

Pedagogical Skills and Perceived Learning Performance of Office Technology and Management Students in Public Polytechnics, Southwest, Nigeria

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Abstract

Pedagogical talent is advantageous and characterized by a mix of theoretical and practical understanding of teaching methods with increasing professional experience. Despite the efforts put in by the faculty, in the teaching learning process, a preliminary investigation revealed that there seems to be a decrease in the level of learning performance of Office technology and management students in public polytechnic in South West. Why there are many factors that influence student learning performance, this study investigated the influence of pedagogical skills on perceived learning performance of OTM students in public polytechnics in South West, Nigeria. The study also investigated if there is any moderating influence of student interest on their learning performance. A descriptive survey research design was used for the study. The target population was 650 OTM students and total enumeration as sample for six public polytechnics in South west, Nigeria offering ND and HND programmes. A structured likert type questionnaire was used to gather data to answer three research questions using descriptive statistics and inferential statistics to test four hypothesis at 0.05 level of significance. The results reveal that the level of perceived learning performance was high (overall $m=2.99$); Institutional support for the students was also high (overall $m=2.98$) and pedagogical skills experienced by OTM students at their lectures was equally high (overall $m=3.05$). The results for H_{01} and H_{02} both revealed that Institutional Support and pedagogical skills individually influence positively perceived learning performance of students in public polytechnics in South West, Nigeria. The result of the analyses were $R=0.338$, $Adj. R^2=0.122$, $F(2.603)=39.009$, $P=0.05$, and $(R=0.528$, $Adj. R^2=0.275$, $F(3.602)=77.386$, $P\leq 0.05$) respectively. The study concluded that conducive learning environment, lecturers teaching methods and competence were important in enhancing perceived learning performance of OTM students. The study recommended that polytechnic authorities should prioritize the provision of modern learning facilities and resources, as well as training and development of lecturers' pedagogical skills to improve the learning outcomes of OTM students.

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Key words: Pedagogical skills, Learning performance and Office Technology and Management

Introduction

Pedagogical talent is advantageous and characterised by a mix of theoretical and practical understanding of teaching methods with increasing professional experience. This information is both learnt and currently applicable. Extensive pedagogical content knowledge, improved problem-solving strategies, improved decision-making, improved perception of classroom events, increased sensitivity to context, and greater respect for students are some of the many features that are highlighted as being characteristic of expert teachers. Teachers, from the viewpoint of their students, should not only absorb academic knowledge but also incorporate knowledge gained from practical and experiential encounters into their lessons. Consequently, the employment of different pedagogies can impact both the quantity of knowledge that students are able to absorb and their attitude towards studying course material (Baker, 2017). The performance of tertiary institution especially public polytechnics is premised on the quality and capacity to engage her students in meaningful learning. When it comes to tertiary institution rankings, however, public polytechnics continue to struggle with helping her students learn and retain information, particularly those majoring in office technology and management. The lack of knowledge among academic staff about how different pedagogies impact students' learning and the need for improved engagement tactics and methods of delivering course work at public polytechnics in southwest Nigeria is further supported by this. In view of the above discussions, this study seeks to examine the relationship between institutional support, pedagogical skills and learning performance of office technology and management students in public polytechnics, southwest Nigeria.

Statement of the Problem

There is an assumed significant decrease in the level of learning performance of students in most tertiary institutions in some developed countries in Europe, America and Asia as well as underdeveloped countries especially in Africa which has cast doubt on the ability of these students to acquire specific competencies such as the ability to solve problems, lead and to undertake continuous learning. Literatures revealed that some tertiary institutions in these countries still grapple with the issue of poor learning performance which cannot be unconnected with the teaching methods used as well as other institutional processes which may have affected students'

learning performance and engagement. Many studies which dealt on the issue of students' learning performance have been carried out in Europe, America, Asia, Africa and specifically Nigeria; regardless, the issue still persist and may have become a challenge prohibiting most tertiary institutions to meet the purpose for which they were created. In Nigeria, the issue of poor learning performance of students is still paramount particularly in public tertiary institutions; and have become more pronounced among public polytechnics domiciled in South West region where students are perceived to lack the ability to learn more, regularly forget what they have learned after few days, cannot understand subject matter of what is taught and fail to sustain over time acquired knowledge when a self-evaluation of is carried after a final examination among others. Literature gives numerous reasons for the vast amount of learning loss from students. Among them is inadequate teaching methods which influences the students' use of cramming, as well as lack of proper support by the faculty to enhance students learning performance all of which undermines the purpose to which tertiary institutions were created. This study therefore intended to provide empirical evidence on the influence of Pedagogical Skills on perceived learning performance of Office Technology and Management Students in Public Polytechnics in Southwest Nigeria.

Perceived Learning Performance

Perceived Learning Performance is a construct that reflects students' self-assessment or subjective interpretation of their own learning achievements, often linked to their understanding, skills acquisition, and overall educational progress. Researchers view it as a valuable metric in educational research, particularly when evaluating instructional quality, pedagogical effectiveness, and student engagement. According to extant literature, perceived learning performance involves a student's belief in their ability to achieve learning outcomes, which can significantly affect motivation and academic behavior. Schunk 2023 suggests that perceptions of learning outcomes can, therefore, foster deeper engagement and greater resilience in the face of academic challenges.

Moreover, scholars emphasized that perceived learning performance is shaped by individual expectations and the broader academic environment. They argue that a supportive learning environment, rich with relevant resources and effective instructional strategies, can enhance

students' confidence in their performance. Tang, 2020 further explained that students who perceive their learning outcomes positively are more likely to participate actively in their own education, aligning their efforts with the desired learning objectives. Additionally, researchers have connected perceived learning performance with cognitive and emotional factors, highlighting how students' attitudes toward learning and their self-efficacy impact their perceived achievements. Students with a strong belief in their learning abilities are more likely to perceive their performance favorably, as they tend to set personal standards and engage more deeply in self-regulated learning practices (González-Betancor, 2023). Collectively, these authors illustrate that perceived learning performance is not only a measure of academic success but also a reflection of students' self-efficacy, motivation, and the support they receive in their educational environments. This concept is, therefore, critical in assessing educational interventions and understanding students' subjective experiences within the learning process.

The Concept of Pedagogical Skills

Academically, pedagogy is concerned with the study of information and skill transmission in educational settings, with a focus on the interactions that occur throughout the learning process. As a result of reflecting various cultural, social, and political situations, pedagogy theory and practice differ substantially. Among the goals of education are the development of students' intellectual and social abilities, the transmission of knowledge to help them grow as individuals, and the promotion of psychomotor and affective learning, which focus on building appropriate emotional dispositions and practical skills, respectively Hernandez, 2019. This educational methodology can help achieve these goals. Pedagogy has been defined as an art form or a trade by other schools of thought as well. Highlighting the importance of "tacit knowledge that is hard to put into words" and other aspects of pedagogy's practical side. Fundamental tenets of education, according to this school of thought, might be best ingrained by hands-on experience rather than rigorous scientific study Hao, 2021 .

A teacher's ability to observe and hone their profession is crucial to teaching in this context. In order to stimulate students' development through education and transmit a diverse set of skills and information, educators play a crucial role in the construction of students' personal identities. This is due to the fact that academic success is the result of collaborative effort between teachers

and students who each commit fully to the learning process. Students can be more productive when their educational institutions have a clear vision for teaching and excellent learning outcomes. Unfortunately, there is no universally accepted way to assess the learning experience, and there are many different aspects to consider when trying to forecast and explain learning activity and consequences. An effective learning environment and student learning outcomes are the result of a number of factors, one of which is pedagogical contact (Chu, 2020).

The term "pedagogy" describes the processes via which a learning environment and its components (teachers, students, and tasks) interact with one another. Communication between teachers and students, as well as pedagogical strategies used in class, are all part of this McCune, 2018. Every educator has a unique approach to teaching, a private pedagogy. This is typically characterized by the manner in which teachers educate their pupils. It is essential for a good teacher to be well-versed in a variety of teaching and learning strategies that can be applied in the classroom. One other definition of pedagogy is "the art of teaching," which entails conveying knowledge and skills in ways that students can grasp, consider, and notice. Therefore, pedagogical concepts centre on the instruction of study plans and techniques, the acquisition of knowledge, established educational standards, and the prediction of skills and attitudes.

Learning pedagogy can be characterized by two main schools of thought: the "live" approach and the "classroom-confined" school of thought. Students engage in the live approach when they are placed in groups to experience learning situations, and the classroom confined approach when they solve academic problems through participation in a classroom setting where they can generate, reflect, and exchange their feelings and difficulties with the lecturer and classmate Koretsk, 2018. The lecturer is able to hone their pedagogical abilities in this area through these interactions, which can be seen as a form of problem-solving in the classroom. Using a pedagogical approach in a classroom context can sustain the stages of concrete experience, reflective observation, and abstract conceptualization in the learning cycle, while assigning activities that include active experimentation can implement the stage of discovery Safin, 2020.

Input – Environment – Output Model

The goal of higher education is to help both students and teachers grow as individuals, and this model gives a theoretical framework that helps with that. It also offers a very practical evaluation.

An explanation of the behavioural approach is provided by the model, which states that the objectives, commitments, and intents of a student are influenced by their traits and experiences. It is used to explain why students' interactions with teachers appear to have a significant impact on their dedication to studying. In order to assess the potential impact of program qualities like academic assistance, social support, environmental support, etc., and the school environment on students' learning performance, the model provides a classification scheme (*Osuji, 2016*). For a classroom to be a productive place for learning, it is essential that teachers and students have a shared understanding of the role that each will play in the educational process. Teachers can find out what their students already know. Because of this, teachers can adapt their lessons to each student's needs at the start of the semester. At the same time, students get an opportunity to learn about the course's overall goals and the instructor's preferred method of evaluation.

In the environment stage, students can assess the class dynamics and how these factors affect their learning progress. These factors include academic support, environmental support, and social support. By the end of the semester, students will have a better idea of how to build their learning process and how to evaluate their own progress. When teachers take stock of their pupils' overall development as learners, they are in the output stage, often known as learning performance. During this part of the process, teachers can also point students in the direction of resources that will help them continue to learn and grow in a certain area even after the class has ended. Here, students can draw connections between what they've learnt in class and what they will learn in other classes as they go through college (*Ludigo, 2019*).

Empirical Studies of Pedagogical Skills and Learning Performance

With the teacher's knowledge, approach, and tactics as supplementary materials, the most valuable asset for education is the educator themselves. Thus, even with sufficient institutional support, a well-designed classroom cannot guarantee effective learning unless the instructor is highly qualified and actively involves the pupils (*Philipsen, 2022*) Thus, a competent educator is one who has received adequate training in the art of teaching, who is endowed with the requisite personality qualities, and who is capable of imparting knowledge to their students. Pedagogical engagement, including teacher competences or student-student interaction, is essential for

developing effective learning settings, according to theoretical and empirical research conducted by these authors.

Pedagogical contact and learning performance were investigated as potential factors influencing academic accomplishment in a related study (Superi, 2022). This research made use of Research using a quantitative approach. The sample population included 1986 students from secondary education schools in Portugal's central region. Included in the study were measures that had been developed for the instrument in earlier studies. A 5-point Likert-type scale was used to construct the items. The factors' reliability was checked using Cronbach's alpha in a pretest that was administered to a small group of high school students. The results show that learning performance has a direct effect on academic accomplishment, whereas teacher competences and student-student interaction have an indirect effect. Learning performance and academic achievement are positively and significantly related, as suggested earlier. Accomplishment in school is more likely to be high for kids who have a more optimistic view of their own learning performance when they consider how much they have learnt, how well they grasp the material, and how eager they are to study more. The significance of a welcoming and understanding classroom setting where instructors play the role of knowledge facilitators and students take an active role in applying what they have learnt is emphasized by this research. An important component of students' ability to self-regulate their learning and a direct predictor of their academic success is the degree to which they are able to reflect on and assess their own learning performance (Akinsolu, 2010). The second is that students benefit when their teachers provide a stimulating classroom setting, exhibit energy, knowledge, and good communication skills; they should also be well-organised and have a good grasp of the subject matter. In addition to improving students' learning performance, this facilitates better student-student interactions, which in turn boosts students' academic success, personal fulfilment, and overall health.

Another study followed a similar pattern, investigating the relationship between pedagogical affect, student interest, and academic achievement. More than a thousand students made up the sample for this survey study. An early version of the instrument was developed by incorporating measures used in previous research into the study. Using Cronbach's alpha, we tested the factors' reliability with a pretest sample of 30 students. Using full-information maximum likelihood

estimation procedures in LISREL 8.54, a confirmatory factor analysis was conducted to evaluate the measures' validity. The results show that students' interest, pedagogical affect, and learning performance are directly correlated with their perceived learning, while student-instructor interaction, instructor responsiveness, course organization, instructor likeability/concern, and student learning performance are indirectly influenced. A student's interest is impacted by their likeability or care for the subject matter through their learning performance. A key finding of the study was the recommendation that educators prioritize student engagement in the classroom. Furthermore, pupils form impressions of teachers based on their demeanor and level of engagement in class. Finally, students are more engaged when teachers are quick to respond to their needs, therefore teachers should work to maximize service efficiency. Teachers should provide classes that are organized and well-structured because students' perceptions of their own learning are much improved when classes are well-organized (Ha, 2021).

Result level of Pedagogical Skills experienced by Office Technology and Management Students in Public Polytechnics in Southwest Nigeria

Concrete Experience	VT	T	UT	VUT	Mean
Our lecturers uses cognitive skills which helps us as students	144 (23.8%)	265 (43.7%)	149 (24.6%)	48 (7.9%)	2.83
We are engaged and have hand on activities often	202 (33.3%)	199 (32.8%)	146 (24.1%)	59 (9.7%)	2.90
We have enough guidance and clear instructions when needed	280 (46.2%)	232 (38.2%)	53 (8.7%)	41 (6.8%)	3.24
We build on prior knowledge and connect new information to existing experiences	133 (21.9%)	211 (34.8%)	158 (26.1%)	104 (17.2%)	2.62
We often go for field trips to connect more with our studies.	137 (22.6%)	232 (38.3%)	160 (26.4%)	77 (12.7%)	2.71
Weighted Mean					2.86

Active Experimentation	VT	T	UT	VUT	Mean
We have in place classroom cultures that values experimentation and encourages students to learn from their mistakes	149 (24.6%)	275 (45.4%)	107 (17.7%)	75 (12.4%)	2.82
We have access to techniques that can guide students during experimentation process	307 (50.7%)	224 (37.0%)	41 (6.8%)	34 (5.6%)	3.33
Collaboration and peer learning is encouraged during learning	234 (38.6%)	230 (38.0%)	83 (13.7%)	59 (9.7%)	3.05
The learning environment encourages us to make inquiry often	279 (46.0%)	243 (40.1%)	36 (5.9%)	48 (7.9%)	3.24
We are provided with choices and control which serves as extra motivation	241 (39.8%)	249 (41.1%)	59 (9.7%)	57 (9.4%)	3.11
Weighted Mean					3.11
Reflective Observation	VT	T	UT	VUT	Mean
We are encouraged to always observe from different viewpoints	266 (43.9%)	276 (45.5%)	29 (4.8%)	35 (5.8%)	3.28
We have access to a supportive environment where learners feel comfortable sharing	323 (53.3%)	201 (33.2%)	52 (8.6%)	30 (5.0%)	3.35
We can develop action plans based on observations, such as proposing solutions to a problem	231 (38.1%)	255 (42.1%)	66 (10.9%)	54 (8.9%)	3.09
We are encouraged to reflect and make inquiry on any subject matter	231 (38.1%)	241 (39.8%)	92 (15.2%)	42 (6.9%)	3.09
Our lecturers play a vital role in guiding us and exposing us to diverse observation opportunities	246 (40.6%)	210 (34.7%)	98 (16.2%)	52 (8.6%)	3.07

Weighted mean	3.18
Weighted mean for Pedagogical Skills	3.05

Decision rule 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.
Note: SA-Strongly agree, A-Agree, D-Disagree, SD-Strongly disagree
Source: Field Survey Results (2024)

Based on the data shown in Table 4.5. Of the people who took the survey, 23.8% found it extremely true that their professors make use of cognitive skills to aid their learning, while 43.7% found it accurate, 24.6% found it untrue, and 7.9% found it extremely untrue. With a mean score of 2.83, respondents generally agreed that their professors make use of cognitive talents that benefit them academically. The results also showed that 33.3% of the respondents are involved and have hands-on activities often; 32.8% are truthful; 24.1% are untrue; and 9.7% are highly untrue. A mean score of 2.90 indicates that most respondents are actively involved and frequently participate in hands-on activities. In terms of having enough direction and clear instructions when needed, 46.2% of respondents found this to be very true, 38.2% found it to be true, 8.7% found it to be untrue, and 6.8% found it to be very untrue. A mean score of 3.24 indicates that most respondents feel they have sufficient direction and can understand and follow directions when necessary. Furthermore, the results showed that out of all the respondents, 21.9% said it was very true, 34.8% said it was true, 26.1% said it was untrue, and 17.2% said it was very untrue about how individuals build on prior knowledge and relate new information to existing experiences. The average score for the statement "I build on prior knowledge and connect new information to existing experiences" was 2.62, as reported by the respondents. In addition, the results showed that 22.6% of the respondents found it very true, 38.3% found it accurate, 26.4% found it untrue, and 12.7% found it very untrue that they commonly go on field trips to make their studies more relevant. The respondents' average rating of how often they go on field trips to make their studies more relevant is 2.71.

H₀₁: There will be no significant influence of pedagogical skills on perceived learning performance of Office Technology and Management Students in Public Polytechnics in Southwest Nigeria;

Utilizing multiple linear regression analysis, the researcher investigated the null hypothesis above, which posits that pedagogical skills will not significantly impact the perceived learning performance of Office Technology and Management students in Public Polytechnics in Southwest Nigeria. The analysis involved regressing the values of pedagogical skill sub-measures (active experimentation, reflective observation, and tangible experience) on the values of perceived learning performance. Perceived learning performance of OTM students in public polytechnics was measured by adding responses to all items used to measure the variable, while data for the influence of pedagogical skills was generated by summing responses to all items used to measure the independent variable. Tables 4.8a-c display the outcomes of the regression tests.

Summary of Regression Analysis on the influence of pedagogical skills on Perceived learning performance of OTM Students in Public Polytechnics in Southwest Nigeria

a. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.528 ^a	0.278	0.275	0.40309

a. Predictors: (Constant), Reflective Observation, Concrete Experience, Active Experimentation

b. ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	37.721	3	12.574	77.386	0.000 ^b
	Residual	97.814	602	.162		
	Total	135.536	605			

a. Dependent Variable: Perceived Learning

b. Predictors: (Constant), Reflective Observation, Concrete Experience, Active Experimentation

c. Coefficients^a

		Unstandardized		Standardized		
		Coefficients		Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.770	.090		19.655	.000
	Concrete Experience	0.068	.035	.094	1.979	.050
	Active Experimentation	-0.106	.037	-.152	-2.847	.005
	Reflective Observation	0.427	.037	.567	11.570	.000

a. Dependent Variable: Perceived Learning

Source: Field Survey Results (2024)

Discussion of findings

For research question one “What is the level of perceived learning performance of Office Technology and Management Students in Public Polytechnics in Southwest Nigeria? The descriptive statistics found a high level perceived performance among Office Technology and Management Students in Public Polytechnics in Southwest Nigeria. One of the studies examining perceived competence influencing academic performance of students at the under-graduate level found that students reported a high level of performance in key areas related to their academic and professional preparedness. In tandem with previous findings, OTM students perceived their performance to be high in several competencies, including document preparation, communication skills, and the use of digital tools. The study highlighted that the integration of practical training and digital literacy into the OTM curriculum contributed significantly to these perceptions of high performance. The study on pedagogical skills and perceived learning performance of Office Technology and Management (OTM) students in public polytechnics in Southwest, Nigeria, reveals a significant relationship between instructors' teaching abilities and student learning outcomes. Effective pedagogical skills, such as lesson planning, classroom management, and assessment, enhance students' understanding and application of OTM concepts. The study suggests that instructors with strong pedagogical skills foster a supportive learning environment, promote student engagement, and improve learning outcomes. Conversely, inadequate

pedagogical skills can hinder students' progress and perceived learning performance.

Conclusion

The study explored the moderating effect of student interest on the relationship between pedagogical skills and perceived learning performance among Office Technology and Management (OTM) students in Nigerian polytechnics. The findings revealed that student interest plays a crucial moderating role, enhancing the positive impact of pedagogical skills on students' learning outcomes. When students demonstrated higher levels of interest, the effectiveness of teaching strategies and methods improved significantly, leading to better learning performance. Conversely, a lack of student interest weakened the influence of pedagogical skills on perceived learning outcomes. Overall, the study concludes that fostering student interest alongside developing strong pedagogical skills is essential for improving learning outcomes in OTM programs. This conclusion contributes to the broader understanding of how intrinsic motivational factors, like student interest, can enhance educational effectiveness in vocational and technical disciplines.

Recommendation

1. The study identified a high availability of pedagogical skills, which significantly influenced the perceived learning performance of OTM students. Therefore, polytechnics should prioritize regular professional development programs to strengthen the pedagogical skills of lecturers. This includes training in innovative teaching methods, active learning techniques, and digital literacy to ensure that lecturers are well-equipped to meet students' learning needs.
2. As the study revealed that students' interest significantly moderate the influence of pedagogical skills on learning performance, lecturers should aim to actively engage students by making course content more interactive and relatable. Institutions can provide workshops for lecturers on how to foster student interest through techniques such as problem-based learning, practical demonstrations, and integration of real-world applications in OTM subjects.

References

- Akinsolu , A.O. 2010 *Teachers and students" academic performance in Nigerian secondary Schools: Implications for planning*. **Florida Journal of Educational Administration and Policy**, 3(2), 86-103.
- Baker M.A. & Robinson., J.S 2017 *the effect of two different pedagogical delivery methods on students' retention of knowledge over time*. **Journal of Agricultural Education**, 59(1), 100-118
- Chu, W. C., Wong, Y. Y. 2020, et al *Perceived achievement of subject learning outcomes, pedagogical strategy, facilitating skills and academic performance of university engineering students*. **International Journal of Child & Adolescent Health**, 13(1).
- González-Betancor, S. M., Fernández-Monroy,et al 2023. *Academic performance of first-year university students: modelling the role of reading competence*. **Higher Education Research & Development**, 42(6) , 1422-1437.
- Ha, H. T. L., Pham, A. T. K., et al 2021. *Training pedagogical skills: evaluation of lecturers and teacher training students at educational universities in Vietnam*. **Eurasia Journal of Mathematics, Science and Technology Education**, 17(12), , em254.
- Hao, Q., Barnes, B., & Jing, M et al. *Quantifying the effects of active learning environments: separating physical learning classrooms from pedagogical approaches*. **Learning Environments Research**, 24(1), , 109-122.
- Hernandez, C. & Flores, I. A. 2019 *Pedagogical mentoring and transformation of teaching practices in university*. Kybernetes,.
- Koretsky, M., Keeler, J., Ivanovitch, J. 2018,et al *The role of pedagogical tools in active learning: a case for sense-making*. **International journal of STEM education**, 5(1),. 18.
- Ludigo, H., Mugimu C. B., & Mugagga. A. M. *pedagogical strategies and academic achievement of students in public universities in Uganda*. **African Journal of Education and Practice**,. Vol.3, Issue No.1, 2019 pp 81 -96.
- McCune, V., *Experienced academics' pedagogical development in higher education: Time, technologies, and conversations*. **Oxford Review of Education**, 44(3), 2018, 307-321.
- Osuji, J.N. *Impact of school facilities on students' academic performances in public secondary schools in Giwa and Zaria education zones, Kaduna state, Nigeria*. Unpublished Master dissertation from Ahmadu Bello University, Zaria, Nigeria. 2016.
- Philipsen, B., J., Tondeur, R., Scherer, B., Pynoo, & Zhu, C. *Measuring institutional support for online and blended learning professional development: validating an instrument that examines teachers' perceptions*. **International Journal of Research & Method in Education**, 45(2), 2022, 164-179.

Safin, R., Korchagin, E., I., Vildanov, & Abitov, R., *On professional and pedagogical competence development of technical university teaching staff*. In IOP Conference Series: Materials Science and Engineering. Vol. 890, No. 1, 2020, p. 012 - 167.

Superi, M. F. B., & Naqshbandi, M. M. *Lecturer competencies and student academic performance: examining the moderating role of student motivation*. **International Journal of Management in Education**, 16(5), 2022, 463-484.