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A Simple but Powerful Way to Enhance Critical Thinking Skills among BSW in Online Class: Strength-based Feedback

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Abstract

As online education grows rapidly in social work, there are growing concerns about teaching critical-thinking skills in online environments. This retrospective case study shares experience of an online course that employed a strength-based instructional method to enhance critical-thinking skills among undergraduate social-work students. Twenty-two student assignments were reviewed from an online Human Behaviour and Social Environment course offered to undergraduate social-work students. Three approaches were adopted to learn the impact of instructional practices on critical-thinking skills: 1) students' course evaluations; 2) the number of words written in students' responses to written assignments; 3) the quality of students' prompts. The study found that using a strength-based approach and providing individualised feedback were effective in enhancing critical-thinking skills in online courses. Limitations and suggestions for future research were discussed.

Keywords: Critical thinking; strength-based approach; online education; social-work education; feedback

Introduction

The Council on Social Work Education (CSWE) mandates critical thinking as an important goal of social-work education (Gibbons & Gray, 2004) and lists it as a required competency in the 2008 Educational Policy and Accreditation Standards (EPAS) (Robbins, 2014). EPAS 2015 and 2022 removed critical thinking from the competency list but mentioned it in several places (CSWE 2015, 2022). As the importance of critical-thinking skills in social-work practices continues to be stressed, investments are being made in designing courses and developing instructional methods for advancing critical-thinking skills in social-work education (Mathias; 2015; Seelig, 1991; Samson, 2016; Sheppard & Charles, 2015). Scholars of social-work education have examined innovative curricula and teaching strategies for critical-thinking skills (Milner & Wolfer, 2014; Samson, 2016; Verburgh, 2019). However, many educators still face challenges in promoting critical-thinking skills in both online and face-to-face classrooms (Milner & Wolfer, 2014). Educators who are not familiar with online teaching might perceive the teaching of these skills as a double barrier.

Social work has used online education for more than two decades. Research on online social-work education has grown rapidly by facing challenges, concerns, and benefits to devise instructional strategies for practicing skill development (Tathahira, 2020). Online education appears to be no longer optional for educators; it has become a necessity since the COVID-19 pandemic. Both online education and teaching critical-thinking skills in social work are

indispensable; however, little attention has been paid to studies on fostering these skills in online social-work courses. This retrospective case study aimed to share lessons learned from an online course that employed a strength-based instructional method to enhance critical-thinking skills among undergraduate social-work students.

Literature review

Critical thinking in social work

Social workers' primary task is problem-solving through five steps: 1) assess clients' problems; 2) identify resources available for clients; 3) select the best intervention(s) to resolve clients' problems; 4) implement the intervention chosen by the clients; and 5) evaluate the effectiveness of intervention(s) (Ashford & LeCroy, 1991; Shier, 2011). These five steps are broadly characterised byusing involving more activities and critical-thinking skills. For example, when they assess a problem, social workers carefully observe clients and their environment, analyse data from observations, integrate information obtained from analyses, and define the problem(s). Observing, analysing, integrating, and defining information or knowledge, are the components of critical thinking (Seelig, 1991). Under the competency of evidence-based practice (EBP), social workers apply knowledge to practices that require life-affecting judgements and decision-making (Council on Social Work Education [CSWE] 2015; 2021; Hurley & Taiwo, 2019).

Sheppard (1995) conceptualises knowledge as process rather than product in social-work practice. The application of theory and knowledge to practice in social work refers to cognitive and practical reasoning processes that inform decision-making and judgement for clients (Helm, 2011; Mathias; 2015; Sheppard, 1995; Sheppard et al., 2001; Sheppard et al., 2018). Cognitive and reasoning processes are aligned with two theoretical strands of critical thinking: cognitive thinking in psychology, and reasoning in philosophy (Facione, 1990; Seelig, 1991; Lai, 2011). These processes take the form of thinking that entails the critical appraisal of case situations, hypothesis generation for possible solutions, and speculation of results in social-work practice (Sheppard & Charles, 2015). Professional judgements are the products of thinking processes in social-work practice. Critical thinking improves practice outcomes as social workers adopt reflexivity to their cases (Sheppard, et al., 2000). Critical-thinking skills benefit not only by assessing cases, developing case plans, and investigating best interventions for clients, but also by engaging clients and building relationships with them—because reflexivity prevents practitioners' assumptions about clients (Helm, 2011).

Social workers assess the problems and issues not of only individual clients, but also of communities, societies, countries, and on global levels that generate a social context of socio-structural oppression, injustice, and discrimination (Shier, 2011). Individual clients' problems may originate from socially constructed barriers, as viewed from a person-in-environment perspective. Practitioners need the skills to place individual cases in a social context that oppresses, marginalises, and discriminates against their clients (Shier, 2011). According to D'zurilla et al. (2004), social problems can be uncovered and solved better in constructive dimensions by understanding complex situations facing clients. Linking individual issues to political and hegemonic contexts entails cognitive and practical reasoning processes related to knowledge and theory (D'zurilla et al., 2004; Sheppard et al., 2000; Sheppard et al., 2001). Critically analysing social systems that oppress vulnerable populations can help social-work practitioners to identify structural inequalities and intervene in the root causes of social problems faced by individual clients (Hurley & Taiwo, 2018). Including individuals' reflections on their beliefs and values regarding how knowledge generates and guides life choices in critical-thinking processes is as important as reviewing clients' values and belief systems that affect intervention outcomes (D'cruz et al., 2007; Sheppard & Charles, 2015). As discussed above, in the current context of social-work practice, social workers are required to think critically when applying

theory and knowledge in their practices (Mathias; 2015) and to promote the critical-thinking skills of their students.

Seelig (1991) reviewed the definitions of critical thinking, called for social-work education to teach critical thinking as a separate skill, and to train social workers as critical thinkers. After Seelig, social-work educators defined critical thinking, but no consensus has been achieved (Boryczko, 2022; Samson, 2016; Verburgh, 2019), Despite the vast number of definitions in social-work education, researchers have identified common elements in the literature on critical thinking. The definitions of critical thinking are based on two aspects: cognitive thinking as theorised by psychology, and philosophical reasoning (Facione, 1990; Lai, 2011; Seelig, 1991). From a philosophical tradition, critical thinkers demonstrate sound reasoning by using adequate and accurate standards of thought to make a fair judgement that entails openness, flexibility, and diverse viewpoints (Facione, 1990; Lai, 2011; Meneses, 2020; Seelig, 1991). This approach emphasises critical thinkers' ideal characteristics. Contrastingly, psychological approaches tend to list the skills or procedures in how critical thinkers act and behave (Lai, 2011). Cognitive critical thinkers would manifest creative-thinking skills such as arguing, classifying, analysing, assessing, inferring, and evaluating (Higgins, 2014; Meneses, 2020). In incorporating these aspects of critical thinking in practice, social-work scholars have developed its conceptual features in the field where reasonable, sound, and independent decisions are made consistently (Mathias; 2015; Verburgh, 2019).

The most common features of critical thinking in social work are the application, analysis, assessment, reflection, evaluation, examination, questioning, hypothesising, synthesising, comparing, challenging, creative thinking, systematic thinking, observing, defining, reasoning, constructing, and sense-making of knowledge, theory, and experience (Burman, 2000; Gibbons & Gray, 2004; Mathias; 2015; Plath et al., 1999; Samson, 2016; Seelig, 1991; Sheppard & Charles, 2015). Adopting these features in social-work practices will contribute to making informed decisions, as social-work scholars describe critical thinking as an informed action taken in complex situations (Burman, 2000; Gibbons & Gray, 2004; Hurley & Taiwo, 2018; Plath et al., 1999; Samson, 2016; Sheppard & Charles, 2015; Verburgh, 2019; Wilson, et al., 2020). Identifying action verbs that characterise critical-thinking skills is more important than summarising or inventing a definition of critical thinking—this study aims to share a case in which students' critical-thinking skills are improved by using those verbs.

Teaching critical-thinking skill in social work

Because critical thinking is perceived to be a crucial practice skill in social work, we found more research literature on teaching critical-thinking skills in social work than on their outcomes and effects on practice. This does not mean that the intellectual aspect of social-work skills, such as critical-thinking skills, is emphasised equally in interpersonal skills in social-work education—Sheppard and Charles (2017) suggested in a longitudinal study that the learning process did not equally incorporate interpersonal and critical-thinking capabilities in social-work education. Despite the recent finding that social-work graduates scored lower in critical-thinking skills than law and business graduates (Sheppard et al., 2018), social-work education scholars continue to conduct research on curriculum design, teaching models, instructions, assignments, and pedagogical approaches that foster and promote students' critical-thinking skills and examine their effectiveness (Boryczko, 2022; Coleman et al., 2002; Gibbons & Gray, 2004; Milner & Wolfer, 2014; Mumm & Kersting, 1997; Plath et al., 1999; Samson, 2016; Verburgh, 2019; Wilson et al., 2020). Social-work programmes have developed and adopted diverse approaches for teaching critical-thinking skills. Some of them have been mapped into the entire programme that helps navigate students' learning in critical thinking over the years (Gibbons & Gray, 2004; Sheppard & Charles, 2017). One school that is dedicated to the development of critical-thinking skills invented an embedded model by incorporating critical-thinking instruction into a 4-year

social-work programme through experience-based learning (Gibbons & Gray, 2004). Students were exposed to a curriculum that integrated critical thinking as a course map over 4 years and demonstrated improved critical-thinking skills when it was evaluated in an exit survey for graduates (Gibbons & Gray, 2004).

Curriculum-based models are the approaches most frequently used by educators and are embedded in assignments, instructions, class activities, textbooks, portfolios, and case-method teaching (Milner & Wolfer, 2014; Samson, 2016). Among many models embedding critical thinking in courses over a semester, the course titled "Critical Thinking for Social Workers" offered in a historical Black college adopted a specifically African-centered perspective (Dyson & Smith Brice, 2016). This course not only implemented diverse pedagogical approaches, instructional techniques, and assignments but also introduced the most pressing topics (such as post-traumatic slavery disorder) which increased students' investment in assignments assisted by critical thinking (Dyson & Smith Brice, 2016). By means of experiential learning theory in teaching critical thinking, educators often found case-based methods such as decision cases and case analysis to be effective in any course, such as practice, theory, and foundational courses (Burman, 2000; Milner & Wolfer, 2014). Studies have also found that, as a type of assignment, reflective writing can be used to enhance students' critical-thinking skills (Boryczko, 2022). These studies, which used curriculum-based approaches to teaching these skills in social work, were adopted in traditional courses but not in the online environment. Despite the easy transference of assignments and cases to online courses, it's not clear that they are applicable to online learning environments or have the same or similar effects when modified.

Teaching critical-thinking skills in online courses

The body of literature on teaching critical-thinking skills in higher education continues to expand (Higgins, 2014; Lai, 2011; Meneses, 2020; Samson, 2016). This is also true of online education, which is one of the fastest-growing areas of education. While educators and researchers face challenges and doubts about critical-thinking skills, scholars who specialise in online education have explored strategies and tools to promote students' critical-thinking skills through online courses (DuBois, 2019; Lee et al., 2019; Robinson, 2021; Tathahira, 2020; Yilmaz & Yilmaz, 2019). Some of these scholars have invented new and high-quality approaches to the development of critical-thinking skills specific to online environments (DuBois, 2019; Yilmaz & Yilmaz, 2019). The most common techniques to foster critical-thinking skills in online education take advantage of the nature of online teaching, which uses advances in technology—including social media (DuBois, 2019). Environmental education offered in an online format optimised the benefits of an online class of expanded access to transdisciplinary, international resources through internet sources, including social-media channels (DuBois, 2019). Another study examined how different forms of feedback on student discussions affect the development of students' critical-thinking skills (Yilmaz & Yilmaz, 2019). Although feedback has been found to have no significantly different effects on these skills, students demonstrated an improvement in critical thinking (Yilmaz & Yilmaz, 2019). The most interesting suggestion in the literature is that the self-regulation skills required in online courses are positively associated with critical-thinking skills (Dwyer & Walsh, 2020; Robinson, 2021; Song et al., 2022)

Although most approaches to enhancing the effectiveness of critical-thinking instructions are not invented exclusively in an online environment, scholars who adopt other approaches suggest that existing models and tools employed in face-to-face classes are transferrable to online courses and their effectiveness is sometimes compared in both modalities (Lanz et al., 2022; Yeh, 2009). A study that examined a short psychological critical-thinking intervention employed in both traditional and online courses found a promising result of online education (Lanz et al., 2022). Compared with students in traditional courses, online students improved their critical-thinking skills significantly. Lanz et al.'s study (2022) suggested that a short critical-thinking intervention

is more effective in an online classroom. Because problem-based learning is often used for critical thinking in face-to-face classrooms (Masek & Yamin, 2011; Şendağ & Odabaşı, 2009; Yuan et al., 2008), online educators have adopted a problem-based learning approach for the development of critical-thinking skills in disciplines as diverse as mathematics and education. Experimental and quasi-experimental designs have demonstrated the effectiveness of an e-learning problem-based model on critical-thinking skills (Evendi et al., 2022; Şendağ & Odabaşı, 2009). When they were transferred from face-to-face to online environments, the existing models and tools were modified appropriately (Evendi et al., 2002; Şendağ & Odabaşı, 2009; Yeh, 2009). For example, Yeh (2009) integrated the direct instruction model into an e-learning setting to affect critical-thinking instruction by optimising the advantages of asynchronous online classrooms, such as the use of video conferences. Using a control group, the e-learning direct instruction model was found to be effective in increasing critical-thinking skills among online students (Yeh, 2019).

Although research on enhancing critical-thinking skills in online courses is growing in higher education, few studies on critical thinking have been conducted in online social-work education. However, social-work educators have expressed concerns about teaching critical-thinking skills in online courses (Lee et al., 2019). Opponents of online learning often highlight the absence of social and personal interaction, engagement, and interpersonal connection (Levin, et al., 2018; Massengale & Vasquez, 2016), which they argue deprives students of valuable opportunities for meaningful discussion. Such discussion is seen as crucial for fostering important critical-thinking skills such as reasoning, self-evaluation of arguments, active participation in diverse demographic spaces, and respect for differing opinions (Groton & Spadola, 2022; Hajhosseini, et al., 2016). However, studies have shown the efficacy of discussion boards in promoting student engagement and interaction in online environments (Lee, et al., 2014; Saadé, et al., 2012).

Recognising the constraints of traditional classroom settings, current online educators acknowledge the advantages of asynchronous online classes in terms of time flexibility (Mandernach, 2006; Tathahira, 2020). The online learning environment allows students and teachers to use their time more effectively. Literature on online education recommends that teachers develop instructional strategies that aim to enhance student engagement and address barriers to teaching critical-thinking skills (Gulbrandsen, et al., 2015; Mandernach, 2006; Saadé, et al., 2012; Tathahira, 2020). As the prevalence of online education increases, there is a pressing need for the development of models and strategies to enhance the critical-thinking skills of online students. Given the benefits of online learning and the importance of effective instructional approaches to teaching critical thinking, this study shares one such instructional strategy.

Strength-based approach in teaching

In social-work practice, a strength-based perspective has emerged as a practice skill that reflects the shift from a focus on problems and deficits to client strengths and assets to achieve goals (Oko, 2006). It has become a framework for social-work practice, with applications continuing to expand into other areas of social work such as substance use, social policy development, the elderly, families, and domestic violence (Agllias, 2013). Strength-based practice models encourage practitioners to incorporate clients' strengths in interventions by identifying explicit, implicit, and potential strengths together with clients and recognising them as clients (Bozic, 2013). Studies have found that a strengths-based approach boosted children's and youth's resilience to recover from their trauma and prevent recidivism among youth offenders because focusing on their strengths increases their sense of purpose and improves their confidence and self-efficacy (Fortune, 2018; McDonald-Harker et al., 2021). As indicated above, interpersonal processes between clients and practitioners can determine the effectiveness of a strength-based approach in any practice setting, because clients need affirmation of their strengths from experts (Tse et al., 2016). The importance of relationships in a strength-based approach is that they

recognise educators' supporting roles when dealing with multi-risk families to improve children's quality of life (Powell, 1997). Despite these benefits, there is little research on the role of the strength perspective in social-work education—not only in any practice setting but also in educational environments—when it comes to benefitting students' learning (Probast, 2010). If it works well in practice, why are we not using it when teaching students?

With this question in mind, the first author adopted a strength-based approach by providing feedback on critical-thinking examples rather than focusing on the deficits of students who need to learn how to find the best in others and themselves. This case study benefitted from an online setting in which all students could provide feedback on their written work.

The lack of literature on the development of critical-thinking skills and the use of a strength-based approach toward students' online social-work education directed this retrospective case study to these research questions:

1. Are online courses appropriate for developing students' critical-thinking skills?
2. How do instructors adopt a strength-based approach in online classes?
3. Will strength-based feedback enhance students' critical-thinking skills in online classes?

Case study

This is a retrospective case study in which we share insights into strategies that aimed to enhance students' critical-thinking skills in real contexts. Case studies enable researchers to delve deeply into the experiential knowledge of one or two specific cases, elucidating the intricate details and complexities of particular contexts (Stake, 2005; Yin, 2014). We did not initially approach the course content with the intention of conducting a formal research study; rather, the primary aim was to facilitate students' advancement in critical-thinking skills. Consequently, formal research procedures such as measuring students' critical-thinking skills and implementing pre- and post-test designs were not planned. But although direct data on students' improvements in critical-thinking skills were not collected, we were able to retrospectively analyse students' weekly written assignments over the semester. These provided evidence of their development. Evidence from online courses with more written assignments also supported our analysis of students' progress.

Setting

The data were collected from 22 students enrolled in an online Human Behavior and Social Environment course offered to undergraduate social-work students at a midwestern university in the United States. Students in this fully online programme were primarily non-traditional students from rural areas within the state and out-of-state. Because this case was evaluated retrospectively after the author noticed changes in students' critical-thinking skills, the study analysed secondary data, such as course assignments submitted, and course evaluation results. The university's Institutional Review Board approved the use of secondary data from course content. Because of the retrospective nature of the study, the only demographic information was students' gender. Of the 22 students, 19 were female, 2 were male, and 1 was transgender.

Course structure

The first author implemented strategies using a strength-based approach for the first time in an online course on Human Behavior and Social Environment. They were also teaching the course for the first time. It was an asynchronous online class for 17 weeks, operated in the learning management system, CANVAS. Two or three graded exercises and three regular written assignments were assigned every week as class attendance equivalent to face-to-face class attendance. Weekly exercises took diverse formats such as oral presentations, written discussions

with responses to classmates, worksheets, and individual responses to prompts. For oral presentations, the students made a video and uploaded it to the discussion forum. Weekly assignments comprised opening, core, and closing exercises in each chapter of the textbook. The types of opening exercises varied from taking a survey to drawing an eco-map and genogram. Presentation assignments were performed in the core exercises. Every week, two or three students made and uploaded a video of the presentation, and the other students watched them and provided feedback on the presentations. Students must complete their previous week's assignments to move forward. Because all course activities are published on the first day of the semester, students work on their coursework at their own pace.

The instructor provided written feedback on all students' weekly exercises and regular assignments when they were graded. Until Week 6, the instructor did not adopt the strength-based approach that will be described in the next section. Strength-based feedback started slowly in Week 7. It intensified as time passed and reflected the students' work. CANVAS allowed students to not only read feedback from instructors but also respond. The instructor and students communicated through both the CANVAS Inbox and the feedback thread on the weekly exercise page.

Students could also choose whether to revise their weekly exercises based on their grade and feedback. If they were satisfied with their initial grades, they did not have to revise but still received a message that showed where and how they could improve. This policy was implemented out of respect for students' decisions to maintain their mental health with less stress, and being satisfied with imperfections. The students were informed of this policy through feedback.

Adoption of strength-based feedback

The instructor intentionally and explicitly complimented the students on practicing their critical-thinking skills in the feedback as a tool of strength-based teaching. The complimentary phrases were crafted by the first author based on previous teaching experience. Each phrase includes the words "critical thinking" to target the enhancement of students' improvement and to bolster their confidence in critical-thinking skills. The feedback always starts or ends with the following complementary phrases:

- Excellent (great) critical thinking!
- You practiced excellent (great) critical-thinking skills.
- This is excellent (great) critical thinking.
- You demonstrated excellent (great) critical-thinking skills.
- Excellent (great) critical-thinking skills used!
- You are an excellent (great) critical thinker.

The most important part—empowering students to repeatedly practice critical-thinking skills—ensued after using complimentary phrases that proved why their work showed critical thinking. Although students were practicing critical-thinking skills, they might not have realised it and might not have been able to reinforce the skills they already had. Thus, the strength-based approach endorsed and prompted students to continue, and to enhance their skills by learning where and how they could demonstrate them. Action verbs identified in the literature on critical thinking in social work were used to reinforce their skills. The following are a few examples of how action verbs were used to show evidence of students' critical-thinking skills. We have highlighted the action verbs intentionally used for each sentence.

- You **integrated** your knowledge of the theory obtained from the course contents into case analysis.
- You **reflected** on your own experience and applied . . . theory learned from this course to the experience.
- I liked that you **applied** . . . theory to the client's case.
- I enjoyed reading your assessment of the problems by **adopting** the theory you learned this week.
- I agree that we can **evaluate** . . . policy by looking at . . .
- You well **identified** the root causes of the problem with the help of . . . theory that we covered last week and I couldn't agree more [sic].
- You **comprehended** the concept well and then **integrated** it into your knowledge development.
- Thank you for **sharing** your own experience. **Reflecting** on our experiences is a great learning tool. [sic]

Cherry-picking was another important strategy, especially for students whose critical-thinking skills required great improvement. Instructors tried hard to find the best lines from the poorly done work. They started by complimenting the students on the good parts, and then gave feedback that included specifics of where and how the work could be done better. The following examples are of feedback provided for improvement.

- Great (good) critical thinking efforts applying theory to the case. If you provided why you chose the theory in this case, it would be more convincing.
- You have done a great (good) job in critical thinking by identifying clients' problems. It would be beneficial if you also presented how the problems are related to the theory.
- I like you picked … theory. Great (Good) critical thinking skills practiced. Can you think of any experience that can be explained with this theory? [sic]

Analysis

This case study analysed secondary data and students' course assignments in an online Human Behavior and Social Environment course. Three measures were adopted to assess the impact of instructional methods on critical-thinking skills among undergraduate social-work students. First, students' course evaluations were analysed to determine how they perceived their critical-thinking skills. The institution in which this case study occurred used to have an item, "Faculty member stimulates thinking" in the course evaluation. The score for this specific item was reported because this case study started to determine how to improve the score, while other items increased over time. Students' comments regarding critical thinking on open-ended questions are reported in the Results. A total of 22 students enrolled and completed the course, and 12 of them completed the course evaluation.

Second, the number of words written in students' responses to the 12-week Closing Exercises was counted as evidence of improvement in their critical-thinking skills. The length of students' responses was used as a measure of how much time they invested in comprehending course materials and integrating them in their knowledge development. All student work was checked for plagiarism using Turnitin. Closing exercises were selected because they consistently required

written responses to encapsulate student learning from Chapters 2 to11 rather than opening and core exercises that used a variety of formats, as discussed in the previous section. To properly measure the quality of students' work and critical-thinking skills using this quantitative method, repetitive sentences that were written in response to lengthy prompts were removed from the analysis. The word count method was used to remove unnecessary content. (The word count is considered appropriate because there was no required or suggested word count.) Students' thinking skills determined their lengthy or short responses in each exercise.

Third, the quality of students' prompts was subjectively reported as evidence of improvement in their critical thinking, such as their knowledge comprehension, application of theory, and new concepts obtained from the course content to the exercises.

Results

Course evaluation

As described above, improvement needed to be made on the item "Faculty member simulates thinking" in the first author's course evaluation. Before the strategy was adopted, the average score for the item across courses taught by the first author was below 3.5 out of five. After adopting the strategy, the score was above four in this course for the first time. Further, four out of 11 students specifically stated that the instructor helped them to "think critically," showing their belief in their ability. Before this course, no comments indicating thinking or critical thinking were found across courses taught by the first author. The students' responses were as follows (words relating to critical thinking are in bold):

Student A

> This class was very challenging for me but I learned so much from it. She **challenged us to think critically** and really understand the material she was teaching.

Student B

> I enjoyed the assignments she put together. They have relevance to the chapter and **also help critical thinking**.

Student C

> Ms. [Author Last Name] did a great job at generating assignments that really got me **critically thinking**. Each assignment was very meaningful to the course.

Student D

> She **definitely makes you think** and is open minded if ideas and opinions are different.

Students' assignments

The length of the students' responses to each assignment was used as evidence for improvement in critical-thinking skills. Table 1 displays variations in each student's responses to closing exercises over the 12 weeks with an evident difference in the length of students' responses before and after the feedback was adopted. Due to the difficulty of presenting non-written assignments, only one of the three weekly assignments was displayed in table format—specifically, the closing exercises that briefly summarised the week's learning. This suggests that students submitted more extensive and lengthy prompts for the other two weekly exercises. Throughout the course, longer written responses were evident from the majority of students, indicating that they did not approach the closing exercise lightly. As previously addressed, only words associated with

critical thinking were considered for counting, and any lines or portions of text that were deemed meaningless were excluded from the word count.

As shown by trends in the word counts extracted from students' responses, the average word count for each student indicated a decrease in responses around the time of the interventions, followed by an increase approximately 2 weeks later. This intervention prompted many students to dedicate more time to providing thoughtful responses, thereby sustaining motivation for those who had already demonstrated critical-thinking skills prior to the intervention (Student IDs 1, 2, 6, 11, 13, 17, 19, and 22). Conversely, students who initially displayed less dedication to coursework, such as Student IDs 4, 14, and 16, exhibited increased time investment in their weekly assignments after intervention. The responses of Student IDs 5, 7, 9, 10, 12, and 18 gradually declined around the time of the intervention, with a gradual recovery observed 1 to 2 weeks after the intervention.

Table 1 The number of words counted from students' prompts

Student ID	Ch. 3	Ch.4	Ch.5	Ch.6 Intervention started	Ch.7	Ch.8	Ch.9	Ch.10	Ch.11	Average
1	361	215	139	373	151	406	355	273	208	275.67
2	207	202	212	120	162	363	281	341	170	228.67
3	294	320	206	497	211	370	157	285	230	285.56
4	98	80	113	143	138	266	340	268	Ab*	236.24
5	182	138	151	76	85	240	134	235	160	155.67
6	206	175	240	148	207	423	415	296	365	275.00
7	109	89	Ab*	61	101	Ab*	423	213	60	150.86
8	125	77	141	135	147	189	192	204	129	148.78
9	240	92	116	111	163	210	282	288	199	189.00
10	134	215	107	131	113	242	250	Ab*	161	169.13
11	347	260	206	266	162	387	563	414	384	332.11
12	158	110	105	73	84	112	273	190	166	141.22
13	230	171	252	206	163	225	203	196	200	205.11
14	53	209	115	153	200	Ab*	258	139	169	162.00
15	200	75	145	239	134	237	399	136	170	192.78
16	Ab*	64	153	245	80	113	Ab*	197	194	149.43
17	539	238	167	277	139	265	790	313	327	339.44
18	152	238	122	108	93	322	483	298	345	240.11
19	266	181	119	262	219	231	199	195	285	217.44
20	190	123	153	127	184	208	183	Ab*	147	164.38
21	132	58	83	101	77	96	103	147	58	95.00
22	227	136	110	84	195	311	258	192	630	238.11

*Absence

Further, during the analysis of the students' assignments, we found that a growing number of students applied knowledge to their personal experience in response to weekly assignments. Students particularly used HBSE theories and new concepts they learned from the course content

in assignments and presentations. After Week 7, when the instructor used the words "critical thinking" in any assignment feedback, more students started searching for additional sources of the topic without being required to do so. Towards the end of the semester, most students could analyse the assigned materials and incorporate the results of the analysis in their knowledge development. For instance, students who found it challenging to apply critical thinking tended to offer general statements regarding theories and concepts, and didn't demonstrate practical applications of their knowledge. One such student (Student ID 7) initially provided a mere summary of new theories introduced in Chapters 3 and 4. However, by Chapter 9, this student demonstrated the ability to apply three theories to solve specific problems and anticipate results. Another student (Student ID 4) presented rhetorical descriptions of a theory in Chapters 3 and 4, relying on repetitive vocabulary without furnishing specific examples or sharing personal experience. Yet, by Chapter 8, this student transitioned to analysing specific situations about issues in current education systems, while also sharing their personal experience of education.

Discussion

The results of adopting strength-based feedback are positive and promising for enhancing students' critical-thinking skills. Using specific words (such as analysing, applying, and critical-thinking skills), was found to be effective in enhancing students' confidence in their skills. This simple technique seemed to empower students to develop knowledge because their instructors acknowledged their existing skills. Strength-based feedback played three positive roles:

1. Students who had demonstrated critical-thinking skills maintained their motivation to think critically through persistent positive feedback.
2. Positive feedback reinforced students' understanding of critical thinking.
3. Students who struggled at the beginning learned how to demonstrate critical thinking skills and were motivated to try their best.

These findings provided the following answers to three research questions.

1. Online courses are appropriate to develop student's critical-thinking skills.
2. Instructors can adopt a strength-based approach to provide feedback on their assignments in an online class.
3. Strength-based feedback enhanced students' critical-thinking skills in online classes.

The online asynchronous class enabled us to establish a system for reviewing students' work weekly. This case study involved multiple weekly assignments to assess student performance, a feature often unavailable in in-person courses. The consistent written assignments (which are more prevalent in online asynchronous courses than in-person or online synchronous courses) afforded opportunities to monitor performance and offer timely guidance for improvement (Mandernach, 2006; Tathahira, 2020). The aim was to enhance students' critical-thinking skills throughout the semester by providing immediate feedback on student work.

While the cultivation of critical-thinking skills remains paramount in the social-work profession, social-work educators grapple with the challenge of fostering these skills among students, particularly in the context of online teaching environments (Lee et al., 2019; Levin, et al., 2018; Massengale & Vasquez, 2016). Skepticism, primarily relating to the perceived absence of direct interaction between instructors and learners, persists among educators regarding online education's efficacy in nurturing students' critical-thinking abilities (Groton & Spadola, 2022; Levin, et al., 2018; Massengale & Vasquez, 2016). Contrary to prevailing concerns, our study reveals a divergent perspective. This case study underscores the efficacy of continual written feedback as a way to foster direct interaction between educators and students in online learning environments. Furthermore, online instructional modalities afford instructors the opportunity to

engage with individual students through written feedback more frequently than their counterparts in face-to-face classes (Gulbrandsen, et al., 2015; McCarthy, 2017). In the online setting, students benefitted from receiving feedback three or four times per week, surpassing the limited opportunities available in traditional, in-person learning environments. However, this heightened accessibility to feedback is available only to students who actively seek guidance and participate in class discussions and activities in face-to-face learning environments.

It is worth noting that when students received positive feedback on their critical-thinking skills with the cherry-picking strategy, they gained a clearer conceptualisation of the construct and demonstrated sustained use thereof throughout the semester as found in students' course evaluations. In the feedback, participants who were enrolled in online instruction as exemplified in this case study regularly encountered instances of critical thinking in their own written expression each week. The feedback employed a strength-based approach rather than the traditional weakness-based performance feedback, which can lead to unintended consequences such as discouraging motivation (Aguinis, et al., 2012). By starting the intervention with strength-based feedback, each student received compliments that pinpointed the areas where they demonstrated critical-thinking skills. This sustained or reignited their motivation and time investment in coursework throughout the semester. In a self-regulated learning environment, a strength-based teaching approach enhanced students' motivation to learn and intensified their intentions to invest effort in learning (Hiemstra & Van Yperen, 2015). Self-regulation is a crucial factor for success in online courses. This iterative process facilitated an enhanced understanding of the encouragement to implement critical thinking and the subsequent actualisation of this skill, ultimately fostering its continued application by the students. This outcome aligns with other studies that have used positive feedback to enhance students' critical-thinking skills, such as the critical analysis of course content, the application of knowledge in practice, and self-reflection in traditional learning environments (Pedrosa-de-Jesus & Guerra, 2018; Shim & Walczak, 2012). Our study's findings further support the potential use of strength-based feedback in fostering critical thinking among online students.

This retrospective case study has several limitations, one of which arises from measurement. Although there are established instruments to measure critical-thinking skills, this study could not use these features because of its retrospective nature. The quality of students' assignments was also subjectively evaluated and might not have properly captured their critical-thinking skills. Despite these limitations, this case study contributes to the practice of how to enhance critical-thinking skills in online social-work education. Strength-based feedback can be adopted in any social-work curriculum, from theory-based courses to practice courses. Implementing this technique is simple enough for professors to define critical thinking and use the definitions in their feedback to students' assignments. This case study is one of the first to evaluate the teaching of critical-thinking skills in online social-work education and use a strength-based approach. Further studies with rigorous measurements will offer knowledge about the teaching of critical-thinking skills in online social-work education and about the effectiveness of a strength-based approach for fostering students' critical thinking.

Conclusion

This case study addresses concerns about teaching critical-thinking skills in online social-work courses. Our study used strength-based feedback to maintain and enhance students' motivation in self-regulated online learning environments. Students' course evaluations and subjectively assessed work demonstrated their understanding of critical thinking and their ability to apply these skills in their weekly assignments. Despite concerns and skepticism surrounding online asynchronous courses, which are often associated with limited human interaction and fewer opportunities for critical analysis, self-reflection, and the application of knowledge, the findings of this study suggest that instructional strategies play a crucial role in online learning

environments. Leveraging the online setting (e.g., by using weekly written assignments, flexible time, and consistent and iterative feedback), can address these concerns effectively.

As a result, we recommend that social-work educators consider integrating a strength-based approach in their online courses and work towards developing a tailored framework for its implementation in their specific educational context.

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