

Impact of Computer-Assisted Peer Feedback on Student Learning and Performance in Agricultural Graphic Design Course

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Introduction/Need for Research

- Students often find feedback received after submission unhelpful for making improvements (Nicol et al., 2014).
- Research is needed to explore the benefits of feed-forward peer feedback using learning management systems & student preparation (Sadler, 2010; Wagner & Rutherford, 2019).
- **Objectives:** (a) describe influence of computer-assisted peer feedback on student attitudes and learning and (b) describe changes in academic performance before and after peer review.

Conceptual Framework

- **Social Constructivism:** Knowledge is built through social interaction, dialogue, & collaboration (McGarrigle, 2013).
- **Assessment as Learning:** Emphasizes active student involvement through self-assessment & peer feedback (Quirke-Bolt, 2020).
- **Feed-Forward Approach:** Feedback is used to improve student work before grading, aiding development (Quirke-Bolt, 2020; Ramsden, 1992).

Methods

Target Population: 23 undergraduate students in an agricultural graphic design course (Fall 2022 or 2023).

Course Activities:

- Instructor taught critical but supportive and unhelpful feedback for a logo and had students improve the unhelpful comments.
- Students completed 4 graphic design projects (logo, restored photo, print ad/poster, brochure).

Peer Review Process:

- Four computer-based peer reviews using rubrics in Canvas.

Survey:

- Adapted 13 Likert scale statements from Quirke-Bolt (2020) to assess attitudes toward peer feedback.
- Established a Cronbach's alpha of .90.
- Disseminated anonymous survey via Qualtrics, 10 days open, one reminder sent.
- Response rate: 78.3%.



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Computer-based peer review enhances undergraduate student performance & learning, increases **engagement**, encourages **detailed attention** to assignments, & **improves quality** of work in an agricultural graphic design course.

Recognized ($n = 16, 88.8\%$) the **increased sense of responsibility** inherent in peer assessment.



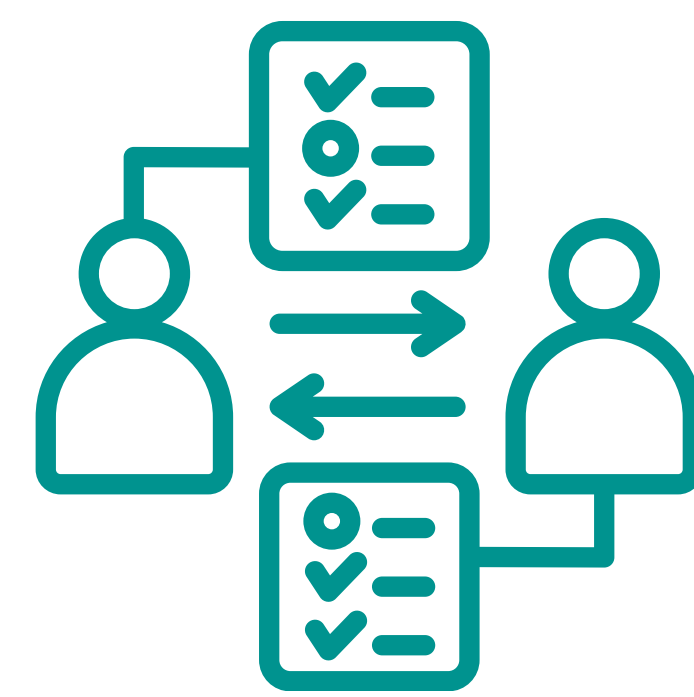
Strongly agreed or agreed ($n = 15, 83.3\%$) that they **trusted peers' feedback**, & peer review **process helped them learn from their peers' comments**.



Strongly agreed ($n = 11, 61.1\%$) or agreed ($n = 7, 38.9\%$) that they **developed & improved work from seeing examples**.



Strongly agreed ($n = 9, 50.0\%$) or agreed ($n = 9, 50.0\%$) that **receiving feedback was helpful & participating in peer reviews provided a workplace skill**, respectively.



Strong agreement ($n = 9, 50.0\%$) or agreement ($n = 9, 50.0\%$) that they felt **comfortable assessing peers' work using rubrics**.



Strongly agreed ($n = 12, 66.7\%$) or agreed ($n = 6, 33.3\%$) they had **necessary skills to participate in peer reviews**.



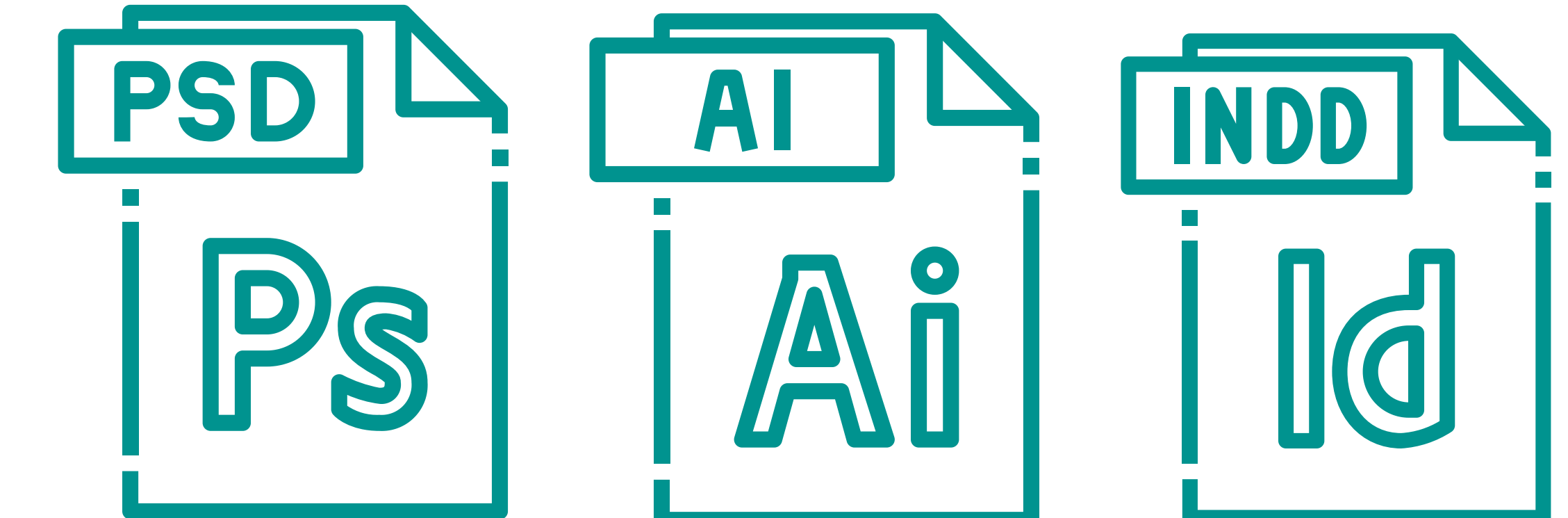
Agreed or strongly agreed ($n = 17, 94.4\%$) that the **peer review process helped identify their mistakes**.



Strongly agreed ($n = 9, 50.0\%$) or agreed ($n = 8, 44.4\%$) that they are **more confident in submitting their work for assessment after seeing others' work**.



Most respondents strongly agreed or agreed ($n = 17, 94.4\%$) that they **developed deeper engagement & understanding of course material** covered in assignments, while one respondent (5.6%) neither agreed nor disagreed.



Wilcoxon signed-rank tests showed respondents' final grades on assignments were significantly higher than rough draft scores.

Conclusions/Implications/Recommendations

- Approach enhanced student learning & equipped them with design skills employers desire (Wagner & Rutherford, 2019).
- Respondents' attitudes toward trusting their peers & their competence in feedback aligned with previous research (Nicol et al., 2014).
- Agricultural communication educators can incorporate computer-based peer review in other courses to enhance student engagement, learning, & academic performance.
- Future research should explore peer review's efficacy across Adobe Creative Cloud design software programs and in other educational contexts.