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Research Article

The Applicability of Peer Teaching in a Post-Graduate Business Course

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ABSTRACT

This study demonstrates the interrelation between peer teaching and six grading criteria used in a graduate business program. Twenty (20) enrolled post-graduate students in the Advanced Statistics course were assigned to five (5) peer groups participating in the study. The quantitative graphical method was used. Specifically, the Correspondence Analysis (CA) two-way contingency table describes the association between the level of peer-teaching and its applicability to the six grading criteria. Based on the CA result, there was a clear separation among the peer groupings and the six grading criteria. Peer group D find peer teaching applicable to written content and exam. Peer group B considered peer-teaching moderately applicable to research while highly applicable in language content. For students in peer group C, moderate peer teaching is highly applicable to oral content. However, peer group A regarded peer teaching as not applicable to written skills. The correspondence analysis provided valuable insights into the relationships between peer teaching and six grading criteria. This study confirms that the level of peer teaching possesses a specific level of applicability in the six grading criteria, with the peer groupings exhibiting distinct patterns.

Keywords: *Peer-teaching, Graduate business course, Correspondence analysis*

Introduction

Graduate education prepares students for advanced professional careers and scholarly pursuits. While effective in many cases, traditional teaching methods may only sometimes meet graduate students' diverse needs. Consequently, alternative teaching methods emerged to enhance the learning experience and foster

critical thinking, collaboration, and application of knowledge. Several popular alternative teaching methods in graduate education are applicable, such as the flipped classroom, which reverses the traditional lecture-based learning model. Before the class started, the faculty introduced student readings, allowing in-class activities focused on discussion,

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problem-solving, and application. Experts believe that flipped classroom encourages active learning and engagement. A study by Bergmann and Sams (2012) demonstrated that the flipped classroom model significantly improved students' learning outcomes and engagement.

Another common alternative learning in business graduate courses is Problem-based learning (PBL). The strategy is a student-centered instructional method that focuses on real business problems. Students work in groups to identify and analyze problems, research, propose solutions, and reflect on the learning process. Schmidt, Rotgans and Yew (2011) found that PBL enhanced critical thinking, problem-solving skills, and the ability to apply knowledge in complex situations. Similar to the PBL is the case study analysis wherein students are introduced to hypothetical scenarios that reflect professional or academic challenges. The key is to examine the facts divulge in the case, identify relevant concepts and theories, analyze data, and develop strategies or solutions. Faculty wanting to concentrate on a specific business challenge and simultaneously emphasize several analytical skills use case analysis. Herreid (2007) highlighted the benefits of case studies in graduate education, including improved critical thinking, decision-making skills, and integration theory and practice.

Educators admit experiential learning is an opportunity applicable in graduate courses that facilitates applying theoretical learning in practical settings. In business graduate school, experiential learnings are in the forms of simulations and project-based learning. Kolb, Boyatzis, and Mainemelis's (2014) experiential learning theory claims that learning occurs through a cycle of concrete experiences, reflective observation, abstract conceptualization, and active experimentation. A review by Sitzmann (2011) indicated that experiential learning approaches positively impact knowledge retention, skill development, and transfer of learning. Several years ago, online education was considered an alternative teaching strategy. However, graduate programs have an increasing online prevalence, providing flexibility and accessibility to students. The virtual

learning environment (VLE) included various instructional methods, including virtual lectures, interactive multimedia, discussion forums, and collaborative projects. A meta-analysis by Alem, Plaisent, Bernard, and Chitu (2014) demonstrated that online learning could be as effective as traditional face-to-face instruction, with similar or improved learning outcomes.

Peer teaching as an alternative teaching method in graduate education involves students actively teaching and learning from their peers, fostering collaboration, critical thinking, and knowledge application. In peer-teaching, the student takes the role of educator and is gaining recognition as an effective alternative teaching method in graduate education which promotes active learning, peer collaboration, and the development of teaching and leadership skills. Students teaching their peers manage to strengthen their understanding of the subject matter resulting in deeper learning. A study by Topping (2005) revealed that students engaged in peer teaching demonstrated enhanced academic performance and knowledge retention. When students teach their peers, they reinforce their understanding of the subject matter, leading to deeper understanding.

Peer teaching provides opportunities for students to enhance their communication, presentation, and interpersonal skills. As students explain concepts and facilitate discussions, they develop effective communication strategies and gain confidence in conveying complex ideas (Boud, Cohen & Sampson 2001). Students actively engage with the course material through peer teaching and cultivate critical thinking skills. Students develop a deeper understanding of the subject matter by designing and delivering instructional materials, facilitating discussions, and providing feedback (Falchikov, 2001).

There are several challenges in peer teaching, such as the knowledge and competency gap. The success of peer-teaching depends on students with sufficient understanding of the content to effectively teach their peers. Instructors need to identify the potential knowledge gaps and ensure the competence of peer teachers (Pharis, Wu, Sullivan & Moore, 2019). Further, there is a need to establish a supportive

learning environment conducive to peer teaching to establish clear expectations, foster a supportive and collaborative atmosphere, and address potential competition or hierarchy among students (Topping, 2005). Part of the challenge is the practical evaluation and assessment of peer-teaching. There is a need for the instructor to develop appropriate evaluation criteria and mechanisms to provide feedback on the peer-teaching process and outcomes is essential (Bridges & Frazier, 2018).

Peer teaching offers several advantages in social sciences, business, and research-focused disciplines. Peer teaching as an alternative instructional approach offers a promising approach in the context of learning advanced statistics. Students participating in peer teaching explained complex ideas in a manner accessible and understandable to their peers. The process makes explaining and clarifying concepts easier in a more comprehensive understanding of the subject matter (Crouch & Mazur, 2001). Guided by their peer, the student is motivated to active learning and apply advanced statistical techniques. Students that acts as peer-teacher present the practical application of statistical method through relevant examples, problem-solving activities, and case studies. The hands-on experience enhances their ability to apply statistical concepts in real-world scenarios (Niemic & Sikorski, 2017).

For the peer-teacher, their knowledge and learning are reinforced. In explaining the statistical concept and techniques, the peer-teacher deepens their understanding of the topic. Conversely, the peer learner retains knowledge by benefiting from alternative explanations and perspectives, which aids in knowledge retention (Topping, 2017). An additional advantage is the development of communication and collaboration skills as part of soft skills. The peer teacher and learner exchange ideas that facilitate discussions and respond to questions or challenges from their peers. These skills are crucial for effectively communicating statistical analyses and findings in research or professional settings (Hmelo-Silver, 2004). Learning together with peers tends to reduce anxiety and increased confidence. Since learning advanced statistics is challenging and intimidating for many graduate students. Peer teaching

provides a supportive learning environment where students engage with their peers in a less formal setting. The situation helps alleviate anxiety and increases confidence in tackling complex statistical concepts (Lundeberg, Moch & Birkett, 2011).

Peer teaching, where students actively teach and learn from their peers, has gained recognition as an effective alternative teaching strategy in graduate education. Several theoretical perspectives provide a foundation for understanding the underlying principles and benefits of peer teaching. This paper explores the theories of constructivism, social learning theory, and cognitive apprenticeship as they relate to the effectiveness of peer teaching in graduate education.

Constructivism posits that learners construct knowledge and meaning through their experiences and interactions with the environment. In peer teaching, students take on the role of both the teacher and learner, constructing knowledge as they explain and discuss concepts with their peers. By engaging in teaching, students deepen their understanding of the subject matter and develop metacognitive skills (Piaget, 1973). Relevant to constructivism is the social learning theory (Bandura, 1977), focusing on the importance of observation, modeling, and social interaction in the learning process. In the social learning theory, peer teaching provides opportunities for students to observe and learn from their peers, enabling the acquisition of new knowledge, skills, and behaviors. Through peer teaching, students engage in collaborative problem-solving, receive feedback, and refine their understanding of the subject matter. Further studies, such as the zone of proximal development (ZPD) concept proposed by Vygotsky (1978), claimed that learning is most effective when it occurs within the gap between a learner's current level of understanding and their potential for growth with guidance. Peer teaching allows students to operate within their ZPD as they receive and provide support to their peers. Students bridge the gap between their knowledge and more advanced concepts through collaborative interactions. The latest cognitive apprenticeship theory suggests that learning occurs through guided practice, where novices learn

from more knowledgeable individuals within a specific domain. Peer teaching aligns with the principles of cognitive apprenticeship, as students with varying levels of expertise engage in reciprocal teaching and learning. The more knowledgeable peers provide scaffolding, support, and guidance to help novices develop their understanding of advanced concepts (Bester, Muller, Munge, Morse & Meyers, 2017).

This study intends to determine how the six grading criteria of oral content, language skills, written content, writing skills, research, and exam compared among assigned peers in Doctor in Business Administration students enrolled in advanced statistics.

Methods

This study used Correspondence Analysis (CA). This quantitative data analysis method gives researchers a graphical understanding of the relationship between two categorical variables, peer-teaching, and six grading criteria in the Advanced Statistics course. The CA considers the relationship between the two categorical variables as a descriptive data reduction technique.

This research involved the participation, reflection, and problem-solving of twenty (20) Doctors in Business Administration students within a peer-teaching setting. It is intended to investigate and improve teaching and learning practices in Advanced Statistics (Halligan, 2014). The collaborative and iterative approach focus on the involvement of the faculty and students in the research process, promoting a deep understanding of the context and the potential for meaningful change in teaching and learning using peer teaching (McNiff, 2013).

This research took the following steps. First, identify the research question (Coughlan & Coughlan, 2016). was to determine how the six grading criteria of oral content, language skills, written content, writing skills, research, and exam compared peer groupings among post-graduate students enrolled in advanced statistics. The question guides the entire research process. In the second step, the interventions were planned based on the research question (Cochran-Smith & Lytle, 2009). The

researcher collaboratively designed interventions for implementing peer teaching. The third step was to collect and analyze the data using various methods reflected in the class record regarding the six grading criteria of oral content, language skills, written content, writing skills, research, and exam. The data collected was then analyzed using correspondence analysis (CA) techniques to identify patterns, themes, or trends (Beaulieu, 2013). Finally, the researchers critically reflected on the collected data and analyzed and interpreted the findings. The final step allowed for a deeper understanding of the issue and helped identify potential areas for improvement (McNiff, 2013).

Twenty post-graduate business students enrolled in Advanced Statistics (PMD 301) participated in the study. The reason behind the selection of PMD 301 is twofold. First, advanced statistics is a challenging course requiring a different demand level and academic learning. Second, the due to the unique demand of the course, it was an opportunity for the program to implement an alternative teaching method.

Peer teaching among graduate students effectively enhances learning and promotes collaboration within an academic community. The approach involved post-graduate students as instructors or mentors, guiding and instructing their peers in specific subject areas. There were several procedures initiated before peer teaching was introduced. The learning objectives were clearly defined before the start of the peer teaching session. The step safeguarded the peer instructor's techniques aligned with the desired outcomes of the teaching session (Stigmar, 2016). Based on their expertise, ability, and interest, the faculty and students identified the peer instructor willing to assume the role of a peer-teacher based on their better understanding of the topic and effective communication skills (Rees, Quinn, Davies & Fotheringham, 2016). For less than an hour, the faculty provided instruction on the role of the peer teacher and some effective teaching strategies. They encouraged students to provide constructive feedback to their peer teacher (Campbell & Mayer, 2009). The peer-teacher presented a detailed lesson plan, content, and assessment

methods to guide coherent and structured instructions (Gottlieb, Epstein & Richards, 2017).

During the breakout sessions, the class used essential resources such as learning space, technology, and teaching materials. The peer-teacher proceeded to lecture, discussions, problem-solving activities, or hands-on demonstrations (Falchikov & Goldfinch, 2000). The peer instructor facilitated deeper understanding and critical thinking using interactive activities, role-plays, or case studies (Rees et al., 2016). During the session, the peer instructor was required to furnish constructive feedback to their classmate on the teaching and learning process. The feedback loop was intended to improve the learning experience for both the instructors and the learners (Pazo, Frankl, Ramani & Katz, 2018). After the session, the faculty evaluated the learning outcomes students archived through quizzes, exams, presentations, or portfolios, to measure the effectiveness of the peer teaching approach (Di Benedetto, Plumb & Beck, 2023). Finally, a debriefing was initiated, soliciting feedback from the peer instructors and the learners to identify areas for enhancement and implement necessary changes in future teaching sessions (Boud & Prosser, 2002).

The correspondence analysis (CA) was used to analyze the interrelation between two nominal variables, peer teaching, and the six grading criteria, in a low-dimensional space while simultaneously depicting the relationship between the categories for peers and six

grading criteria. The CA revealed that the group of peers was influential in meeting any of the six grading criteria. For each variable, the distance between categories identified in a plot showed the relationship between categories with similar categories plotted close to each other. The projected points for one variable on the vector from the origin to a category point for the peers and grading content describe the relationship between the variables. The contingency table included the evaluation of row and column profiles and testing for independence via the chi-square statistic.

Results and Discussion

In a two-way contingency table, this study intends to describe the observed association of two traits in peer-teaching, level, and applicability, summarized by the cell frequencies and a distinctive inferential feature, whether certain levels of peer-teaching apply to the six grading criteria. Reflected in Table 1 was the peer grouping with coded student members. Peer grouping was based on their expertise in various topics in the Advanced Statistics course. Peer-group A is composed of four students (a, l, j, q) earning an average of 1.1; similar to peer-group B with four members (k, o, p, r) receiving an average of 1.3; peer-group C with four students (s, t, m, d) and getting an average of 1.0; peer-group E with four members (b, e, g, n) earning an average of 1.1 and peer-group D with two members (l and f) receiving an average of 1.1.

Table 1. Students Assigned Peer-Grouping and Corresponding Grades

Peer-groupings	Oral Content	Language skills	Written content	Written skills	Research	Exam	Mean
A (a,l,j,q)	1.0	1.0	1.0	1.5	1.3	1.0	1.1
B (k,o,p,r)	1.4	1.5	1.2	1.5	1.4	1.0	1.3
C (s,t,m,d)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
D (l,f)	1.0	1.0	1.1	1.0	1.0	1.2	1.1
E (b,e,g,n)	1.0	1.0	1.1	1.5	1.0	1.1	1.1
Mean	1.1	1.1	1.1	1.3	1.1	1.1	1.1

The eigenvalue (eValue), in Table 2 is associated with the level of peer teaching, and the level of the applicability to grading criteria presents a relative size of this dimension. The

eValue (0.01) accounted for 53.47 percent, and the second dimension eValue (0) accounted for 37.23 percent. The first two dimensions accounted for 90.71 percent of the variation.

Hence there is only less than a ten percent loss in information. The CA plot generated significantly represents the pattern expected in two-dimensional space.

Table 2. Eigenvalue section

	eValue	%	cum %
1	0.01	53.47	53.47
2	0.00	37.23	90.71
3	0.00	9.15	99.86
4	0.00	0.14	100.00

Inspecting the CTR1 column in Table 3 reveals that Peer-group D (0.5046) and Peer-group B (0.5096) in CTR2 contribute highly to peer teaching. Examining the COR1 column, Peer-group D (0.9893) primarily represents the ideal Peer-teaching profile, and similarly identified in the COR2 column Peer-group B (0.6865) mainly represents the ideal peer-teaching among peer groupings in the Advanced Statistics course.

The quality column describes the proportion of the variation reproduced by the two factors. Depicted in the table that the profiles, peer-group B (98.61 percent), peer-group C

(98.08 percent); and peer-group D (99.21 percent) were all above 90 percent. However, peer-group A (0.7855) and peer-group E (0.7490 percent) were moderate, indicating a moderate proportion of the variation in this profile reproduced by the two factors reported.

The inertia measures how spread out the profiles are in the profile space. Peer-group B (0.2764) indicate a relatively large deviation from their average, while peer-group D (0.2727) contains the second highest inertia. The peer-group B and D composed more than 50 percent of the spread of peer-teaching profiles.

Table 3. Plot Detailed Section for Rows of Peer-Groupings

Peer-groupings	Quality	Mass	Distance	Inertia	Factor 1	Factor 2	COR 1	COR 2	CTR 1	CTR 2
A	0.7855	0.2018	0.0109	0.1986	-0.0764	-0.0521	0.5357	0.2498	0.1990	0.1333
B	0.9861	0.2359	0.0130	0.2764	-0.0623	0.0943	0.2996	0.6865	0.1549	0.5096
C	0.9808	0.1780	0.0051	0.0819	0.0635	0.0308	0.7941	0.1867	0.1216	0.0411
D	0.9921	0.1869	0.0161	0.2727	0.1263	-0.0066	0.9893	0.0027	0.5046	0.0020
E	0.7490	0.1973	0.0095	0.1703	-0.0244	-0.0809	0.0626	0.6864	0.0200	0.3140

The map represented in Figure 1 shows the projections of five vertex points depicting the peer-teaching among the post-graduate students enrolled in the Advanced Statistics course. Notably, the horizontal axis is the first principal axis, and the vertical axis is the second principal axis. Inspecting only the profiles' positions, peer-group D is far from the peer-group C, E, A, and B. The data convey the single most significant feature of presenting the optimal scaling terminology in peer teaching, which best differentiates peer groupings which peer-group D at a distance from other peer groups suggesting four categorical peer teaching, very good, good, fair, and poor.

Further, with the two-dimensional interpretation, the vertical axis pulls apart four categorical effectiveness of peer-teaching among the students. The profiles differ vertically and horizontally, as indicated by a moderately high percentage of inertia. Nonetheless, it can be inferred that the profile of the peer group considered peer-group D is very good in the use of peer-group while peer-group C with good use, peer-group E with fair use, and peer groups A and B with poor use of peer-teaching. The application of peer teaching for peer group E is not applicable. For peer groups A and D, peer teachings are moderately applicable; peer group C is applicable; and peer group B is very applicable.

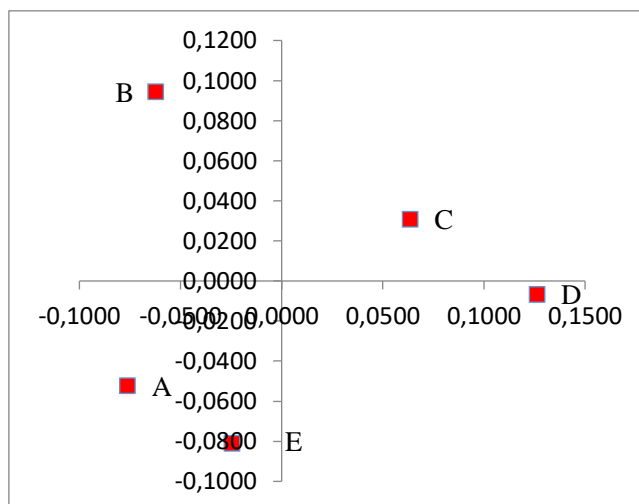


Figure 1. CA Plots for Rows among Peer-group

Inspecting the CTR1 column in Table 4 reveals that Exam (0.4174) contributes to the inertia of the horizontal axis to the peer-teaching and the language skills (0.3374) in CTR2 applicable to peer-teaching. Examining the COR1 column, Exam (0.8099) largely represent the applicable Peer-teaching profile, and similarly identified in the COR2 column, oral content (0.9424) mainly represent the peer-teaching applicable in the course content.

The quality column describes the proportion of the variation reproduced by the two factors and depicted in the table that the profiles, Exam (98.96 percent), written skills (97.74

percent), oral content (94.65 percent), and language skill (94.07 percent), were all above 90 percent. However, research (38.99 percent) indicates a lower proportion of the variation in this profile reproduced by the two factors reported.

The inertia measures how spread out the profiles are in the profile space. Written skill (0.4597) indicates a relatively large deviation from their average, while Exam (0.3804) contains the second highest inertia. The Written skill and Exam composed more than 80 percent of the spread of the profiles of the course content.

Table 4. Plot Detailed Section for Columns of Six Grading Criteria

	Quality	Mass	Distance	Inertia	Factor 1	Factor 2	COR 1	COR 2	CTR 1	CTR 2
Oral content	0.9465	0.1602	0.0047	0.0946	0.0044	0.0667	0.0042	0.9424	0.0005	0.1734
Language skill	0.9407	0.1632	0.0092	0.1867	-0.0104	0.0923	0.0118	0.9289	0.0030	0.3374
Written content	0.9311	0.1588	0.0056	0.1112	0.0671	-0.0268	0.8028	0.1283	0.1209	0.0278
Writing skill	0.9774	0.1929	0.0191	0.4597	-0.1096	-0.0815	0.6296	0.3479	0.3921	0.3112
Research	0.3899	0.1691	0.0070	0.1478	-0.0481	0.0205	0.3301	0.0598	0.0661	0.0172
Exam	0.9896	0.1558	0.0196	0.3804	0.1259	-0.0593	0.8099	0.1797	0.4174	0.1330

The map in Figure 2 shows the projections of four vertex points depicting the various level of applicability of peer-teaching in six grading criteria. Reviewing only the profiles' positions, writing skills are far from the exam, written content, research, oral content, and language skills. The data convey the single greatest

feature of presenting the optimal scaling terminology in the applicability of peer-teaching in the six grading criteria at a distance from the two factors suggesting a four categorical application; very applicable, applicable, moderately applicable, and not applicable.

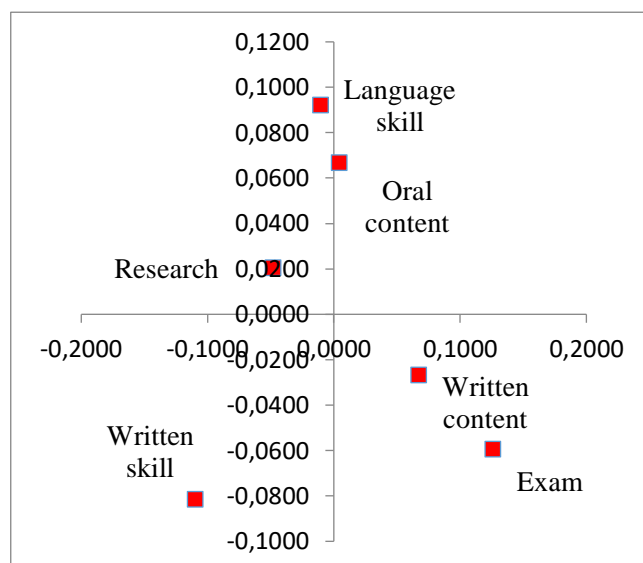


Figure 2. CA Plot for Columns in Six Grading Criteria

Moreover, the two-dimensional interpretation, the horizontal axis, suggests a four-categorical applicability of peer-teaching in the course content. The profile of peer-teaching suggests written skills is not applicable, while written content and exam are moderately applicable. The oral and language content peer-teaching is very applicable among the six grading content.

Finally, the Figure 3 CA plot combines the two independent plots. The association between the peer-teaching and the six grading criteria is depicted in the asymmetric plot. With very good peer teaching, peer group D finds written content and exam moderately applicable. Among the peer group, B found peer teaching moderately applicable in research but highly applicable to language content. In the case of peer group C, moderate peer teaching reveals high applicability in oral content. They find peer-group A and E with poor peer teaching not applicable to written skills.

In graduate education, programs seek to use different methods to facilitate student learning. Graduate students in the Advanced Statistics course perceived peer teaching as applicable in written content and exam. Peer teaching encourages students to assume an active role in instructing their classmates. Through collaborative learning, they share knowledge, engage in problem-solving and clarify concepts which they consider a valuable learning method (Martin & Hand, 2019). In a

traditional graduate school, students used handouts, textbooks, and other written content as a source of information. However, students in this study revealed that they consider peer-teaching better in furnishing detailed explanations and allowing for self-paced learning (Wang, Shao, Huang & Xu, 2021), unlike the traditional source of information, which is often vague, tough to understand, and difficult to align to their preferred learning styles (Sutton, 2018).

As a unique pedagogical strategy, peer teaching offers several advantages in oral content learning. Students involved in peer teaching divulge that the setting provides more opportunity for active engagement, promotes critical thinking, and improve understanding (Topping, 2017). During peer teaching, they conveniently explain challenging concepts using their own words, proceed to meaningful discussions and receive immediate feedback. The peer-teaching becomes leverage for improving their oral communication and comprehension skills (Kalaian & Kasim, 2017). Also, the interaction peer teaching provides positively impacts their confidence and communication skills. They develop self-assurance in presenting information and expressing their ideas in front of their peers (Wang, Wang & Yang, 2019). Due to repeated practice and feedback from peers, students improve their ability to articulate concepts effectively, listen attentively, and provide

constructive feedback, strengthening their oral communication competence. Students find peer teaching helpful to draw on their collective knowledge and experiences, fostering a sense of ownership and responsibility for their learning. They appreciate the focus on active

participation and collaborative learning as they engage their peers in discussion and exchanging ideas. In contrast, the peer instructor facilitates a deeper understanding of oral content and encourages a more interactive learning environment (Xu, Chen & Xu, 2021).

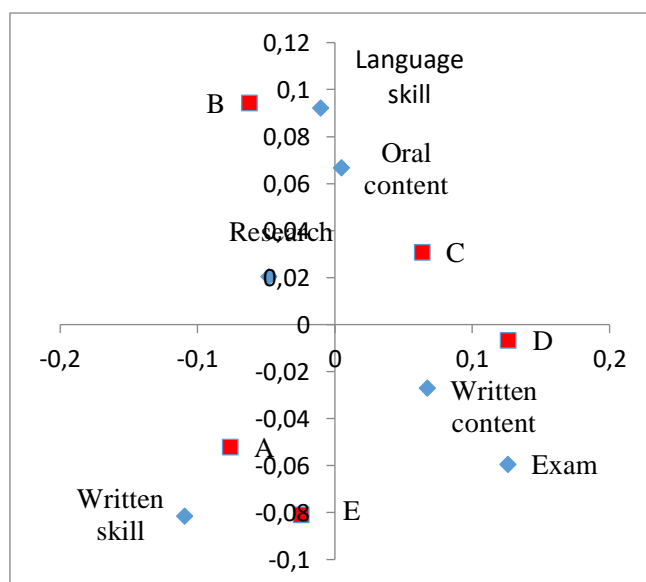


Figure 3. Combined CA plot for Peer-teaching

Students' perspectives on the applicability of peer teaching in research indicate a moderate level of usefulness. Based on the student perspective, peer teaching in research activities provides benefits such as shared knowledge, diverse perspectives, and mutual support (Patrucco, Alarcon & Medina, 2019). While collaborating, they discuss research methods and findings and receive feedback on their work. Admittedly, the moderate level of usefulness is attributed to certain limitations and challenges when applying peer teaching in the research process. One major factor that facilitates better understanding among students in peer-group is the more profound understanding of research concepts and methods through peer explanations and discussions (Rai, 2018). It also appears that students are willing to receive constructive criticism from their peers and proceed to refine their ideas while gaining insights from various perspectives. The peer interactions further improve their research process. On the other side, the moderate level of peer teaching applicability in

research reveals certain limitations, such as the reliability and accuracy of information peers provide and the level of discrepancies in research skills among peers, including constraints for thorough peer feedback and guidance (Patrucco et al., 2019). Also, students feel more comfortable seeking guidance from instructors or experts in research-related matters.

Students often consider peer teaching to have limited applicability in writing content. Writing is a complex skill that requires individual creativity, critical thinking, and personal expression. They consider writing in the course a more personal and unique process, making it challenging to incorporate effective peer teaching strategies (Hyland, 2019). Writing tasks often involve personal style, voice, and subjective choices, which can be difficult for peers to provide accurate and context-specific guidance—as an individualistic and context-dependent academic task, making writing skills a challenging task to generalize peer teaching across diverse writing tasks and genres (Leki, 2016). Students

consider the importance of individual writing style and personal voice significantly differ among peers. Thus, they prefer the guidance and intervention of the faculty or resort to self-directed learning strategies to enhance their writing proficiency. Moreover, students seriously think peer teaching cannot provide accurate and effective feedback on writing content. Essential elements in writing content, such as coherence, structure, and language conventions, are not appropriately addressed in peer teaching. Also, peers may raise the reliability of writing quality and proficiency at significantly various levels, adding more confusion and reliability of their peers' comments (Cho & MacArthur, 2010).

Conclusion and Recommendations

CA is a helpful tool to depict the significant applicability of peer teaching in the grading criteria of the advanced statistics course. Following the procedures in peer teaching, this research confirmed that peer teaching offers a valuable alternative teaching method in graduate education. Peer-group D considered very good peer teaching applicable to written content and exam. At the same time, Peer Group B regarded good peer teaching as moderately applicable in research but highly applicable in language content. Among students in peer group C, moderate peer teaching is highly applicable in oral content. Conversely, peer-group A and E students need better peer teaching more applicable to written skills.

While peer teaching brings benefits, it also poses challenges related to knowledge gaps in writing skills. By focusing on the specific challenges that made poor peer teaching not applicable to enhancing writing skills, the program can provide the necessary support to effectively integrate the peer-teaching as a pedagogical strategy.

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