

Congruence of Perceived Effective Clinical Teaching Characteristics Between Students and Preceptors of Nurse Anesthesia Programs

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This study continues landmark research, by Katz in 1984 and Hartland and Londoner in 1997, on characteristics of effective teaching by nurse anesthesia clinical instructors. Based on the literature review, there is a highlighted gap in research evaluating current teaching characteristics of clinical nurse anesthesia instructors that are valuable and effective from an instructor's and student's point of view.

This study used a descriptive, quantitative research approach to assess (1) the importance of 24 characteristics (22 effective clinical teaching characteristics identified by Katz, and 2 items added for this study) of student registered nurse anesthetists (SRNAs) and clinical preceptors, who are Certified Registered Nurse Anesthetists, and (2) the congruence between the student and

preceptor perceptions. A Likert-scale survey was used to assess the importance of each characteristic. The study was conducted at a large Midwestern hospital.

The findings of this study did not support the results found by Hartland and Londoner based on the Friedman 2-way analysis. The rankings of the 24 characteristics by the students and the clinical preceptors in the current research were not significantly congruent based on the Kendall coefficient analysis.

The results can help clinical preceptors increase their teaching effectiveness and generate effective learning environments for SRNAs.

Keywords: Clinical faculty, educational personnel, faculty characteristics, mentoring, nurse anesthesia.

The center of nurse anesthesia education lies in the clinical arena. Interacting with clinical preceptors while observing and taking part in real cases allows students to grow into a professional role, acquire professional and personal skills, and develop attitudes and values believed to be essential for entering the healthcare field.¹ It is important that students feel comfortable in their learning environment while performing clinical skills to successfully enculturate into the healthcare environment. It is also imperative for clinical preceptors to feel confident in their skills and in their abilities to meet the challenge of maintaining patient safety while providing a strong learning experience for students.

Teaching effectiveness of clinical instructors is in many ways pivotal to the quality of education that students gain from the clinical arena.¹ Constructive, positive feedback is essential for both students and clinical preceptors to ensure the ideal learning environment. As a result, being in the clinical setting may provoke stress for students. Students may be nervous about being unable to answer questions, the possibility of unintentionally harming patients, being embarrassed or humiliated by staff in the operating room, and not being able to work at a rapid, efficient pace. Cook,² in a review of the literature regarding student anxiety in the clinical arena, found that the

major factor affecting anxiety among students was how they perceived their clinical preceptors' teaching style and attitudes toward the students. Students' anxiety levels, in turn, influenced their ability to learn and perform safely and effectively.² Therefore, this current study is important to identify up-to-date clinical teaching characteristics to ensure the most effective training for each new generation of nurse anesthetists and their clinical preceptors.

The current study continues a line of research begun in 2 landmark studies published by Katz³ in 1984 and Hartland and Londoner¹ in 1997. Katz³ sought to define characteristics of effective clinical instructors in the field of nurse anesthesia. Hartland and Londoner¹ further explored the 22 characteristics that emerged from Katz's research to determine the importance of each characteristic as perceived by nurse anesthesia program directors, Certified Registered Nurse Anesthetist (CRNA) clinical instructors, first-year student registered nurse anesthetists (SRNAs), and second-year SRNAs.

Healthcare has been affected by major change over the past 14 years since Hartland and Londoner's research. Yet little follow-up research has been conducted to examine whether the 22 characteristics identified by Katz remain important and whether the perceptions of students and instructors as identified by Hartland and Londoner have changed. The current study aims to fill the gap. Its ob-

jectives are first, to determine how today's students and clinical preceptors rate the importance of each of Katz's items, along with 2 items not studied by Katz (but deemed important by the researchers), and second, to identify the degree of congruence between the perceptions of clinical instructors and first- and second-year SRNAs. Based on the literature review, current research has led the researchers to believe that mentoring in the operating room and a preceptor education course should be added as characteristics and reviewed in this study. The results are important to help today's clinical preceptors adjust to the changing healthcare environment so that they can increase their teaching effectiveness and generate effective learning environments for current SRNAs.

History and Review of Literature

As noted above, Katz's³ pilot study identified characteristics of effective clinical instructors in the nurse anesthesia setting as perceived by nurse anesthetists and physicians (not identified as anesthesiologists in the study, but described as physician clinical instructors). Katz presented respondents with 22 characteristics that were potentially descriptive of clinical nurse anesthesia faculty, and asked them to rate each on a 5-point Likert scale (*not at all descriptive, rarely descriptive, descriptive, frequently descriptive, extremely descriptive, and not applicable*). The 22 characteristics shown in Table 1 were rated as important by the nurse anesthetists, physicians, or both. The findings showed that the nurses and physicians relied on different characteristics to distinguish between the best and worst clinical instructors. For the nurse anesthetists, empathy and respect were the top-rated characteristics. Other characteristics included scholarly teaching/knowledge, clinical competence/judgment, effective evaluation/counseling, and appropriately encouraged independence. The physician group, in contrast, identified open-mindedness as the top-rated characteristic; this was followed by enjoyment of teaching, clinical competence/judgment, ego strength/self-assurance, positive approach, stimulation of effective discussion, empathy/respect, and not being belittling or threatening. A potential difference between the CRNAs and the physicians may be that CRNAs tend to work more directly with students than their physician counterparts.

Hartland and Londoner¹ subsequently examined the perceived importance of the 22 characteristics identified by Katz's study among 4 professional groups: program directors, CRNAs, and first- and second-year SRNAs. This study was also conducted by means of a questionnaire with a Likert-type rating of the characteristics as *somewhat important, important, very important, highly important, and critically important*. A random sample of 200 CRNA clinical instructors, 200 students, and all program directors of accredited nurse anesthesia programs across the United States were surveyed. The results of this study

1. Clinical competence/judgment
2. Calm during times of stress
3. Ego strength/self-assurance
4. Flexibility
5. Appropriately encourages independence
6. Engenders confidence
7. Motivates students
8. Empathy/respect
9. Evaluation/counseling
10. Enjoys teaching
11. Stimulates student involvement
12. Positive role model
13. Open-minded
14. Sensitivity
15. Scholarly teaching/knowledge
16. Accessibility
17. Communication skills
18. Individualizes teaching
19. Timely feedback
20. Actively teaches
21. Stimulates effective discussions
22. Use of student care plans

Table 1. Clinical Characteristics in Survey

Source: Katz.³

supported Katz's findings in that the 4 groups agreed that all 22 characteristics were important and were in overall agreement about the relative importance of each one. Interestingly, this congruence proved contrary to previous research. Hartland and Londoner¹ suggested that their common clinical experience in nursing school, as well as previous work experience and the possibility of having worked as a preceptor for nursing students in prior employment may have led the students, CRNAs, and program directors to share certain perceptions about what makes an effective clinical instructor. The authors discussed implications for further research and for initiating faculty development interventions to strengthen teaching strategies. They pointed out that their results can serve as a trial marker for further research into clinical teaching excellence of nurse anesthetists.¹

Ramsborg and Holloway⁴ conducted a study on the congruence of SRNAs, clinical instructors, and student graduates regarding characteristics of positive and negative learning experiences. Their survey, submitted randomly to nurse anesthesia schools across the country, presented written scenarios that respondents were asked to describe as positive or negative learning experiences based on a 4-point scale assessing the behavior of the instructor and student involved. The content of the written scenarios highlighted clinical problems, such as

responsibility for procedures or patient difficulty, and instructional problems, such as instructor or student attitudes. In each case, participants were asked to rate the learning experience based on the behavior of the instructor and student involved without the specific problem at issue being identified as such. Clinical instructors viewed positive learning experiences as stemming from student motivation and enthusiasm for learning as well as the ability to correlate and apply didactic material to the clinical situation. Students and graduates identified positive learning environments in cases when instructors projected confidence in their practice while also offering them a degree of independence. With regard to negative learning experience, several students attributed these to the instructor's failure to offer support when a problem occurred or when the instructor berated a student's novice judgment. For clinical instructors in this sample, negative learning experiences involved students presenting with a "know-it-all" attitude while failing to meet expectations. Despite their different perspectives, however, the students, graduates, and clinical faculty were in overall agreement on which scenarios represented positive and negative learning experiences.

Cook² studied baccalaureate nursing students' perceptions of effective teaching behaviors and students' anxiety levels while interacting with clinical faculty. When students perceived faculty as showing respect, expressing approval with the clinical group, selecting appropriate assignments, and acting friendly and trustful toward students, they reported lower anxiety levels and, therefore, better learning environments. Conversely, when students viewed faculty as impolite, difficult to approach or talk to, and treating students as if they were irresponsible, students' anxiety levels increased, making it difficult to concentrate and to perform well in the clinical setting. The authors recommended that clinical faculty should strive to consciously and consistently exhibit inviting teaching behaviors in order to help students manage their anxiety while engaged in clinical learning experiences.² However, this study had a weakness in that it included only the population of undergraduate nursing students. As Hartland and Londoner found, the undergraduate nursing students appear to have different perceptions than graduate nursing students based on their different levels of previous clinical experience.

Meno et al³ explored students' perception of mentoring in the operating room. This descriptive research surveyed SRNAs in an effort to identify characteristics that differentiate the roles of clinical mentor vs educator. Most students reported an existing mentor program in place at their university, usually a senior student paired with an incoming student. It appeared to be rare for students to have an individual CRNA mentor throughout the program. The results showed that SRNAs believed they benefited from having a mentor, and that CRNAs

were regarded as the best mentors compared with anesthesiologists and nonanesthesia providers. The authors found that for all 3 types of mentors, the 3 descriptors or characteristics, based on those from Hartland and Londoner's research, that students deemed most important were knowledgeable, approachable, and encouraging. The results of this study were supported by previous findings in the literature and suggested that clinical mentoring is of great value for SRNAs' learning environment. The authors noted that more research was needed to determine the best method for implementing a mentorship program and how the program can best benefit SRNAs.

Elisha⁶ recently conducted an exploratory study designed to determine the effectiveness of an 8-hour educational class that used "active learning" principles to modify the teaching behaviors of CRNAs. Active learning is a method of instruction often used with adults because it introduces concepts in a contextual manner that is applicable to real-life situations.⁶ The study was designed as a follow-up to previous research that identified active learning as a way to improve the teaching strategies of CRNA clinical instructors. The 8-hour course designed by Elisha was intended to teach CRNA instructors the principles of adult learning, how to establish positive teacher-learner relationships, provide positive feedback, and conduct student evaluations. Before the course, senior and junior SRNAs were polled to determine the least beneficial behavior of CRNA instructors; the respondents unanimously agreed that the worst behavior was expressing a degrading or demeaning attitude, whether communicated verbally or nonverbally. Upon completion of the course and during the 2 months following completion, CRNA participants' behaviors and knowledge were positively influenced, and they felt more confident in their ability to practice anesthesia and to teach students. However, the CRNAs were less receptive to changing teaching practices based on the students' individualized needs, which was stressed in the course.

There is limited recent research identifying current effective characteristics of nurse anesthesia clinical faculty and how students perceive these characteristics as contributing toward their education. This study aims to fill this need.

Materials and Methods

- **Study Design.** This study used a descriptive, quantitative research approach to explore how SRNAs and clinical preceptors perceive the 22 effective clinical teaching characteristics identified by Katz in 1984. The study examined (1) the individual importance of each characteristic as perceived by SRNAs and CRNA preceptors and (2) the level of congruence between the 2 groups. The study's design mirrored Hartland and Londoner's research of 1997.

The study was conducted at a large Midwestern teach-

SRNA	CRNA
<ul style="list-style-type: none"> • Age • Gender • Professional status (first-year or second-year SRNA) • Number of days per week receiving clinical instruction • Number of months enrolled in the nurse anesthesia program 	<ul style="list-style-type: none"> • Age • Gender • Professional status (CRNA) • Number of days per week participating in clinical instruction • Number of years participating as a clinical instructor

Table 2. Demographic Information Collected

Abbreviations: SRNA indicates student registered nurse anesthetist; CRNA, Certified Registered Nurse Anesthetist.

ing hospital that employed approximately 125 CRNAs. The study was completed at this hospital for the convenience of accessibility to the target population. The target population was first-year and second-year SRNAs enrolled in an integrated Graduate Program of Nurse Anesthesia at an affiliated university as well as the CRNA preceptors who worked at the hospital and participated in clinical teaching at the hospital. Most of the clinical experiences for the SRNAs were performed at this hospital. Institutional review board approval was obtained at both the participating university and hospital.

• *Methods.* Data were obtained from a questionnaire distributed to 125 CRNAs and 50 SRNAs at the participating hospital and university. The dependent variables were measured using a tool developed by Hartland and colleagues from Katz's previous research. This scale had established reliability and validity using a test-retest procedure. Reliability was determined using a test-retest procedure, with a resulting 0.66 mean interrater reliability coefficient.¹ Participants were asked to rate 24 characteristics—the 22 identified by Katz (Table 1), plus 2 added for the current study—along a 5-point Likert scale with 1 = *somewhat* important, 2 = important, 3 = *very* important, 4 = *highly* important, and 5 = *critically* important. The 2 additional characteristics were *participation in a preceptor educational course* and *mentoring style*. The researchers deemed these characteristics important because of evidence-based research. Meno et al⁵ linked Hartland and Londoner's¹ characteristics in their research and discussed the great value of mentoring in the operating room. Elisha⁶ evaluated a clinical education course to help improve teaching strategies for CRNA preceptors, which was stressed as important by the junior and senior SRNAs that were polled in the research. Definitions were provided in the current survey for *mentoring style* and *preceptor education course* for clarification and uniformity. All data collected maintained confidentiality, and participation was completely voluntary by participants.

Demographic information was collected from the participants. The demographic information is presented in Table 2.

• *Data Analysis.* Data analysis was performed using statistical software (SPSS Predictive Analytics Software,

SPSS/IBM Corp, Chicago, Illinois). The researchers calculated the mean scores given by the CRNAs and students for each of the 24 characteristics studied. The researchers further used Friedman 2-way analysis to establish the order of importance for the 24 characteristics for each of the 2 individual groups. Then the Kendall coefficient analysis was used to determine the congruence of 2 sets of ranking of the characteristics.

Results

A total of 175 surveys (125 CRNAs, 50 SRNAs) were distributed for this study, and 95 were returned, a response rate of 54%. Six of these surveys were unusable because of missing data, leaving a total of 89 surveys for data analysis. The demographic data are shown in Table 3.

An analysis of variance demonstrated a high level of consistency within each of the groups (Friedman test, 289.21; at $P < .001$). When the Kendall coefficient analysis was used to determine the congruence of 2 sets of ranking, the results did not support high agreement between the groups' overall rankings of the characteristics (Kendall coefficient, 0.145), compared with the findings of Hartland and Londoner. Tables 4 and 5 present the scores arranged in descending order for the students and instructors, respectively.

Discussion

This study reexamined the perceived importance of 22 items shown by Katz³ to be indicative of effective clinical teaching by nurse anesthetists. It also examined the congruence of perceptions regarding effective teaching characteristics between today's SRNAs and clinical preceptor CRNAs, particularly in comparison to the Hartland and Londoner¹ study of 1997. In comparing the 2 studies, Hartland and Londoner¹ randomly sampled 200 CRNA clinical instructors, 200 students, and all nurse anesthesia program directors from accredited civilian nurse anesthesia programs throughout the United States. Theirs was a much larger sample size than in the current study, which sampled only 1 integrated nurse anesthesia program. In addition, they sampled a variety of program types (integrated vs front-loaded), with a greater response rate of 73.4% for final data analysis.¹ This contributed to the possible variation in statistical results. However, the data

Demographic information	SRNAs	CRNAs
Age	23-45	25-65
Female gender (%)	77.4	79
No., by professional status	First-year students: 11 Second-year students: 20	64
Time in clinical (d/wk)	First-year students: 1-3 Second-year students: 4-5	1-3
Months in program	First-year students: < 10 Second-year students: > 11	NA
Preceptor experience	NA	1-16+ (most had < 3)

Table 3. Demographic Data

Abbreviations: SRNA indicates student registered nurse anesthetist; CRNA, Certified Registered Nurse Anesthetist; NA, not applicable.

Rank	Characteristic	Mean
1	Stimulates student learning involvement	4.39
2	Appropriately encourages independence	4.32
3	Motivates students	4.29
4	Engenders confidence	4.26
5	Calm during times of stress	4.26
6	Clinical competence/judgment	4.23
7	Flexibility	4.23
8	Enjoys teaching	4.10
9	Ego strength/self-assurance	4.07
10	Open-minded	4.03
11	Individualizes teaching	4.00
12	Empathy/respect	3.97
13	Preceptor educational course ^a	3.40
14	Actively teaches	3.84
15	Evaluation/counseling	3.84
16	Communication skills	3.74
17	Stimulates effective discussions	3.65
18	Mentoring style ^a	3.65
19	Sensitivity	3.65
20	Accessibility	3.58
21	Positive role model	3.58
22	Timely feedback	3.26
23	Scholarly/knowledge	3.23
24	Use of student care plan	3.23

Table 4. Students' Mean Score Rank Order of Characteristics Perceived as Indicative of Effective Clinical Instructors

^a Indicates questions added to the survey for future research and discussion (not included in original survey by Katz³).

Rank	Characteristic	Mean
1	Clinical competence/judgment	4.31
2	Ego strength/self-assurance	4.17
3	Calm during times of stress	4.13
4	Appropriately encourages independence	4.06
5	Stimulates student involvement	4.05
6	Flexibility	3.98
7	Motivates students	3.98
8	Positive role model	3.91
9	Evaluation/counseling	3.77
10	Individualizes teaching	3.67
11	Actively teaches	3.67
12	Enjoys teaching	3.64
13	Accessibility	3.61
14	Timely feedback	3.59
15	Open-minded	3.59
16	Engenders confidence	3.56
17	Stimulates effective discussions	3.56
18	Empathy/respect	3.39
19	Communication skills	3.38
20	Mentoring style ^a	3.33
21	Scholarly teaching/knowledge	3.33
22	Use of student care plan	3.20
23	Sensitivity	3.08
24	Preceptor educational course ^a	2.95

Table 5. Nurse Instructors' Mean Score Rank Order of Characteristics Perceived by CRNAs as Indicative of Effective Clinical Instructors

^a Indicates questions added to the survey for future research and discussion (not included in original survey by Katz³).

collected in this survey may still prove to be valuable for future research.

With regard to the first objective, the current study showed that all 22 of Katz's characteristics are perceived

to be important by both clinical instructors and students. Looking at both groups together, the mean scores for the 22 characteristics and the 2 additional discussion items ranged from less than 3 to nearly 4.4 on a 5-point Likert

scale. That is, most respondents rated each of these items as important, very important, or highly important.

With regard to the second objective, the results of the current survey were not congruent with the findings of Hartland and Londoner. The Kendall coefficient for the current research indicates that the 2 groups differed significantly in their rankings of the characteristics under study. Hartland and Londoner, in contrast, found absolute homogeneity between their groups. However, no previous study had shown that level of congruence between professional groups, usually consisting of students vs faculty and directors.

It is worth noting that despite the differences in the rankings overall, 3 characteristics scored in the top 5 for both groups. Two of these, *stimulates student involvement* and *appropriately encourages independence*, were ranked first and second, respectively, by SRNAs and ranked fifth and fourth by CRNAs. These results underscore the importance, recognized by both groups, of giving SRNAs a measure of autonomy in the clinical setting. Most adult learners are hands-on learners, and being able to act independently in the clinical setting helps them build and retain the skills necessary for success as future CRNAs. The third characteristic ranked in the top 5 by both groups was *calm during times of stress*, highlighting the observation that a calm demeanor in the operating room provides a better learning environment for both parties involved.

Two items appeared in the bottom 4 characteristics for both groups: *scholarly teaching/knowledge* and *use of a student care plan*. The latter result is surprising. The student care plan is a traditional part of the SRNA training, whereby the student is typically expected to present at least 1 written patient-specific or case-specific anesthetic care plan for each clinical day. The low ranking of this item (ranked last by the students and second-to last by the CRNAs) suggests that it is worth reconsidering the effectiveness or importance of care plans to clinical training practice. Skill at preparing written care plans may not be a vital measure of whether a student knows how to provide anesthetic safely and competently. Regardless of whether a care plan is used, preparation in the clinical setting is demarcated by the performance of the student and his or her ability to engender sound clinical interventions.

For today's students, this study has identified new ideas and suggestions to improve learning in the clinical setting. The *AANA Journal* has recognized some of these suggestions in previous publications, commencing with Katz and Hartland and Londoner's research studies. As described above, Elisha⁶ discussed the use of an active learning curriculum to help prepare CRNAs to become more knowledgeable and perceptive as clinical instructors. The research by Meno et al⁵ suggests that students with mentors perform better in their programs than students without mentors.

The survey used in the current research addressed the importance of preceptor education and mentoring through 2 items added to Katz's original list. The first item, *mentoring style*, was designed not to measure whether mentoring per se was seen as valuable, but whether students or instructors regarded as crucial a consistent one-to-one mentoring style (the same mentor assigned to each student for the full length of the program). A definition of *mentoring style* was included in the survey question to clarify any alternate definitions that may have confused the survey participant. *Mentoring style* was ranked 18th and 20th by the SRNAs and CRNAs, respectively, suggesting that one-to-one mentoring is not necessarily essential for improving student learning in the clinical setting. This point is valid in part because students feel that it is advantageous to work with various CRNAs to diversify their learning experiences.

The other added item, *preceptor education*, was ranked 13th by the students and 24th by the CRNAs. Again, a definition of the preceptor education course, as described by Elisha,⁶ was included in the survey for clarification. This definition described the preceptor educational course as a tool to help teach CRNA instructors the principles of adult learning, how to establish positive teacher-learner relationships, provide positive feedback, and conduct student evaluations in the operating room. These results warrant some consideration. The students ranked *preceptor education* near the middle in terms of importance, suggesting that students tend to feel CRNAs could benefit from training in how to meet students' learning needs in the clinical setting. With regard to the CRNAs, remember that this group ranked *clinical judgment* and *competence* first in importance in the survey. It may be that it is difficult for nurse anesthesia instructors to see the value of education or a course designed to focus on teaching CRNA preceptorial skills rather than assessing clinical competencies. Although CRNAs are competent practitioners, they may not always be effective preceptors for students in the operating room. The educational course is a valid point because of the fact that this study also identified similar results to Elisha's⁶ previous research.

The current study had some limitations: its small sample size, one type of educational setting (integrated program), and only one facility. The results may not apply to didactic nurse anesthesia educational programs. However, the findings warrant further research into ways to improve education in the clinical setting. One key area for research this study suggests is the use of a written student care plan. Another is the effectiveness of a teaching curriculum for CRNA clinical instructors—especially one that would focus on how to allow students greater autonomy in the operating room, because the characteristic of autonomy (*appropriately encourages independence*) ranked second by the students in our sample.

Conclusion

This study found little congruence between the teaching characteristics perceived as most effective by SRNAs and clinical preceptors. Clinical experience and the effectiveness of the clinical instructor are instrumental in creating a successful nurse anesthesia program. We hope that this study will help today's preceptors better understand their students' needs in order to more efficiently educate, mentor, and guide them throughout their academic program.

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