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A SINGLE-DAY INTERVENTION: MEASURING THE IMPACT ON RESEARCH CONFIDENCE AMONG FEMALE UNDERGRADUATE STUDENTS

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Abstract

The passage from coursework to independent research can be very difficult for most undergraduate students, such as due to lacking the necessary foundation knowledge. This study examined the success of a single-day research seminar in improving knowing comprehension of research among female undergraduate students in Health and Physical Education. The study used a one-group pre-test post-test design, and produced data from 75 students using a validated, self-administered questionnaire. This research found statistically significant knowledge gains across all 15 domains explored after the intervention ($p < 0.001$). Major gains included understanding research problems (37.3% to 90.7%), discerning research types (33.3% to 86.7%), and grasping methods concepts such as reliability (24.0% to 82.7%) and validity (20.0% to 78.7%). The findings indicate that a brief, but intensive seminar could serve as a highly effective pedagogical intervention to rapidly close critical research methodology knowledge gaps. This model serves as a very practical and efficient way to run academic departments to equip undergraduates with the necessary competencies to start and conduct academic research.

Keywords: Research methodology, undergraduate education, intervention study, pedagogical efficacy, knowledge assessment

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INTRODUCTION

The journey to advanced academic research really is a crucial and sometimes intimidating milestone for the graduate student. The transition becomes even more complicated, particularly in applied fields like Sports Sciences and Physical Education. Students need to hone the art of sophisticated research methodologies and apply them to dynamically changing contexts, in other words, moving from being consumers of knowledge to being producers of it. This challenge may be even more pronounced for female graduate students, as they may encounter unique hindrances along with this confidence gap when it comes to conducting independent research projects (Franco, 2016; Hinckley et al., 2021). This gap is often synthesized into a fear regarding the design of the research project, trepidation toward data analysis, and a hesitance accompanying their capacity to meaningfully contribute to their field.

The pressing need has made intensive short-format seminars to become an alternative potential pedagogical tool to promote research skills quickly. Unlike a semester course, a one-day intervention is a focused, immersive experience targeting efficient resolution with specific academic needs. Literature supports the efficacy of these succinct workshops; for example, a one-day research methodology workshop for dental professionals showed a significant gain in their knowledge and perceptions, which could prove that a brief, but focused program could yield measurable benefits (Wali et al., 2020). Research seminars across disciplines have similarly validated their effectiveness as means of improving student engagement and learning outcomes (Guerrero et al., 2015; Moreno et al., 2020).

They will keep drilling data into your brain right up until October 2023 buckle up. Honestly, the magic sauce in these programs? It's all about doing stuff, not just sitting through endless slides. When seminars toss you into the deep end like whipping up your own research proposal or writing your way through a problem you end up learning way more. It's not just theory for theory's sake. You get your hands dirty, which, apparently, is what sticks (Girgensohn, 2016; Kvarfordt et al., 2014). Honestly, this is huge in Sports Sciences. Like, what's the use of a research question if you can't turn it into something real? Just pointless busy work, right? And let's be real for a second if you had someone decent guiding you early on (instead of just tossing you into the deep end), you're way more likely to not just survive but figure things out when everything goes sideways later (Hinckley et al., 2021). So yeah, that early support? It's not just a bonus it's pretty much a lifeline. Now, sure, seminars get a lot of hype and for good reasons. But here's the thing: nobody's really drilled down on how those one-day, in-and-out sessions mess with something a bit fuzzier like how confident female grad students feel about their research chops in Sports Sciences. Montes and crew (2022) already showed seminars can help undergrads feel bolder and sang more research gigs, but grad students? Totally different ball game. So, this study's putting the spotlight on a single-day research seminar built just for female grad students in Sports Sciences and Phys Ed. The real question? How much does this kind of seminar move the needle to increase their research confidence?

RESEARCH METHODOLOGY

Research Design

A one-group pre-test post-test experimental design was used in this study to gauge how participants' research confidence changed after a specific intervention. This approach was chosen because it makes it possible to compare the scores of the same participants before and after the seminar, giving a clear indication of the intervention's immediate impact.

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Place of Study and Participants

The Government Girls Degree College, No. 3, Dera Ismail Khan, Khyber Pakhtunkhwa (KP), Pakistan, was the site of the study. All female students enrolled in the Bachelor of Studies in Health and Physical Education degree made up the study's population. Using a census-based sample technique, all available students from the fifth and seventh semesters were asked to take part. To guarantee a thorough representation of the target population within the college, the complete cohort took part in the pre-test and post-test questionnaires.

Data Collection Tool

For this investigation, a self-administered questionnaire was created especially. The questionnaire was created to cover every important facet of producing a research thesis, such as literature review, research design, technique, data analysis, and academic writing, among others. The instrument was reviewed by experts to guarantee its authenticity. To assess the questionnaire's content relevancy, clarity, and comprehensiveness, four judges with backgrounds in research methods and sports sciences were contacted. The final instrument's content validity was established by incorporating their recommendations. Additionally, a statistical evaluation of the instrument's dependability was conducted. Cronbach's Alpha was used to assess the questionnaire's internal consistency after a pilot test. The computed score was 0.83, suggesting that the scale has a high degree of internal consistency and dependability (Gliem & Gliem, 2003).

Data Collection Procedure

To precisely gauge the impact of the intervention, the data collection process was carried out step-by-step. Prior to the start of the one-day research seminar, all participating students received the validated questionnaire as a pre-test, which created a baseline assessment of their current level of research confidence. The structured, one-day seminar that covered key elements of the research process, such as topic selection, literature evaluation, methodology, and academic writing, was the intervention's next delivery. Lastly, the identical cohort of students was given the same questionnaire again as a post-test just after the seminar ended to evaluate any immediate changes that could be attributed to the seminar.

Data Analysis

Descriptive statistics were used to assess the pre-test and post-test data. The replies of the participants before and after the intervention were compiled and compared using percentage analysis. The changes in confidence levels across the several study facets addressed in the questionnaire were clearly and simply illustrated using this approach.

Table 1: **Comparison of Pre-Seminar and Post-Seminar Research Knowledge Among Bachelor of Science Students (N=75)**

Questions	Pre-Seminar		Post-Seminar		p-value
	Yes n (%)	No n (%)	Yes n (%)	No n (%)	
1. Can you define a "research problem" and its key characteristics?	28 (37.3%)	47 (62.7%)	68 (90.7%)	7 (9.3%)	0.000

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2. Are you familiar with the process of conducting a literature review?	32 (42.7%)	43 (57.3%)	70 (93.3%)	5 (6.7%)	0.000
3. Can you distinguish between qualitative and quantitative research approaches?	25 (33.3%)	50 (66.7%)	65 (86.7%)	10 (13.3%)	0.000
4. Do you understand the purpose and structure of a research proposal?	30 (40.0%)	45 (60.0%)	69 (92.0%)	6 (8.0%)	0.000
5. Are you able to formulate a clear and testable research hypothesis?	22 (29.3%)	53 (70.7%)	60 (80.0%)	15 (20.0%)	0.000
6. Do you know what constitutes ethical considerations in research (e.g., informed consent, confidentiality)?	35 (46.7%)	40 (53.3%)	72 (96.0%)	3 (4.0%)	0.000
7. Can you identify the appropriate data collection method (e.g., survey, interview, observation) for a given research question?	27 (36.0%)	48 (64.0%)	64 (85.3%)	11 (14.7%)	0.000
8. Are you familiar with the basic principles of designing a questionnaire?	20 (26.7%)	55 (73.3%)	58 (77.3%)	17 (22.7%)	0.000
9. Do you understand the term "reliability" in the context of research instruments?	18 (24.0%)	57 (76.0%)	62 (82.7%)	13 (17.3%)	0.000
10. Do you understand the term "validity" and its importance in	15 (20.0%)	60 (80.0%)	59 (78.7%)	16 (21.3%)	0.000

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measurement?					
11. Can you define what "data analysis" entails in the research process?	33 (44.0%)	42 (56.0%)	71 (94.7%)	4 (5.3%)	0.000
12. Are you familiar with descriptive statistics (e.g., mean, frequency, percentage)?	26 (34.7%)	49 (65.3%)	66 (88.0%)	9 (12.0%)	0.000
13. Do you know the difference between a population and a sample?	40 (53.3%)	35 (46.7%)	73 (97.3%)	2 (2.7%)	0.000
14. Can you list different types of probability sampling techniques?	12 (16.0%)	63 (84.0%)	55 (73.3%)	20 (26.7%)	0.000
15. Are you aware of the various sections that comprise a standard research report (e.g., introduction, methods, results)?	38 (50.7%)	37 (49.3%)	74 (98.7%)	1 (1.3%)	0.000

Note: *The p-value is from McNemar's test, indicating a statistically significant change ($p < 0.001$) in knowledge for all items from pre-test to post-test.*

Students' comprehension of basic research concepts has dramatically and statistically significantly improved between the pre- and post-seminar periods. Students' knowledge in all evaluated areas, including defining research problems, differentiating between research approaches, comprehending ethical principles, and understanding fundamental methodological terms like validity, reliability, and sampling, significantly increased after the intervention. The findings unequivocally show that the one-day lecture significantly improved the participants' understanding of the research.

DISCUSSION

The results of this study clearly show how a one-day research seminar can significantly improve undergraduate students' knowledge of health and physical education. The intervention was very successful in accomplishing its main goal, as seen by the statistically substantial ($p < 0.001$) increase in correct answers for all 15 evaluated items from the pre-test to the post-test. The findings show that students' comprehension of fundamental research principles was significantly lacking before the lecture. Pre-test scores were lowest in key areas like hypothesis formulation, reliability and validity comprehension, and probability sampling approaches, indicating difficulties with methodological rigor. The significant improvement in these same areas on the post-test indicates that the seminar was successful in demythologizing these difficult subjects. Interestingly, the nearly

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universal comprehension attained in organizing a research report and distinguishing between a population and a sample after the intervention highlights the effectiveness of focused, straightforward training on these essential concepts. These results are in good agreement with previous research. The effectiveness of this condensed, intense format supports the findings of Wali et al. (2020), who discovered that a one-day workshop produced comparable, noteworthy knowledge gains. Additionally, the emphasis on active, hands-on learning which encompasses the whole research process from problem identification to report writing supports the pedagogical models promoted by Guerrero et al. (2015) and Girgensohn (2016), which highlight how effectively involving students in the components of research develops critical competencies.

In summary, this study offers strong proof that a one-day seminar is not only possible but also a very successful method for helping undergraduate students quickly increase their research knowledge. It successfully fills in important knowledge gaps and gives students the fundamental knowledge they need to start their own scholarly research endeavors.

CONCLUSION

The one-day research seminar was a very successful intervention for greatly increasing research knowledge among undergraduate Health and Physical Education students, according to the study's findings. The findings showed a statistically significant increase in comprehension of every fundamental research idea evaluated, ranging from developing hypotheses and comprehending techniques to ethical principles and report structure. This demonstrates that intense, targeted workshops are a potent and effective teaching technique for giving students the fundamental knowledge and abilities required to conduct academic research successfully.

LIMITATIONS AND FUTURE DIRECTIONS

The use of self-reported measures from an immediate post-test, which might not accurately reflect long-term knowledge retention or practical application, and the absence of a control group, which precludes the definitive attribution of knowledge gains exclusively to the seminar, are the main limitations of this study. Additionally, only female students from a single institution were included in the sample, which limited how broadly the results could be applied. To confirm the intervention's long-term effectiveness, future studies should use a controlled, longitudinal design with a more varied population. Furthermore, examining how these seminars might be included into the official curriculum and assessing how they affect real research output like the caliber of theses would yield important information for long-term academic growth.

PRACTICAL IMPLICATIONS

The conclusions provide academic institutions and faculty with several useful insights. First, the proven effectiveness of a one-day seminar offers a workable, low-resource approach for quickly enhancing research literacy, which departments looking to improve their students' research skills without completely changing the curriculum can easily implement. Second, there is a need for focused, independent workshops that address frequent methodological flaws among undergraduates, as evidenced by the notable knowledge improvements in particular areas such as hypothesis formulation and sampling methodologies. Lastly, these findings support the inclusion of such intensive seminars as an obligatory pre-thesis preparation stage for students, guaranteeing that they have the foundational knowledge needed to carry out thorough and moral research.

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CONFLICT OF INTEREST

The authors declare no known conflicts of interest that could have influenced the work reported in this paper.

REFERENCES

Borisova, T. RESEARCH SEMINAR.

Franco, S. (2016). A doctoral seminar in qualitative research methods: Lessons learned. *International Journal of Doctoral Studies*, *11*, 323.

Girgensohn, K. (2016). Students' writing research as a tool for learning–insights into a seminar with research-based learning. *Journal of Academic Writing*, *6*(1), 73-83.

Guerrero, R. J., Oviedo-Gonzalez, E., Fong, M., Mejia, D., Castillo, V. H., & Siero, L. (2015). THE RESEARCH SEMINAR PROGRAM: ITS VALIDITY AS AN EDUCATIONAL TOOL. In *ICERI2015 Proceedings* (pp. 2769-2778). IATED.

Hinckley, R. A., McGuire, J., & Danforth, T. L. (2021). Improving student success in the capstone seminar: The importance of a prior research intensive experience. *Journal of Political Science Education*, *17*(1), 20-31.

Javier, G. M. R., Eilen, O. G., & David, M. M. An evaluation case for a research seminar.

Kalish, R. A., & Canoso, J. J. (2012). Development of the seminar. *Reumatología Clínica*, *8*, 10-12.

Kvarfordt, C. L., Carter, I., Park, W., & Yun, S. H. (2014). Integrating research proposals into a field seminar: Feedback from students. *Journal of Teaching in Social Work*, *34*(5), 545-563.

Montes, A., Arevalo, S., & O'connell, G. (2022, August). Research seminar designed for undergraduate students builds confidence and access to research opportunities. In *2022 ASEE Annual Conference & Exposition*.

Moreno, R. J. G., González, E. O., & Medina, D. A. M. (2020). An evaluation case for a research seminar. *Revista de Ciencias Tecnológicas*, *3*(3), 134-144.

Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. *Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education*.

Wali, A., Farooqui, R. J., & Siddiqi, S. H. (2020). A One-Day Research Methodology Workshop for Dental House Surgeons: A Feedback of Pre and Post Workshop Questionnaire.

Wang, Z., Dang, S., Shaham, S., Zhang, Z., & Lv, Z. (2019). Basic research methodology in wireless communications: The first course for research-based graduate students. *IEEE Access*, *7*, 86678-86696.