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Research Article

Development and Application of a Written Communication Rubric to Improve Baccalaureate Nursing Student Writing

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Aims. Baccalaureate nursing students often enter nursing programs with varying degrees of writing skills. The use of formative assessment can provide students and faculty with information to act upon during a course and improve learning. This study aimed to test the use of a program-level written communication rubric as a formative assessment to be able to provide targeted interventions for improvement as part of curricular evaluation. *Methods*. A written communication rubric (14 criteria with scores ranging from 1–4) was applied twice during the semester to assess the writing assignments of 33 undergraduate nursing students enrolled in a nursing research course. A targeted intervention was designed and implemented based on deficient aggregate assessment results from the first student assignment. *Results*. Paired *t*-test analysis demonstrated a significant upward change in student performance in the second student assignment for all seven of the targeted competency scores (all $p < 0.05$). *Conclusions*. The use of a program-level rubric as a formative assessment paired with a targeted intervention improved the writing skills of nursing students during a single semester. By harnessing the tools of online learning management systems, faculty can quickly identify specific challenges for students in academic writing. There is potential for formative assessment to be used by faculty and students to direct the ongoing development of writing skills both during a course and throughout the program of study.

1. Introduction

The American Association of Colleges of Nursing [1] identifies communication as an essential concept in the latest update to their document, The Essentials: Core Competencies for Professional Nursing Education. The Essentials document contains guidelines for providing quality in nursing education within a competency-based framework [1]. The development of effective written communication can contribute to critical thinking skills that are needed in clinical nursing practice [2]. Competency in written communication is an integral component of an undergraduate nursing degree, not only to be used in the future workplace but also in the preparation for graduate education [3].

Undergraduate nursing students often arrive at nursing programs with varied competencies in academic writing. Some of the main challenges noted in the literature are style guidelines, grammar, and writing mechanics [2, 4]. While writing is often threaded throughout the nursing curriculum, addressing problem issues early in the program so that students can make changes and gain confidence in their writing ability is a key step toward improving written communication skills [4]. Within courses, repeated feedback through structured formative assessment is one way to help build learners' writing skills.

Formative assessment is the process of monitoring student learning to identify gaps so they can be addressed in a timely manner [5]. Formative assessment can provide both students and faculty with information that informs and improves learning during a course [6]. Faculty are able to address gaps in scholarly writing for undergraduate nursing students at multiple points during the course, which empowers students to incorporate feedback before the next written assignment is duemid-term. One method of providing such feedback is through the use of rubrics.

Rubrics are useful tools for setting students' expectations of writing, by assessing their current level of skill and providing direction for future writing [7]. A rubric gives students clear guidance as to what is considered below expectations, meeting expectations, and exceeding expectations for a given assignment. This, in turn, alleviates some of the potential confusion a student may have [8]. Well-designed rubrics explicitly linked to learning outcomes contribute to a reduction in student anxiety about an assignment and also facilitate consistency in grading among faculty when courses are team-taught [8]. Rubrics deliberately aligned to learning outcomes give faculty a tool to ascertain whether students are meeting performance goals [8]. Additionally, clear documentation of outcome performance contributes to effective program assessment.

2. Materials and Methods

2.1. Aims. This study aimed to test the use of a program-level written communication rubric as a formative, aggregate assessment of undergraduate nursing student writing competency. One goal was to examine the effectiveness of the rubric for adequacy in identifying common areas of weakness in order to provide group feedback for improvement. Researchers also sought to determine whether such targeted intervention would improve performance. Furthermore, the researchers sought to validate the minimum standard score established by the written communication rubric for baccalaureate nursing students as part of real-time program assessment.

2.2. Research Design. This pilot study employed a pretest and posttest design, utilizing a written communication rubric to assess student writing. Two faculty researchers assessed student performance before and after an education intervention targeting areas of student cohort weakness as identified by the rubric.

2.3. Setting. This study took place in an introductory nursing research course at a large state-sponsored university in California. This course is considered writing intensive and is situated in the junior year of the Bachelor of Science in Nursing (BSN) program. As part of course requirements, students must adhere to the American Psychological Association (APA) style and complete a series of written papers. During the semester in which the assessment occurred, the course was team-taught by several faculties in a fully online format utilizing the Canvas learning management system by Instructure.

2.4. Population and Sample. The sample consisted of all 33 undergraduate nursing students enrolled in the required nursing research course. In an analysis of data self-reported to the university, 36% of student subjects were Asian, 36% White, 21% Hispanic, and 6% African American. Among the cohort, 82% were self-identified as female, 48% were first-generation college students, 45% were eligible for federal financial aid, and 9% already had a bachelor's degree.

2.5. Intervention. Together, we created a rubric to establish consistent written communication competencies that could be used for assessment at the program level. Criteria were developed to set benchmarks for students in both the BSN and Master of Science in Nursing (MSN) programs in the School of Nursing, followed by initial testing of the rubric at the undergraduate level. This pilot rubric was modified from the Written Communication VALUE Rubric created by the American Association of Colleges and Universities (AAC&U) [9] and also influenced by current nursing program grading rubrics and the university's written communication rubric. The AAC&U, through Creative Commons licensing, permits faculty to adapt the Written Communication VALUE Rubric for institutional-level use with proper attribution (https://www.aacu.org/initiatives/value-initiative/value-rubrics/value-rubrics-written-communication). To enhance pilot rubric validity, it was presented for critique to the program review committee within the school and to institutional assessment faculty outside the discipline.

The newly created rubric established numeric whole scores ranging from 1 (lowest) to 4 (highest) representing increasing written communication competency across six outcomes subdivided into 14 measurable criteria. For this project, a numeric score of 2 was set as the minimum competency level for the BSN student for each criterion. A glossary was included as part of the rubric for consistency of definitions. The pilot rubric was added to the outcomes function in the Canvas learning management system at the departmental level and then pulled into a scoring rubric attached to two major course writing assignments to allow faculty to assess student work [10]. Within this learning management system, outcomes scoring results are then visible in a unique Learning Mastery Gradebook to track individual and aggregate student performance throughout the semester for each rubric criterion [10].

For this pilot study, the written communication rubric was used by the researchers to assess the writing of each student on the two major papers in the course. Students were asked to submit a copy of their papers to separate assignment dropboxes where they could see the pilot rubric. Students were not advised of the minimum competency score set by the researchers. To make clear this rubric was not a course requirement, students were advised in the written instructions that evaluation would be for program evaluation purposes, would not impact their course grade, and would not be visible in the online gradebook. Students were provided the usual assignment-specific rubrics used for grading within the original assignment submission dropboxes, and all written and verbal instructions reinforced the purpose of the separate submissions. Table 1 demonstrates a sample of the minimum satisfactory criteria for the assignment-specific grading rubric compared with the minimum competency criteria pilot rubric applied in this study. The authors completed a series of shared reviews

Table 1: Sample minimum criteria for grading rubric vs. pilot rubric.

Criteria	Assignment-specific rubric minimum BSN satisfactory criteria	Written communication rubric minimum BSN competency criteria
Introduction	Elucidates topic but not key question(s). Describes subtopics to be reviewed. General thesis statement evident	General thesis statement evident. Elucidates topic but not key question(s). Describes subtopics to be reviewed
Topic and closing sentences	Some topic and closing sentences are specific to the main point of the paragraph. Some attempts at tying the main points back to thesis	Some topic sentences are specific to the main point of the paragraph. Some attempts at tying main points back to thesis. Topic and closing sentences do not always connect paragraphs and ideas
Overall focusing and sequencing	Most material is clearly related to the main topic but may not be organized within subtopics. Attempts transitions, with some variety	Generally organized and focused within subtopics. Attempts transitions, with some variety
Support	Sources used to support thesis, but weakly related. Sources are generally acceptable but not all peer-reviewed (evidence-based) research	Attempts to use credible and/or relevant sources to support ideas related to the genre of the writing. Sources are generally acceptable but not all peer-reviewed, evidence-based research
Conclusion	Review of key conclusions is present. Some integration with thesis statement. Some discussion relevant to impact of research material on topic	Review of key conclusions. Some linkage to thesis statement. Some discussion relevant to impact of research material on topic
Grammar and mechanics	Grammatical errors or spelling & punctuation substantially detract from reading the paper; reader's understanding is substantially compromised	(Mechanics) Demonstrates adequate control of mechanics, although errors may impede understanding (Syntax) Language generally conveys meaning with clarity, but sentence fragments, run-on/awkward sentences detract from flow
Communication and APA style	Word choice is informal in tone. Writing is choppy, with many awkward or unclear passages. Errors in APA style detract substantially from reading & understanding the paper	(General formatting/APA) Majority all of paper adheres to APA format throughout paper as prescribed for assigned task. Majority of APA elements included for title page, running head, headings, indentation, line spacing, margins, etc. (Active Voice) Uses active voice, when appropriate for the genre, but relies on passive language excessively
In-text citations	Two citation formatting errors (APA) and/or two missing in-text citations	Majority of in-text citations correctly written in APA format. Majority of statements appropriately credit the ideas of others
APA reference list	Some references incorrectly written in APA format. More substantial errors	Reference list includes all sources cited within the paper. Majority of references correctly written in APA format. More substantial errors

initially to promote interrater reliability. As previously noted, students did not see their scores from the pilot written communication rubric but did receive the usual faculty grading feedback.

Student performance was scored on the first paper using the pilot rubric. One or more students failed to meet the minimum scoring standard for half of the 14 criteria on the rubric. A total of 3% to 39% of students were deficient in one or more of the following rubric competencies: Disciplinary Awareness (utilization of conventions particular to nursing such as professional tone), Content Development (use of content to convey meaning), General Formatting (APA), Introduction (the introductory section of the paper), Overall Focusing and Sequencing, Conclusion (the conclusion section of the paper), and In-Text Citations (APA). The two worst performing criteria at the individual level were Introduction (15% of students scoring <2) and In-Text Citations (39% of students scoring <2). A series of five short videos were then created by faculty to target the subminimal competencies, including APA formatting, common errors in scholarly writing, in-text citations, and reference lists. These videos were posted in the online course for asynchronous student review and made available in advance of the due date for the second major paper. The same written communication rubric was applied to assess the final paper before comparing scores to those from the first paper to determine the effect of the targeted intervention.

This study was submitted to the University's Institutional Review Board (IRB) and was approved as a program evaluation activity.

2.6. Data Analysis. The paired samples *t*-test was conducted to determine whether there were significant differences between the pretest and posttest of the sample on the overall rubric and individual criterion scores. Data analysis was conducted using IBM SPSS Statistics (Version 28.0).

3. Results and Discussion

Students demonstrated improvement in written communication scores from the first to the second paper. Every student who did not meet the minimum expected level of competency on the first paper successfully met the goal by the second paper. As well, each individual student in the sample achieved a score of at least 2 on all 14 outcome criteria. Statistical analysis demonstrated a significant ($p < 0.05$) upward change in student performance on the seven targeted competency scores as presented in Table 2. The targeted criterion with the lowest initial group mean score (In-Text Citations) increased by over a point (+1.12 points) in the final measurement on the 1- to 4-point scale, while the smallest improvement (+0.35 points) occurred in the criterion with the highest initial group mean score (Overall Focusing and Sequencing). Furthermore, mean scores showed statistically significant improvement in all but one criterion (References) out of the 14 total measurable criteria on the rubric.

4. Discussion

The results of the study indicate that a program-level written communication rubric can successfully be used to help identify common areas of weakness, allowing for targeted interventions for improvement. These findings are similar to those experienced by faculty who derive great benefit from administering formative quizzes to diagnose problem topic areas in a course [6]. While it may be typical for faculty in team-taught courses to discuss anecdotal impressions of deficient student performance on writing assignments, the application of a rubric resulted in actionable numeric findings available to all faculties in the course. The time required to develop a sound writing rubric is worthwhile as it allows faculty to evaluate the linkage between learning and instruction for impactful change [6, 11]. In this project, assessment findings were presented at once in a systematic and straightforward way by utilizing previously untapped tools in the learning management system. Individual scores not meeting standard were color-coded to indicate the deficiency at a glance and aggregate criterion competencies for enrolled students were visually displayed through an annotated pie chart. Having this kind of familiar, interactive dashboard can prove efficient in highlighting concerns for busy nursing faculty.

When comparing the criterion scores between the first and second papers, there was a significant improvement in student scores so that all students ultimately achieved the designated outcomes for writing competency. The results demonstrate the effectiveness of providing targeted student support based on real-time, formative assessment data. Online tutorials designed to meet specific student needs have been shown to improve student writing and are beneficial to student success [3]. With increasingly online modes of course delivery, this study suggests favorable results in academic writing that can be achieved with video tutorials. Prompt adjustment of teaching strategies is an important advantage of formative assessment [6], and faculty can take advantage of learning management system tools in this regard.

Program-level assessment of written communication can be challenging. As nursing programs move toward a competency-based educational framework, faculty should look to evaluate these competencies throughout the curriculum [12]. By creating a written communication rubric that conforms with curricular outcomes, it may be implemented in multiple courses with the ability to track student performance from semester to semester. Faculty can also embed selected components into the scoring rubric for both small and large formative assessments to show student progress in skill development with consistent feedback. A chief advantage of this strategy is the ability to pull data at any point rather than waiting to assess curricular outcomes after a course or program has finished. Program evaluation is the opportunity to identify both strengths and weaknesses, and it should be noted that the faculty in this pilot project was able to use formative assessment findings to validate improvement in areas where students already met minimum standards yet continued to develop their writing skills.

Table 2: Change in writing competency aggregates scores preintervention and postintervention.

Writing competency	Paper 1 mean score	Paper 2 mean score	p value
Disciplinary awareness	2.21	2.76	<0.001*
Content development	2.30	2.79	<0.001*
General formatting	2.36	3.30	<0.001*
Introduction	2.12	2.82	<0.001*
Overall focusing and sequencing	2.52	2.88	<0.001*
Conclusion	2.45	2.85	<0.001*
In-text citations	1.73	2.85	<0.001*

*Significant at $p < 0.05$.

Ongoing faculty participation in timely, continuous program improvement is a best practice [12].

The analysis was limited to a small convenience sample from a single course in the BSN program at one university. While this study focused on the use of the pilot rubric at the BSN level, the rubric was designed to be used across all programs including the MSN program. The AACN Essentials are broken down into competencies in ten different domains, all of which pertain to both undergraduate and graduate nursing education with two different sets of expectations dependent on the level of the program. In terms of written communication, a key Essential is Domain 4: Scholarship for the Nursing Discipline, which contains subcompetencies related to communication of others' research findings (entry level) and engagement in and dissemination of personal scholarship (advanced level) to advance the profession of nursing [1]. The rubric recognizes this with a higher minimum competency for MSN students to address this domain and prepare students for later scholarship. The rubric was developed as a tool to be used across curricula, and expectations might differ for nursing faculty with dissimilar program frameworks and outcomes. Although steps were taken to support consistency in scoring between the two researchers reviewing the papers, repeated testing is needed to establish the reliability of the newly created rubric. Individual faculty is encouraged to tailor rubrics to their specific course and program needs.

In order to be effective, rubrics should be well-designed and user-friendly. The pilot rubric, based on a well-established tool from the AAC&U, follows recommendations for structure by identifying performance levels and articulating the skills necessary within criteria across each level [7]. Further edits would help to clarify and simplify the language to improve utility and meaning for both faculty and students. Standardized writing rubrics have been shown to improve consistency in grading among faculty while still allowing for flexible application to a variety of writing exemplar types [13]. Additional pilot testing of the rubric with alternate writing assignments would allow for rubric refinement.

This was a pilot study, and thus, the visibility of the rubric assessment results was limited to faculty. Future research and use of the rubric would include visibility to the students. Applying consistent formative assessment has been shown to improve students' self-assessment and positively influence their study habits [6]. Integration of a program-level written communication rubric into assignment grading would allow students to identify gaps in their work and self-correct on future assignments toward program outcomes. Faculty may also consider applying sections of the rubric to smaller written assignments at multiple points throughout the semester, preferably scaffolding learning, and assessment in a systematic way. Although the AAC&U advises that rubrics adapted from the Written Communication VALUE Rubric should not be used for grading [9], it is possible to incorporate rubric outcomes into a learning management system so that students see each performance rating without receiving a point value.

5. Conclusion

Integration of a program-level written communication rubric into the assessment tools of a course learning management system allows nursing faculty to identify areas concerning student performance as part of formative and summative assessments. Utilizing such assessments during the term creates the opportunity for faculty to create targeted interventions for students to implement immediately to improve skills in scholarly writing. Application of the rubric at two points in the semester also enables faculty to measure the effectiveness of teaching strategies employed to improve learning outcomes.

Data Availability

The individual data sets generated by this study include student scores and demographic information and are not publicly available due to federal educational privacy regulations.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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