TRAINING YOUNG RESEARCHERS IN STUDY HABITS AND RESEARCH SKILLS: PANACEA FOR EXAMINATION MALPRACTICE AND PLAGIARISM IN HIGHER EDUCATION IN CROSS RIVER STATE

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Executive Summary

Examination malpractice and plagiarism are currently problems affecting productivity in the educational system of Nigeria and their proliferation in higher education has been frowned at by concerned education stakeholders, including the present researchers. In 2012 Nigeria ranked number one in the world examination malpractice index, and malpractices in both internal and external examinations in our schools is very worrisome. In like vein plagiarism among young researchers has reached a height, that if attention is not given to its eradication may continue to truncate the process of generating creative and innovative driven outputs in our higher institutions. Plagiarism is a negative academic research behaviour that contributes to fallen standard of education. The researchers have identified poor study habits and research skills as critical factors responsible for this indiscipline behavior among young researchers. The purpose of this research is to establish the effect of training in study habit skills, using rational emotive therapy techniques to recreate cognition about involvement in malpractice and, plagiarism training in application of SQ3R study method, and training in selected research skills critical for the development of positive academic research behaviour among undergraduate researchers in universities in. Cross River State. The research design will be the pre-test post-test control group experimental design/ Four research questions will guide the research and two null hypotheses will be tested at 0.05 level of significance. The population will comprise' all final year undergraduate students in the two public universities in Cross River State during the current 2020/2021 session. A proportionate sample often percentage (10%) of final year students from each of the two universities will be selected, and then, those who complete the treatment the training in study habit and research skills) and complete the post-test will be admitted in the study. Data will be. generated using" Undergraduate Students Study Skills/Involvement in Plagiarism Questionnaire" (UGSSS/1PQ). Data generated from the participants will be analysed using Descriptive and Analysis of Covariance (ANCOVA) statistical procedure. Expected results should reveal a positive effect of rational emotive behavior therapy (REST), SQ3R on poor study skills and research skills training on negative research behavior. Recommendations will be made based on the findings of this research and the work disseminated as scheduled through publication and executive

Introduction

Education activities of university educational institutions have been highlighted as teaching, research and scholarship, community service, staffing, students, infrastructures and educational facilities and evaluation procedures which translate to the outputs. And because quality education is value-laden, quality education should produce disciplined behavior, hard work, improved cultural heritage and mutual respect within and outside the school community (Majasan, 1998 as cited in Idika & Ovat, 2019).

Disciplined behaviour, which is the index of quality education is fast deteriorating among students and young researchers in some university educational institutions. Evidences of examination malpractice and

plagiarism have become prevalent in the University system, too. Examination malpractice constitutes any unethical practice leading to the flouting of the rules and regulations guiding the conduct of examinations (Gbenga, 2008). Examination malpractice undermines the quality of manpower and academic attainment. The problem of examination malpractice seems to have led to a breakdown in educational activity and thus, a serious concern to all meaningful stakeholders. Efforts to curb examination malpractice have been through enlightenment campaigns, and recently in University of Calabar, there is examination monitoring task force to enforce certain expected conduct. Measures on culprits, creation of a department to handle cases of examination malpractice among others. Despite these measures, examination malpractice is still prevalent in our higher, particularly university education. There are also researches which have been conducted to discover the cause of this problem and from there proffer solution. Some of the causes as identified by YVAEC, (2017) include eroded societal values, emphasis on paper qualifications/certificate, inadequate teaching and learning resources, lack of qualified teachers, inadequate preparation of students for examination, poor state of infrastructure in schools, students' laziness, inadequate coverage of syllabus, peer pressure, change of subjects of study, low morality mild sanctions against culprits, inactive laws and perverted use of technological advancement (Uwadiae, 2017, Asiya, 2012).'Another indiscipline-practice in university education is plagiarism. Plagiarism is taking the words, ideas and labour of other people and giving the impression and or pretending that they are one's own work, thereby crediting the idea, opinion and thought to oneself (Pyer, 2000 as cited by Idika & Ovat, 2019). It is the wrongful appropriation and stealing and publication, of another author's language, thoughts, ideas or expressions and the representation of them as one's own original work (Wikipedia). The consequences of plagiarism are far reaching. It negates the main objective of research; it truncates the process of generating new ideas and innovation and impedes the addition of information to existing literature, and besides, it reveals the lapses in training in university education. The researchers condemn plagiarism because it contributes to fallen standard of education. Consequently, creativity, innovation and good research practice are relegated to the background while plagiarism thrives to destroy the mission of university education. Young and would-be researchers have been found to engage in one form of plagiarism or the other. They are about thirteen forms of Plagiarism, one may be culpable, Many other reasons attributed to students' involvement in plagiarism are that, according to Gullifer and Tyson (2010) and Walker (2009), students.are motivated to plagiarize because of inadequate.time to study, fear of failure perceived between actual grade and students' personal effort, student" studying so many courses that result to a lot of work per semester, a belief that students will not be caught because lecturers do not have time to read extensively the assignment due to work pressure, motivation of doing well, of getting good grade, students' feeling of alienation by colleagues, and students' individual factors,such as age, grade average point, gender and others (Gullifer & Tyson, 2010, p. 465). Lack of proper orientation or integration of students in the culture of academic community' is also viewed as one of the reasons that young researchers plagiarize (Berts, Bostocked, Elder and Trueman, 2012). The above causal factors have been narrowed 'down into two major causes, study skills and research skills. Therefore, this research is geared towards addressing the above causes by training young researchers and ascertaining how this affects their involvement in examination malpractice and plagiarism. Involvement refers to taking part in the behavior associated with examination malpractice and plagiarism. Lecturers for example detect plagiarism during marking and assessment of students' submissions (term papers, assignments, examinations scripts). Similarity, copied works among students can be said to be an act of involvement in plagiarism, showing that the source of the work is somewhere. However, some authors maintain that involvement in plagiarism may be intentional which is sometimes unknowingly because they are unclear of what constitutes proper way to take note, paraphrase, or make quotation due to poor research writing skills (Onuoha & Ikonne, 2013).

Statement of Problem /Justification

The problem of this study is in two folds: examination 'malpractice and plagiarism among undergraduate students. Examination malpractice and plagiarism are two serious issues in academics. Students at various levels of education are seen to indulge in various forms of examination malpractice; be it external examination or internally organized examinations. In the university, students keep inventing new ways of examination malpractice as the school authority keeps devising strategies to puncture examination malpractice during semester examinations; the problem lingers on. The present study seeks to determine if training students in study habits could help stern down the tide of examination malpractice among undergraduate students.

Even more serious is the problem of plagiarism among under graduate students. These students are would be researchers, with expectations that they would become instrumental in solving the problems of the society through research. Though undergraduate students are taught courses bordering on research methods, available evidence shows that they do not manifest the required skills during their final year research projects. They are seen to indulge in serious plagiarism! activities such as copy and paste, no citations, inappropriate citations, no referencing, etc. And unfortunately, the university has not devised a means of checking plagiarism at the undergraduate level, but the touch lights have concentrated on post-graduate students only. The consequence is that these undergraduate students, transit into post-graduate programmes with the same attitude, therefore, creating more problems for the university on plagiarism check efforts. To this end, it has become imperative to begin to take steps to arrest the menace of plagiarism among undergraduate students by redirecting the touch light in order to catch them young, hence, the present study.

Objectives of the study

The goal of this research is to establish the effect of training in study habits and research skills on involvement in examination malpractice and plagiarism among young researchers (undergraduates) in university educational setting. Specifically, the study sought to determine the;

i. effect of study habits training on reduction of undergraduate students' involvement in examination malpractice
ii. effect of gender on reduction of undergraduate students' involvement in examination malpractice after treatment
iii. effect of age on reduction of undergraduate students' involvement in examination malpractice after treatment
iv. effect of research skills training on reduction of undergraduate students' involvement in plagiarism
v. effect of gender on reduction of undergraduate students' involvement in plagiarism treatment (research skills training)
vi. effect of age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training)?

Research questions

1. What is the main effect of study habits training on reduction of undergraduate students' involvement in examination malpractice?
2. What is the effect of gender on reduction of undergraduate students' involvement in examination malpractice after treatment?
3. What is the effect of age on reduction of undergraduate students' involvement in examination malpractice after treatment?
4. What is the main effect of research skills training on reduction of undergraduate students' involvement in plagiarism?
5. What is the effect of gender on reduction of undergraduate students' involvement in plagiarism treatment (research skills training)?
6. What is the effect of age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training)?

Hypotheses

1. There is no significant main effect of study habits training on reduction of undergraduate students' involvement in examination malpractice
3. There is no significant effect of gender on reduction of undergraduate students' involvement in examination malpractice after treatment
4. There is no significant effect of age on reduction of examination malpractice after treatment
5. There is no significant interaction effect of treatment, gender and age on reduction of undergraduate students' involvement in examination malpractice.
6. There is no significant main effect of research skills training on reduction of undergraduate students' involvement in plagiarism

7. There is no significant effect of gender on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training).
8. There is no significant effect of age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training)
9. There is no significant interaction effect of treatment, gender and age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training)

Literature Review

Idika & Ovat (2019) cited the work of Chukwuemeka, Gbenga, Sunday and Ndidiamaka of 2013 which studied academic dishonesty among Nigerian pharmacy students in comparison to their United Kingdom Counterparts and found that the perception of Nigerian students as regards academic dishonesty in the universities investigated was poor, and the students' involvement in cheating was much higher than' what was reported in US and UK schools. Today, it is widely acclaimed that 60 years after. the first universities were founded in Nigeria, only few publications by researchers in Universities in Nigeria are considered worthy enough for international assessment and replication (Times Higher Education Ranking 201 1). Further study by Idika, Joshua and Umoinyang (2016) reviewed a situation of inadequate research skills to carry out meaningful researches in fundamental areas involving problem articulation, literature search, instrument construction and validation, collection and analysis of data and reporting with proper referencing of research information to the wide audience requiring this vital information for transformational purposes. The poor skills in carrying out adequate and authentic researches have therefore, tended to stagnate progress and development in vital areas of the economy of this nation.

The present researchers opine that training in good study habits or skills and research skills may be lead ways to young researchers in university education to build needed capacity against examination malpractice and plagiarism. Poor study habits refers to the unwillingness of students to study or the adoption of study habits that impair understanding and retention and leads to poor academic achievement. Poor study habits are one of the identified causes examination malpractices. Good study habits are learned behaviors geared towards use effective means to study and pass examinations. When students learn how to read and they comprehend, they will be able to pass examinations without malpractice. Poor study habits include lying in bed while reading, listening to loud music while reading, reading without taking notes or arguing questions in order to ensure that what has been read has been muted to memory, reading only teachers notes, not reading until it is the day of examinations, cramming and memorizing of rules, reading under poor lighting and poor ventilation conditions, adopting a wrong posture while reading (Ntanim 2017). The training will involve exposing young researchers to Rational Emotiyes Behaviour Therapy (REBT) and SQ3R, Participants will also be trained in research skills. Here quasi, experimental research design will be used for the study. Students 'will be exposed to pre-examination of research capacity after which they will be trained, then after, post examination of capacity will be administered.

The data collected will be analysed using means, standard deviation and ANCOVA. Ali (2009) perceives research skills as a special ability to perform set tasks or undertake a careful investigation of a phenomenon, including the ability to follow the right principles or procedures, methodologies and otherwise of research in order to discover new knowledge for the purpose of adding to the knowledge bank. Research..skills according to Idika (2016) also imply Participation in conferences, seminars, workshops symposia, collaborative researches and mentoring and emphazised that adequate involvement in these? and related activities fosters research skills in the individual researchers.

Research skill development among young researchers in academics is the engine that keeps universities to their mandate as centers of ideas and innovation for the needed development. Training will also involve structured short courses with hands on activity on selected research skills. Among the selected skills are conceptualizing a research problem or for stating clearly the purpose of study ; skills to review and evaluate literature, skills to ethically report research information and reference all materials cited and used in the work as well as the skills for editing and use of turnitin software.

Methodology:

Design of the study

The quasi-experimental design of randomized an inter-group pre-test/post-test method with group control was adopted for the study. A quasi-experimental design means that experimental designs are applied to

real situations (educational in this case). The design was chosen because it allows learning conditions to be deliberately manipulated, and at the same time controlled. To achieve this, the study subjects (SS) were randomly assigned to two groups; experimental group (denoted by letter E) and control group (denoted by letter C). Three fundamental strategies were used to mitigate the defects of this design: (1) inclusion of a control group; (2) random selection, in which all the students in the selected experimental classes are assigned into the experimental group and (3) taking measurements before and after the application of the treatment (Training)

The design is illustrated in figure 1.

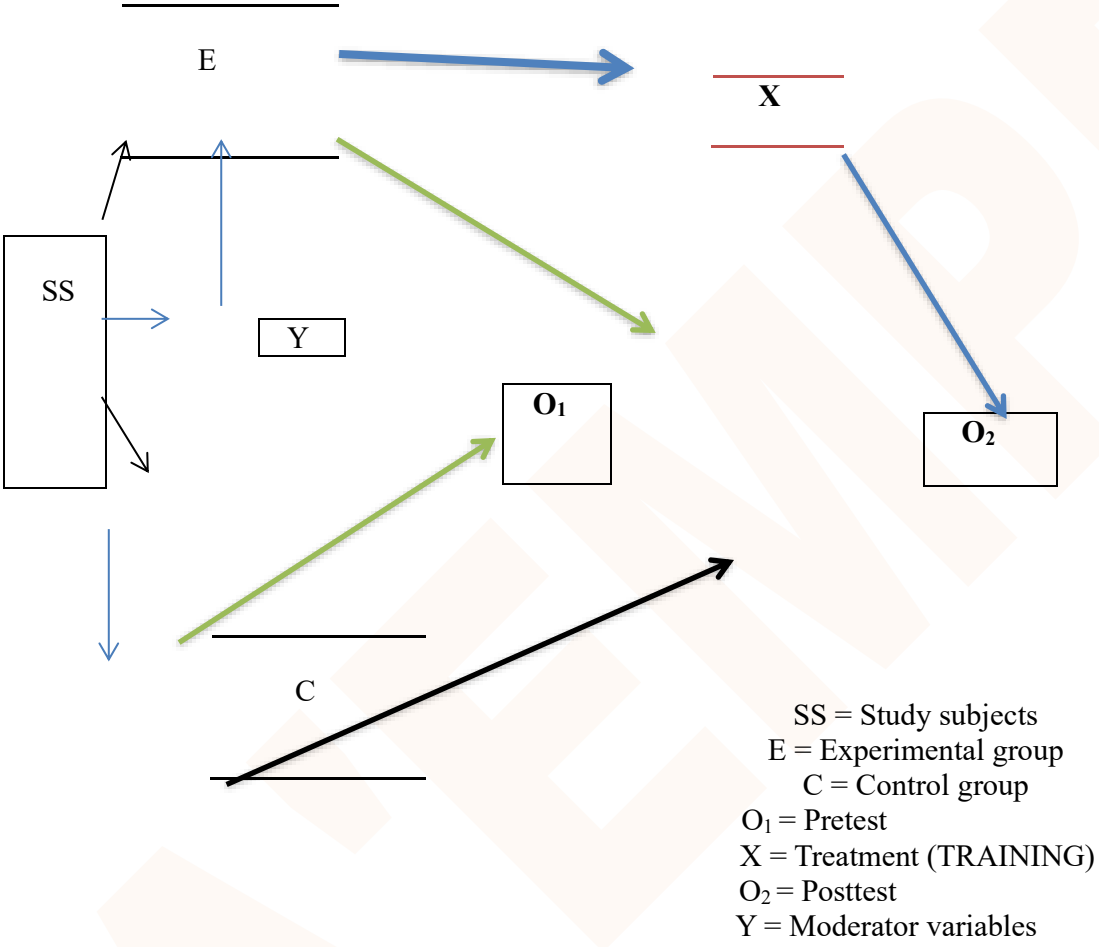


Figure 1: illustration of the study design (Adopted from Bichene, 2024)

Furthermore, the study involved a 2 x 2 x 2 factorial design for detailed assessment of the effectiveness of the treatment, because a factorial design permits examining the effects exerted in the experiment by the independent variables separately and also jointly. Illustration of the factorial design is presented in Table 1

TABLE 1
2 x 2 x 2 factorial design

Treatment	Sex	Age
"TRAINING"	M	Below 25yrs
	F	26yrs and above
NORMAL LECTURE ACTIVITIES	M	Below 25yrs
	F	26yrs and above

Participants

The study population comprised 1,734 faculty of education final year undergraduate students in two public Universities in Cross River State (University of Calabar = 914 and Cross River State University = 820) during the current 2021/2022 academic session.

The final year class was chosen because;

- they will be taking their degree examinations and will be desperate to pass by all means
- they will also be carrying out their research project as part of the requirements for their graduation

The simple random sampling technique was adopted in selecting four departments for the study. The hat and draw procedure was used; the researchers wrote down numbers representing the departments on pieces of papers, folded them into paper balls and put in two containers (one for University of Calabar and one for Cross River State University), after mixing the paper balls the researchers blindly selected two departments from each container. After every pick, the department name was written down and the paper was returned into the container, mixed before picking again. At the end, four departments that met the inclusion criteria were selected:

1. The departments had male and female students in the final year class
2. The. departments had final year class
3. The departments are located far apart from each other

Two departments (one in University of Calabar and one in Cross River State University) constituted the experimental group, while the other two (one in University of Calabar and one in Cross River State University) constituted the control group. Furthermore, to ensure group equivalence, students in the selected departments were randomly assigned into two; Experimental and Control groups. Randomization is a process of ensuring that procedures used in research are kept the same.

The sample for this study was 381 students in the final year class of the four departments in Faculty of Education in University of Calabar and Cross River State University selected for the study (Experimental = 198; males = 92, females = 106. Control = 183; males = 81; females = 102).

Instruments

Two instruments developed by the researchers were used for data collection in this study;

Study Habits and Research Skills Training Manual (SH&RSTM) and Tendency for Involvement in Examination Malpractice and Plagiarism Questionnaire" (TIEM&PQ)

Study Habits and Research Skills Training Manual (SH&RSTM) consists of two parts; part A focused on Study Habits and was designed to expose students to effective study habits that may enhance their comprehension of learned materials as well as boast their confidence to face their examinations without indulging in examination malpractice. Part B of the instrument focused on Research Skills with a view of empowering the study subjects (final year students) with skills that may enable them carry out their research project exercise without involvement in plagiarism.

Similarly, the Tendency for Involvement in Examination Malpractice and Plagiarism Questionnaire" (TIEM&PQ) consist of three parts; part A elicited information on participants' demographic data such as sex, age institution. Part B and C consisted of 30 items (15 each) designed to obtain data on students Study Habits and Research Skills before the Treatment/Training (Pretest) and after the Treatment /Training (Posttest)..

Construct validity was conducted to ensure that items in the instrument represents the construct of interest, or how much the items on the instrument indicates the construct to be measured. To determine the reliability of the research instruments a trial test was conducted using 100 students selected from departments in the faculty that were not selected for the main study but has the same characteristics as those selected for the study. The Cronbach Alpha method was used to analyse data and determine the reliability estimates of the instruments. This reliability estimation method was considered appropriate because it gives a judgment about the internal consistency of items of a scale. In this regards, its value tells whether an item is able to consistently measure what it purports to measure or not. The reliability estimate of the instrument of was 0.86 and was considered high enough for the instruments to be used in this study.

Data collection

The following process as followed in collecting data for this study; Control of extraneous/confounding variables Extraneous variables are those considered not to be of direct interest to this study but their presence

may be capable of affecting the outcome of this study. Steps were taken to check these threats to internal and external validity through randomization and use of pretest scores for the two groups as covariate. The instrument; Tendency for Involvement in Examination Malpractice and Plagiarism Questionnaire" (TIEM&PQ) used for pretest and post-test was administered to the experimental and control groups under same conditions. Selection threat was controlled by selecting departments with similar demography; imbalance caused by mortality was controlled using 'intention to threat techniques' such that attrition experienced at any of the groups was excluded from the analysis.

Control of threats to external validity, contamination effect was controlled by ensuring that departments selected for both experimental and control are located far apart, and participants in both groups have no idea that the other exist during this study.

Pre-test data collection (Control and Experimental Group): First administration of the copies of Tendency for Involvement in Examination Malpractice and Plagiarism Questionnaire" (TIEM&PQ) to students in both the experimental and control groups. In doing this, all participants were assigned serial numbers to serve as a means of identification of participants in the pre-test, because they were instructed not to write their names. The completed copies of the questionnaire were retrieved from participants, arranged serially and sealed in an envelope marked pretest.

Treatment on experimental group

At this point, Study Habits and Research Skills Training Manual (SH&RSTM) was administered on the experimental group only. To do this, the researchers requested for adjustment in the lessons time table for the participating students to accommodate the training. During the exercise, participants in the experimental group received training on Study Habits and Research Skills for eight weeks (i.e two months) by the researchers. To check for attrition, attendance record of all group members was taken in each training day. Similarly, in the control group attendance record of students present in school and taking part in their normal school activities during the period was be kept.

Control group (No Treatment)

Participants in this group were not exposed to the Study Habits and Research Skills training, but participate in their Normal School Activities (NSA) during the experimental period.

Post-test

At the end of 8 weeks training, the items in Tendency for Involvement in Examination Malpractice and Plagiarism Questionnaire" (TIEM&PQ) were reshuffled and re-administered on both the experimental and control groups by the researchers, following the same procedure as during administration of the pre-test. Participants were reminded to write down their identification numbers at the top of their copies of the questionnaire as they did during the pretest; those numbers assisted the researcher to match participant's copies of instrument with that of first administration (pretest), during data preparation /scoring. Completed copies of the questionnaire were retrieved, counted, arranged and sealed in an envelope marked as posttest and ready for scoring/coding.

Informed consent

The researchers visited each of the institutions, faculties and departments selected for the study, familiarized with the management through an official introductory letter from the Department of Research, University of Calabar. With consent received, the researchers proceeded to meeting the subjects, and carrying out the actual study

Data preparation and scoring

Copies of Tendency for Involvement in Examination Malpractice and Plagiarism Questionnaire" (TIEM&PQ) administered to the participants were collated for screening, scoring and coding. In screening, the copies of the questionnaire completed by participants at post-test were matched with the copies of the participants at pre-test. Carefulness was applied in ensuring that mortality experienced at post-test was taken care of by screening the pre-test and post-test copies based on identification numbers assigned to participants for that purpose, therefore participants at the pre-test and post-test were matched together and those not

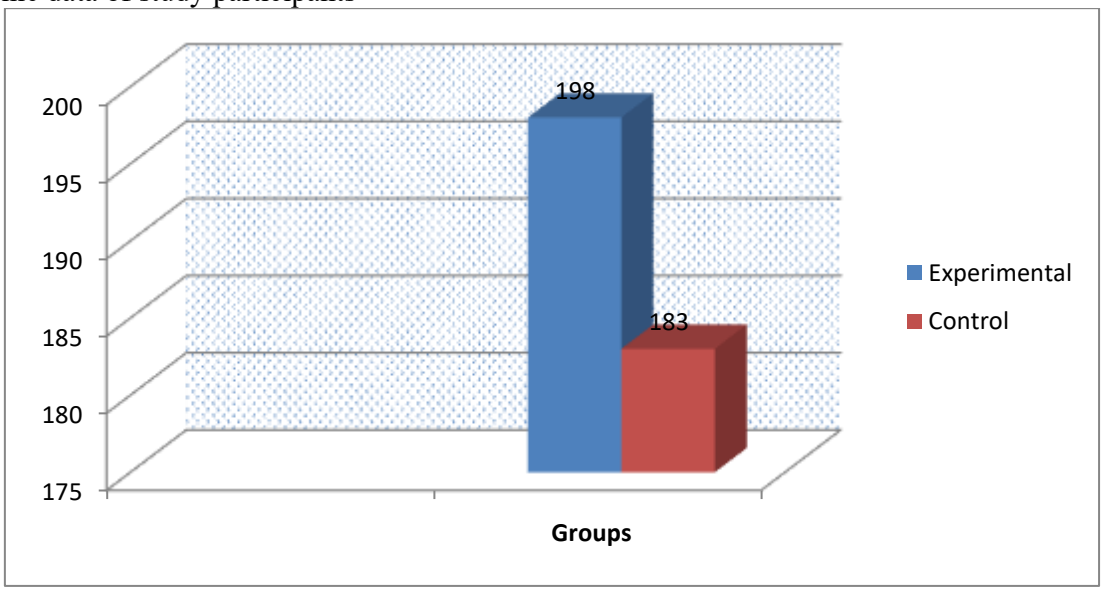
identified to have participated in both pretest and posttest screened out. Only the correctly filled copies of the instrument were scored and coded based on the coding schedule.

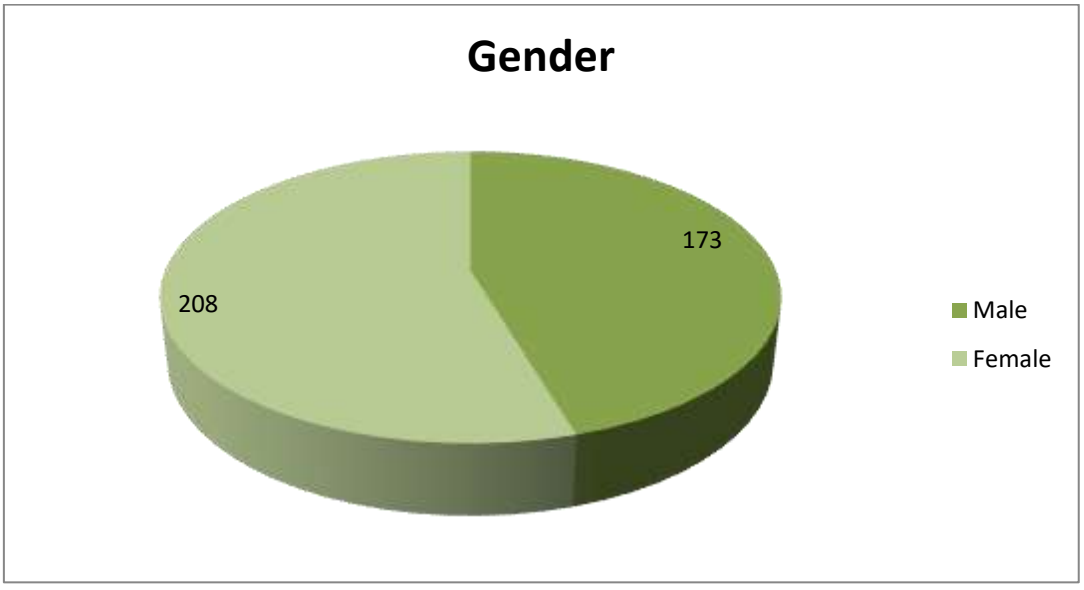
Data analysis

Analysis of data was done with the aid of SPSS version 21.0 for windows. To compare the two groups, the differential effect of the treatment was analyzed using descriptive statistics (involving mean and standard deviation to answer research questions, while inferential statistics involving Analysis of Covariance (ANCOVA) to test hypotheses at .05 Alpha level, using the pretest scores as covariate for the posttest scores.

Results

Demographic data of study participants





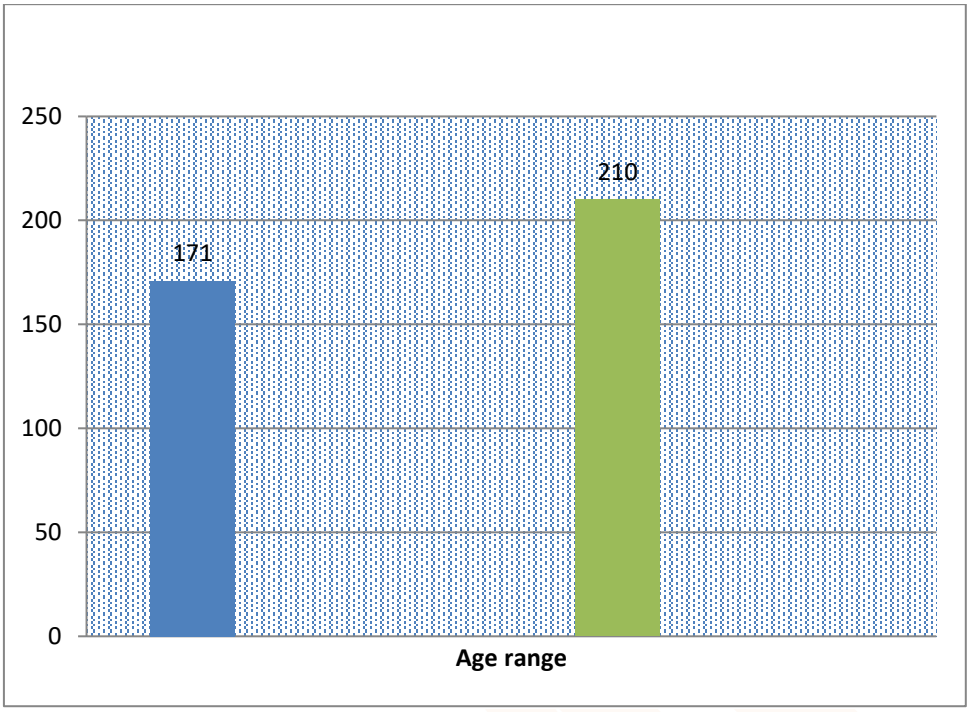


Table 2
Mean scores and standard deviation of the subjects in the study variables

Variables	Category	Test type	N	Mean	SD	Mean diff.
Study habits						
Group	Experimental	Pre-test	198	32.11	1.56	7.47
		Post-test	198	24.64	4.43	
	Control	Pre-test	183	31.98	1.84	1.23
		Post-test	183	30.75	3.40	
Gender	Male	Pre-test	173	32.06	1.65	3.50
		Post-test	173	28.56	5.11	
	Female	Pre-test	208	32.04	1.73	5.49
		Post-test	208	26.55	4.67	
Age	Below 25yrs	Pre-test	171	32.22	1.24	5.08
		Post-test	171	27.10	4.99	
	26yrs and above	Pre-test	210	31.89	2.03	4.19
		Post-test	210	27.72	5.03	
Research skills						
Group	Experimental	Pre-test	198	24.13	3.14	7.07
		Post-test	198	31.20	2. 15	
	Control	Pre-test	183	27.40	1.46	1.30
		Post-test	183	26.10	3.52	
Gender	Male	Pre-test	173	30.02	2.73	.07
		Post-test	173	30.09	3.81	
	Female	Pre-test	208	29.20	2.44	.05
		Post-test	208	29.15	3.12	
Age	Below 25yrs	Pre-test	171	32.82	1.63	2.64
		Post-test	171	32.46	2.87	
	26yrs and above	Pre-test	210	33.17	3.10	4.19
		Post-test	210	29.62	4.14	

Research question one

What is the main effect of study habits training on reduction of undergraduate students' involvement in examination malpractice?

The research question was answered using descriptive statistics (mean score and standard deviation). The results are presented in Table 3.

Table 3
Main effect of study habits training on reduction of undergraduate students' involvement in examination malpractice

Variables	Category	Test type	N	Mean	SD	Mean diff.
Group	Experimental	Pre-test	198	32.11	1.56	7.47
		Post-test	198	24.64	4.43	
	Control	Pre-test	183	31.98	1.84	1.23
		Post-test	183	30.75	3.40	

As presented in Table 3, the pre-test mean scores (Mean = 32.11) of respondents in the experimental group decreased during the post-test (Mean = 24.64) with a mean score difference of 7.47. Conversely, the pre-test mean score (Mean =31.98) of respondents in the control group though slightly reduced during the post-test (Mean= 30.75) with a mean difference of 1.23, the marginal decrease in the control group may be due to test-wise factors. The substantial mean difference in the experimental group may be attributed to the study habits training administered to the experimental group. Therefore, we conclude that study habits' training was effective in reducing undergraduate students' involvement in examination malpractice. This result was further subjected to statistical significance and reported in Table 4 (hypothesis 1).

Hypotheses one

There is no significant main effect of study habits training on reduction of undergraduate students' involvement in examination malpractice. The hypothesis was tested using analysis of covariance (ANCOVA). The results are presented in Table 4.

Table 4:
ANCOVA of main effect of treatment on reduction of undergraduate students' involvement in examination malpractice

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	4065.642	2	2032.821	127.124	.000
Intercept	1088.007	1	1088.007	668.040	.000
Pretest	5.483	1	5.483	.343	.558
Treatment	4041.573	1	4041.573	252.744	.000
Error	6971.989	379	15.991		
Total	341356.000	381			
Corrected total	11037.631	380			

R Squared = .449 (Adjusted R Squared = .439), Grand Mean 27.701; SE = .192

As presented in Table 4, the result of the analysis showed that, after adjustment for the covariate, the calculated F-value for treatment was $F_{(2, 379)} = 252.744$; p = .000. This result means that, there was significant effect of treatment (study habits training) on reduction of undergraduate students' involvement in examination malpractice. Therefore, the null hypothesis was rejected. Furthermore, results showed a multiple regression coefficient R of .449 and a squared value (R^2) of .439. This implies that 44.9 per cent of the variance on reduction of undergraduate students' involvement in examination malpractice can be explained by the treatment (study habits training).

Research question two

What is the effect of gender on reduction of undergraduate students' involvement in examination malpractice after treatment?

This research question was answered using descriptive statistics (mean score and standard deviation). The results are presented in Table 5.

Table 5
Effect of gender on reduction of undergraduate students' involvement in examination malpractice after treatment

Variables	Category	Test type	N	Mean	SD	Mean diff.
Gender	Male	Pre-test	173	32.06	1.65	3.50
		Post-test	173	28.56	5.11	
	Female	Pre-test	208	32.04	1.73	5.49
		Post-test	208	26.55	4.67	

As presented in Table 5, the pre-test mean scores (Mean = 32.06; SD =1.65) of male respondents did not differ with mean scores of the female respondents (Mean = 32.04; SD =1.73). Though, the mean score of female participants was slightly lower than male participants, we can conclude that male and female participants get involved in examination malpractice almost at the same level. Therefore, there was no much gender difference in undergraduate students' involvement in examination malpractice after treatment. This result was further subjected to statistical significance and reported in Table 6 (hypothesis 2).

Hypothesis two

There is no significant effect of gender on reduction of undergraduate students' involvement in examination malpractice after treatment. The hypothesis was tested with ANCOVA and the results are presented in Table 6

Table 6:
ANCOVA: effect of gender on reduction of undergraduate students' involvement in examination malpractice after treatment

Source	Type III sum of squares	Df	Mean square	F	Sig.
Corrected model	458.724	2	229.362	9.453	.000
Intercept	1263.229	1	1263.229	52.063	.000
Pretest	25.475	1	25.475	1.050	.306
Gender	14.654	1	14.798	2.914	.061
Error	10578.907	379	24.264		
Total	341356.000	381			
Corrected total	11037.631	380			

R Squared = .042 (Adjusted R Squared = .037), Grand Mean 27.556; SE = .237

As presented in Table 6, the calculated $F_{(2, 379)} = 2.914$; $p = .061$ is not statistically significant ($p > .061$) at .05 significance level. The result means that, there was no significant effect of gender on reduction of undergraduate students' involvement in examination malpractice after treatment; the null hypothesis was therefore retained. This implies that reduction on involvement in examination malpractice among undergraduate students' after treatment was at equal level for both gender (male and female).

Research question three

What is the effect of age on reduction of undergraduate students' involvement in examination malpractice after treatment? This research question was answered using descriptive statistics (mean score and standard deviation). The results are presented in Table 7.

Table 7
Effect of age on reduction of undergraduate students' involvement in examination malpractice after treatment

Variables	Category	Test type	N	Mean	SD	Mean diff.
Age	25yrs and below	Pre-test	222	32.22	1.24	5.08
		Post-test	222	27.10	4.99	
	26yrs and above	Pre-test	217	31.89	2.03	4.19
		Post-test	217	27.72	5.03	

As presented in Table 7, the pre-test mean scores (Mean = 32.22; SD =1.24) of participants in the age category of 25 years and below did not differ with mean scores (Mean = 31.89; SD =2.03) of the participants aged 26years and above. Though, the mean score of the participants aged 25 years and below was slightly higher than the participants aged 26years above. Thus, there is no age difference on reduction of undergraduate students' involvement in examination malpractice after treatment. This result was further subjected to statistical significance and reported in Table 8 (hypothesis 3).

Hypothesis three
There is no significant effect of age on reduction of examination malpractice tendencies among secondary school students.
The hypothesis was tested with ANCOVA and the results are presented in Table 8.

Table 8:
ANCOVA: effect of age on reduction of undergraduate students' involvement in examination malpractice after treatment.

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	235.401	2	117.701	4.751	.000
Intercept	1333.326	1	1333.326	53.816	.000
Pretest	39.616	1	39.616	1.599	.307
Age	11.332	1	11.332	2.530	.064
Error	10802.230	379	24.776		
Total	341356.000	381			
Corrected total	11037.631	380			

R Squared = .021 (Adjusted R Squared = .017), Grand Mean 27.438; SE = .238

As presented Table 8, the calculated F-value for age is 2.530 and it is not statistically significant (p = .064) at .05 significance level and (2, 379) degrees of freedom. The result means that, there was no significant effect of age on reduction of undergraduate students' involvement in examination malpractice after treatment; the null hypothesis was therefore retained. This implies that reduction on involvement in examination malpractice among undergraduate students' after treatment was at equal level for all ages.

Hypothesis four
There is no significant interaction effect of treatment, gender and age on reduction of undergraduate students' involvement in examination malpractice.
The hypothesis was tested with ANCOVA and the results are presented in Table 9.

Table 9:
ANCOVA: interaction effect of treatment, gender and age on reduction of undergraduate students' involvement in examination malpractice.

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	5223.892	2	326.493	63.720	.000
Intercept	1146.546	1	1146.546	68.852	.000
Pretest	14.400	1	14.400	.487	.486
Treatment	3982.614	1	3982.614	251.081	.000
Gender	318.798	1	318.789	1.045	.307
Age	10.083	1	10.083	.732	.300
Treatment *gender*age	8.121	1	8.121	.590	.443
Error	5813.739	379	13.777		
Total	341356.000	381			
Corrected total	11037.631	380			

R Squared = .370 (Adjusted R Squared = .364), Grand Mean 27.682; SE = .193

The results as presented in Table 9 indicate that the calculated F-value for the interaction effect of treatment, gender and age was not significant; F (2, 379) = .590; p >.05. Therefore, the null hypothesis was

retained and the alternate hypothesis rejected. In other words, the treatment did not significantly reduce participant's examination malpractice tendencies when gender and age was considered jointly.

Research question five

What is the main effect of research skills training on reduction of undergraduate students' involvement in plagiarism?

The research question was answered using descriptive statistics (mean score and standard deviation). The results are presented in Table 10.

Table 10

Main effect of research skills training on reduction of undergraduate students' involvement in plagiarism

Variables	Category	Test type	N	Mean	SD	Mean diff.
Group	Experimental	Pre-test	198	31.20	3.14	7.07
		Post-test	198	24.13	2. 15	
	Control	Pre-test	183	27.40	1.46	1.30
		Post-test	183	26.10	3.52	

As presented in Table 10, the pre-test mean scores of respondents (Mean = 31.20) in the experimental group decreased during the post-test (Mean = 24.13) with a mean score difference of 7.07. Conversely, the pre-test mean score of respondents (Mean = 27.40) in the control group though slightly reduced during the post-test (Mean= 26.10) with a mean difference of 1.30, the marginal decrease in the control group may be due to test-wise factors. The substantial mean difference in the experimental group may be attributed to the research skills training administered to the experimental group. Therefore, we conclude that research skills' training was effective in reducing undergraduate students' involvement in plagiarism. This result was further subjected to statistical significance and reported in Table 11 (hypothesis 5).

Hypotheses five

There is no significant main effect of research skills training on reduction of undergraduate students' involvement in plagiarism. The hypothesis was tested using analysis of covariance (ANCOVA). The results are presented in Table 11.

Table 11:

ANCOVA: main effect of treatment (research skills training) on reduction of undergraduate students' involvement in plagiarism

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	8.638	2	4.319	.035	.000
Intercept	19306.162	1	19306.162	156.214	.000
Pretest	.076	1	.076	.001	.558
Treatment	8.470	1	8.470	274.316;	.000
Error	37076.259	379	123.588		
Total	113283.000	381			
Corrected total	37084.898	380			

As presented in Table 11, the result of the analysis showed that, after adjustment for the covariate, the calculated F-value for treatment was $F_{(2, 379)} = 274.316$; $p = .000$. This result means that, there was significant effect of treatment (research skills training) on reduction of undergraduate students' involvement in plagiarism. Therefore, the null hypothesis was rejected.

Research question six

What is the effect of gender on reduction of undergraduate students' involvement in plagiarism treatment (research skills training)? This research question was answered using descriptive statistics (mean score and standard deviation). The results are presented in Table 12.

Table 12
Effect of gender on reduction of undergraduate students' involvement in plagiarism treatment (research skills training)

Variables	Category	Test type	N	Mean	SD	Mean diff.
Gender	Male	Pre-test	173	30.02	2.73	.07
		Post-test	173	30.09	3.81	
	Female	Pre-test	208	28.20	2.44	2.95
		Post-test	208	29.15	3.12	

As presented in Table 12, the pre-test mean scores (Mean = 30.02; SD = 2.73) of male respondents did not differ with mean scores of the female respondents (Mean = 30.09; SD =3.81). Though, the mean score of female participants was slightly lower than male participants, we can conclude that male and female participants get involved in plagiarism almost at the same level. Therefore, there was no much gender difference in undergraduate students' involvement in plagiarism after treatment. This result was further subjected to statistical significance and reported in Table 13 (hypothesis 6).

Hypothesis six

There is no significant effect of gender on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training). The hypothesis was tested with ANCOVA and the results are presented in Table 13

Table 13:
ANCOVA: effect of gender on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training).

Source	Type III sum of squares	Df	Mean square	F	Sig.
Corrected model	9979.559	2	3326.520	36.695	.000
Intercept	20510.324	1	20510.324	226.250	.000
Pretest	24.719	1	24.719	.273	.306
Gender	9979.390	1	4989.695	2.244	.086
Error	27105.339	379	90.653		
Total	113283.000	381			
Corrected total	37084.898	380			

As presented in Table 13, the calculated $F_{(2, 379)} = 2.244$; $p = .086$ is not statistically significant ($p > .05$). The result means that, there was no significant effect of gender on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training), the null hypothesis was therefore retained. This implies that there was no gender differences in reduction of involvement in plagiarism among undergraduate students' after treatment (research skills training).

Research question seven

What is the effect of age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training)? This research question was answered using descriptive statistics (mean score and standard deviation). The results are presented in Table 14.

Table 14
Effect of age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training)

Variables	Category	Test type	N	Mean	SD	Mean diff.
Age	25yrs and below	Pre-test	171	32.82	1.63	0.36
		Post-test	171	32.46	2.87	
	26yrs and above	Pre-test	210	31.17	3.10	0.55
		Post-test	210	30.62	4.14	

As presented in Table 14, the pre-test mean scores (Mean = 32.82; SD =1.63) of participants in the age category of 25 years and below did not differ with mean scores (Mean = 32.46; SD =2.87) of the participants

aged 26years and above. Though, the mean score of the participants aged 25 years and below was slightly higher than the participants aged 26years above. Thus, there is no age difference on reduction of undergraduate students' involvement in plagiarism after treatment. This result was further subjected to statistical significance and reported in Table 15 (hypothesis 7).

Hypothesis seven

There is no significant main effect of age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training)

The hypothesis was tested with ANCOVA and the results are presented in Table 15.

Table 15:

ANCOVA: effect of age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training)

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	10672.243[a]	2	1778.707	19.934	.000
Intercept	20240.515	1	20240.515	226.830	.000
Pretest	20.220	1	20.220	.227	.307
Age	9971.441	1	4985.721	2.874	.085
Error	4.903	379	4.903		
Total	688.901	381			
Corrected total	26412.655	380			

As presented Table 8, the calculated F-value for age is 2.874 and it is not statistically significant (p = .085) at .05 significance level and (2, 379) degrees of freedom. The result means that, there was no significant effect of age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training); the null hypothesis was therefore retained. This implies that reduction on involvement in plagiarism among undergraduate students' after treatment was at equal level for all ages.

Hypothesis eight

There is no significant interaction effect of treatment, gender and age on reduction of undergraduate students' involvement in plagiarism after treatment (research skills training)

The hypothesis was tested with ANCOVA and the results are presented in Table 16.

Table 16:

ANCOVA: interaction effect of treatment, gender and age on reduction of undergraduate students' involvement in plagiarism.

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	10672.243[a]	2	1778.707	19.934	.000
Intercept	20240.515	1	20240.515	226.830	.000
Pretest	20.220	1	20.220	.227	.634
Treatment	9971.441	1	4985.721	55.874	.000
Gender	4.903	1	4.903	.055	.815
Age	688.901	1	344.451	3.860	.072
Treatment *gender*age	26412.655	1	89.232	19.934	.643
Error	5813.739	379	13.777		
Total	113283.000	379	1778.707		
Corrected total	37084.898	381			

The results as presented in Table 16 indicate that the calculated F-value for the interaction effect of treatment, gender and age was not significant; F (2, 379) = .634; p >.05. Therefore, the null hypothesis was retained and the alternate hypothesis rejected. This implies that the treatment did not significantly reduce participant's examination malpractice tendencies when gender and age was considered jointly.

Discussion of findings

The findings from the study indicate that study habits training had a significant impact on reducing undergraduate students' involvement in examination malpractice. This conclusion is drawn from both the descriptive and inferential statistical analyses presented in Tables 3 and 4.. The descriptive analysis showed that the experimental group, which received study habits training, experienced a notable reduction in examination malpractice involvement. Specifically: Pre-test Mean (Experimental Group): 32.11, Post-test Mean (Experimental Group): 24.64 and Mean Difference: 7.47 This suggests that students who received training in study habits developed better academic integrity practices, reducing their reliance on malpractice. Conversely, the control group, which did not receive the intervention, showed only a slight reduction in malpractice behaviour: Pre-test Mean (Control Group): 31.98, Post-test Mean (Control Group): 30.75 and Mean Difference: 1.23. The small decline in the control group could be attributed to test-wise factors such as increased awareness due to participation in the study or external influences like school regulations or peer discussions. The inferential statistics confirmed that the study habits training had a statistically significant effect on reducing examination malpractice: $F(2, 379) = 252.744$; $p = .000$ (significant effect), $R = .449$, $R^2 = .439$ (indicating that 44.9% of the variance in malpractice reduction was explained by the study habits training). These results reinforce the argument that structured study habits training is a powerful tool in mitigating academic dishonesty among undergraduates.

Several studies align with these findings, emphasizing the role of study habits and academic self-regulation in reducing academic dishonesty: Adeyemo (2010) found that students with strong study habits and time management skills were less likely to engage in examination malpractice. This is because effective study routines build confidence, reducing the temptation to cheat. Zimmerman & Schunk (2011) highlight that self-regulated learning strategies, which include good study habits, help students become more responsible for their academic success, lowering their tendency to resort to unethical practices. Obidigbo (2017) also observed that universities that implemented study skills training recorded a significant drop in examination malpractice cases over time.

While many studies support the positive impact of study habits training, some researchers argue that other factors play a more significant role in examination malpractice reduction: for instance Owuamanam (2005) argues that institutional policies and strict examination monitoring have a greater impact on reducing malpractice than individual study habits training. He suggests that without strong enforcement of academic integrity policies, even well-trained students might still engage in malpractice due to peer pressure or fear of failure. Eisenberg (2004) suggests that psychological factors, such as test anxiety and academic stress, may be stronger predictors of cheating behavior than study habits alone. He argues that interventions focusing on stress management and ethical reasoning should complement study habits training. These contrasting perspectives indicate that while study habits training is effective, a multi-faceted approach, including institutional policy enforcement, stress management programs, and ethical education, may yield even better results.

Furthermore, the findings also suggest that gender did not play a significant role in determining the effectiveness of study habits training in reducing examination malpractice among undergraduate students. This conclusion is supported by both descriptive and inferential statistical analyses presented in Tables 5 and 6. The descriptive statistics indicate that before the treatment, both male and female students had similar levels of involvement in examination malpractice: Pre-test Mean (Male): 32.06 (SD = 1.65), Pre-test Mean (Female): 32.04 (SD = 1.73). This suggests that academic dishonesty is not significantly gender-dependent before intervention. Additionally, the post-treatment analysis found that the study habits training was equally effective for both genders, as no significant difference was observed in the reduction of examination malpractice between male and female participants. The inferential statistical results further confirm this: $F(2, 379) = 2.914$; $p = .061$, Since $p > .05$, the effect of gender is not statistically significant. Thus, we can conclude that study habits training was effective across genders and that gender did not significantly influence students' tendency to engage in examination malpractice after treatment.

Several studies support the finding that gender differences do not significantly affect the likelihood of engaging in examination malpractice when academic interventions are introduced. Jegede & Okebukola (2010) found that both male and female students exhibit similar tendencies toward academic dishonesty when exposed to the same learning environment and pressures. Balogun (2018) suggests that study habits, rather than gender, is the primary determinant of students' engagement in malpractice. When both genders receive

proper study training, their academic integrity improves equally. Ajiboye & Adebayo (2020) argue that societal perceptions that one gender is more prone to malpractice than the other are largely unfounded, as students cheat due to academic pressure, not gender-related factors. While the current study found no significant gender effect, some research suggests that gender differences may influence academic dishonesty in certain contexts: Whitley, Nelson, & Jones (2001) reported that male students are more likely to engage in academic dishonesty due to risk-taking tendencies and lower fear of consequences. McCabe & Trevino (1997) found that female students tend to have higher ethical standards and lower engagement in cheating behaviors, suggesting that females may respond better to interventions targeting academic integrity. Owolabi (2015) suggests that in some cultural settings, female students experience greater academic pressure, which can sometimes lead to higher rates of cheating among them. These alternative perspectives highlight that while gender differences in malpractice may exist in some studies, the current research suggests that when provided with study habits training, both male and female students benefit equally in terms of malpractice reduction.

Also, findings indicate that age did not significantly influence the reduction of examination malpractice among undergraduate students after study habits training. Both younger (≤25 years) and older (≥26 years) participants demonstrated similar levels of reduction in malpractice, as shown in both descriptive and inferential statistical analyses in Tables 7 and 8. The descriptive statistics indicate that before treatment, students across different age categories had similar tendencies toward examination malpractice: Pre-test Mean (≤25 years): 32.22 (SD = 1.24) Pre-test Mean (≥26 years): 31.89 (SD = 2.03). Although younger students had a slightly higher mean score in malpractice involvement before treatment, the difference was minimal. After treatment, both groups showed a similar level of reduction, suggesting that age did not significantly influence the impact of study habits training. The inferential statistical results further confirm this: $F(2, 379) = 2.530$; $p = .064$, Since $p > .05$, the effect of age is not statistically significant. This means that the reduction in malpractice tendencies was not dependent on students' age; rather, the study habits training was equally effective across all age groups.

Several studies support the finding that age does not significantly influence students' engagement in examination malpractice after academic interventions: Ojo & Olaniyan (2018) found that students of different age groups tend to engage in malpractice at similar rates when exposed to the same academic environment and pressures. Their study emphasized that academic integrity is influenced more by learned behaviors and study habits than by age differences. Elliot & Devine (2014) argue that academic dishonesty is driven more by situational factors (such as assessment pressure and perceived difficulty of exams) than by demographic factors like age. This aligns with the current study's finding that once study habits training is introduced, students of all ages benefit equally. Tindall & Curtis (2020) highlight that both younger and older students are equally susceptible to academic dishonesty when faced with challenges such as lack of preparation, fear of failure, and inadequate study skills. They recommend study skills training as an effective intervention across all age groups. While the current study found no significant age effect, some research suggests that age differences may play a role in academic dishonesty in specific contexts: McCabe & Treviño (1997) argue that younger students (especially first-year undergraduates) may be more likely to engage in malpractice due to lower self-regulation skills compared to older students who have more academic experience. Stephens & Nicholls (2008) suggest that older students, particularly those returning to education after a gap, might have stronger ethical values and self-discipline, making them less likely to engage in academic dishonesty. Arnett (2000) introduces the concept of "emerging adulthood," suggesting that younger students (18-25 years) are still developing responsibility and moral reasoning, which might make them more prone to academic dishonesty. These alternative perspectives indicate that while some studies find age-related differences in academic integrity, the current research suggests that study habits training effectively levels the playing field, reducing malpractice equally across age groups.

The findings indicate that there was no significant interaction effect of treatment, gender, and age on the reduction of undergraduate students' involvement in examination malpractice. This means that the effectiveness of study habits training in reducing malpractice was not influenced by the combined effect of gender and age. The statistical results from Table 9 indicate that: $F(2, 379) = .590$; $p > .05$, Since p is greater than .05, the interaction effect is not significant. This means that study habits training was effective independently but was not influenced by the combined effects of gender and age. In simpler terms, the reduction in examination malpractice was consistent across different gender and age groups, without any interaction among these factors affecting the outcome. Several studies support the idea that gender and age do not significantly interact with academic interventions when reducing examination malpractice: Olatunji &

Adebayo (2019) found that study habits training improved students' academic integrity regardless of gender and age differences. Their study concluded that cheating behaviour is more influenced by academic culture and pressure than by demographic factors. Bandura (1997) suggests that self-regulated learning, a core component of study habits training, is effective across all age and gender groups because it focuses on personal motivation and accountability rather than external demographic traits. Zimmerman & Schunk (2011) emphasize that once students develop strong study habits, they rely less on malpractice, regardless of their age or gender. This aligns with the current study's findings that the intervention worked consistently across all groups.

Although the current study found no significant interaction, some researchers argue that age and gender may interact with academic interventions in certain cases: McCabe & Treviño (1997) suggest that younger male students are more likely to engage in academic dishonesty due to social pressures and lower self-regulation, implying that interventions might work differently across age and gender groups. Stephens & Nicholls (2008) found that older students may be more receptive to academic integrity training due to higher levels of self-discipline, while younger students might require more reinforcement. Ajiboye & Adebayo (2020) argue that gender socialization influences academic behavior, suggesting that male and female students may respond differently to interventions, particularly in competitive academic environments. While these studies suggest potential interaction effects, the findings of the current research indicate that study habits training was equally effective across all groups, meaning that individual differences in academic dishonesty may be more related to external academic pressures than gender or age factors.

The findings from this study indicate that research skills training had a significant impact on reducing undergraduate students' involvement in plagiarism. This conclusion is drawn from both the descriptive and inferential statistical analyses presented in Tables 10 and 11. The descriptive analysis revealed a significant reduction in plagiarism tendencies among students who received research skills training (experimental group), compared to those who did not (control group): Pre-test Mean (Experimental Group): 31.20, Post-test Mean (Experimental Group): 24.13, Mean Difference: 7.07. The substantial reduction in plagiarism among the experimental group suggests that research skills training effectively enhanced students' understanding of proper citation, referencing, and ethical research practices. Conversely, the control group, which did not receive the training, showed only a slight decrease in plagiarism levels: Pre-test Mean (Control Group): 27.40, Post-test Mean (Control Group): 26.10, Mean Difference: 1.30. This small decline in plagiarism within the control group could be attributed to test-wise factors, such as increased awareness due to participation in the study or external academic influences.. The inferential statistics further confirmed the significant impact of research skills training: $F(2, 379) = 274.316$; $p = .000$ (significant effect), Since $p < .05$, the null hypothesis (stating that research skills training has no effect on plagiarism reduction) was rejected. This strongly supports the conclusion that research skills training plays a critical role in reducing plagiarism among undergraduate students.

Several studies align with these findings, emphasizing the importance of research skills training in preventing plagiarism: Pecorari (2013) found that inadequate research and citation skills are key contributors to plagiarism among university students. Training programs that focus on academic writing and ethical research practices significantly reduce unintentional plagiarism. Park (2003) highlighted that many students plagiarize due to a lack of understanding of academic integrity rather than deliberate dishonesty. Proper training helps bridge this knowledge gap. Owunwanne, Rustagi, & Dada (2010) reported that universities that introduced structured research training observed a substantial decline in plagiarism cases. Elander et al. (2010) found that teaching students how to paraphrase, cite sources correctly, and develop original arguments significantly reduces plagiarism. These studies reinforce the idea that plagiarism is often a result of poor research skills rather than intentional misconduct, and that structured training programs can effectively reduce such behaviours. While most studies support the effectiveness of research skills training, some researchers argue that additional factors may influence plagiarism: Bretag et al. (2014) suggest that institutional policies and strict plagiarism detection software (e.g., Turnitin) may have a stronger deterrent effect than training alone. They argue that enforcement mechanisms should complement research training. Comas-Forgas & Sureda-Negre (2010) found that peer influence and academic pressure play a significant role in students' decision to plagiarize. Even with training, some students may still resort to unethical practices under pressure to perform. Howard (2001) points out that cultural differences in academic writing norms may contribute to plagiarism, particularly for international students who are unfamiliar with Western citation practices. Thus, research training should be tailored to diverse student populations. These perspectives suggest that while

research skills training is effective, it should be supplemented with institutional policies, academic integrity awareness programs, and plagiarism detection tools for a more comprehensive approach.

Again, findings indicate that gender did not significantly influence the reduction of plagiarism among undergraduate students after research skills training. This conclusion is drawn from both descriptive and inferential statistical analyses in Tables 12 and 13. The descriptive statistics show that male and female students had similar levels of plagiarism before receiving research skills training: Pre-test Mean (Male): 30.02 (SD = 2.73), Pre-test Mean (Female): 30.09 (SD = 3.81). Although the female participants had a slightly lower mean score compared to the male participants, the difference was minimal. After treatment, both male and female students experienced a reduction in plagiarism, and no substantial gender difference was observed in the reduction levels. The inferential statistical results further confirm this: $F(2, 379) = 2.244$; $p = .086$, Since $p > .05$, the effect of gender is not statistically significant. This means that both male and female students benefited equally from the research skills training, and gender did not significantly influence the effectiveness of the intervention. Several studies support the finding that gender differences do not significantly affect the likelihood of engaging in plagiarism when academic interventions are introduced: for instance, Park (2003) found that plagiarism is often a result of a lack of awareness rather than gender-specific tendencies. Once students receive training, plagiarism tendencies reduce equally across both genders. Pecorari (2013) argues that proper research skills training improves students' ability to cite correctly, paraphrase, and develop original arguments, regardless of gender. Elander et al. (2010) highlight that students' research competence, not their gender, determines their likelihood of engaging in plagiarism. Training programs that emphasize referencing and paraphrasing significantly reduce plagiarism in both male and female students. These studies reinforce the idea that plagiarism is more of a skills-related issue than a gender-related behaviour, and structured training programs are equally effective for both male and female students. While the current study found no significant gender effect, some researchers suggest that gender differences may influence academic dishonesty, including plagiarism, in specific contexts: Whitley, Nelson, & Jones (1999) reported that male students tend to engage more in academic dishonesty than female students, possibly due to risk-taking behaviors and lower adherence to academic ethics. McCabe & Treviño (1997) found that female students generally exhibit higher academic integrity and are more likely to internalize ethical norms compared to their male counterparts. Stephens & Nicholls (2008) suggest that male students may be more likely to engage in plagiarism due to higher levels of confidence in avoiding detection, whereas female students may be more cautious. Although these studies suggest potential gender differences in plagiarism behavior, the current research found no significant effect of gender after research skills training. This implies that once students are educated on proper research practices, gender differences in plagiarism tendencies become negligible.

The findings indicate that age did not significantly influence the reduction of plagiarism among undergraduate students after research skills training. This conclusion is drawn from both descriptive and inferential statistical analyses in Tables 14 and 15. The descriptive statistics show that students in different age groups had similar levels of plagiarism before receiving research skills training: Pre-test Mean (≤25 years): 32.82 (SD = 1.63) and Pre-test Mean (≥26 years): 32.46 (SD = 2.87). Although younger students (≤25 years) had a slightly higher mean score in plagiarism than older students (≥26 years), the difference was minimal. After treatment, both age groups experienced a reduction in plagiarism, and no substantial difference was observed in the reduction levels. The inferential statistical results further confirmed this: $F(2, 379) = 2.874$; $p = .085$, Since $p > .05$, the effect of age is not statistically significant. This means that students of all ages benefited equally from the research skills training, and age did not influence the effectiveness of the intervention. Several studies support the finding that age differences do not significantly affect plagiarism behavior when academic interventions are introduced: Elander et al. (2010) found that plagiarism often results from a lack of research skills rather than age-related differences in academic ethics. Their study concluded that once students receive proper training, plagiarism tendencies reduce equally across all age groups. Pecorari (2013) emphasizes that effective research skills training helps all students, regardless of age, to develop proper citation, referencing, and paraphrasing techniques, reducing their involvement in plagiarism. Tindall & Curtis (2020) suggest that plagiarism is more influenced by academic pressure and time constraints than by age, reinforcing the idea that research training should be standardized for all students rather than targeted at specific age groups. These studies align with the current research findings, suggesting that plagiarism prevention strategies should focus on skill development rather than age-based interventions. While the current study found no significant age effect, some researchers suggest that age differences may influence academic integrity and responses to plagiarism interventions: for instance, Babalola (2012) found that younger students

may be more likely to engage in plagiarism due to higher reliance on the internet for research, while older students may use more traditional research methods.

There was no significant interaction effect of treatment, gender, and age on the reduction of undergraduate students' involvement in plagiarism. This means that the effectiveness of research skills training in reducing plagiarism was not influenced by the combined effect of gender and age. The statistical results from Table 16 indicate that: $F(2, 379) = .634$; $p > .05$, Since p is greater than .05, the interaction effect is not significant. This means that research skills training was effective independently, but its impact was not influenced by the combined effects of gender and age. In other words, both male and female students, regardless of their age, benefited equally from the training, and no particular group showed a significantly different response to the intervention. This suggests that research skills training is universally effective, independent of demographic factors like gender and age. Several studies support the finding that gender and age do not significantly interact with academic interventions when reducing plagiarism: Elander et al. (2010) found that plagiarism is primarily a skills-related issue rather than a demographic-based behavior. Their study concluded that when students receive proper research training, reductions in plagiarism occur across all gender and age groups. Pecorari (2013) emphasizes that students of different backgrounds and demographics tend to plagiarize at similar rates due to a lack of research skills, rather than because of gender or age-related factors. Tindall & Curtis (2020) highlight that effective academic writing training benefits all students equally, reinforcing the idea that plagiarism prevention should be standardized for all learners. These studies align with the current research findings, suggesting that plagiarism prevention strategies should focus on skill development rather than demographic-specific interventions. Although the current study found no significant interaction effect, some researchers argue that gender and age may influence academic dishonesty in certain contexts: McCabe & Treviño (1997) found that younger male students are more likely to engage in academic dishonesty due to risk-taking behaviors and lower self-regulation. Stephens & Nicholls (2008) suggest that older students may be more receptive to academic integrity training due to higher levels of self-discipline, while younger students may require additional reinforcement. Babalola (2012) found that gender and age differences in plagiarism may be influenced by cultural and institutional factors, particularly in regions where academic dishonesty is more socially tolerated. Despite these perspectives, the findings of this study suggest that once students receive proper research skills training, gender and age differences in plagiarism behavior become negligible. This indicates that plagiarism is more strongly influenced by research skills than demographic factors.

Conclusion

The study confirmed that study habits training and research skills training are highly effective in reducing examination malpractice and plagiarism. Importantly, these interventions were found to be equally beneficial across all students, regardless of gender or age. This underscores the need for universities to institutionalize structured academic integrity programs that focus on skill development rather than demographic-based interventions. By implementing comprehensive training programs, strict institutional policies, and awareness initiatives, higher education institutions can significantly reduce academic dishonesty and promote a culture of integrity among students. Future research should explore long-term effects of these interventions and investigate other possible factors influencing students' academic behaviors. With a collective effort from educators, policymakers, and students, universities can create an ethically responsible academic environment that fosters genuine learning and intellectual growth.

Recommendations

The results of this study have several important implications for educators, policymakers, and institutions of higher learning. Based on these findings, the following recommendations are proposed:

1. Universities should make study habits training a mandatory part of orientation programs for new students to equip them with effective learning strategies from the beginning of their academic journey.
2. Regular workshops on academic integrity should be conducted to reinforce ethical study practices and discourage malpractice.
3. Research skills training should be embedded into all undergraduate programs, ensuring that students understand how to properly cite, reference, paraphrase, and avoid plagiarism.
4. Universities should adopt digital tools (e.g., Turnitin, Grammarly, and AI-based writing assistants) to help students check for plagiarism before submitting their work.

5. Universities should establish strict academic integrity policies that clearly define examination malpractice and plagiarism, along with their consequences.
6. Peer mentoring programs should be introduced, where senior students guide junior students on ethical research practices and study habits.
7. Universities should assess the effectiveness of study habits and research skills training through periodic surveys and academic performance tracking.
8. Feedback from students and faculty members should be collected to improve and refine training programs.

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