USING DALE CARNEGIE'S PRINCIPLES TO TEACH NURSING INFORMATICS ONLINE DURING A PANDEMIC

Research article

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Abstract

The coronavirus disease of 2019 (COVID-19) pandemic makes it vital for nursing students to have access to online education. Dale Carnegie's principles were used as a teaching strategy by the same instructor in one of the two text-based online asynchronous courses on nursing informatics in the summers of 2020 and 2021. Students (n = 108) were randomly divided into two different sessions. Students' final grades and feedback to surveys on course and faculty at the end of the semester were collected and analyzed. Students' final grades and ratings on the course and faculty evaluation surveys in the intervention group that incorporated Carnegie's principles were higher than those in the control group. There were more positive and fewer negative comments in the intervention group than in the control group in both surveys. A positive learning environment created by Carnegie's principles helps instructors increase students' satisfaction and learning outcomes during stressful times.

Keywords: Dale Carnegie, engaging, nursing, online education, pandemic

1. Introduction

The coronavirus disease of 2019 (COVID-19) pandemic makes it vital for nursing students to have access to education in an online environment, including written assignments in text-based online asynchronous courses. Students in online learning face even more difficulties during the pandemic, such as uncertainty, environmental distractions, and anxiety (Irawan et al., 2020). A creative teaching strategy is needed to engage students while decreasing their stress levels during learning.

Teachers should decrease students' anxiety levels and keep students engaged. Student engagement effectively increases student learning motivation, satisfaction, and learning outcomes while decreasing their sense of isolation in the online setting (Martin & Bolliger, 2018). Engaging teaching approaches involve respect and emotionally appropriate feedback (Chiu, 2022). A common teaching practice to decrease students' stress during the COVID-19 pandemic was to remove scheduled assignments so that students had fewer assignments to complete. This strategy might temporarily reduce students' anxiety; however, it may also jeopardize students' learning opportunities. In the texted-based online asynchronous learning environment, teacher feedback during grading is the primary channel for students to learn (Luo & Kalman, 2018). A common way of grading is to exclusively indicate the mistakes students make and why their grades are lowered. However, without a teacher's tone and body language in a text-based setting, the message behind the feedback may sound like a punishment to the students. The punishment and criticism may make students defensive and hurt their feelings and self-esteem. Students may lose the motivation to engage in learning or correct their work.

1.1. Using Dale Carnegie's Principles in Teaching

Carnegie's principles are systematic methods initially developed to help people build positive relationships through respect and influence (Carnegie, 2017). A fundamental principle of Dale Carnegie's Principles is to respect people and meet their emotional needs,

such as not to criticize, condemn or complain about others, and never say "you are wrong". The suggestions provided by Carnegie enhance the positive emotion of the individual involved and the relationship among individuals (Carnegie, 2017). He suggested not to treat people as creatures of logic, but the creatures of emotion and pride.

Based on Carnegie's principles, teachers should treat students the same way and show respect to students, no matter the quality of their submitted assignments. Teachers need to focus on encouragement and praise for the improvements, no matter how small they are. Showing respect does not mean the teacher will ignore or misjudge students' problems. In order for students to happily make changes based on the teacher's suggestions, teacher feedback needs to strategically make the students' faults seem easy to correct. Teachers also need to help students to save their faces while pointing out their mistakes. For example, teachers could talk about their own mistakes before criticizing the students and try to understand students' points of view. Instead of directly telling students what is wrong, teachers could call attention to students' mistakes indirectly, such as asking them questions to lead them to see the problems by themselves. Carnegie suggested people use smiles to treat others. A smiley emoji could be used in the feedback in the text-based online asynchronous courses. Following Carnegie's principles, teacher' comments could always begin in a friendly way with praise and honest appreciation.

1.2. Research Questions

1) How do Carnegie's principles in graduate nursing informatics courses impact teaching in a text-based online asynchronous learning environment?

2) How do Carnegie's principles in graduate nursing informatics courses impact students' learning in a text-based online asynchronous learning environment?

2. Method

2.1. Research Design

A convergent mixed methods study was used (Creswell & Creswell, 2018). Qualitative and quantitative data were collected and analyzed concurrently. The results from qualitative and quantitative phases were compared to identify the similarities and differences for a comprehensive understanding of how Dale Carnegie's principles impact teaching and students' learning of Nursing Informatics in an online asynchronous setting during the pandemic.

2.2. Setting

The study was conducted in two asynchronous online courses at an East Coast University in the United States. The subject of the courses was nursing informatics at the graduate level. Nursing informatics, a discipline for nurses to use technologies to support the quality of patient care (Darvish et al., 2014), is an important skill set for students to learn for their future advanced nursing practice. The course had seven learning modules, and each module lasted one week. The same course was offered during the pandemic in the summer terms of 2020 and 2021. The study was approved by the institutional review board and waived informed consent.

2.3. Procedure

Second-year graduate nursing students (n = 108) who registered for the nursing informatics course in the years 2020 and 2021 were randomly divided into two sessions by the university's registrar's office each year. Each session was taught by the same instructor using the same course materials within the same online course shell. In each course session,

after students reviewed the course lessons and submitted their written assignments before the due dates, the same instructor graded students' assignments based on the same rubric.

Carnegie's principles were used in addition to the regular grading process in the intervention group, while the regular online teaching feedback methods were used in the control group of the same course each year. The university's registrar's office sent students two evaluation surveys for each course at the end of the semester. One survey was to evaluate the course, and another was to evaluate the faculty. The surveys were designed and developed by the university.

2.4. Quantitative Phase

The quantitative phase was a retrospective case-control study (Creswell & Creswell, 2018; Newman, 2001) of the students' final grades and the aggregated course review data for an online course taught in the summer sessions of 2020 and 2021. The courses were selected because they provided an opportunity to compare two groups of students in a natural experiment (Shadish et al., 2001). Cases and controls were students who took different sessions of nursing informatics taught by the same faculty.

2.4.1. Data collection

Students' final grades were retrieved from the grade center of the courses' learning platform. The aggregated survey results were retrieved from the university's registrar's office. To protect students' identities, each student's survey results were not available to the researchers.

2.4.1.1. Instruments

The course evaluation survey is an eight-item form that included statements about the course design and instruction, such as "the level of instruction contributed to my learning," "the assignments contributed to my learning and helped me to gain new knowledge," and "overall, the course met my academic objectives." The questionnaire used a five-point Likert scale. Participants were instructed to state their level of agreement with each questionnaire item, with one representing "strongly disagree" and five representing "strongly agree." The mean across items (reliability: Cronbach's $\alpha = 0.64$) served as the outcome for the variable of the level of course design. Higher scores indicated a higher level of quality in course design and instruction.

The faculty evaluation survey is a six-item form that included statements such as "the faculty member treated students with respect," "the faculty member was prepared," and "overall, the faculty was effective at delivering course content." Students rated the quality of the faculty's teaching on a five-point scale, with one representing "strongly disagree" and five representing "strongly agree." The mean of this scale (reliability: Cronbach's $\alpha = 0.62$) served as the outcome for the variable of the faculty's quality of teaching. Higher scores indicated a higher level of teaching quality. Both surveys have acceptable reliabilities.

2.4.1.2. Data analysis

The data were analyzed using SPSS Statistics (version 26). Descriptive statistics were summarized, including the means of each survey and students' final grades. The mean response scores of students who attended different sessions of the same course were compared using an independent samples t-test for two surveys. Students' final grades in the two sessions were also compared using an independent samples t-test.

2.5. Qualitative Phase

The evaluation surveys sent by the university registrar's office include an open-ended question in each survey asking for students' comments about the course or the faculty members (i.e., strengths and areas of improvement). Students' comments were reviewed and analyzed comprehensively using the content analysis method. Themes of being either positive or negative were generalized. The number of each theme was counted and compared between two sessions of the course each year.

2.6. Mixed Methods Phase

The findings from different data sources were compared. The similarities and differences between the two sets of findings were identified and examined. More insights were generated after this comparison and were elaborated on in the discussion section.

3. Findings

The overall findings are demonstrated in Table 1. The following will describe quantitative, qualitative, and mixed methods findings separately.

Table 1. *Summary of Findings*

Dependent Variables		Group	Quantitative Findings			Qualitative Findings		
			N	Mean	p	N	Positive Comments	Negative Comments
Learning	Final grades	Intervention	54	3.54	0.01	NA		
		Control	54	3.50				
Teaching	Course evaluation survey results	Intervention	22	4.42	0	8	2	6
		Control	22	3.86		10	1	9
	Faculty evaluation survey results	Intervention	20	4.47	0.16	9	6	3
		Control	24	3.80		9	3	6

3.1. Quantitative Findings

Quantitative findings are summarized in Figure 1. Twenty-seven students were enrolled in each session for both years. The students' mean final grades in the intervention group were 93.84% in 2020 and 97.27% in 2021. In the control group, the students' mean final grades were 92.47% in 2020 and 96.22% in 2021. The intervention group's mean final grades in both years (3.54) were significantly higher than the control group's (3.5; $p = 0.01$).

Ten students in the intervention group responded to the course evaluation survey both years, with a 37% response rate. In the control group, 15 students in 2020 and seven students in 2021 responded to the course evaluation survey, with a 41% response rate. The mean of students' evaluation of the course evaluation survey was 4.35 in 2020 and 4.43 in 2021 in the intervention group, with an overall mean of 4.42. In the control group, the mean of students' evaluation of the same survey was 3.56 in 2020 and 4.34 in 2021, with an overall mean of 3.86. The overall mean rating in the intervention group is significantly higher than in the control group ($p < 0.01$).

For the faculty evaluation survey, ten students in the intervention group for both years responded to this survey, with a 37% response rate. In the control group, 15 students in 2020 and 9 students in 2021 responded to this survey, with a 44% response rate. The mean of students' evaluation to the faculty evaluation survey was 4.4 in 2020 and 4.64 in 2021 in the intervention group, with an overall mean of 4.47. For the control group, the mean of students' evaluation of the same survey was 3.64 in 2020 and 4.15 in 2021, with an overall mean of

3.8. The difference in mean scores of the faculty evaluation survey between the two sessions was not significant ($p = 0.16$).
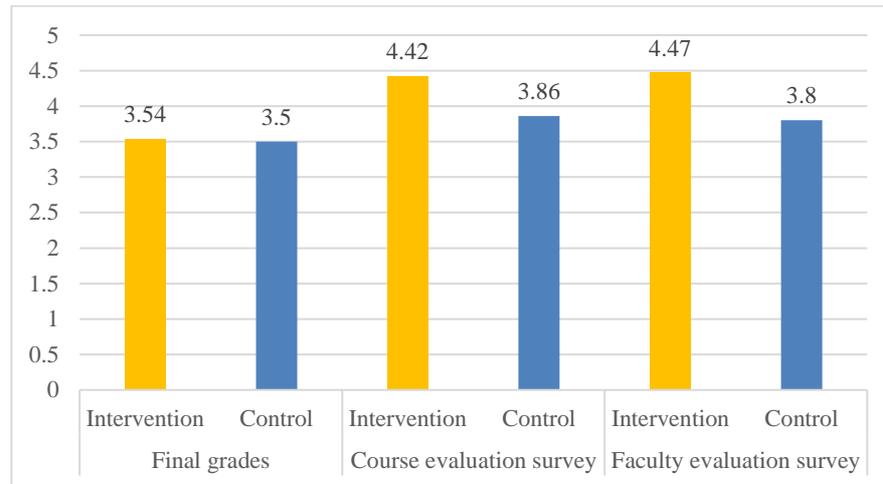
Figure 1 Mean comparison between intervention and control groups

3.2. Qualitative Findings

Qualitative findings are summarized in Figure 2. In the intervention group, four students in both years responded to the open-ended question in the course evaluation survey, with a 15% response rate. Among them, one student provided positive feedback each year, and three students provided negative feedback each year. Four students in 2020 and five students in 2021 responded to the open-ended question faculty evaluation survey, with a 17% response rate. Among them, three students provided positive feedback each year; one student in 2020 and two students in 2021 provided negative feedback. In the control group, four students in 2020 and six students in 2021 responded to the open-ended question in the course evaluation survey, with a 19% response rate. Among them, one student in 2020 and no student in 2021 provided positive feedback. Three students in 2020 and six students in 2021 provided negative feedback. Four students in 2020 and five students in 2021 responded to the open-ended question in the faculty evaluation survey, with a 17% response rate. Among them, one student in 2020 and two students in 2021 provided positive feedback. Three students each year provided negative feedback.
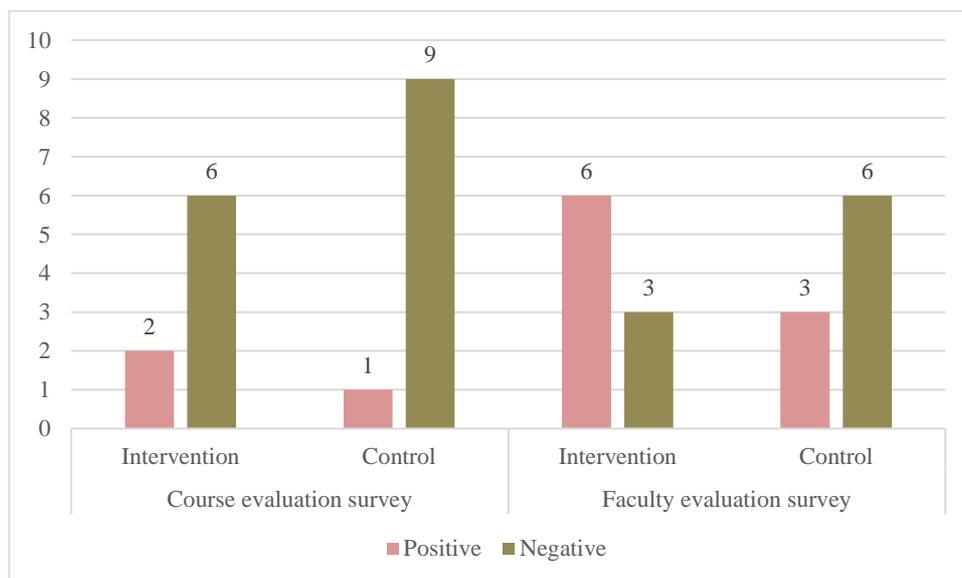
Figure 2 Number of comments comparison between intervention and control Groups

3.3. Mixed Methods Findings

The findings of quantitative and qualitative studies are consistent. Students' final grades and their ratings of the course evaluation survey in the intervention group are significantly higher than in the control group. Students' ratings on the faculty evaluation survey in the Intervention group are also higher than in the control group, although not significant. These quantitative results are consistent with the qualitative results that there were more positive and fewer negative comments in the intervention group than in the control group in both surveys.

4. Discussion

Nursing education not only needs to focus on the course contents but also on teaching strategies for how to deliver the content (Horntvedt et al., 2018). Teaching must include engagement strategies to decrease stress and foster positive emotions (Luo, 2019). Carnegie's principle provides a strategy for students' engagement and relationship building, helping students decrease stress while receiving critiques. This study indicated that students who received Dale Carnegie's principles in teaching showed a significantly higher satisfaction rate with the course and faculty; they had better learning outcomes than students who did not receive instruction according to these principles.

4.1. Students' High Satisfaction Rate

Students' positive learning experiences can be attributed to Carnegie's principles. In general, students' ratings for both the course evaluation survey and faculty evaluation survey were significantly higher in the sessions where Carnegie's principles were used. Students also provided more positive survey feedback in those sessions.

Nursing requires licensure. Standardized exams are commonly used in nursing education to prepare students for licensure exams. The learning process of preparing for the exam typically consists of students identifying errors and learning from them. Accepting constructive criticism can be stressful for students (Luo & Kalman, 2018). The pandemic has increased the stressors on students, such as depression, anxiety, and suicidal thoughts (Wang et al., 2020).

Although the courses mentioned in this article were writing-intensive and had no exams, students might have kept the same exam-taking mindset while working on assignments. In online text-based asynchronous courses that use a writing-to-learning teaching style without any exams, students cannot learn only from teacher's feedback regarding their mistakes. More importantly, they learn from themselves by thinking and writing (Kayaalp et al., 2021). Carnegie's Principles strategically help students focus on their strengths while lightening the stress load. This might be one of the important reasons why students' satisfaction rates with course and faculty were high.

The results indicated that the total number of students who provided negative comments (i.e. 24) was more than those who provided positive comments (i.e. 12). This might be because students who did not earn a desirable grade may be more likely to complain. However, when students earn a good grade, they may prefer to do something else and use minimal effort on the evaluation survey, especially in the nonrequired narrative commenting area.

4.2. Students' Better Learning Outcomes

Carnegie's principles create a positive and mutually trustful learning environment, which helps students engage in the learning process. Positive feedback motivates people to improve in a more vigorous and creative way (Jack Zenger & Folkman, 2013). In a nonjudgmental

atmosphere, students do not have to fear being wrong and being negatively judged while working toward effective solutions to problems in the assignments. When students are involved in encouraging activities they are encouraged, they can think deeply and freely explore new ideas; they are also more likely to invest considerable time and energy into working harder (Guo et al., 2022). This helps explain why the nursing students in the intervention group had better learning outcomes.

5. Conclusion

As an educational strategy, Carnegie's principles significantly improved the quality of teaching and learning in an online, asynchronous setting. Carnegie's principles promote effective teaching methods that help instructors involve nursing students in safe and constructive learning environments. By learning nursing informatics through instructor feedback, students not only had a more positive experience with courses and faculty but also had better learning outcomes than those who received standard online teaching methods.

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