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# Investigation of the Determinants of Examination Malpractice Intentions of Pre-Service Deaf Teachers Using the Hierarchical Multiple Regression Analysis

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## ABSTRACT

This study examined the determinant factors of examination malpractice intentions (EMI) among pre-service deaf students in a Nigerian teacher training college. Four (4) research questions were raised and answered in the study. Data were collected from 265 pre-service deaf teachers using a closed-ended questionnaire. Data generated were analysed using descriptive statistics, bivariate correlation, hierarchical multiple regression analysis, and the independent *t*-test at a 0.05 level of significance. The results obtained revealed a significant inverse relationship between the academic level of pre-service teachers and EMI among the study participants. Peer pressure was found to have the highest predictive capacity of influencing EMI, followed by academic level and study habits, respectively. There was also a moderating interaction between achievement motivation, test anxiety, and EMI among the participants. A significant difference only exists in the EMI among the participants based on gender parity and not the onset of deafness. Based on the findings, the study recommends that relevant stakeholders in deaf education and deaf studies work towards the building of self-confidence required for academic excellence. More so, deaf students should be guided and encouraged to carefully choose friends who can positively influence their academic decisions and actions.

## 1 | Background to the Study

The last two decades have recorded some consistent growth in deaf education. Such growth and advances in the education of deaf students can be attributed to the concerted effort of all stakeholders. Interestingly, post-secondary education, particularly in Nigeria, has consistently recorded increases in the enrollments of deaf students. The influx of deaf students across various post-secondary institutions in Nigeria has opened a barrage of concerns that require the attention of relevant stakeholders. Such critical concerns include, but are not limited to, heightened levels of anxiety and stress being experienced by pre-service deaf teachers (PSDTs), communication challenges and social barriers, limited accommodation and lack of inclusion in class and group discussions, low motivation, peer pressure, and bullying (Batista and García 2023). Recent evidence has shown that the foregoing challenges faced by deaf students (PSDTs) in tertiary institutions are mostly motivated by overcrowded classrooms (Lynch et al. 2020; Mapepa and Magano 2018). Over the years, issues of overcrowded classrooms have been a menace in Nigeria's' post-secondary education classrooms.

It is quite unfortunate that PSDTs, whose active participation in inclusive classrooms and group discussions is largely influenced by communication difficulties, are found and 'sandwiched' in such an overcrowded classroom (Mushtaq and Reba 2017). According to Adigun et al. (2024), deaf students are a heterogenous group of individuals with similar experiences of the inability to actively respond to oral communication. In other words, deaf students have relatively fewer lexicons and

grammar capabilities and lower reading vocabularies. They show weaker connections in sentences and word meaning and usually exhibit a lack of requisite language skills, which is significant enough to prevent them from acquiring or accessing relevant oral information through hearing (Adigun et al. 2024; Berent et al. 2024). Therefore, based on the deficiencies in language competencies coupled with pedagogical instruction delivered in a complex lecture room (Gbenga et al. 2023; Maikomo et al. 2021), there may be a higher probability for reduced academic concentration and increased academic and test anxiety (Adigun et al. 2024), which may possibly lead to intentions of engaging in examination malpractices among PSDTs. While examination malpractice (EM) is a negative behaviour which is exhibited among many college students (Nganchi and Charlotte 2020; Ogunjobi et al. 2021), the intention to exhibit such negative behaviour may be heightened among students whose experience of teaching and learning was enveloped with extreme challenges. Hence, the objective of this study is to

- establish if there is a significant relationship between the independent variables ((a) academic level, (b) gender, (c) onset of deafness, (d) study habits, (e) peer pressure, and (f) test anxiety) and the dependent variable (examination malpractice intention [EMI]).
- ascertain if there would be a significant influence of the independent variables ((a)academic level, (b) gender, (c) onset of deafness, (d) study habits, (e) peer pressure, and (f) test anxiety) on the dependent variable (EMI).
- determine if achievement motivation would moderate the influence of (a) peer pressure, (b) study habits, and (c) test anxiety such that the higher the level of achievement motivation, the lower the influence of peer pressure, study habits, and test anxiety on EMI, and
- find if there would be any significant difference in EMI of pre-service deaf teachers based on (a) gender differences (male and female) and (b) onset of deafness (prelingual and postlingual).

### 1.1 | Literature Review

The conduct of examinations in colleges and universities is a means through which students' academic achievements are measured. Thus, institutions of higher learning place high value on the scores obtained by students in such examinations for promotional and graduation purposes. While a lot of importance is attached to higher score advancement for subsequent academic levels and career propensities, students have been found to engage in various positive and negative behaviours just to ensure they meet the minimum standard for graduation purposes (Gbenga et al. 2023; Nganchi and Charlotte 2020; Nwankwo and Nwankwo 2020). Among such negative behaviours is EM. Examination malpractices (EM) have been described as any deceitful, illicit or unauthorised action executed solely or in collaboration with other actors/stakeholders before, during, or after the examination for the purposes of gaining unfair advantage and/or securing unmerited, unwarranted, and imbalanced results or grades (Gbenga et al. 2023; Nwankwo and Nwankwo 2020; Adie and Oko 2016). Lamentably, issues of examination malpractices are a complex phenomenon that has been widely reported in some African countries such as Ghana (Abubakari 2023); Zimbabwe (See: Bbalo and Mulauzi 2019; Chifinda 2017; Kwalombota 2015) and the United States (Fossey and Zirkel 1994) respectively. In Nigeria, Gbenga et al. (2023) as well as Nwankwo and Nwankwo (2020) reported that the recurring incidences of EM in Nigerian tertiary institutions are alarming and such cases are being recorded in every examination. Like in Nigeria, there are reports of examination malpractices among deaf students from various parts of the world. In line with the foregoing submission, it is important to note that the act of EM did not just occur in the examination hall.

Therefore, EMI, in this study, is conceived as a structured plan of action, ideas, or strategies designed by students/candidates/individuals to circumvent institutional rules and regulations governing the conduct of examinations for the purpose of promotion geared towards graduation for the award of certificates in colleges and other post-secondary educational institutions. Based on available evidence in literature, there is no doubt about the fact that EM is motivated by several factors, which may include peer pressure, academic anxiety, achievement motivation, or students' study habit patterns. Apparently, despite the plethora of existing studies on academic performance of deaf students (Adigun and Ndwandwe 2022; Alshutwi et al. 2020; Hrastinski and Wilbur 2016), there is a dearth of evidence in literature on issues of EM and/or the intentions among PSDTs in colleges or other post-secondary institutions, particularly in Nigeria. Thus, this study leveraged literature available among non-deaf students to provide a basis for discussion. Interestingly, irrespective of the onset of deafness, that is, prelingual[1] or postlingual[2], deaf students have peers (deaf and non-deaf) with whom they associate with.

Interaction with peers can have both negative and positive influences on the actions, behaviour, or intentions of an individual. Such influence may possibly emanate from pressure from peers and may influence informed decisions taken by PSDTs to engage in EM. For instance, in Bassey and Iruoje's (2016) study among some sample of students in Edo State, Nigeria reported a direct correlation between peer influence and the attitude and intention of students to cheat in an examination. Based on their findings, Bassey and Iruoje (2016) argued that endorsement of a particular behaviour by peers would determine students' attitude, engagement, and potential to exhibit such behaviour. Therefore, it can be concluded that the influence and pressure from peers strongly motivates intentions to engage in EM. Other studies reported a negative correlation between peer influence on students' engagement in or intention to engage in EM (Agunbiade and Ajayi 2018; Anierobi et al. 2020; Mauti et al. 2021; Okorodudu 2013). Therefore, a negative peer influence or pressure may account for a higher likelihood of intentions to cheat in an examination and vice versa. While Agunbiade and Ajayi (2018) ascertained the plausible influence of peer pressure on EM, the duo further asserted that the influence of peer pressure on the intention of a student to engage in EM also depends on a student's level of anxiety towards such examination.

Interestingly, test anxiety and the desire to excel were expressed by Mauti et al. (2021) as some of the factors that motivated intentions to engage in EM. Adigun et al. (2024) noted that due to

language deprivation resulting in lexical and syntactic complications, deaf students expressed heightened anxiety towards assessment questions. Specifically, Adigun et al. (2024) observed that such irrational and impeditive dread towards assessment of learning outcomes among deaf students leads to mental disorientation, panic, intense negative feelings, and anxiety about personal competence, which may spike up EMI. Although, until now, there is yet to be an established study that has determined the role of test anxiety on EMI among deaf students, there are numerous studies of such magnitude among non-deaf students. Described as a psychological disposition, test anxiety plays an important part in students' intentions of and attitude towards participation in EM (Nwosu et al. 2020). Earlier, other studies such as those of Naliaka et al. (2015), Nwosu et al. (2017) and Ofodile et al. (2019) asserted that test anxiety, as a psychological disposition, may prompt intentions of and/or indulgence in EM. A recent study by Oyama and Oyama (2022), conducted among some 735 undergraduates who were in year two, three, and four in a Nigerian university, found a direct correlation between high test anxiety and academic dishonesty. In other words, Oyama and Oyama (2022) believed that students who exhibited lower test anxiety would have reduced intent to engage in academic dishonesty or EM. Similarly, the findings in the study of Oyama and Oyama (2022) corroborate with the findings presented in the studies of Balogun et al. (2017), DordiNejad et al. (2011), and Zamani and Pouratashi (2018).

Regardless of the state of individuals' level of anxiety, the expectation of examiners is that examinees should have been well prepared and should have studied applicable learning materials prior to the time of examination. Thus, performance in an examination may be affected by students' study habits. Alwashmi (2023) remarked that a study habit is a process that encompasses the application of affective and behavioural components of an individual in a manner that facilitates decoding and encoding of instructional information geared towards one's capability for storing and retrieving information for knowledge construction. However, while there is a paucity of existing studies on the implication of study habits on PSDTs' intentions for EM, some other studies have shown that variations exist in perceived examination intentions among students when study habits are dichotomised. For instance, Ossai (2011a) adduced that a study habit is a valid predictor of intention and students' engagement in EM. Ampofo (2020) and Ntui et al. (2022) stated that students with poor study habits have a higher probability of engaging in EM. Okorodudu and Ossai (2004) stated that students with poor study habits lack self-confidence and have lower academic achievement motivation and poor academic self-efficacy and thus they have a greater affinity to interact with peers that could motivate them to engage in behaviours associated with academic dishonesty.

Okorodudu and Ossai (2004), in their study, stressed the importance of achievement motivation as a factor that could significantly influence academic dishonesty and, by extension, EM. Regardless of linguistic challenges associated with deafness, studies have shown that deaf students' academic engagements are greatly influenced by achievement motivation (Adigun 2020; Marschark et al. 2012; Yuliang 2024). Despite the associated social, emotional, and linguistic challenges, existing studies have indicated that both intrinsic and extrinsic motivations are important determinants that affect the engagement of deaf students in several academic-related issues (Henshaw et al. 2015; Marschark et al. 2012; Povlakić-Hadžiefendić 2019). For instance, Povlakić-Hadžiefendić (2019) confirmed that deaf students can have high motivation for learning and perhaps high competence to engage in various academic tasks; however, Hasanbegovic and Mahmutovic (2022) noted that deaf students with deflated achievement motivation are susceptible to self-doubt and limited resilience for academic stress. Thus, Hasanbegovic and Mahmutovic (2022) adduced that repeated failure or lack of understanding of pedagogical content may lead to the exhibition of extreme behaviour, such as academic dishonesty and EM, among PSDTs.

While existing studies have shown a correlation between study habits, peer pressure, test anxiety, and EM in schools (Alwashmi 2023; Anierobi et al. 2020; Mauti et al. 2021), the moderating effects of achievement motivation in relation to EMI, particularly among deaf college students, are yet to be ascertained. Although some studies have revealed that achievement motivation may significantly moderate students' study habits (Ernest-Ehibudu and Opurum 2019; Jegede et al. 1997; Kumari and Chamundeswari 2015; Paulson 2018; Sundari et al. 2020), until present, no study has reported the moderating potential of achievement motivation on study habits vis-à-vis EMI. Kumari and Chamundeswari (2015) asserted that achievement motivation moderates several factors that influence students' perception of their proficiency and academic performance. Thus, this study posed to determine the potential moderating influence of achievement motivation on peer pressure and PSDTs' EMI. Previous studies, such as those of Benish-Weisman et al. (2022), Cairns and Cairns (1994), and Chen et al. (2003), have expressed the potential relationship between achievement motivation, peer influence, and potential behaviours that an individual can exhibit. Posited that the relationship between achievement motivation and peer relation is influenced by social functioning across group levels.

Interestingly, Chen et al. (2003) further asserted that association with peers may significantly influence socio-cognitive competence. In other words, performance and achievement differentiation across peer group levels may partly affect participation in social milieu for clustering individuals with associated social behavioural styles and similar academic abilities. In line with the submissions of Chen et al. (2003), an earlier study by Cairns and Cairns (1994) showed that interaction between motives may represent an essential aspect of peer influence with a greater impact on socio-cognitive behaviour. Thus, achievement motivation based on peer influence may encourage positive or negative behaviour, which may affect academic engagement (Anierobi et al. 2016; Benish-Weisman et al. 2022; Chen et al. 2003; Okoro and Udoh 2014). Besides peer influence, studies have also associated examination misconducts with achievement motivation (Ofodile et al. 2019; Olabisi and Abiola 2014; Oyama and Oyama 2022). However, other studies noted that for deaf students within an integrated or inclusive classroom, their engagement in examination misconducts is much more influenced not only by the intent to excel like their peers but also by anxiety and fear of failure (Adigun et al. 2024; Alshutwi et al. 2020; Hrastinski and Wilbur 2016; Lissi et al. 2023; Mahwish et al. 2012; Mapepa and Magano 2018).

Mbugua and K'Okul (2013) and Mahwish et al. (2012) submitted that negative psychological dispositions and prevailing school climate, coupled with perceived unhealthy academic competition, may motivate students' intentions to engage in examination misconducts. Mahwish et al. (2012) stressed that due to heightened academic tension, attitudinal dispositions towards deaf students, as well as linguistic challenges, deaf students tend to have multiple challenges that may motivate their intention to engage in EM rather than fail to save themselves from aggravated worries which may arise from their lowered academic achievement. Until now, the differences in EMI in relation to the onset of deafness are yet to be understood in existing studies. However, previous studies have indicated that the language abilities of deaf students differ across the prelingual and postlingual dichotomy (Adigun and Nzima 2021; Bakare 2013; Loeb and Sarigani 1986; Ogundiran and Olaosun 2013). Adigun and Nzima (2021) and Bakare (2013) noted that there are variations in the dispositions, potentials, as well as perceived intentions of deaf students and how each deaf individual reacts to prevailing situations. Studies have confirmed that individuals with prelingual deafness may exhibit higher levels of anxiety towards examination than postlingually deaf students. The foregoing assumption is based on the level of linguistic competency and past language usage. On the other hand, Adigun and Nzima (2021) asserted that postlingually deaf students have a higher likelihood of impulsive tendencies, a higher degree of dissatisfaction, personality crises, and stressful psychosocial adjustment patterns.

Across various academic years, Adigun and Nzima (2021) as well as Ogundiran and Olaosun (2013) found no significant difference in the academic achievement of deaf students in mathematics and their attitude towards biology respectively. However, a significant difference was noted by Ademokoya and Shittu (2007) in the academic performance of postlingual students compared to their prelingual peers. While there is sparse evidence on the implications of the onset of hearing loss on EMI, there exist divergent views on gender parity in EMI among students across various academic levels. For instance, some studies found neither a significant relation nor difference between gender parity and EM among various groups of students (Badejo and Gandonu 2010; Ede 2017; Kyei and Nduro 2014; Mulongo et al. 2020; Olowodunoye and Titus 2011; Ossai 2011a). Among existing studies, the study of Nwosu et al. (2017) observed a gender difference in students' engagement in EM, with females having a higher tendency to engage in such negative behaviour in an examination. Unlike Nwosu et al. (2017), findings reported in the studies of Amalu and Amalu (2020), Animasahun and Ogunniran (2014) as well as Eze (2010) noted that a correlation exists between gender differences and students' engagement in EM. Largely, their (Amalu and Amalu 2020; Animasahun and Ogunniran 2014; Eze 2010) studies found more male involvement in examination misconducts.

Until now, there are no existing studies that have established factors that may influence the involvement or intention of PSDTs' to engage in EM in Nigeria. However, there is evidence in extant literature that such behaviour exists among college students in Nigeria and, coupled with other associated plausible factors, PSDTs in various colleges and universities may exhibit such behaviour. While such negative academic behaviour has been established among non-PSDTs (Gbenga et al. 2023; Nwankwo and Nwankwo 2020; Ossai 2011b), this current study, based on the following research questions, is poised to determine factors that motivate the EMI among PSDTs in colleges in Nigeria.

### 1.2 | Research Questions

1. Is there a significant relationship between the independent variables ((a) academic level, (b) gender, (c) onset of deafness, (d) study habits, (e) peer pressure, and (f) test anxiety) and the dependent variable (EMI)?
2. Is there a significant influence of the independent variables ((a) academic level, (b) gender, (c) onset of deafness, (d) study habits, (e) peer pressure, and (f) test anxiety) and the dependent variable (EMI)?
3. Will achievement motivation moderate the influence of (a) peer pressure, (b) study habits, and (c) test anxiety such that the higher level of achievement motivation, the lower the influence of peer pressure, study habits, and test anxiety on EMI?
4. Will there be any significant difference in EMI of pre-service deaf teachers based on (a) gender differences (male and female) and (b) onset of deafness (prelingual and postlingual)?

## 2 | Material and Method

### 2.1 | Study Design and Participants

This study adopted a cross-sectional research design in the investigation of the moderative influence of achievement motivation on EMI of deaf college students in Nigeria. Respondents in this study were purposively sampled from a publicly funded teacher training college in Nigeria. Pre-service teachers who registered as deaf students in the college were purposively selected as respondents to the questionnaire used as the research instrument in this study. A total of 283 students indicated interest to partake in the study. Of the 283, a total of 265 adequately filled research instruments were found sufficient for analysis. Thereafter, leveraging on the moderate effect size based on the assumption of power analysis and significance level of 0.05% and 80% power (Cohen 2013), a sample size of 265 was considered adequate. Of the 265 adequately filled questionnaires, 46.42% ($n = 123$) of the respondents identified as male, while 53.58% ($n = 142$) were female. Also, 155 respondents, which accounted for 58.49% of the respondents, identified as individuals with postlingual deafness. Further, the composition of the respondents included 78 (29.4%) who were in their third year in the college, 58 (21.9%) in their second year and a total of 129 (48.7%) in their first year as college students at the time of data collection. A total of 108 respondents, which accounted for 40.75% of the total respondents, were registered for art-based courses in the college, while 84 (31.70%) and 73 (27.55%) were registered for science-based and social science-based courses respectively.

## 2.2 | Measures

A four-sectioned instrument was used for data collection. The first part of the research instrument consisted of a statement that sought demographic information from the respondents. Such demographic information included academic levels, gender, course/program, and onset of deafness. Other instruments used for data gathering were as follows:

### 2.2.1 | The Westside Test Anxiety Scale (WTAS)

This study adopted the WTAS, which was developed by Driscoll in 2007 to assess the test anxiety of the respondents in a study. The WTAS is a brief 10-item instrument used to test the level of anxiety among students when it comes to assessment and evaluations. Items of the WTAS included self-assessment statements such as "The closer I am to a major exam, the harder it is for me to concentrate on the material" that assisted in collection of relevant information. The WTAS is a five-point response format of "5 = extremely or always true" to "1 = not at all or never true".

### 2.2.2 | Peer Pressure Scale (PPS)

The PPS used for data collection in this study is a 30-item scale developed by Santor et al. (2000). Statements in the scales afford the researcher the opportunity to ascertain the influence of peer pressure on examination intentions among pre-service deaf teachers. The scale, which has statements like "My friends could push me into doing just about anything", was designed in a five-point response format of "1 = Strongly Agree" to "5 = Strongly disagree".

### 2.2.3 | Achievement Motivation Scale (AMS)

We adopted the revised 10-item version of the Achievement Motives Scale by Lang and Fries (2006). The AMS is a scale that contains items such as "I enjoy situations in which I can make use of my abilities" which were used to assess the academic achievement motivation of the study respondents. The AMS was designed in a five-point response format of "1 = Strongly Agree" to "5 = Strongly disagree".

### 2.2.4 | Study Habit Questionnaire SHQ

This study adopted 30-items from the Palsane and Sharma Study Habit Inventory (Palsane and Sharma 1989), which originally has 45-items to measure study habits among students of post-secondary education. The adopted 30-items were items that measure respondents' time management skills, physical conditions, learning motivation, reading ability, note taking and memory, test taking and health of study. The adopted 30-items were scaled in a five-point response format of "1 = Never" to "5 = Always".

### 2.2.5 | Examination Malpractice Intentions (EMI)

The EMI is a self-developed 15-item questionnaire whose items were generated based on available evidence in literature. "I do not see anything wrong in cheating once in a while during and examination" is an example of the items of the EMI questionnaire, which were constructed in a five-point response format of "1 = Strongly Agree" to "5 = Strongly disagree".

## 2.3 | Validity and Reliability

Collectively, the research instruments described above were subjected to both content and face validities. Two senior academics with extensive research output on issues of educational psychology and guidance and counselling assessed the research instrument, commented, and made necessary contributions to the items of the research instrument before it was subjected to a reliability test. The research instrument was subjected to a test–retest reliability test among 30 deaf students in another publicly funded university in another state of Southwest Nigeria. Since there are no existing studies that have collectively used all the measures to assess EMI, this study established the internal consistency values of the instrument to ensure its reliability. Thus, a test–retest reliability was conducted. The entire instrument generated a reliability coefficient of 0.09. Separately, EMI was found to be reliable at $\alpha = 0.68$, study habits at $\alpha = 0.86$, peer pressure at $\alpha = 0.81$, and achievement motivation at $\alpha = 0.71$, respectively.

## 2.4 | Procedure for Data Collection

Permission was sought from appropriate officials of the college and, through the usage of the Nigerian sign language as the medium of communication, respondents were duly informed of the objectives of the study. Confidentiality of the responses was ascertained and ensured, after which the researcher obtained written informed consent from the respondents before they were made to voluntarily respond to the research instrument in a well-conducive environment. Two research assistants who were sign language interpreters with the college assisted with the process of data collection. Responses to the research instrument took each respondent about 32 min on average to complete.

## 2.5 | Ethical Consideration

The conduct of this study was in accordance with the conduct of social and humanities research of the University of Namibia, Namibia, and the research committee of the School of Special Education, Federal College of Education (Special), Nigeria. Above all, the study strictly adhered to the *Declaration* of *Helsinki* in respect of all ethics of social science research.

## 2.6 | Data Analysis and Its Process

Data obtained through the responses to the research instrument, which was coded into the SPSS version 23 data analysis, were analysed using descriptive statistics, which involves the use of frequency count and simple percentage calculation, as well as inferential statistics, which involved the application of the Bivariate correlation, the use of hierarchical multiple regression analysis (Tabachnick and Fidell 2001), and the independent

*t*-test at the 0.05 level of significance. Demographic information was analysed with descriptive statistics. Research question one was analysed using the bivariate correlation, and research questions two and three were analysed using the hierarchical multiple regression analysis. The moderation slope was achieved using StatWiki (Gaskin 2012), while research question four was analysed using the independent *t*-test.

## 3 | Results

**Hypothesis 1.** *There would be no significant relationship between the independent variables (academic level, gender, onset of deafness, study habits, peer pressure, achievement motivation, and test anxiety) and the dependent variable (EMI).*

Table 1 shows bivariate relationship between the independent variables (academic level, gender, onset of deafness, study habits, peer pressure, achievement motivation, and test anxiety) and the dependent variable (EMI).

Results of the correlation as shown in Table 1 revealed an inversely significant relationship between the academic level of pre-service teachers and EMI ($r_{(265)} = -0.299$, $p < 0.01$), while study habits ($r_{(265)} = 0.463$, $p < 0.01$), peer pressure ($r_{(265)} = 0.523$, $p < 0.01$), achievement motivation ($r_{(265)} = 0.261$, $p < 0.01$) and test anxiety ($r_{(265)} = 0.366$, $p < 0.01$) had a positive significant relationship with EMI among the study participants. This finding implies that there is a higher tendency for pre-service teachers who were in their early years to have a higher probability for EMI. However, findings indicated in Table 1 imply that an elevated potential for positive study habits, good association with peers, and heightened level of achievement motivation, with a lessened test anxiety would significantly deflate EMI. Further, Table 1 revealed that the onset of deafness and/or gender difference has no significant relationship with EMI.

**Hypothesis 2.** *There would be a positive influence of the independent variables ((a) academic level, (b) gender, (c) onset of deafness, (d) study habits, (e) peer pressure, and (f) test anxiety) on EMI among the study participants.*

Table 2 shows six stages of hierarchical multiple regression, which was used to determine the relative contributions of the independent variables (academic level, gender, onset of deafness, study habits, peer pressure, and test anxiety) to the prediction of EMI (dependent variable) among pre-service teachers who are deaf. The results of the hierarchical model show that inclusion of the academic level of the participants at the first stage of the model accounted for 9% variance in EMI ($R^2 = 0.09$, $\Delta R^2 = 0.09$, $F_{(1,263)} = 25.84$, $p < 0.01$), and the analysis showed evidence of a significant negative effect of the academic level on EMI ($\beta = -0.30$, CI = −6.40, −2.83, $p < 0.01$). The foregoing implies that respondents at the lower academic levels may have a higher tendency for the development of EMI. Thus, Hypothesis 2a is accepted. In the second stage of the model, gender of the respondents accounted for an additional 6% variance in EMI ($R^2 = 0.09$, $\Delta R^2 = 0.01$, $F_{(1,262)} = 1.84$, $p > 0.01$). However, the analysis showed no evidence of any significant influence of gender on EMI ($\beta = -0.30$, CI = −6.40, −2.83, $p < 0.01$). Hence, Hypothesis 2b is rejected. Similarly, the introduction of the onset of deafness to the model at stage 3 did not account for any change in variance, hence Hypothesis 2c was not accepted. Meanwhile, inclusion of peer pressure to the model at stage 4 accounted for 21.7% variance in EMI ($R^2 = 0.30$, $\Delta R^2 = 0.22$, $F_{(1,260)} = 82.11$, $p < 0.01$) and the analysis showed evidence of a significant positive influence of peer pressure on EMI ($\beta = 0.48$, CI = 0.21, 0.33, $p < 0.01$). Thus, Hypothesis 2d is accepted. Additionally, inclusion of study habits to the model in stage 5 accounted for additional 4.5% variance in EMI and the analysis showed evidence of a significant positive influence of study habits ($R^2 = 0.35$, $\Delta R^2 = 0.05$, $F_{(1,259)} = 18.25$, $p < 0.01$) on EMI ($\beta = 0.27$, CI = 0.10, 0.62, $p < 0.01$). Thus, Hypothesis 2e is accepted. Additionally, test anxiety, when added to the hierarchical multiple regression

**TABLE 1** | Correlation matrix of independent variable and dependent variable (examination malpractice intention).

| Variables | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Examinations malpractices intentions | 1 | | | | | | | |
| 2 | Academic level | −0.299** | 1 | | | | | | |
| 3 | Gender | 0.076 | 0.012 | 1 | | | | | |
| 4 | Onset of deafness | 0.010 | −0.065 | 0.061 | 1 | | | | |
| 5 | Study habits | 0.463** | −0.152* | 0.295** | 0.195** | 1 | | | |
| 6 | Peer pressure | 0.523** | −0.199** | 0.136* | −0.034 | 0.539 | 1 | | |
| 7 | Achievements motivation | 0.261** | 0.194** | 0.140* | 0.123* | 0.114 | 0.244** | 1 | |
| 8 | Text anxiety | 0.366** | −0.202** | 0.180** | −0. 094 | 0.301** | 0.586** | 0.410** | 1 |
| Mean | | 1.218 | 1.54 | 1.58 | 44.969 | 66.373 | 87.747 | 22.664 | 29.147 |
| Standard deviation | | 0.581 | 0.500 | 0.494 | 8.976 | 13.154 | 15.991 | 5.063 | 7.609 |

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

**TABLE 2** | Hierarchical multiple regression with examination malpractice intention as dependent variable.

| | Examination malpractices intentions | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | | Model 6 | | Model 7 | |
| **Variables** | | CI: 95% | | CI: 95% | | CI: 95% | | CI: 95% | | CI: 95% | | CI: 95% | | CI: 95% |
| Academic level | −0.30** | −6.40, −2.83 | −0.30** | −6.42, −2.85 | −0.30** | −6.44, −2.85 | −0.20** | −4.73, −1.53 | −0.19** | −4.51, −1.41 | −0.18** | −4.40, −1.26 | −0.20** | −4.61, −1.51 |
| Gender | | | 0.08 | −0.64, 3.51 | 0.08 | −0.64, 3.54 | 0.01 | −1.62, 2.06 | −0.05 | −2.67, 1.03 | −0.06 | −2.85, 0.87 | −0.01 | −1.99, 1.86 |
| Onset of deafness | | | | | −0.01 | 1.85. 0.99 | 0.01 | −1.62, 2.08 | −0.04 | −2.56, 1.11 | −0.03 | −2.48, 1.23 | −0.08 | −3.24, 0.51 |
| Peer pressure | | | | | | | 0.48** | 0.21, 0.33 | 0.03** | 0.13, 0.26 | 0.30** | 0.09, 0.25 | 0.36** | 0.12, 0.28 |
| Study habit | | | | | | | | | 0.27** | 0.10, 0.62 | 0.27** | 0.10, 0.27 | 0.21** | 0.05, 0.23 |
| Text anxiety | | | | | | | | | | | 0.08 | −0.06, 0.24 | 0.02 | −0.14, 0.17 |
| AM × Peer pressure | | | | | | | | | | | | | −0.11 | −0.02, 0.03 |
| AM × Study habit | | | | | | | | | | | | | −0.01 | −0.02, 0.02 |
| AM × Test anxiety | | | | | | | | | | | | | 0.26** | 0.02, 0.08 |
| *Model fit statistics* | | | | | | | | | | | | | | |
| *F*-value | 25.84** | | 1.84 | | 0.60 | | 82.11** | | 18.25** | | 1.50 | | 4.92** | |
| $R^2$ | 0.09 | | 0.09 | | 0.09 | | 0.30 | | 0.35 | | 0.35 | | 0.38 | |
| $\Delta R^2$ | 0.09 | | 0.01 | | 0.00 | | 0.22 | | 0.05 | | 0.01 | | 0.04 | |

** Significant at 0.005.

at stage 6, accounted for an additional 4% variance in EMI. However, the analysis showed no significant positive influence of test anxiety on EMI. Therefore, Hypothesis 2f is not accepted.

**Hypothesis 3.** *Achievement motivation would moderate the influence of (a) peer pressure, (b) study habits and (c) test anxiety such that the higher the level of achievement motivation, the lower the influence of peer pressure, study habits and test anxiety on EMI.*

Further, results presented in Table 2 (Model 6) showed the interactive effects of achievement motivation on EMI among PSDTs. Table 2 further revealed that only test anxiety interacted with achievement motivation, and the inclusion accounted for an additional 3.5% variance in predicting EMI ($R^2 = 0.38$, $\Delta R^2 = 0.04$, $F_{(3,255)} = 4.92$, $p < 0.01$), and it significantly reduced the effect of test anxiety on EMI ($\beta = 0.26$, CI = 0.02, 0.08, $p < 0.01$). Thus, Hypothesis 3c is hereby accepted, while Hypothesis 3a and 3b are rejected. Figure 1 showed the two-way interaction slope of the moderation effects of achievement motivation (low and high) and test anxiety (low and high) on EMI. The two-way interaction slope revealed that higher levels of achievement motivation strengthen the positive relationship between test anxiety and EMI.

**Hypothesis 4.** *There would be no significant difference in EMI of pre-service deaf teachers based on (a) gender differences (male and female) and (b) onset of deafness (prelingual and postlingual).*

Findings reported in Table 3 showed that a difference in EMI exists between males ($M = 44.24$, SD = 9.67) and females ($M = 45.61$, SD = 44.61), and the difference is shown to be significant (df = 263; $t = -1.24$; $p = 0.00$). On the other hand, no significant difference in EMI exists between respondents with prelingual deafness ($M = 44.86$, SD = 8.43) and postlingual deafness ($M = 45.05$, SD = 9.37); thus, the difference is shown to be insignificant (df = 263; $t = -0.16$; $p = 0.94$).

## 4 | Discussion of Findings

Extant literature has shown that behaviour exhibited by deaf students is not different from what is shown by non-deaf students (Adigun and Nzima 2021; Batista and García 2023). In other words, being deaf does not preclude them from engaging in or having intentions to engage in examination misconducts particularly because of academic and psychosocial challenges faced by deaf students (Lynch et al. 2020; Mapepa and Magano 2018; Mushtaq and Reba 2017). Until this study, evidence of factors that may influence PSDTs' engagement in examination misconduct was scarce, but empirical evidence obtained from PSDTs showed that while it is perceived that pre-service deaf teachers who participated in this study may have EMI, there is a significant inverse relationship between the academic level of PSDTs and EMI. In other words, intentions to engage in EM tend to decrease across higher academic levels. This result is probably because as PSDTs go through the academic ladder, they tend to adjust better to the academic environment. However, PSDTs in lower academic levels may have higher levels of EMI because

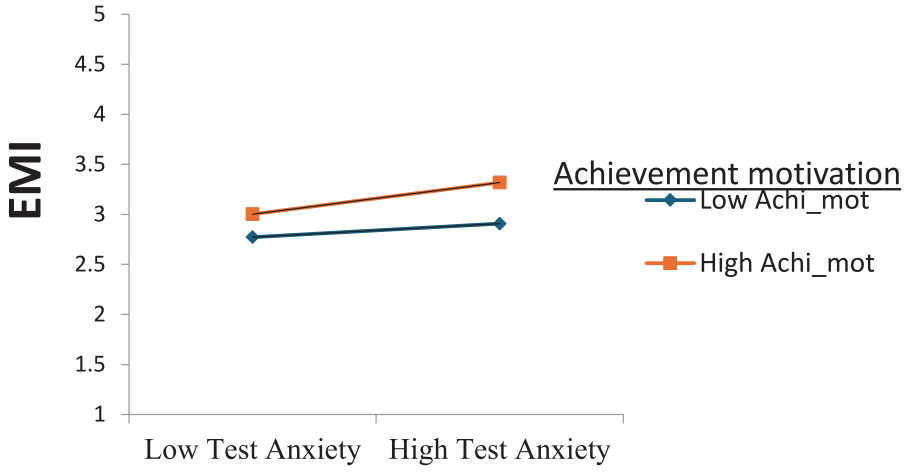


**FIGURE 1** | Two-way interaction slope between achievement motivation and test anxiety. EMI, Examination malpractice intention.

**TABLE 3** | Test of difference of EMI among pre-service teachers.

| Variable | Examination malpractice intentions | *N* | Mean | Std. deviation | Df | *t* | Sig |
|---|---|---|---|---|---|---|---|
| Gender | Male | 123 | 44.235 | 9.674 | 263 | −1.240 | 0.000 |
| | Female | 142 | 45.605 | 8.307 | | | |
| Onset of deafness | Prelingual | 110 | 44.864 | 8.434 | 263 | −0.162 | 0.936 |
| | Postlingual | 155 | 45.045 | 9.367 | | | |

of perceived academic difficulties in the college based on prevailing classroom dynamics, particularly from overcrowding, achievement anxiety, and/or peer pressure (Agunbiade and Ajayi 2018; Anierobi et al. 2020; Ede 2017; Gbenga et al. 2023; Kyei and Nduro 2014; Lynch et al. 2020; Mauti et al. 2021; Nwankwo and Nwankwo 2020; Okorodudu 2013).

A direct and significant positive correlation between study habits, peer pressure, achievement motivation, test anxiety, and EMI was established among the study participants. This finding further strengthens the fact that there may be a higher tendency for PSDTs who were in their early years to have a higher probability for EMI. In other words, the findings imply that an elevated potential for positive study habits, good association with peers, and heightened level of achievement motivation with a lessened test anxiety would significantly deflate the tendency for EMI and vice versa. Evidence provided in the studies by Adigun and Iheme (2020), Adigun et al. (2024) and Alshutwi et al. (2020) had shown that EMI transcends issues of language abilities of deaf students, but such inappropriate behaviour may be influenced by anxiety and peer pressure. Similarly, current findings of this study corroborate findings reported in the studies of Anagbogu and Bichene (2024), Anierobi et al. (2016), Bassey and Iruoje (2016), Gbenga et al. (2023), Mauti et al. (2021), Nganchi and Charlotte (2020), Ntui et al. (2022), Ogunjobi et al. (2021), and Ossai (2011b). Based on the associated similarities between the current findings and previously available evidence on EMI among students, the research of this study asserts that associated influence from either deaf or non-deaf peers may directly influence PSDTs engagement in EMI. In the same manner, such peer influence may strengthen PSDTs' study habits, which could also inspire positive study habits and lessen test anxiety, which could also have a direct impact on PSDTs' EMI.

The result of the hierarchical model, which was used to provide answers to research question two, indicated that three variables (academic level, peer pressure, and study habits) in the hierarchy significantly contributed to EMI among the participants. Among the three variables, peer pressure had the highest predictive capacity to influence EMI, followed by academic level and study habits, respectively. On the other hand, gender parity, onset of deafness, and test anxiety were found not to have significant predictive capacity when added to the hierarchical regression model. This finding implies that peer influence remains a significant factor to be considered when observing EM among students. In other words, PSDTs' engagement in EMI is influenced by the circle of friends kept by an individual. Interestingly, such circles of friends across the academic ladder, particularly in the college, shaped the study habits of the participants in relation to EMI. Globally, extant literature has espoused the role of peer influence and pressure on the academic performances of students (Agunbiade and Ajayi 2018; Anierobi et al. 2020; Bassey and Iruoje 2016; Mauti et al. 2021; Okorodudu 2013). The foregoing research reports found a link between peer influence and EMI. In fact, Anierobi et al. (2020), Agunbiade and Ajayi (2018), as well as Mauti et al. (2021) averred that the negative influence of peers and even negative pressure from them may heighten the perceived engagement of students in EM.

According to findings in the study of Bassey and Iruoje (2016), students caught in the web of EM said that they were pressured by their friends to cheat in examinations. On the other hand, the foregoing studies imply that when peer influence is positive, then study habits can be enhanced (Alwashmi 2023; Ampofo 2020; Ossai 2011a; Ntui et al. 2022; Okorodudu and Ossai 2004). Okorodudu and Ossai (2004) posited that students with poor study habits may have a greater affinity to interact with peers that could motivate them to engage in behaviours associated with academic dishonesty, but when a friend circle is positive and such peers stand against negative behaviour, intentions to participate in examination misconduct will be reduced or absent. Moreover, such positive peer influence will motivate study habits that favour excellent academic performance across various academic levels. Based on this current finding, the researcher believes that with positive peer circles, the academic self-confidence and study habits of PSDTs improve across the academic years, which may thereby reduce perceived test anxiety that may build up EMI in the study participants.

In furtherance of the objective of this study, among all the variables included in the model, only test anxiety interacted with achievement motivation. In other words, the relationship between achievement motivation and test anxiety significantly moderated PSDTs EMI. The foregoing further implied that individuals with lower test anxiety and higher achievement motivation would have reduced EMI. The relationship between achievement motivation and test anxiety (Figure 1) may also be affected by the quality of peers' influence. Basically, EMI is ignited by various factors, which include but are not limited to test anxiety and perceived achievement motivation or fear of failure (Bassey and Iruoje 2016; Gbenga et al. 2023; Nganchi and Charlotte 2020; Nwankwo and Nwankwo 2020; Adie and Oko 2016). Studies by Adigun and Ndwandwe (2022), Alshutwi et al. (2020) as well as Hrastinski and Wilbur (2016) have shown that deaf students in schools are resilient in standing against academic redundancies because of their intention to achieve positive learning outcomes. However, such intentions to achieve enviable academic performance may be threatened by various factors (Gbenga et al. 2023), which may motivate their intention to participate in examination malpractices.

Compared to past studies that found a moderating influence of achievement motivation on study habits (Ernest-Ehibudu and Opurum 2019; Jegede et al. 1997; Kumari and Chamundeswari 2015; Paulson 2018; Sundari et al. 2020), this current study extends the moderating influence of achievement motivation to test anxiety as it concerns EMI, particularly among college-going PSDTs in Nigeria. The current findings therefore provide support to the study of Benish-Weisman et al. (2022) and Kumari and Chamundeswari (2015) who asserted that achievement motivation has the capacity as a variable to moderate several socio-cognitive factors.

Findings with regards to the hypothesis indicated a significant disparity exists in the EMI of the study participants based on gender parity, with female PSDTs having a perceived higher likelihood of EMI based on the calculated mean. This finding agrees with Nwosu et al. (2017), who also noted a gender difference in students' engagement in EM, with females having a higher tendency to engage in EM. However, this current finding is not in conformity with what was found in the studies of Badejo and Gandonu (2010), Ede (2017), Mulongo et al. (2020)

and Ossai (2011b), nor the studies of Amalu and Amalu (2020), Animasahun and Ogunniran (2014) as well as Eze (2010), who found more male involvement in EM. On the other hand, no significant differences in EMI of PSDTs based on their onset of deafness (prelingual and postlingual) were reported in this study. This finding shows that the onset of deafness does not specifically affect the behaviour of the participants. This finding agrees with the assertion of Adigun and Ndwandwe (2022), Adigun and Nzima (2021), Bakare (2013), Hrastinski and Wilbur (2016), Loeb and Sarigani (1986) as well as Ogundiran and Olaosun (2013), who stated that the onset of deafness does not have significant influence on the learning behaviour of deaf learners, but only on language proficiency. Moreover, deaf students, irrespective of their onset of deafness, have been found to have substantial levels of academic resilience (Adigun and Ndwandwe 2022; Alshutwi et al. 2020), which could enable them to have the capacity to resist the intention to engage in EM. The findings in this current study are like the findings reported in the studies of Adigun and Nzima (2021) as well as Ogundiran and Olaosun (2013).

## 5 | Conclusions and Recommendations

This study has presented an exposé of EMI among PSDT's vis-à-vis academic level, gender, onset of deafness, study habits, peer pressure, achievement motivation, and test anxiety as determinant factors. The study did not only add to extant literature in deaf education and deaf studies but also specifically showed that PSDTs or deaf students in general are not immune to EM. Importantly, this study concluded that

- there is a direct and positive relationship between study habits, peer pressure, achievement motivation, and test anxiety among the study participants. There is also an inversely significant relationship between the academic level of PSDTs and EMI.
- peer pressure had the highest predictive capacity to influence EMI, followed by academic level and study habits respectively,
- there is a relationship between achievement motivation and test anxiety that significantly moderates EMI among PSDTs, and
- a significant disparity exists in the EMI of the study participants based on gender parity and not with the onset of deafness.

Based on the findings from this study and the conclusion thereof, this study recommends that stakeholders (teachers, parents, school administrators, and counsellors, among others) in deaf education and deaf studies need to ensure deaf students in general build the self-confidence required for academic excellence. Such concerted efforts should ensure that deaf students have elevated academic self-efficacy and good study habits that will boost their confidence to perform well in examinations without having the intention to cheat. Moreover, school guidance counsellors should ensure that activities that expose deaf students to dangers of engaging in EM are reduced. While it is important for school administrators to ensure that class/lecture rooms are convenient for teaching and learning for the benefits of PSDTs, it is important to ensure that the conduct of examinations is guarded by stringent measures against EM. This study established that peer influence has great effects on EMI; hence, it is important that PSDTs and other deaf students are advised to carefully select their friends, meaning that deaf students should make friends with individuals who will positively encourage and motivate the building of self-confidence and a positive attitude towards studying in a manner that will eliminate or reduce test anxiety as well as EM potentials.

Essentially, it is imperative for institutions of higher learning which respond to educational provisions for deaf students to develop and institute inclusive examination malpractice policies. In other words, such institutions should ensure that relevant policies against examination malpractices are provided in sign language. In addition, such policies must ensure that stern warnings are given to sign language interpreters and other communication support workers not to provide any support that may negatively influence academic integrity, and invigilators must ensure that while deaf students are given extended time for their examinations, only approved assistive technologies are used by deaf students in their examinations. Lastly, institutional policies against examination malpractices should make provision for reiteration of clear exam rules in accessible formats for deaf students at the start of their examinations.

## 6 | Limitations of the Study

No research work is exhaustive. Hence, this current study is not an exception. This study has examined EMI as a concept being determined by some selected variables. However, the identified and selected variables may not be applicable to all teacher training colleges that have deaf students. Moreover, this study approached data collection via a single mode (quantitative approach) using a close-ended questionnaire. The limitation of the close-ended questionnaire is that it does not afford the participant to express themselves further. Therefore, there may be a need to approach future studies using another qualitative approach or mixed research methods. Future studies should give opportunities for school administrators and other relevant stakeholders in deaf education to air their views about EMI among deaf students. Perhaps a cross-national study on EMI may further provide in-depth empirical evidence on EMI among PSDTs.

### Conflicts of Interest

The author declares no conflicts of interest.

### Endnotes

[1] Deafness that occurs before the acquisition of speech and language.

[2] Deafness that occurs after the acquisition of speech and language.

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