

An Evaluation of Research Performance: A Survey Study of Undergraduate Media and Communication Students

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Abstract

Assessing research performance is essential for adopting enhancement procedures. The emphasis of the study was on undergraduate media students. The objectives of this study were to estimate their research abilities, evaluate the efficiency of some studies conducted, and identify areas for improvement. A survey was employed to collect data about the results of the final examination of the research methods subject. The study gathered 100 scores, representing three batches of male and female students. The study used the independent sample t-test to compare the means for the two groups of males and females and then explain the differences and effect size. The results showed that female students have much higher research method scores (79.3) than male students (74.9). The standard deviation for male research methods scores (10.9) is higher than that for female students (9.8), indicating higher variability in male scores. The standard error of the mean estimates the precision of the sample mean. It is higher for male students (1.5) than for female students (1.4). Hence, male students needed more accuracy in estimating the population mean due to the large variability in their scores. The effect size was ($d = 0.41$). There were differences (t ($df = 98$, $p = .035$)) in the scores, with the mean score for the females ($M = 79.3$, $SD = 9.8$) being higher than the males ($M = 74.9$, $SD = 10.9$). In conclusion, testing students' research skills revealed a slight difference between male and female media B.Sc. students.

Keywords: research methods, assessment, research performance

1. Introduction

Concerns about advancing research proficiency represent a priority for academic institutions, teachers, and undergraduate and postgraduate students. Likewise, the empirical assessment of students' skills in the field indicates the extent of research performance and perfection. Numerous studies in different countries have examined the level of media education and media practices. These studies highlight the processes of research development and research implementation. They have emphasized the need for collaborative efforts between teachers and researchers to enhance media activation. Analytical results underscore the necessity of improving media education, research, and instructional practices (Dhiman, 2021). Some studies have noted a need for more comprehensive media and communication study subjects. There is also a focus on social media's use in educational applications. Likewise, the use of new media in academic contexts warrants investigation (Piotrowski, 2015).

In terms of educational practice, learning outcomes are critical for determining the substance of education and the practicality of the techniques used. Considering this argument, there is a long history of evaluating academic courses and programs. As a result, most higher education institutions now use learning outcome measurements (Tremblay, 2013). Further research developments in the media and communication disciplines highlight the influence of journalism. Also, new research projects have conducted public opinion changes and content analysis studies. Hence, recent search initiatives have focused on critical social concerns (Ibrahim et al., 2019). In real terms, good research should address practical issues and offer advantageous findings. Therefore, scholars need to evaluate the successive research additions (Barada, 2012).

In terms of practice, tools of communication and e-learning have transformed the teaching process. In this sense, the application of communication technologies should be appropriate for the learning activities. Hence they can improve the e-learning experience. Consequently, there may be a relative guarantee to meet the learners' needs (Barrot, 2021; Chugh et al., 2021; Zahra et al., 2023). Moreover, visual presentation tactics have improved educational research procedures. Numerous studies have assisted students in better understanding research concepts. They can also demonstrate how visual aids may help learners understand abstract concepts (Agustini et al., 2020). In fact, social media

studies have investigated media phenomena. These studies shed light on social media's function in various sectors and offer a fresh perspective on platform linkages for future research (Leung et al., 2019). Even from a historical point of view, the content analysis approach has become increasingly important to examine social communication phenomena (Lombard et al., 2002).

Interdisciplinary and overlapping diagnostic approaches are features that highly relate to media and communication phenomena. Therefore, it is essential to qualify researchers and inform them about the difficulties of using social media data and realizing the research aims (Weller, 2015). Although studies on media phenomena has expanded, there may still be disagreement over describing and quantifying them. Some reviews emphasize the essentiality of methodologies and punctual language as prerequisites to investigating and understanding communication phenomenon (Ratcliff, 2021). It is important to note that in this new era of media, qualities of ethics and accuracy must remain interconnected, and without these qualities, journalism may lack trust, and failure becomes probable (Goc & Tynan, 2015).

This study uses an independent sample t-test in statistical analysis to identify significant differences between undergraduate male and female students studying media and communication sciences. Up to the researcher's knowledge, there has been no deep study of B.Sc. students' research skills over the last few years. Nevertheless, numerous studies have investigated the challenges of higher education and provided case studies of particular situations. Studies in this distinct field lack a thorough evaluation of research academic performance among students enrolled in the media and communication B.Sc. program. The current study progresses to give an empirical appraisal of their research talents while also suggesting areas for growth. Thus, any empirical study of undergraduate media and communication students may highlight the importance of a scientific appraisal of their research achievements. This essentiality derives from the need to provide reliable and effective methods for assessing students' research abilities and finding potential for improvement.

The investigation of how students perceive the influence of adopting new media technologies in higher education on their academic performance is one topic of research interest. Furthermore, various studies have identified the characteristics influencing social media use in educational contexts to improve student academic performance (Al-Adwan et al., 2020; Davis et al., 2015; Jastrow et al., 2022). The current study examines and assesses the academic search performance of undergraduate students enrolled in the B.Sc. media and communication program. The objectives include: (1) Evaluate undergraduate media and communication students' research abilities and knowledge. (2) Assess the efficacy of the research, education, and student assistance provisions. (3) Determine opportunities for improvement in research and performance. The Study designed interviews with several media professors who teach research methods to male and female students. The professors observed that the disparity in interest in media research between male and female students is due to relative individual differences, not the nature of the course or its presentation. The professors also noted that students' understanding of research methods and the complexity of media phenomena are essential (Al Ziadi, 2024).

This paper emphasizes answering three questions: (1) Are undergraduate media and communication students proficient in fundamental research skills such as literature review, research design, data collection, and analysis? (2) How does media and communication students' research performance compare to other disciplines? (3) What variables explain the variability in research achievement among undergraduate media and communication students? The paper hypothesizes the absence of consequential differences in media research method grades between male and female respondents.

The study's significance stems from its evaluation of B.Sc. students' research abilities. Data collection from the official list of test scores is practical for studying the growth of research skills. It also helps to measure academic performance and participation in research-based courses. The projected outcomes of this study may contribute to the debate on effective research education techniques in the field of media and communication by identifying areas for improvement in students' research competency. The study is structured as follows: an introductory section, a review of previous studies, methods, discussions, results, concluding remarks, recommendations for future research, and references.

2. Literature Review

This section of the literature study gives a summary of existing studies evaluating the research performance of undergraduate media and communication students. The review follows a thematic approach to examine the key themes and findings from the previous research articles. The focus point in this respect is a quantifiable investigation of research potentials for B.Sc. media students. This evaluation identifies knowledge gaps and establishes the framework for immediate, feasible studies. It consists of five thematic parts. These parts show a significant explanatory criterion that might assist in estimating the potential of research performance. They are as follows: (1) vision-based methodology. (2) Causes: base methodology. (3) tactics-based methodology. (4) Utilization-based methodology (5). Results-based methodology.

2.1 The Vision-Based Methodology

The vision-based methodology recognizes the significance of applying proper research styles and prepares the path for

innovative methods. It also addresses research rules, linguistic applications, theory implementation tendencies, and preferences for resolution criteria. Among the vision-based methodology elements is the qualitative-quantitative duality. In this sense, when a researcher establishes his research strategy, he should consider the differences between qualitative and quantitative research (Dawson, 2009; Paxson, 2010). Apparently, in the social sciences, there are two main types of research: quantitative and qualitative. The principal distinction between these two research methods is the number of observations (Stockemer, 2019). More significantly, the option of employing innovative methods is always available. Simultaneously, it has become familiar in the last decade to acknowledge that the semi-prevalence of communication technological equipment poses some sort of challenge for empirical research (Kubitschko & Kaun, 2016). Some writers assess how communication and media studies may stimulate innovation in research, teaching, curriculum design, theory development, and community engagement (Chasi & Rodny-Gumede, 2020).

The research rules reflect the standard for performing phenomenal investigations. Providing students with comprehensive guidance on research methods is critical. The goal here is to present instructions and insights on conducting research projects. As a result, issues including methodology, scope of study, limits, findings, suggestions, main report format, conclusion, appendices, and bibliography are crucial. Furthermore, clear aims, a clear presentation of findings, and the value of actual research projects look essential (Kothare, 2004). Other reviews highlight further instructions. Such studies attempt to provide students with the information and skills required to undertake effective communication research by combining theoretical explanations with practical examples (Petty et al., 2017).

Concerning theory implementation, some studies highlight the need for more sophisticated theories. In this sense, the assimilation of media studies with area studies, particularly from regions of Asia, Africa, Latin America, North Africa, and the Middle Eastern area, is crucial for a more comprehensive and international approach to theoretical debates within the field (Hafez, 2013). Hence, researchers reconsider the importance of theory in guiding research methodology in communication studies. That includes practical guidance on how to construct theories effectively. The insistent use of formal modeling techniques to assist in developing small theories deserves special consideration (Cappella, 1977). Combining social media explanatory reasoning with grounded theory methodologies yields a comprehensive qualitative research methodology. Hence, it offers scholars practical guidance (Halaweh, 2018). Likewise, implementing a scientific paradigm and new formulas for knowledge discovery is decisive (Gong, 2022).

2.2 The Cause-Based Methodology

The cause-based methodology represents an essential component of the literature review. One of the reasons for conducting studies is the disparity in media usage among generations. Comparative paradigms are one of the reasons why people do research. Some articles compare the utilization of social media by Generation Y (Millennials) and Generation Z (Mude & Undale, 2023). In the same context, the most common purposes of scientific research on human social behavior and attitudes are to examine, describe, explain, analyze, and make judgments and predictions. (Eid, 2011). Some articles emphasize journalism experiments and mass communication studies to discover causal relationships between variables. That underscores the need to use rigorous experimental procedures to advance theoretical research and test hypotheses in these fields (Crano et al., 2014; Kim, E., Duffy & Thorson, 2021). The connection between media and art has become a popular research topic. It outlines a methodological approach to creative practice research. It invites contributions and conversations about practice-based techniques in creative practice research to help influence future updates (Skains, 2018). It is worth noting that an individual's experiences and learnings influence how he perceives the world around him (Taylor et al., 2016). As a result, it shapes our thinking and searching habits.

2.3 The Tactics-Based Methodology

The tactics-based methodology focuses on the resuscitation of qualitative research methodologies in mass media studies. This trend indicates a shift toward accepting other research methodologies in addition to traditional quantitative methods. The qualitative approach exposes students' use of research tools and viewpoints, resulting in a more thorough knowledge of mass media phenomena (Cooper et al., 1993). Another strategy is to employ text-mining tools in technical communication articles to manage enormous datasets. It compares hand-coded methods against automated data collection and machine coding. The study recommends a mixed-methods strategy for conducting effective technical communication research (Lauer et al., 2018). Structural equation modeling (SEM) is a widespread data analysis approach in media studies that permits scholars to test hypotheses combining hidden variables, appraise straightforward and winding causal effects, and assess the validity of measuring techniques. It is essential to give information on suitable practices to help communication researchers benefit from SEM (Goodboy & Kline, 2017).

Another pivotal tactic-based technique is to mark the substance of effective learning instruments for online qualitative methodology courses. This technique focuses on crucial areas such as text analysis, survey research, artificial intelligence, and feedback systems for improving student learning in online quantitative courses (Bachner & O'Byrne,

2021). Subsequently, there is a discussion and examination of internal communications. The articles here discuss the most effective communication approaches. The findings may highlight disparities in communication preferences between age groups, with younger employees less likely to seek direct supervisor interaction than older employees (Suthers, 2017).

2.4 The Utilization-Based Methodology

The utilization-based methodology encompasses several aspects of performance, like considering the importance of solving climate change and environmental challenges through good environmental communication research. This technique highlights the need for a more comprehensive and action-oriented research paradigm that promotes public awareness, climate justice, and sustainable living practices in local communities. This strategy seeks to address the complexities of environmental concerns while advocating for policies that protect the environment and encourage sustainable behaviors (Boora et al., 2022). Furthermore, it is necessary to train future journalists in media education using modern research techniques. There is a focus on the job of emerging technologies such as cloud computing, big data processing, and artificial intelligence in improving media research (Klyuev et al., 2019).

Intellectuals and educators are interested in the potential spread of information and media technologies (ICT) in education. Numerous studies investigate the current status and accomplishments of higher education teaching with ICT integration. They underline the continued trend of technology integration in education and the need for scholars to focus on this subject from several angles to drive progress (Gao, 2023). Nevertheless, authenticity in communication research is critical. Thus, defining authenticity and giving a method for measuring degrees of authenticity in corporate statements and actions, as well as how stakeholders perceive authenticity, is critical (Molleda, 2010).

2.5 The Results-Based Methodology

The results-based methodology emphasizes relevant elements like progress in research practice, challenges overcome, and data influence. Numerous studies have shown a rise in social media research, including results and recommendations related to communication and sociology. They represent research trends in human behavior and the use of social media (Li et al., 2017). Sometimes, identifying media research results necessitates the availability of certain conditions. Communication research encounters problems such as resource-intensive data collection. It is unavoidable to solve these issues by establishing a framework for data-driven research in multimodal communication. It is crucial to gather linguists, communication scholars, statisticians, and computer scientists to create tools for researching communication phenomena and promote transdisciplinary collaborations in the discipline (Fang et al., 2015; Steen et al., 2018). Other studies examine the impact of big data on social media, specifically how it affects the operations, structure, and behavior of social media platforms (Akash K Salian, 2024). Data storage and management determine repercussions and follow consequences. Identifying the challenges faced by communication and media students when conducting scientific research was one of the key points highlighted in the study. Many students and professors, through dedicated interviews, reported that the research methods course requires more training and brainstorming sessions, particularly in defining the title and creating the timeline. Additionally, there is a need for training in modern methods and technological applications that assist in conducting scientific research. These tools include reference management software, artificial intelligence applications, writing enhancement tools, and proofreading aids (Yagoub, 2024).

There is an impact of using AI technology in teaching and learning activities. Research examples demonstrated the implementation of quantitative and qualitative methodologies to evaluate how AI-based learning initiatives influence student attitudes and the learning process (Rina, 2023). The internet and social media influence how knowledge is generated, accessed, and shared. The emphasis here is on using online platforms to bridge the gap between research, policy, and practice in the field. The literature and experts compare print and digital media. They determined that digital media may effectively replace print media. While electronic media is gradually gaining importance, print media continues to motivate education, especially in remote locations without contemporary educational facilities (Coleman et al., 2014). The previous studies' presentations concentrated on research vision, search choices, research methodology, and results review. Many papers have addressed competency standards, research methodological insights, teaching approaches, the use of digital technology, and the selection of specific case studies. The current study focuses on evaluating research performance. This study surveyed a representative sample of B.Sc. students who want to get research experience and participate in joint research groups.

3. Method

The study methodology in this work is set up on a statistical analysis basis, specifically an independent sample t-test analysis. The application of this statistical analysis allowed us to examine the disparities between two separate groups of media and communication undergraduate students. Therefore, the study design was employed to compare the means of two disconnected groups. The study highlighted three questions concerning students' skills in research writing, the

research performance of media B.Sc. students compared to other relevant disciplines, and the nature of variables that explain the variability in research achievement among undergraduate media and communication students.

The study's dependent variable was B.Sc. students' performance in research methods. The assessment of this variable followed the scale measurement since it corresponds to the numerical form. Meanwhile, the study disregarded other variables. The collection of data was independently controlled and ensured for the sake of strengthening the credibility of the findings and conclusions. The type of study sample was a random sample survey method that reflected the students' scores in the research methodology subjects for males and females. Each official result list for every academic season had the same chance to be selected. The study findings presented justification and assessment for the differences in mean values regarding the overall performance and results' scores for male and female research methodology students.

The research tools encompass the equipment used to collect, measure, and interpret data. The tools used to collect the research data were the sampling techniques employed to collect representative items of official examination results. Other data collected indicated sources like scientific publications, books, and websites. The data collected was numerical. As a result, it was consistent with the statistical procedures, particularly the requirements for independent sample t-tests. The researcher did not encounter influential obstacles in collecting, measuring, and analyzing the data. The measurement tool included in the study was the "scales "measurement. This type of measurement was recognized in inferential statistics when the data exposed to analysis was numerical.

This quantitative study aimed to compare groups and justify their differences, concentrating on research skills among male and female students in an undergraduate Media and Communication program at the Faculty of Arts, King Faisal University. An independent-sample t-test was applied to determine if significant differences existed. The study used IBM SPSS version 26 to analyze numerical data, presenting the results through comprehensive tables and graphs. The study population consisted of students' official exam scores from six cohorts within the new curriculum plan. A sample from three cohorts, representing 50% of the research population, was selected through a robust randomization process to enhance credibility. This approach ensured that the sample was representative, allowing for a reliable comparison of means and hypothesis testing (Selvamuthu & Das, 2024). Reconsideration of data requirements, sample selection, and analytical tools helped the study to achieve scientifically applicable results. These findings contribute valuable insights into gender-based differences in research skills, offering a basis for future educational strategies and interventions.

4. Results

The study's main concern was to evaluate the research abilities and knowledge of undergraduate media and communication students, analyze the efficacy of research performance and teaching, give students help, and suggest areas for improvement. Meanwhile, the study examined the basic research skills and standards of B.Sc. media students compared to other academic specializations. It also aimed to identify the factors that influence their overall research performance. This section's extensive scope included describing sample demographics, investigating composite measures and data shape, employing descriptive and inferential statistical techniques, and testing the core hypothesis.

The study conducted the independent sample t-test to explore whether there was a difference between male and female media B.Sc. students. Therefore, compare the means of two independent samples. On average, female students have much higher research method scores (79.3) than male students (74.9). The standard deviation for male research methods scores (10.9) is higher than that for male students (9.8), indicating high variability in female scores. The standard error of the mean predicts the accuracy of the sample mean. It is higher for male students (1.5) than female students (1.4). That indicates less precision in estimating the population mean for male students because of the note-worthy variability in their scores. (See Table 1).

Table 1. Group Statistics

	Male and Female Media B.Sc. Students	N	Mean	Std. Deviation	Std. Error Mean
Examination Result Scores of Media Research Methods Course	Male B.Sc. Media Student	50	74.8800	10.86586	1.53666
	Female B.Sc. Media Student	50	79.3000	9.79431	1.38513

Levene's test of equality of variance indicates that the F-significance value is greater than 0.05; hence, we will take values of "equal variance assumed." As it is evident from Table 2, the two-tailed significance value is 035, which is quite higher than 0.05, with t = -2.137 (CI = -8.52546 to -.31454), hence rejecting the hypothesis and concluding that the difference between the media research methods of male and female students is significant.

The statistical test, an independent-sample t-test, was conducted to compare the students' groups. There were significant differences (t ($df=98$, $p=.035$) in the scores with the mean score for the females ($M=79.3$, $SD=9.8$) being higher than for males ($M=74.9$ $SD=10.9$). The difference magnitude in the means $=-4.42000$, 95% CI: -8.52546 to $-.31454$) was significant. Hence, the hypothesis was supported. (See Table 2). To conclude, the independent sample t-test indicated a statistically significant difference between the means of the study's groups.

Table 2. The Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower		Upper
Result Scores	Equal variances assumed	1.187	.279	-2.137	98	.035	-4.42000	2.06879	-8.52546	-.31454
	Equal variances not assumed			-2.137	96.962	.035	-4.42000	2.06879	-8.52600	-.31400

The study added the effect size (Cohen's d) to the results report and used the online effect size calculator {<https://socscistatistics.com/effectsize/default3.aspx>} to compute the effect size. There are three options for making the computations for an independent sample t-test. One option is Cohen's d , which is applicable when the two groups have similar standard deviations and the same sample size. However, when the standard deviations are different for groups, it is recommended to use Glass's δ effect size. The third alternative, where the sample sizes differ or are extremely small (less than 20), is to employ Hedges' g effect size. The measurement of effect size ranges from small (0.2) to medium (0.5) to larger (0.8) appropriately. The results are the following: Cohen's $d = (79.3 - 74.88) / 10.34397 = 0.427302$. Glass's $\delta = (79.3 - 74.88) / 10.86586 = 0.406779$. Hedges' $g = (79.3 - 74.88) / 10.34397 = 0.427302$. The addition of effect size provides accuracy concerning the magnitude of the differences between male and female media research methods. The effect size for the difference was (more than small and less than medium). ($d=0.41$). (See Table 3).

Table 3. Value of Effect Size

Cohen's d Value	Effect Size
0.01	extremely tiny
0.20	Small
0.50	Medium
0.80	Large

5. Discussion

The study investigated the undergraduate media and communication students' research ability and understanding. This evaluation sought to assess the efficacy of teaching strategies in research projects, provide student assistance, and identify areas for pedagogical improvement. The study evaluated undergraduate media and communication students' research abilities, compared them to other fields, and discovered characteristics that influenced their findings. The research included demographic characterization, analysis of composite measures, and data distribution. The execution of descriptive and inferential statistical methods and rigorous hypothesis testing helped explain the data collected in consideration of the study's questions, hypotheses, and aims. The study highlighted the influence of new media on

education, communication, and interactions. Numerous studies in this respect examine how social media apps affect education sustainability in higher education by investigating characteristics such as active collaborative learning and engagement, which influence students' academic performance and satisfaction (Alamri et al., 2020).

Assessing research and conducting performances among media B.Sc. students highlighted a difference between males and females. The leading finding of the paper showed a statistically significant difference between the means of male and female Media B.Sc. students, demonstrating that personal competency and proficiency had a substantial influence on the dependent variable. The findings indicate that individual characteristics, institutional incentives, and competitive spirit were feasible in improving the overall academic performance of research methodology comprehension and scientific study facilitation. Likewise, social media plays a principal role in classrooms, and improving Internet reliability and speed is critical for adequately employing information and communication technology (Dumpit & Fernandez, 2017).

Despite the modest variation in research abilities between male and female media B.Sc. students, both male and female are proficient in fundamental research abilities such as developing study ideas, gathering data, using appropriate analytical methods, and presenting findings. Comparing the quality of media B.Sc. students to those of other comparable fields revealed considerable consistency. As far as it looks, students from various fields (Arabic and English language, sociology, and history) at the same college have equal opportunities to learn and improve their research abilities. As a result, there was no significant difference concerning talents or overall performance. Nonetheless, the intricate nature of the media phenomenon, as well as its interactions with the fields of psychology, sociology, economics, and other knowledge specializations, might motivate media students to be more punctual.

The current study, like previous ones, demonstrated that students favor the instructor's effort and then seek out how to employ technology in the learning research process. The findings show that, while students acknowledge the need to digitize education, almost all prefer that instructors use modern technology. However, only an inconsiderable number of students use modern technologies such as neural networks, 3D modeling software, and interactive map creation tools in their projects. The emphasis is on merging digital technology into teaching techniques, focusing on neural networks and interactive material to improve learning experiences (Zubko et al., 2023). Likewise, the data-gathering technique is critical for answering research questions and getting insight into the research issue. Hence, researchers must choose the most appropriate data-gathering method (Taherdoost, 2021).

Teaching the basics of research, in addition to the development of skills and competencies, is a crucial issue for undergraduate and postgraduate students. Therefore, studies in this field gain particular importance as they serve dual purposes for academic institutions and students. Moreover, the progress of research skills leads to the creation of qualified graduates who adopt and practice integrative problem-solving techniques. Even at the societal and national levels, doing high-quality research is a pioneering step in realizing inclusive development. Also, part of the research skills appeal is encouraging researchers to adapt teamwork activities and join research groups. This trend, if applicable, will increase the quality and efficiency of the studies performed.

6. Conclusion

The concluding remarks reflect the importance of understanding and practicing research writing. This study evaluated the research capabilities of undergraduate media and communication students, assessed the effectiveness of the research education and support provided to students, and identified areas for improvement. The contrast of the two groups' research skills revealed a slight difference between male and female students in the undergraduate media program. Moreover, significant efforts and ongoing attempts look feasible to advance training and practice. For instance, one study investigated how recent media graduates evaluated the growth of their research skills acquired during their education. Considering the indicative points highlighted by qualitative interviews, this study emphasizes the importance of research skills in media practice. These results highlight the necessity of a consistent framework in research education to enhance students' understanding of the transferability of research skills to various professional fields (Wilmore & Willison, 2016).

This study highlights substantial comments regarding the potential limitations of this research. Research methodologies reflect both practical and theoretical perspectives. This duality creates complexity at both the teaching and assessment levels. Consequently, separating the theoretical and practical components of the phenomenon under study may be misleading for students. Therefore, conducting future studies that develop questionnaires and surveys to analyze students' comments, observations, and suggestions will be practical and necessary in this field. The shortcomings of this study may relate to the sample size, despite its representation of male and female students. However, subsequent studies can compare the performance levels in the research methods course and other necessary prerequisites for research in media and communication topics, such as media theories and introduction to statistics courses (Al Saifi, 2024).

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Data sharing statement

No additional data are available.

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