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Assessment of Lecturer's Teaching Practices, student research-related course content exposure and Research Competence among postgraduate students in Southwest Nigeria

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Abstract
This study examines the influence of lecturers' teaching practices and postgraduate students' exposure to research-related course content on research competence of postgraduate students in South-west Nigeria. Using a correlational research design, a self-developed questionnaire which demonstrated high reliability scores: the Lecturer's Teaching Practices Scale (r = 0.90), the Postgraduate Student Research-Related Course Content Exposure Scale (r = 0.97), and the Research Competence Scale (r = 0.98) was used to collect data from 316 postgraduate from sampled public universities (state and federal) in Southwest, Nigeria. Pearson Product Moment Correlation (PPMC) and Multiple Regression analysis were conducted. The findings revealed a positive relationship between lecturers' teaching practices and student's research competence (r = 0.36; P =0.00) and also positive relationships between course content exposure and students' research competence (r = 0.53; P =0.00). The regression analysis revealed that research-related course content exposure is a strong predictor of research competence ($\beta = 0.736$; $p < 0.05$), but lecturers' teaching practices do not independently predict research competence ($\beta = 0.249$; $p > 0.05$). These findings highlight the significance of thorough teaching practices and course exposure in improving the research competence of postgraduate students. The paper recommended enhanced research competence among postgraduate students.

Keywords: Research Competence, Lecturers, Postgraduates, Course content exposure, research-related

Introduction
Higher educational institutions are traditionally set-up to function through teaching, community service and research. Research conduct and dissemination however, are not exclusive responsibilities of the academic staff (Falaye, 2020; Oderinwale and Falaye, 2021). Students and particularly postgraduate students play significant roles in carrying out academic research to improve their trainings and also as part of the requirements for the award of research-based degrees such as MPhil/PhD and PhD. Studies on postgraduate students' research experience and competence have highlighted the challenges, opportunities and significance of postgraduate students and their research endeavours. The quality of research carried out by the students is a reflection of what they have acquired during their programme. Henson, Hull, and Williams (2010) note that the nature and quality of research are inseparable from the nature and quality of the graduate education and the production of future education researchers. Strokova (2018) points out that researchers (postgraduate students inclusive) have developed ground-breaking concepts, items, procedures, and services by conducting qualitative research which turns out to be important discoveries and concepts in their field. However, prior researchers revealed that the quality of research conducted by students has been a burden in the academic domain (Afolabi, Afolabi, Aragbaye, 2022; Agu and Odimegwu, 2014; Bako, 2005; Desmennu and Owoaje, 2018; Strokova, 2018).

A study conducted by Tella and Onyancha (2021) investigates the academic publishing encounter of 919 postgraduate students from twelve universities in Southwestern Nigeria. Research findings indicate that a significant proportion of postgraduate students at the chosen universities has between 0 and 2 years of research experience. Nevertheless, a mere 23.7% of the students had managed to produce academic papers over the designated study period. Although the studies did not directly investigate research competency among postgraduate students, they did acknowledge the importance of specific abilities for achieving

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research competence in this group. The skills encompass methodological expertise, proficiency in data analysis, adeptness in conducting literature searches and reviews, comprehension of research keywords, access to pertinent research resources, proficiency in phone, email, and ICT usage. With this in mind, courses focused on research are created to enhance the research skills of students at both the undergraduate and postgraduate levels. Research-oriented courses are a crucial component of higher education, and educators can create and implement impactful courses by comprehending students' learning attributes (Castro and Tumibay, 2021). Understanding students' learning characteristics is essential when creating and delivering research-related courses. Studies suggest that instructional approaches that promote active learning and student interaction can facilitate the development of research abilities and enhance students' comprehension (Yew and Goh, 2016). Utilising problem-based or inquiry-based learning methodologies can facilitate the development of students' critical thinking abilities and their ability to apply acquired knowledge to real-life situations. Furthermore, offering criticism and support can aid students in improving their research abilities and enriching their learning experience. Therefore, the utilisation of formative assessment was recommended in order to provide students with feedback during the research procedure. This can aid students in recognising areas for improvement and adapting their approach accordingly.

The knowledge acquired from the courses is expected to prepare students for project writing (Ossai, 2016; Pagliawan, 2017). Hence, students are expected to demonstrate mastery of such courses during project writing. Research-related courses are taken by all disciplines in the university with different course titles such as 'Research Method', 'Research Method and Statistics' 'Educational Research', 'Research Design' and 'Technical Writing'. The purpose of these courses is to inculcate in students the ability to carry out independent research beginning from their undergraduate projects (Ossai, 2016; Tan, 2007). Ekmekci, Hancock, and Swayze (2012) assert that the predominant objective of the research-related courses is for students to become 'critical evaluators of research'. Similarly, research-related courses are indispensable tool to model student attitudes, learning, and achievement in the field of research (Lombard and Kloppers, 2015). As important as the research-related courses are, students perceived them to be complex, rigorous, and difficult; their perception tends to dictate their attitude towards the courses; hence, some students enroll for the courses with much trepidation. It seems the purpose of the research-related courses, which is to enhance the development of students' research competence, has not really been accomplished because most students' scores in research-related courses do not correlate with their final year projects.

Lecturers play a crucial role in developing research competence of their students through their teaching practices during research-related classes. This is because they are central to the dissemination of the course content to students; serving as the source of students' acquisition of research skills (Oderinwale and Ogunrinde H.B, 2022). Also, they have the inclination to determine how students perceive research-related courses and students' attitude towards such courses. In addition to guiding students in academics or extracurricular activities, lecturers are responsible for influencing their students' futures and making them competent in their chosen course of study; through dissemination of information, morality, tradition, contemporary obstacles, and strategies for overcoming them. Despite the fact that education has changed significantly in recent years as a result of the introduction of digital media, giving education a new dimension, yet, the significant role of lecturers in ensuring that students receive the proper education cannot be underestimated (Lombard and Kloppers 2015). Although students are usually encouraged to study outside the four walls of the lecture hall to have a real grasp of the course, nevertheless, most students tend to rely solely on what lecturers pass to them. Hence, lecturers' input to the acquisition of knowledge and students' gain from any particular course have a tendency to be positively correlated to the course content

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delivery, coverage, and exposure of students to the course content (Ekmekci et al, 2012; Nind et al, 2020). It is expedient for any lecturer who aspires students' maximal benefit from any course to be dynamic in the delivery of the course content (Afolabi et al, 2022).

The research quality of postgraduate students in Southwest Nigeria is a crucial manifestation of the education and training they get during their degrees. Prior research has identified significant limitations in the research skills of postgraduate students, despite the crucial importance of research in higher education. Research-related courses aim to provide students with fundamental research abilities. However, the efficacy of these courses is sometimes diminished by variables such as sub-par teaching methods and insufficient student involvement. In the process of developing research competency, lecturers play a vital role as they directly influence students' abilities through their teaching methods. Nevertheless, there seems to be a discrepancy between the desired results of research-oriented courses and the actual research skills exhibited by students in their culminating projects. The students' view of these courses as intricate and demanding intensifies the problem, causing anxiety and potentially impeding their learning process. Although active learning and participation are crucial for developing research abilities, a significant number of students heavily depend on lecturers for their learning, hence amplifying the lecturer's role. Hence, this study aims to assess lecturer's teaching practices, students' research-related course content exposure and research competence among postgraduate students in Southwest Nigeria

Objectives of the study

- to assess the relationship between lecturer's teaching practices and postgraduate students' research competence;
- to assess the relationship between postgraduate students' research-related course content exposure and their research competence; and
- to investigate the influence of lecturer's teaching practices, postgraduate students' research-related course content exposure on postgraduate students' research competence.

Hypotheses

Based on the set out objectives, the following hypotheses were tested in the study:

- There is no significant relationship between lecturers' teaching practices and postgraduate students' research competence.
- There is no significant relationship between postgraduate students' research-related course content exposure and their research competence.
- There is no significant composite contribution of lecturers' teaching practices, postgraduate students' research-related course content exposure on postgraduate students' research competence.
- There is no significant relative contribution of lecturer's teaching practices, postgraduate students' research-related course content exposure on postgraduate students' research competence.

Methodology

This study assessed the influence of lecturers' teaching practices and postgraduate students' exposure to research-related course content on research competence of postgraduate students in South-west Nigeria. Correlational research design was adopted. The sample consisted of postgraduate students from six universities in the region. The formula adopted for the sample size calculation is:

$$n = \frac{Z^2 p(1-p)}{E^2}$$

Using the formular, the corresponding to the desired confidence level is 1.96 for 95% confidence; p is the estimated proportion of the population (set at 0.5 for maximum variability), and E is the margin of error (also set at 0.5 for maximum variability). Hence, the sample size for the study is 384.16 approximately = 384 (Singh and Masuku, 2014). However, 82% (316 postgraduate students) of the intended respondents participated in the study. Simple

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Random sampling technique was adopted to select participants for the study. The data were gathered using a self-developed questionnaire which demonstrated high reliability scores: the Lecturer's Teaching Practices Scale (r = 0.90), the Postgraduate Students' Research-Related Course Content Exposure Scale (r = 0.97), and the Research Competence Scale (r = 0.98). The tools assessed students' encounters with their instructors' teaching methods, exposure to course content related to research, and self-evaluated research proficiency, encompassing expertise in data collection, analysis, report delivery, and problem identification. The data gathering entailed the direct administration of questionnaires to the respondents. The analysis was performed using the Statistical Package for the Social Sciences (SPSS), utilising Pearson Product Moment Correlation (PPMC) and Multiple Regression analysis to examine the hypotheses. The study ensured the participants' anonymity, and confidentiality were upheld.

Table 2: Demographic Characteristics of participants

Variable	Characteristics	Percent
Gender	Male	55.4
	Female	43.0
Faculty	Art/Humanities	6.3
	Education	47.2
	Social Science/Management	46.5
Current Pogramme Level	Coursework	31.6
	Proposal	19.9
	Fieldwork	25.9
	Post field	7.3
	Oral defense/vival	15.2

Results

Table 2 is the presentation of Pearson Product Moment Correlation Matrix of lecturer's teaching practices and postgraduate student's research-related course content exposure research competence.

Table 2a: Descriptive Statistics

	Mean	Std. Deviation	N
Lecturer's teaching practices	30.8544	8.98311	316
Postgraduate student's research - related course content exposure	59.40	20.482	316
Postgraduate research competence	88.30	31.217	316

Table 2b: Pearson Product Moment Correlation Matrix

		Lecturer's teaching practices	Postgraduate student's research-related course content exposure	Postgraduate research competence
Lecturer's teaching practices	Pearson Correlation	1	.601**	.362**
	Sig. (2-tailed)		.000	.000
	N	316	316	316
Postgraduate student's research-related course content exposure	Pearson Correlation	.601**	1	.526**
	Sig. (2-tailed)	.000		.000
	N	316	316	316
Postgraduate research competence	Pearson Correlation	.362**	.526**	1
	Sig. (2-tailed)	.000	.000	
	N	316	316	316

**. Correlation is significant at the 0.01 level (2-tailed).

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Hypothesis One - There is no significant relationship between lecturer's teaching practices and postgraduate student's research competence.

As presented in Table 2, statistically, there is a significant moderate positive correlation between lecturer's teaching practices and postgraduate student's research competence (r = 0.36; P = 0.00). Hence, the null hypothesis that there is no significant relationship between lecturer's teaching practices and postgraduate student's research competence is rejected. This suggests that better teaching practices by lecturers are associated with greater exposure of students to research-related content.

Hypothesis Two - There is no significant relationship between postgraduate student's research-related course content exposure and their research competence.

As shown in Table 2, there is a strong positive correlation between postgraduate student's research-related course content exposure and postgraduate research competence (r = 0.53; P =0.00). Therefore, the stated null hypothesis that there is no significant relationship between postgraduate student's research-related course content exposure and their research competence is rejected. This indicates that greater exposure to research-related course content is associated with higher research competence among postgraduate students. The correlation is statistically significant at the 0.05 level.

Hypothesis Three: There is no significant composite contribution of lecturer's teaching practices, postgraduate students' research-related course content exposure on postgraduate students' research competence.

In order to ascertain the influence of lecturer's teaching practices, postgraduate students' research-related course content exposure on postgraduate students' research competence, multiple regression analysis was conducted as presented in Table 3.

Table 3: Multiple Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.529[a]	.280	.276	26.571

a. Predictors: (Constant), **Postgraduate students' research-related course content exposure Lecturer's teaching practices**

ANOVA [a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	85992.511	2	42996.255	60.901	.000[b]
	Residual	220977.527	313	705.998		
	Total	306970.038	315			

a. Dependent Variable: Research Competence

b. Predictors: (Constant), **Postgraduate students ' research-related course content exposure Lecturer's teaching practices**

The result revealed that the adjusted R = 0.276, indicating that approximately 27.6% of the variance in postgraduate research competence is explained by the composite contribution of lecturer's teaching practices and course content exposure of the postgraduate students. The F-statistic value is 60.901 with a significance level of 0.000, indicating that the model is statistically significant and that the independent variables jointly have a significant influence on the dependent variable. Hence, the null hypothesis is rejected.

Hypothesis 4: There is no significant relative contribution of lecturer's teaching practices, postgraduate students' research-related course content exposure on postgraduate students' research competence.

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Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	36.880	5.579		6.611	.000
	Lecturer's teaching practices	.249	.209	.072	1.194	.233
	Postgraduate students' research-related course content exposure	.736	.091	.483	8.051	.000

a. Dependent Variable: Research Competence

As shown in the multiple regression analysis result, the influence of lecturer's teaching practices on research competence is not statistically significant ($\beta = 0.249$; $p > 0.05$). This suggests that lecturer's teaching practices do not have a strong or significant influence on research competence in this model. However, the result revealed statistically significant contribution of Postgraduate students' research-related course content exposure to research competence ($\beta = 0.736$; $p < 0.05$).

Discussion

The result revealed that Lecturer's teaching practices are strongly correlated with **research-related course content exposure** and moderately correlated with **research competence.** While research**-related course content exposure** has a strong positive correlation with **research competence**. All correlations are statistically significant at the 0.05 level, suggesting robust relationships between these variables. Generally, the results imply that improving lecturer teaching practices and increasing exposure to research-related content can positively impact the research competence of postgraduate students. The regression results reinforce the correlation findings by showing that research**-related course content exposure** is a significant predictor of research competence, whereas lecturer's teaching practices is not. This indicates that while effective teaching methods are valuable, the actual exposure to research content is a more direct driver of research competence.

The robust relationship supports the notion that better teaching practices enhance students' exposure to critical research content, which is essential for developing research skills. Also, the moderate positive correlation between lecturer's teaching practices and postgraduate research competence suggests that while teaching practices do contribute to research competence, the relationship is not as strong as with research-related content exposure. This finding is consistent with earlier studies that emphasised the importance of teaching quality in shaping research competence, but also highlighted the multifaceted nature of research skill development (Desmennu and Owoaje, 2018; Tella and Onyancha, 2021). A strong positive correlation observed between research-related course content exposure and research competence underscores the importance of extensive exposure to research-related content in enhancing research skills, supporting findings from Castro and Tumibay (2021) and Yew and Goh (2016), who found that comprehensive course content significantly contributes to students' research abilities.

Additionally, about 28% of the variance in research competence were attributed to research-related course content exposure and lecturer's teaching practices which signifies that other factors also influence research competence. This partial explanation is consistent with the idea that research competence is influenced by various factors beyond just the course content and teaching methods (Afolabi, Afolabi, and Aragbaye, 2022). Research-related course content exposure is a significant predictor of research competence, with a positive effect. This result highlights the critical role of exposure to research-related content in enhancing research competence. It supports the findings of

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Ekmekci, Hancock, and Swayze (2012) and Ossai (2016), who emphasised the importance of extensive and relevant content exposure in developing research skills. Lecturer's teaching practices does not significantly predict research competence in this model. While lecturer's teaching practices shows a positive coefficient, it is not statistically significant, indicating that, within this model, lecturer's teaching practices has a less direct impact on research competence compared to research-related course content exposure. This finding suggests that while teaching methods are valuable, they may be less impactful on their own compared to the depth of content exposure (Agu and Odimegwu, 2014; Strokova, 2018).

The strong correlations between teaching practices, content exposure, and research competence underscore the importance of both effective teaching and comprehensive content exposure in developing research skills among postgraduate students. The regression analysis further confirms that research-related course content exposure is a significant predictor of research competence, reinforcing the critical role of content exposure in enhancing research skills. In contrast, lecturer's teaching practices did not show a significant impact, suggesting that the quality of teaching alone may not be as influential as the amount of relevant content provided. These findings suggest that higher educational institutions should prioritise enriching research-related course content and ensuring extensive exposure to it, alongside effective teaching practices, to enhance postgraduate students' research competence. This approach aligns with the literature indicating the importance of both comprehensive content and effective teaching in developing research skills (Henson, Hull, and Williams, 2010; Yew and Goh, 2016). Furthermore, the results underscore the importance of exposing postgraduate students to comprehensive research-related content to enhance their research competence. The result also highlights the need for higher educational institutions to focus on enriching research-related course content and ensuring students have ample opportunities to engage with it, rather than relying solely on teaching methodologies.

Conclusion

This study examines the crucial significance of teaching practices employed by lecturers and the exposure to research-related course content as the determinants of the competence of postgraduate students in research. The significant correlations among these characteristics underscore the necessity for efficient pedagogical approaches and thorough curriculum covering to cultivate resilient research abilities. The regression analysis highlights that although teaching practices play a role, the extent and scope of course content exposure are stronger indicators of research competence.

Recommendation

These findings indicate that in order to enhance students' research competence, institutions should prioritise improving the quality of instruction and providing ample exposure to relevant research topics. In addition, there is need for interactive teaching practices in order to strengthen the research competence of postgraduate students. Regular formative evaluations and feedback, in addition to problem-based and inquiry-based learning, are essential for cultivating critical thinking and practical research competence. Students also need to be thoroughly equipped for independent research, which will foster faculty growth, promote collaborative learning, and routinely assess programs.

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