools etc, when gathering information in social case work. It is

essential for social workers to practice mindfulness when gathering information as they will have to present information to the courts. Technology further plays a role as there are many organisations rendering services via call centres. Social workers should be sensitive to the needs of clients seeking counselling and support online. Pray (2001) outlines that there are increasing opportunities for continuing education and professional development online. Social workers with enhanced critical thinking will be in a position to render an effective service. The study by Pray (2001) also highlights the importance of critical thinking when addressing the needs of students with disabilities. In this way students are able to use online courses for the purposes of education, which is conducive to the student setting as compared to a normal classroom set up.

Critical thinking: Socio-Economic Status

This review indicates that there is a correlation between critical thinking skills and socio-economic status (Deal & Pittman). The study suggests that students who have parents with university degrees were more prone to thinking critically and achieve better academically. Social workers must be aware that the term socio-economic status is all encompassing. It includes not just income but education, financial security, quality of life and other opportunities which are presented. Socio economic status is relevant to all realms of behavioural and social sciences, including research, practice and advocacy (American Psychological Association).

These six factors emerged as themes relating to critical thinking skills in social work. Plath et al. (1999) poses a question regarding critical thinking skills. The authors ask whether critical thinking is a general skill or something that should be developed with practice. In this review, the reviewers found that critical thinking is not just a general skill, especially in social work education, as social workers need to make informed decisions in practice. These decisions can only be made if a social work student has been engaged in the development of critical thinking skills in education and learning opportunities. The factors identified in this study that contributes

to critical thinking skills in social work are self-awareness, education and learning/ sources of knowledge, decision making, reflection, technology and socio-economic status.

The Council on Social Work Education (2001) recognises that knowledge alone does not necessarily lead to good decisions. Even extremely knowledgeable social workers have to think carefully and critically before making decisions and taking actions that affect the lives and well-being of others (Cournoyer, 2017). Social workers are faced with a wide array of problems, and sometimes they tend to react to situations based on their belief systems and values. By applying critical thinking skills, the social worker will achieve better results personally and professionally. It is essential for social workers to be guided by a framework on critical thinking which includes all the elements identified in Figure 2. In this manner social workers will render services that are guided by the education they received, by being registered with a statutory body for best practice and policy and using techniques and approaches that are suited to every case. It is a social worker's duty to thrive to continuously learn and research new tools in order to enhance professionalism. The continuum of acquiring knowledge will assist the social worker in making well informed decisions in their helping relationship with their client system.

Conclusion

This systematic review intended to highlight critical thinking skills in social work. From the nine articles included in this review, it becomes clear that critical thinking skills are imperative for social work students as well as the profession. In order to deliver social workers who have developed critical thinking skills in practice, institutions should be guided in developing critical thinking skills in their education and training materials. The themes highlighted in this review that contributed to critical thinking skills in social work are self-awareness, education and learning/ sources of knowledge, decision making, reflection, and technology and socio-economic status. Social work is a professional qualification and therefore lifelong learning is encouraged to meet the requirements of statutory bodies globally. Students develop their critical thinking skills

during training and later their skills are enhanced by continuous professional development as well as experience in the practice field of social work. Critical thinking is a process and therefore, a social worker should be able to reflect, make decisions, and use various sources of knowledge in order to deliver quality of services.

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Section 3: Conclusions, limitations, recommendations, policy brief and recommendation

This section draws conclusions, acknowledges the limitations of the study and makes recommendations for future studies. The section includes a policy brief aimed at training institutions and practice organisations. The reviewer also reflects on the research process and learning experiences throughout the master's study.

Conclusion

The aim of this study was to highlight all aspects related to critical thinking in social work. The SPICE acronym was used to address the research question. Nine articles were identified as per inclusion and exclusion criteria by means of electronic searches that provided valuable information on critical thinking skills in social work.

The evidence shows that there is a lack of research on critical thinking skills in social work. The quality of child protection social work depends on the workforce and the work environment. Therefore, it is essential that social workers incorporate elements of self-awareness, transparency, and openness to diversity, culture and religion in service rendering. Even though training at institutions offer social work students an opportunity to develop their critical thinking, in practice social workers have an ethical duty to improve their competency by continuous professional development. Critical thinking is an ongoing process of self-reflection and self-improvement. In social work education educators have to include modules and tools that will enhance critical thinking in practice.

Limitations

The reviewer took into consideration and acknowledged certain limitations that emerged during the research process.

The reviewer encountered the following limitations:

- The OneSearch portal includes various databases that offer articles, abstracts, journals, books, dissertations and other forms of research based on the selected search terms strategy. These results are often not static, indicating that results may differ at every search attempt. Mr Nestus Venter from the NWU library indicated that even though results vary and are not static, articles closest to the terms inserted will be found. However, the reviewers doubt that all relevant articles were found during search process.

- Most articles that were found were based on critical thinking in education, with slight references to social work practice. The total number of included articles was low, amounting to a final nine articles included in the review. The intention of this study was aimed at social workers, but studies that were found were based on social work education. Due to its relevance to social work and critical thinking, the reviewers included it in the study.

Recommendations

- It is recommended that future studies focus on the development of a concise definition of critical thinking skills specifically related to social work education and practice.
- It is further recommended that social work curricula be designed and implemented to embed and instil the application of critical thinking skills in all learning through problem-based and simulation activities.
- Continuous professional development should be encouraged among practicing social workers to further develop their critical thinking skills and expertise.

Policy Brief

A policy brief is a policy document that is produced to support, to engage and persuade informed, non-specialist audiences. Policy briefs are endorsed to an extensive audience as an instrument for disclosing research findings to policy and decision makers (Young & Quinn, 2007). This policy brief is aimed at practicing social workers and tertiary institutions offering higher education's courses in social work.

The goal of this policy brief is to provide information that may be beneficial in further engagement in the importance of critical thinking skills in social work

June 2019

A systematic review of critical thinking skills in social work

"If there was one life skill everyone on the planet needed, it was the ability to think with critical objectivity"
— Josh Lanyon

The nature of social work, especially in the protection of vulnerable groups such as children, requires of social workers to act timeously and to make weighty decisions without much information to serve the best interest of vulnerable clients. Professional social work practice further requires social workers to analyse, assess, interpret, communicate, evaluate and intervene on a continuous basis. Underlying these skills is the ability to **think critically**.

Further research is necessary to explore the factors and skills that can enhance critical thinking in social work education and practice.

The **aim** of this study was to systematically review literature on all aspects related to critical thinking in social work. The general goal of the study was to explore the level of critical thinking that exists in social work and to explore guidelines for the enhancement and further development of critical thinking skills in social work.

This study was conducted by means of a **systematic review** as this method is considered suitable to locate, appraise and synthesise the evidence from available literature. This method followed a rigorous ten-step process by two independent researchers. Nine studies were identified and included in this review.

Thinking critically includes the synthesis, comparison and evaluation of ideas from a variety of sources such as texts, direct observation, experience and social dialogue. It involves more than an in-depth examination of knowledge sources. It requires us to reflect on knowledge through a wide and different way of thinking. All of these are crucial elements in the development of a treatment plan or intervention in social work, but particularly in the high impact field of child protection (Vardi, 1999)

Six themes emerged from this review, namely self-awareness, education and learning / sources of knowledge, decision-making, reflection, technology and socio-economic status. The identified themes are interrelated and imperative in the development of critical thinking skills in social work education.

Guidelines:

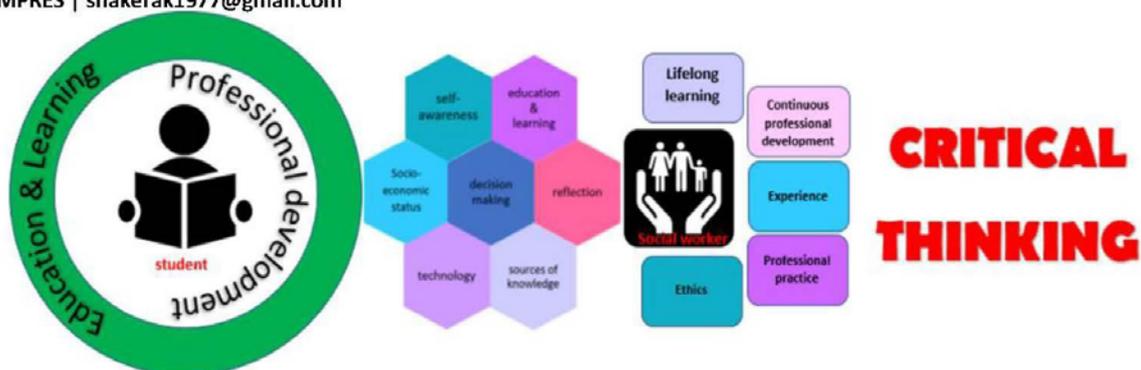
Training institutions should include aspects of critical thinking skills in their training programmes.

Continuous professional development should be encouraged in various fields of social work to enhance the competence and expertise of social workers.

Practice placements should provide an opportunity for students to further develop their critical thinking skills in preparation for practice.

Mrs S Khan, Prof AG Herbst, Mrs T Sayed

COMPRES | shakerak1977@gmail.com



Reflection

Social work has always been my passion. I was fortunate enough to have been given the opportunity to study 21 years ago at the NWU. I initially enrolled for a B.Ed degree, but changed at the last minute to social work. My journey after university led me to work in varied fields of social work, which led to growth and the ability to question myself when making decisions for children and their families. It has not been easy, but with a good support system – my family, friends, social work colleagues and supervisors – I have persevered and I have always strived towards making the informed decision.

My research journey

I have had the opportunity of being a practical supervisor for social work students from the NWU. During that time, I learned more about social work from the students and I had the opportunity to impart my knowledge to them. It was two of my social work students who encouraged me to go back to studying. The thought was daunting, but they brought me the application forms. I also wondered if I had the capacity to study again after such a long period of time. I was selected and my journey began. Attending lectures in the field of child protection was very enlightening as I was in the position to relate to scenarios presented as I had experience. The road during this master's journey was not easy. I faced many challenges, my topic changed many times, my research design and method also changed, but all this made me stronger and more determined to work harder and complete my study. I also had to face challenges at my place of work, and this affected my home life and my studying. My supervisors always provided me the necessary support and guidance and encouraged me not to give up; this is where I am, and I am forever grateful.

In the end, the challenges were worth it as I have made a contribution to a cause about which I am very passionate. My thought processes and my thinking has also developed in

respect of not just research methodology, but in social work as well. I grew in the protection of children and for social workers to focus on making informed decision in respect of the children and families we all serve.

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ADDENDUMS

ADDENDUM 1: Scientific Committee Approval



Recommendation of the Research Proposal Committee to the Research Ethics Committee Research Using Human Participants

Scientific Committee	Name	Shakera Khan	Discipline	MSW(Child Protection)
	Research Entity	COMPRES	Contact Person	Valencia Walker
	Faculty	Health Science	E-mail	33052018@nwu.ac.za
Title of the study:	A systematic review of critical thinking skills in social work			
Researchers involved in the study:	Prof Alida Herbst			
Executive summary of the research:	<p>The very nature of child welfare, where the protection of children and decisions in the best interest of such children are priority, always requires from social workers to act timidly and often with limited information. Given the fast pace and radical decisions that social workers in this field have to make, critical thinking can be seen as a challenging, but essential process skill required from social workers (Part, 2012:2). Professional practice further requires social workers to be able to analyse, interpret, assess, communicate, evaluate and intervene among multiple sources of knowledge and sources of information in a manner that respects the dignity and diversity of the people served(Samson, 2016:147).</p> <p>Before engaging any further in the importance of critical thinking it is important to define critical thinking. According to Brookfield (2012:1),critical thinking entails "...the identification of assumptions that frame critical thinking and determine our actions, evaluating the degree of accuracy and validity of such assumptions, critical reflection on ideas and decisions from various different perspectives and taking informed actions after careful consideration."</p> <p>It is important to note that critical thinking does not simply mean being logical, solving problems or being creative, although some or all of these aspects could be involved (Brookfield, 2012:11). The hallmarks of critical thinking include being clear versus unclear, accurate rather than inaccurate, deep versus narrow, adequate for purpose versus inadequate, fair versus biased and one-sided, and logical versus illogical. Critical thinking goes hand in hand with the use of evidence as this is important when making decisions as to the intervention which will be given to the client. In Social Work, Gambrell proposed that 'critical thinking is a unique kind of purposeful thinking in which we use standards such as clarity and fairness to evaluate evidence related to claims about what is true and what is not (EPPI Toolkit, 2017:2)</p> <p>Samson (2016:147) elaborates further by emphasizing that the main components of critical thinking involve analysis, evaluation and the construction of an argument. The other key activities that have been identified as being crucial to critical thinking include having openness to diverse ideas, identifying and challenging, taken-for- granted assumptions and exploring and imagining alternatives(Vandsburger, Duncan-Datson, Akerson& Dillon, 2010:302). Critical thinking is definitely not a new idea as its ancient roots date back to the ideas of the Greek philosopher Socrates, who is credited with pioneering a questioning and rational approach to problem solving, while encouraging people to reject statements made on the basis of confused meaning and inadequate evidence.</p> <p>Critical thinking is important for the development of social work skills in direct practice. According to the Encyclopaedia of Social Work, direct social work practice is the application of social work theory and or methods to the resolution and prevention of psychosocial problems experienced by individual's families and groups. A further definition from the Oxford Dictionary of Social Work and Social Care states that direct practice can be defined as "...face -to-face social work with service users as opposed to activities carried out on behalf of or with regard to service users". There has been growing concern about the shrinking proportion of time social workers spend in direct practice as the administrative burden has grown. Gambrell (2013:95) states that "...Critical thinking in social work is purposeful, responsive, supports humility, integrity, perseverance, empathy and self -discipline, self -assessing results in a well-reasoned answer and recognising opposing</p>			

views". Social workers help people from all walks of life and come across people or populations with experiences ideas and opinions that often vary from their own. According to Vardi (1999:101), thinking critically includes the synthesis, comparison and evaluation of ideas from a variety of sources such as texts, direct observation, experience and social dialogue. It involves more than an in depth examination of knowledge sources, it requires us to reflect on knowledge through a wide and different way of thinking. All of these are crucial elements in the development of a treatment plan or intervention in social work.

To formulate a treatment plan or intervention for working with a client, the social worker needs to first consider the beliefs, thoughts or experiences that underlie the client's actions without making a snap judgement. Critical thinking helps the social worker to objectively examine these factors, consider their importance and impact on the course of action, while maintaining a professional, non- biased attitude. In order to develop critical thinking skills as a social worker one needs to have the ability to self-reflect and observe one's own behaviours and thoughts about a particular client or situation. According to Professor Islam (Miller, 2016) self-awareness, observation and critical thinking are closely intertwined and impact on the ability to be an efficient social worker.

Critical thinking is about taking a step back and thinking logically and carefully about the information one has, rather than believing everything one reads, sees and hears. A number of commentators have observed that social workers are generally good communicators and skilled at gathering information about families and their circumstances, but they have difficulty in processing the material they have collected. The difficulties seem to lie in the critical thinking skills social workers have and how these skills are applied in drawing conclusions in practice (Brown, Moore &Turney, 2012:5). Critical thinking is particularly important for all professionals working with human beings. In child protection social work critical thinking not only involves the cognitive process of applied thinking, but also requires action that is consistent with the cognition. Assessment in child protection therefore plays a very important role and links directly with critical thinking.

According toHolland (2010) and Munro (2008:20), a good assessment is a complex activity which includes the systematic and purposeful gathering of information, but is more than simply a process of collecting facts. This requires a range of knowledge and skills. Mumm and Kersling (1997:4) explained the skills necessary for critical thinking include the development of cogent arguments, clear definitions, and problem solving strategies, information organisation and creativity. . Critical thinking allows the child protection social worker to look beyond the surface of a client's problem and, in the words of Kirst-Ashman (2010:20), to "...carefully examine and evaluate the beliefs and actions and to establish an independent decision about what is true and what is not".

Two distinct conceptual discourses emerge from theoretical discussions on the importance of critical thinking to social work. Each strain attempts to use the concept of critical thinking to address a different perceived challenge in social work practice. The first, which focuses on the challenge of avoiding logical errors in clinical decision making, is best represented in the work of Mathias(2015:463). This author is of opinion that critical thinking is synonymous with scientific reasoning and it should be employed as a complement to evidence based practice, as it aims to maximize the likelihood of making good decisions. The second strain focuses on the application of social work values in dealing with complex problems (Mathias, 2015:463).Social workers' critical thinking will impact on various professional decisions which may greatly affect the lives of clients. One example of such a decision would be whether a child should be removed from a family or not. Social workers are expected to be problem solvers no matter what the situation. They must be professional at all times, abide by the professional code of ethics and respect the diversity of their clients. Critical thinking is further of utmost importance when facing ethical issues and dilemmas. Ethical dilemmas are situations where ethical principles conflict and a solution cannot be found and are common to various professions (Zastrow& Kirst-Ashman, 2010:49). Good professional skills include being critical about the information received regarding the clients served and not to collect information for the sake of information gathering, but with purpose and integrity (PART, 2012). From the previous discussions it is clear that critical thinking is an integral part of generic social work practice, but even more so in the high responsibility and fast pace environment of child protection. The abilities and attitudes of critical thinkers need some further exploration and discussion.

Potential risk level for human participants:	No risk	<input type="checkbox"/>	Motivate: Click here to enter text.
	Minimal risk	<input type="checkbox"/>	
	Medium risk	<input type="checkbox"/>	
	High risk	<input type="checkbox"/>	
Potential risk level for children and incapacitated adults:	No risk	<input type="checkbox"/>	Motivate: Click here to enter text.
	No more than minimal risk of harm	<input type="checkbox"/>	
	Greater than minimal risk with the prospect of direct benefit	<input type="checkbox"/>	
	Greater than minimal risk with no direct benefit	<input type="checkbox"/>	
Recommendation for the ethics committee	Expedited review	<input type="checkbox"/>	Motivate: Click here to enter text.
	Full review	<input checked="" type="checkbox"/>	
	Exempted from review	<input type="checkbox"/>	
Any additional comments	Motivate: Click here to enter text.		
Committee members present during the review	Members present		
	Karel Botha		
	Werner de Klerk		
	Mariette van der Merwe		
	Roslind Mokwele		
	Elma Ryke		
Wim Roestenburg			
An additional expedited application was submitted with a special committee _ Dr Mariette van der Merwe and Prof Retha Bloem reviewed the new expedited application and gave permission for continuation with the study			
Date of review	2019/01/28		



Signature of Chairperson

Date: [Click here to enter a date.](#)



Signature of Research Director

Date: 2019/01/31

Decision of the Ethics Committee: Expedited review	<input type="checkbox"/>	Motivate: Click here to enter text.
Full review	<input type="checkbox"/>	
Exempted from review	<input type="checkbox"/>	



Signature of Chairperson of the Research Ethics Committee

Date: [Click here to enter a date.](#)

ADDENDUM 2: Ethical Approval



Private Bag X1290, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Fax: 018 299-4910
Web: <http://www.nwu.ac.za>

Research Ethics Regulatory Committee
Tel: 018 299-4849
Email: nkosinathi.machine@nwu.ac.za

25 March 2019

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the North West University Health Research Ethics Committee (NWU-HREC) on 25/03/2019, the NWU Health Research Ethics Committee hereby approves your study as indicated below. This implies that the North-West University Research Ethics Regulatory Committee (NWU-RERC) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: A systematic review of critical thinking skills in social work.																															
Study Leader/Supervisor (Principal Investigator)/Researcher: Prof AG Herbst																															
Student: S Khan																															
Ethics number:	<table border="1"> <tr> <td>N</td><td>W</td><td>U</td><td>-</td><td>0</td><td>0</td><td>0</td><td>2</td><td>4</td><td>-</td><td>1</td><td>9</td><td>-</td><td>A</td><td>1</td> </tr> <tr> <td colspan="3">Institution</td> <td colspan="5">Study Number</td> <td colspan="2">Year</td> <td colspan="5">Status</td> </tr> </table>	N	W	U	-	0	0	0	2	4	-	1	9	-	A	1	Institution			Study Number					Year		Status				
N	W	U	-	0	0	0	2	4	-	1	9	-	A	1																	
Institution			Study Number					Year		Status																					
<small>Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation</small>																															
Application Type: Systematic Study	Risk: Minimal																														
Commencement date: 25/03/2019																															
Expiry date: 31/03/2020																															
Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.																															

Special in process conditions of the research for approval (if applicable):

<p>General conditions:</p> <p>While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:</p> <ul style="list-style-type: none"> The study leader/supervisor (principle investigator)/researcher must report in the prescribed format to the NWU-HREC: <ul style="list-style-type: none"> annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study. The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the NWU-HREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited. Annually a number of studies may be randomly selected for an external audit. The date of approval indicates the first date that the study may be started. In the interest of ethical responsibility the NWU-RERC and NWU-HREC reserves the right to: <ul style="list-style-type: none"> request access to any information or data at any time during the course or after completion of the study; to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process; withdraw or postpone approval if: <ul style="list-style-type: none"> any unethical principles or practices of the study are revealed or suspected;
--

- *it becomes apparent that any relevant information was withheld from the NWU-HREC or that information has been false or misrepresented;*
- *submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or*
- *new institutional rules, national legislation or international conventions deem it necessary.*
- *NWU-HREC can be contacted for further information or any report templates via Ethics-HRECAppl@nwu.ac.za or 018 299 1206.*

The NWU-HREC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the NWU-HREC or the NWU-RERC for any further enquiries or requests for assistance.

Yours sincerely

Prof Wayne Towers
Chairperson NWU Health Research Ethics Committee

Original details: (22351930) C:\Users\22351930\Desktop\ETHICS APPROVAL LETTER OF STUDY.docm
8 November 2018

Current details: (22351930) M:\DSS18533\Monitoring and Reporting Cluster\Ethics\Certificates\Templates\Research Ethics Approval Letters\9.1.5.4.1 HREC Ethical Approval Letter.docm
3 December 2018

File reference: 9.1.5.4.2

ADDENDUM 3: PRISMA checklist



PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria; participants; and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I ²) for each meta-analysis.	



PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see item 15).	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see item 16]).	
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: www.prisma-statement.org.

Page 2 of 2

ADDENDUM 4: The NOTARI data extraction tool

A data extraction tool is formulated (Botma *et al.*, 2010:244) as a control mechanism to presents data in a similar format to ease analysis and synthesis. The NOTARI data extraction tool by the Joanna Briggs Institute (s.a) for qualitative methodologies in this study and presented hereafter.

NOTARI data extraction tool				
Reviewer		Date		Record nr
Author(s)				
Year		Journal		
Method				
Participants				
Setting				
Geographical				
Cultural				
Population				
Sample size				
Interventions				
Data analysis				
Author conclusions				
Reviewer comments				

ADDENDUM 5: The MASTARI data extraction tool

MAStARI data extraction tool

Reviewer		Date		Record nr		
Author(s)						
Year				Journal		
Method	RTC	Retrospective	Quasi-RCT	Observational	Longitudinal	Other
Participants						
Setting						
Population						
Sample size						
Interventions						
Author conclusions						
Reviewers conclusions						
Study results						
Dichotomous	Outcome	Intervention (n, N)		Intervention (n, N)		
Continuous	Outcome	Intervention (n, N)		Intervention (n, N)		

ADDENDUM 6: The CASP and EPHPP critical appraisal tools



CASP Checklist: 10 questions to help you make sense of a **Qualitative** research

How to use this appraisal tool: Three broad issues need to be considered when appraising a qualitative study:

- ▶ Are the results of the study valid? (Section A)
- ▶ What are the results? (Section B)
- ▶ Will the results help locally? (Section C)

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is “yes”, it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a “yes”, “no” or “can’t tell” to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Qualitative) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Paper for appraisal and reference:

Section A: Are the results valid?

1. Was there a clear statement of the aims of the research?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

- HINT: Consider
- what was the goal of the research
 - why it was thought important
 - its relevance

Comments:

2. Is a qualitative methodology appropriate?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

- HINT: Consider
- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
 - Is qualitative research the right methodology for addressing the research goal

Comments:

Is it worth continuing?

3. Was the research design appropriate to address the aims of the research?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

- HINT: Consider
- if the researcher has justified the research design (e.g. have they discussed how they decided which method to use)

Comments:

4. Was the recruitment strategy appropriate to the aims of the research?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

- HINT: Consider
- If the researcher has explained how the participants were selected
 - If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
 - If there are any discussions around recruitment (e.g. why some people chose not to take part)

Comments:

5. Was the data collected in a way that addressed the research issue?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

- HINT: Consider
- If the setting for the data collection was justified
 - If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
 - If the researcher has justified the methods chosen
 - If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
 - If methods were modified during the study. If so, has the researcher explained how and why
 - If the form of data is clear (e.g. tape recordings, video material, notes etc.)
 - If the researcher has discussed saturation of data

Comments:

Section C: Will the results help locally?

10. How valuable is the research?

HINT: Consider

- If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature)
- If they identify new areas where research is necessary
- If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Comments:

QUALITY ASSESSMENT TOOL FOR QUANTITATIVE STUDIES



COMPONENT RATINGS

A) SELECTION BIAS

(Q1) Are the individuals selected to participate in the study likely to be representative of the target population?

- 1 Very likely
- 2 Somewhat likely
- 3 Not likely
- 4 Can't tell

(Q2) What percentage of selected individuals agreed to participate?

- 1 80 - 100% agreement
- 2 60 - 79% agreement
- 3 less than 60% agreement
- 4 Not applicable
- 5 Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

B) STUDY DESIGN

Indicate the study design

- 1 Randomized controlled trial
- 2 Controlled clinical trial
- 3 Cohort analytic (two group pre + post)
- 4 Case-control
- 5 Cohort (one group pre + post (before and after))
- 6 Interrupted time series
- 7 Other specify _____
- 8 Can't tell

Was the study described as randomized? If NO, go to Component C.

No Yes

If Yes, was the method of randomization described? (See dictionary)

No Yes

If Yes, was the method appropriate? (See dictionary)

No Yes

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

C) CONFOUNDERS

(Q1) Were there important differences between groups prior to the intervention?

- 1 Yes
- 2 No
- 3 Can't tell

The following are examples of confounders:

- 1 Race
- 2 Sex
- 3 Marital status/family
- 4 Age
- 5 SES (income or class)
- 6 Education
- 7 Health status
- 8 Pre-intervention score on outcome measure

(Q2) If yes, indicate the percentage of relevant confounders that were controlled (either in the design (e.g. stratification, matching) or analysis)?

- 1 80 – 100% (most)
- 2 60 – 79% (some)
- 3 Less than 60% (few or none)
- 4 Can't Tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

D) BLINDING

(Q1) Was (were) the outcome assessor(s) aware of the intervention or exposure status of participants?

- 1 Yes
- 2 No
- 3 Can't tell

(Q2) Were the study participants aware of the research question?

- 1 Yes
- 2 No
- 3 Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

E) DATA COLLECTION METHODS

(Q1) Were data collection tools shown to be valid?

- 1 Yes
- 2 No
- 3 Can't tell

(Q2) Were data collection tools shown to be reliable?

- 1 Yes
- 2 No
- 3 Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

F) **WITHDRAWALS AND DROP-OUTS**(Q1) **Were withdrawals and drop-outs reported in terms of numbers and/or reasons per group?**

- 1 Yes
- 2 No
- 3 Can't tell
- 4 Not Applicable (i.e. one time surveys or interviews)

(Q2) **Indicate the percentage of participants completing the study. (If the percentage differs by groups, record the lowest).**

- 1 80 -100%
- 2 60 -79%
- 3 less than 60%
- 4 Can't tell
- 5 Not Applicable (i.e. Retrospective case-control)

RATE THIS SECTION	STRONG	MODERATE	WEAK	
See dictionary	1	2	3	Not Applicable

G) **INTERVENTION INTEGRITY**(Q1) **What percentage of participants received the allocated intervention or exposure of interest?**

- 1 80 -100%
- 2 60 -79%
- 3 less than 60%
- 4 Can't tell

(Q2) **Was the consistency of the intervention measured?**

- 1 Yes
- 2 No
- 3 Can't tell

(Q3) **Is it likely that subjects received an unintended intervention (contamination or co-intervention) that may influence the results?**

- 4 Yes
- 5 No
- 6 Can't tell

H) **ANALYSES**(Q1) **Indicate the unit of allocation (circle one)**

community organization/institution practice/office individual

(Q2) **Indicate the unit of analysis (circle one)**

community organization/institution practice/office individual

(Q3) **Are the statistical methods appropriate for the study design?**

- 1 Yes
- 2 No
- 3 Can't tell

(Q4) **Is the analysis performed by intervention allocation status (i.e. intention to treat) rather than the actual intervention received?**

- 1 Yes
- 2 No
- 3 Can't tell

GLOBAL RATING**COMPONENT RATINGS**

Please transcribe the information from the gray boxes on pages 1-4 onto this page. See dictionary on how to rate this section.

A	SELECTION BIAS	STRONG	MODERATE	WEAK
		1	2	3
B	STUDY DESIGN	STRONG	MODERATE	WEAK
		1	2	3
C	CONFOUNDERS	STRONG	MODERATE	WEAK
		1	2	3
D	BLINDING	STRONG	MODERATE	WEAK
		1	2	3
E	DATA COLLECTION METHOD	STRONG	MODERATE	WEAK
		1	2	3
F	WITHDRAWALS AND DROPOUTS	STRONG	MODERATE	WEAK
		1	2	3
				Not Applicable

GLOBAL RATING FOR THIS PAPER (circle one):

- | | | |
|---|----------|----------------------------|
| 1 | STRONG | (no WEAK ratings) |
| 2 | MODERATE | (one WEAK rating) |
| 3 | WEAK | (two or more WEAK ratings) |

With both reviewers discussing the ratings:

Is there a discrepancy between the two reviewers with respect to the component (A-F) ratings?

No Yes

If yes, indicate the reason for the discrepancy

- | | |
|---|---|
| 1 | Oversight |
| 2 | Differences in interpretation of criteria |
| 3 | Differences in interpretation of study |

Final decision of both reviewers (circle one):

- | | |
|----------|-----------------|
| 1 | STRONG |
| 2 | MODERATE |
| 3 | WEAK |

ADDENDUM 7: Author guideline

Author Guidelines: Journal of Social Work Education

Preparing Your Paper

Articles, Teaching Notes, Research Notes

- Should be written with the following elements in the following order: Include title page; abstract; funding; declaration of interest statement (if applicable); bio notes on contributors; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list)
- Should contain an unstructured abstract of 120 words.
- Read [making your article more discoverable](#), including information on choosing a title and search engine optimization. Submission types JSWE accepts the following types of submissions: full-length articles and submissions for the Notes section, including Field Notes, Research Notes, and Teaching Notes. Full-length articles should be 15–25 double-spaced pages, not including references, figures, or tables. Articles should be original, have a sound conceptual or empirical base, and be well-argued. Manuscripts submitted as Notes should not exceed 10 pages and should be written in the same clear, readable, and scholarly style as full-length manuscripts. JSWE accepts proposals for special topic issues and sections. No more than one special issue will be published each year. Proposals are reviewed by the editor-in-chief and the Editorial Advisory Board for decision. The following components, submitted in electronic format only, make up a complete proposal: (a) an overview of the issue/section theme, including a discussion of the purpose of the issue and its contribution to the knowledge base; (b) a summary of anticipated article topics; (c) a proposed timeline from distribution of the call for papers to final acceptance of all manuscripts; (d) a list of guest reviewers with CVs; (e) CVs of the proposed guest editor(s). Special topic proposals should be sent to esimon@cswe.org.

Checklist: what to include

1. Author details. All authors of a manuscript should include their full name and affiliation on the cover page of the manuscript. Where appropriate, please also include ORCIDiDs and social media handles (Facebook, Twitter or LinkedIn). One author will need to be identified as the corresponding author, with their email address normally displayed in the published article. Authors' affiliations are the affiliations where the research was conducted. If any of the named co-authors moves affiliation during the peer-review process, the new affiliation can be given as a footnote. Please note that authorship may not be changed after acceptance. Also, no changes to affiliation can be made after your paper is accepted. Read more on authorship [here](#).

2. Abstract. This summary of your article is normally no longer than 120 words. Read tips on [writing your abstract](#).

3. Funding details. Please supply all details required by your funding and grant-awarding bodies as follows: For single agency grants This work was supported by the under Grant . For multiple agency grants This work was supported by the under Grant ; under Grant ; and under Grant .

4. Disclosure statement. With a disclosure statement you acknowledge any financial interest or benefit that has arisen from the direct applications of your research. Further guidance, please see our page on what is a conflict of interest and how to disclose it.

5. Data availability statement. If there is a data set associated with the paper, please provide information about where the data supporting the results or analyses presented in the paper can be found. Where applicable, this should include the hyperlink, DOI or other persistent identifier associated with the data set(s). Templates are also available to support authors.

6. Data deposition. If you choose to share or make the data underlying the study open, please deposit your data in a recognized data repository prior to or at the time of submission. You will be asked to provide the DOI, pre-reserved DOI, or other persistent identifier for the data set.

7. Supplemental online material. Supplemental material can be a video, dataset, fileset, sound file, or anything else which supports (and is pertinent to) your paper. Supplemental material must be submitted for review upon paper submission. Additional text sections are normally not considered supplemental material. We publish supplemental material online via Figshare.

8. Figures. Figures should be high quality (600 dpi for black& white art and 300 dpi for color). Figures should be saved as TIFF, PostScript or EPS files. Figures embedded in your text may not be able to be used in final production.

9. Tables. Please supply editable table files. We recommend including simple tables at the end of your manuscript, or submitting a separate file with tables.

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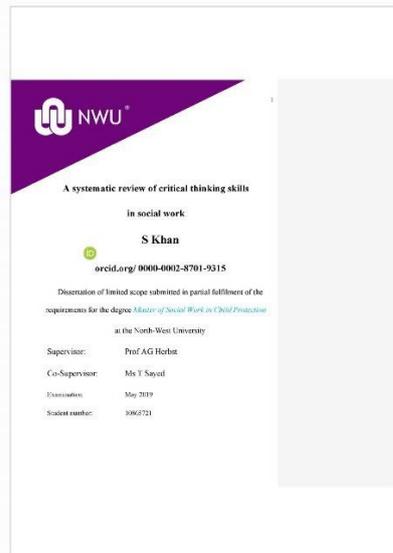


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