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DIALOGIC TEACHING AND ITS EFFECT ON STUDENTS' CREATIVE CONCEPTUALISATION OF CONSUMER PRODUCT IN DELTA STATE COLLEGES OF EDUCATION

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Abstract
The aim of the study is to examine the effect of dialogic teaching (student-student and student teacher interactions) on students' conceptualization of consumer product. It is observed that some consumer products do not failed after few months of market entry. This failure probably could be owing to the conventional teaching approach that is adequate enough to indulge creative and innovative tendencies in students. Thus, the study seeks to determine if experimental group performance statistically differs significantly from the control group. The study adopted a quasi-experimental design (pretest and posttest of non-equivalent control group). The design employed through an intervention programme. Two groups were established, the Control and Experimental group. The Control group received no treatment while the Experimental group administered the treatment of 'Dialogic Teaching'. The population of the study consisted of Business Education final year students of Colleges of Education Warri and Mosogar in Delta State. The sample size of 40 students was randomly selected using simple random sampling technique. To guide the study, five research questions and hypotheses were raised. Observation Protocol were designed to elicit the creative abilities of students after the intervention programme. The Observation consisted of 25 items. The research questions were analysed using mean and standard deviation. The hypotheses were tested with Analysis of Covariance (ANCOVA) at 0.05 level of significance. The study concluded that dialogic teaching significantly enhances students' creative conceptualisation of consumer products compared to traditional lecture methods. Dialogic teaching be formally adopted in Business Education curricula across Colleges of Education to foster creativity in students.

Introduction
Conceptualisation of product is a necessity for product or service organizations. It is the point where all salient issues of efficacy, varieties, uniqueness, and values, personality, uses are brought to bear. In some cases, product that hit the markets seems to lack the good evaluation of its concept. As such, most times such products do not survive its early product life cycle of introduction neither does it experience the early product growth. This has been the case of many entrepreneurial efforts of individuals who are in a rush to package and push products into the Consumer Market. Many small scale businesses with these tendencies have suffered infancy death, resulting to loss of capital investment, expertise skills and knowledge, etc. Lots of potential product could not see the light of day as some of the entrepreneurs lack the knowledge that would boost admirable and credible product that meet up with customers' expectations and needs.

Conceptualisation of product is a segment of product development. It entails devising how a product might serve potential needs. It requires a great deal of creativity. It is a description of a product before its design. The description includes the product name, market segment, how the target users will use the product, business goal of the product, its unique selling retail outlet. It is the point of commencing discussion and continued improvement of products, a check on the mechanism.

Students' capacity to think creatively requires their ability to look at a problem or issues from a fresh perspective and come up with innovative solutions. In other words, creativity is the capacity to invent something new or reshape old ones in new dimensions or outlook (Ewarawon, 2022).

Dialogue in education is a specific form of commitment that employs organized questioning to guide and stimulate conceptual comprehension, creative reasoning and its application to reality in classroom session (Corwin, 2020). Dialogue pedagogy aimed to improve the world as well as to expand students' awareness of many issues (Godson & Gill, 2014). Critical thinking in dialogic classroom provides students the opportunity to conceptualise innovative features of product. This can only be achieve more where creative pedagogies such as dialogic teaching is targeted at students in tertiary institutions.

In the process of dialoguing in the classroom, collaboration and explorative activities between students are encouraged. The collaborative explorative constructs in dialogic teaching fosters creativity. Li (2012) acknowledged that through this scenario, students work together as team to share the problem-solving as in this case develop a product concept in the student-student interaction dimension of dialogic teaching. Dialogic teaching is problem-based or inquiry-based. This problem-based and inquiry-based learning tends to enhance greatly students' critical thinking, reflection skills, cognitive and metacognitive capacity (Le et al., 2018). Collaborative group builds on each student's strength and learning is amplified. Whole-class conversation and group discussions influences students learning and reasoning when students think together; classroom dialogue becomes tool for developing new understanding and insights (Littleton and Mercer, 2013 in Omland & Rodnes, 2020).

Statement of the Problem

Most of the entrepreneurs whose product did not see the light of day are educated persons. Entrepreneurship Education domicile in schools' curriculum are expected to orient would be entrepreneurs (students) on concept development. No doubt, this is done in the teaching learning process. However, the efficiency of the teaching method to incite creativity of would-be entrepreneurial students is a call for concern. The conventional teaching approach is not enough to indulge creative and innovative tendencies in students. In recent studies, dialogic teaching is seen to instigate and boost creativity in academic reasoning in students. It becomes necessary for this study to find out if students' ability to generate credible product concept could be achieve through exposure of students to dialogic teaching? If it does, what effect will it have on students' creative tendencies?

Research Purpose

The specific aims of this study are to determine if there are significant differences between;

1. The mean rating of product needs identification of students who are exposed to dialogic teaching and who are exposed to traditional teaching;
2. The mean rating of identification of product features of students who are exposed to dialogic teaching and who are exposed to traditional teaching;
3. The mean rating of innovative product of students who are exposed to dialogic teaching and who are exposed to traditional teaching;
4. The mean rating rebuilding failed products of students who are exposed to dialogic teaching and who are exposed to traditional teaching; and
5. If motivation moderate significantly between dialogic teaching and creative conceptualization of product.

Research Hypotheses

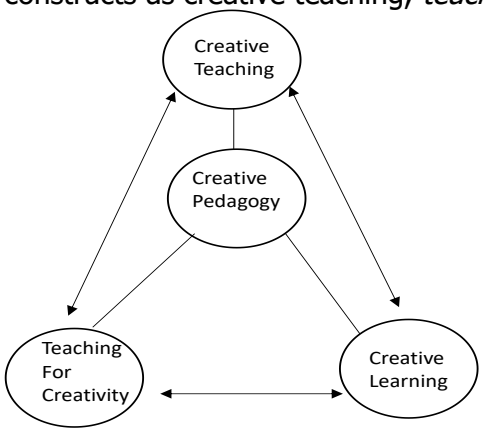
1. There is no significance difference between the mean rating of product needs identification of students who were exposed to dialogic teaching and who were exposed to traditional teaching.
2. There is no significance difference between the mean rating of identification of product features of students who were exposed to dialogic teaching and who were exposed to traditional teaching.

3. There is no significance difference between the mean rating of innovative product of students who were exposed to dialogic teaching and who were exposed to traditional teaching.
4. There is no significance difference between the mean rating of rebuilding failed products of students who are exposed to dialogic teaching and who are exposed to traditional teaching; and
5. Motivation does not moderate significantly between dialogic teaching and creative conceptualization of product.

Literature Review

Teaching in modern times requires a place for telling and a place for dialogue because it involves human being as in this case students who are complex and different in reasoning, understanding, experience, and social economic background (Dawes 2000 in Ewarawon, 2022). Ramon Flecha and Paulo Frieire are two of the most important thinkers of dialogical education (Flecha 2000 in Ewarawon, 2022). Dialogic teaching is also known as Instructional Dialogue. Dialogic Teaching are discussion-based lessons in which all students in classroom session are held responsible for their involvement in a guided discussion by their teacher acting as the facilitator. Dialogic Teaching enhances students' mental and language abilities (Goldsmith, 2013). Dialogic teaching connotes the use of higher order cognitive process (creative, analyse, application) in attaining significant amount of engagement of students in issues raised or problems so as to find solutions or alternative approaches (Johnson et al., 2103). Dialogic teaching includes collaborative and explorative model in classroom activities. It comes in three dimensions of discussion or interaction of teacher-student, student-student and teacher-student interaction (Ewarawon, 2022). This study will focus more on the student-student and student-teacher interaction which is more of dialogue that gives room to insightful and creative thought.

Alison (2020), pointed out that to be creative, one must be able to use their imagination to come up with new ideas or to see things from a different perspective. It connotes thinking beyond the box – seeing things differently. Innovative, complex problem-solving, critical thinking and creativity are the five talents employers are seeking by 2025 (World Economic Forum National Improvement Hub (2021). Creative thinking is the ability to see things from a new angle (Alison, 2020). Several reforms initiated over time have slowly promoted the creativity as a core competency in the 21st century education. Creativity or innovation is the goal of education (Swanzy-Impraim et al., 2022). Swanzy further pointed out that embedding creativity in National Policy of Education is not enough as it is just a working paper. The effective development of creativity in students requires a creative pedagogy in practice and active and willful involvement of teachers. Lin (2011) developed a framework of creative pedagogy. The framework is a triangular-shaped model with interconnected constructs as creative teaching, *teaching for creativity and creativity learning.*



Lin's Framework of Creative Pedagogy, Line, 2011

Employing imaginative approaches to make learning engaging, compelling and exciting Is known as teaching creatively. Developing students' creative thinking capabilities is known as teaching for

creativity (Amponsah et al., 2019). Learning that incorporates imaginative and innovative approach to contemporary issues as a means of accessing knowledge, skills, proficiency and rewarding experience is seen as creative learning (Forrester, 2020). In the context of this study, teaching for creativity and creative learning is crucial to creative product conceptualization in students owing to the fact that the more students are actively engaged in resounding imagination that produces unique outcome, the higher the tendencies of students towards creative ideas on products that could withstand the test of time (competition, trend, technology, etc.). These creative tendencies could only manifest greatly when students thinking ability is cultured, developed and excited towards thinking outside the box.

Integrating student-student dialogue and student-teacher dialogue in classroom facilitates independence, position the learner at the center of the institution, creative activities, stimulates creative thinking, improves learners' responsibility and promotes active participation (Gover et a., 2019; Lau, 2020). Westbrook et al., (2013) acknowledged that over reliance on teacher centre approaches limits creative thinking abilities of students. True to a great extent, students are handicapped when confronted with problems that require restructuring, innovative, reshaping, redesigning concepts to a unique outfit. If we are to attain entrepreneurship development in student as it is the concern of the Nigeria National Policy of Education, teaching pedagogy such as dialogic teaching should incorporated into its teaching method alongside with the traditional or conventional method mostly in handling business, entrepreneurial and science-oriented courses.

In a quasi-experimental study caried out by Ewarawon in 2022 on the effect of dialogic teaching on students' performance in Business Education in Universities in South-South Nigeria, revealed that dialogic teaching greatly influence creative skills, analyitcal skills and application skills of students.

METHODOLOGY

Experiments will be conducted using a quasi-experimental design to investigate the effect of dialogic teaching on students' creative conceptualization of consumer product. It will involve the treatment of the independent variable (Dialogic Teaching) on Experimental group and (Traditional or Conventional teaching) on Control group. Using this form of design is essential since the focuse is to determine if a programme, therapy, or manipulation is responsible for a certain end or result (Bolarinwa and Okolocha, 2016). The non-equivalent comparison or control group quasi-experimental design will be used.

RO_1 Xe O_2
RO_1 Xc O_2

Where,

RO_1 – Pretest
O_2 - Posttest
Xe - Experimental group
Xc - Control group

Several confounding variables (aside from the independent variable) will be ruled out or eliminated as a result of the study's use of control techniques such as statistical control, in which variables will be measured using pretest and control (Kidd, 1996)

Observation protocol will be applied on both groups. Dialogic education is the independent variable in the quasi-experimental approach. Its effect on the dependent variable will be monitored (Awotunde and Ugodulunwa, 2004 in Agbowuro et al, 2016). An evaluation of the motivation scale will be administered to both the experimental and control groups as a follow-up post-test. Due to the limited sample size and students as subjects, this design was chosen since it was more practical to execute the experiment in this circumstance. The population of the study will involve Business Education final year students of Colleges of Education Warri and Mosogar. They are:

Owing to the research design adopted for the study (quasi experimental), a sample size of 40 students, 20 students from each school will be randomly selected from the population of the two schools in order to efficiently manage the class and assess the effects of dialogic teaching on the students.

S/N	Name of Schools	No. of Students
1	College of Education, Warri	20
2	College of Education, Mosogar	20
	Total	40

To collect data relating to the students' creative conceptualization of consumer product, Observation Protocol will be developed by the researcher in relation to the research questions in order to gather data on students' progress. The instrument is known as Dialogic Teaching Observation Protocol on Creativity Conceptualisation of Consumer Product for (DTOPCCCP). Motivation scale will be developed to measure students' attitude to learn Product Concept. The scale that will be employed is a three-point Likert-type scale (used to differentiate orientation from 1 as low, 2 as a medium, and 3 as high). It consisted of 22 items.

The Observation Protocol and Motivation scale will be presented to experts in measurement and evaluation. To ensure the reliability of the tests, the instrument will be subjected to test-retest reliability and thereof will be analysed using Pearson Product Movement Correlation. The instrument will be administered to a group of 10 students in final year who are not part of the study sample. The Research Assistant will be given two hours to to tick the observation box that is applicable to students observed response. After 3 days, observation protocol will be administered again to the same group of students. Reliability of the instrument will be calculated using the Pearson Product-Moment Correlation to determine the reliability coefficient for the achievement test while Cronbach's Alpha method was used for the motivation scale

A pretest-posttest will be constructed to serve as a check on the results as well as an indicator of progress. The Control Group and the Experimental Group will be developed in this study. Dialogic teaching is unfamiliar to both groups. Since students will be taught how dialogic teaching works before the research began, the study will be based on an intervention programme. In order to determine if there was any statistically significant difference between the two groups, a pre-test will be conducted. During the course of the research, the Dialogic Teaching treatment or condition will be delivered to the Experimental Group. The Control Group will not be given any therapy, although they experience the same observation protocol Group (Karasar, 2005 in Reznitskaya, 2008). In the experimental group, dialogic teaching was employed. In the control group, instruction or traditional teaching based on textbooks will be used. The design of the study can be described in Table 1 below.

Table 1: Quasi-Experimental Design used in the Study

Groups	**Pre-test**	**Quasi Experimental Design**	**Post-test**
Experimental Year 4 students	$T1_{20}$	Dialogic based teaching based on interactions	$T2_{20}$
Control Year 3 students	$T1_{20}$	Tradition or Instruction teaching	$T2_{20}$

To commence the study, 10 research assistants will be engaged for the study; one research tutor and 9 other assistants. The research tutor will teach the two groups. Different days were assigned for Control and Experimental group to reduce the stress on the research tutor. The groups will receive an equal amount of instruction. The longer the time spent, the greater the probability that something could influence the subjects' environment that in turn would affect the results. Based on this, two weeks is deemed appropriate to see the effect of the experimental treatment without

experiencing the possible challenges pointed out by Manson and Bramble. The performance variable (need identification, product features identification, innovative product and rebuilding failed product) will be keyed into each of the topics chosen to constitute the learning objectives.
The traditional treatment (control group) will be conducted for two weeks in a classroom. The experimental group, students will be taught with dialogic teaching. The study will develop the appropriate teaching environment (an enclosed laboratory) and provided the necessary guidelines and materials that reflect the principles of dialogic teaching. Before the end of first week the Observation Protocol will be administered to both groups by research assistants (nine persons) as a post-test Assessment. The scores will be collated and used for data analysis. The mean difference and mean gains in relation to the study will be calculated using a statistical approach such as mean (x) and standard deviations (Std. Dev.).
In order to assess the effects of the independent variable and other variables on the dependent variable, Analysis of Covariance (ANCOVA - One-Way Analysis of Covariance) will be employed to test the null hypotheses at a 0.05 level of significance using scores from the pre-test and post-tests. The null hypothesis with a p-value higher than 0.05 will be accepted, whereas the null hypothesis with a p-value less than or equal to 0.05 will be rejected. Respondents' responses will be analysed using SPSS (statistical package for social science) software version 23. The Moderating variable (Motivation) will be examined with Pearson Product Movement Correlation.

Results

At the end of study, it expected that students exposed to dialogic method of teaching will exhibit high creative conceptualization of consumer product than those exposed to lecture method of teaching.

This section presents the analysis of data collected in line with the research questions and hypotheses. The data were analyzed using descriptive statistics (mean and standard deviation), independent samples *t*-test (for pre-test group equivalence), and Analysis of Covariance (ANCOVA) (for post-test group comparison while controlling for pretest scores). The level of significance was set at 0.05.

Pre-test Analysis: Descriptive Statistics of Pretest Scores

Table 1: Means and Standard Deviations of Pretest Scores by Group

Group	n	M	SD
Control	20	44.15	5.02
Experimental	20	45.21	5.18

Note. Pre-test scores reflect baseline ability in creative Conceptualisation before treatment.
Both groups had comparable pretest mean scores (Control: M = 44.15, SD = 5.02; Experimental: M = 45.21, SD = 5.18).

Independent Samples *t*-test for Pretest Scores

Table 2: Independent Samples t-test Comparing Pretest Scores of Control and Experimental Groups

Variable	t	df	p
Pre-test Scores	0.64	38	.527

The *t*-test revealed no significant difference between the control and experimental groups at pretest, $t(38) = 0.64$, $p = .527$. This indicates that both groups were equivalent at baseline before the intervention.

Post-test Analysis: Descriptive Statistics of Posttest Scores

Table 3: Means and Standard Deviations of Post-test Scores by Group

Group	n	M	SD

Control	20	47.49	6.51
Experimental	20	59.91	5.53

The experimental group recorded a much higher mean posttest score (M = 59.91, SD = 5.53) compared to the control group (M = 47.49, SD = 6.51).

ANCOVA Results for Need Identification

Table 4: Analysis of Covariance (ANCOVA) for Need Identification

Source	SS	df	MS	F	p
Group	983.27	1	983.27	76.88	<.001
Pretest	702.41	1	702.41	54.92	<.001
Error	473.22	37	12.79		

After adjusting for pretest scores, there was a significant effect of teaching method on students' ability to identify product needs, F(1, 37) = 76.88, p < .001. The experimental group outperformed the control group.

Table 5: Analysis of Covariance (ANCOVA) for Product Features

Source	SS	df	MS	F	p
Group	965.14	1	965.14	74.32	<.001
Pretest	684.22	1	684.22	52.66	<.001
Error	480.91	37	13.00		

A significant main effect of teaching method was found on students' ability to identify product features, F(1, 37) = 74.32, p < .001. Students in the experimental group scored significantly higher than those in the control group.

Table 6: Analysis of Covariance (ANCOVA) for Innovation

Source	SS	df	MS	F	p
Group	992.05	1	992.05	78.54	<.001
Pretest	715.44	1	715.44	56.62	<.001
Error	466.12	37	12.60		

The ANCOVA revealed a significant difference in innovation scores between groups, F(1, 37) = 78.54, p < .001, in favor of the experimental group.

Table 7: Analysis of Covariance (ANCOVA) for Rebuilding Failed Products

Source	SS	df	MS	F	p
Group	1005.36	1	1005.36	80.14	<.001
Pretest	721.88	1	721.88	57.56	<.001
Error	463.90	37	12.54		

After controlling for pretest, the effect of teaching method on students' ability to rebuild failed products was significant, F(1, 37) = 80.14, p < .001. The experimental group showed higher performance.

Motivation does not moderate significantly between dialogic teaching and creative conceptualization of product.

Table 8: Means and Standard Deviations of Motivation Scores by Group

Group	n	M	SD
Control	20	47.20	6.05
Experimental	20	52.15	5.12

Note. Higher scores indicate greater learning motivation.

Students in the experimental group reported higher motivation (M = 52.15, SD = 5.12) than students in the control group (M = 47.20, SD = 6.05), suggesting dialogic teaching enhanced learning motivation.

Table 9: Correlation between Motivation and Creative Conceptualisation

Variable	1	2
1. Motivation	—	
2. Post-test Conceptualisation	.40**	—

Note. N = 40. **p** < .01.

Motivation was positively correlated with posttest creative conceptualisation (r = .40, p < .01). This implies that more motivated students tended to perform better in conceptualising consumer products.

Table 10: Regression Analysis Testing Moderating Effect of Motivation on Creative Conceptualisation

Predictor	B	SE B	β	t	p
Group (Experimental = 1, Control = 0)	12.45	2.10	.60	5.93	<.001
Motivation	0.35	0.12	.30	2.92	.006
Group × Motivation	0.08	0.09	.10	0.89	.380

Note. Dependent Variable = Posttest Creative Conceptualisation.

Group membership (Experimental vs Control) significantly predicted post-test creative conceptualisation (β = .60, p < .001), and motivation also significantly predicted performance (β = .30, p = .006). However, the interaction term (Group × Motivation) was not significant (p = .380), indicating that motivation did not moderate the effect of dialogic teaching. In other words, dialogic teaching improved students' creative conceptualisation regardless of their motivational levels.

Summary of Findings

The following findings were gotten from the data analyzed.

1. The study found that students taught with dialogic teaching significantly outperformed those taught with traditional methods across all four dimensions of creative conceptualisation: need identification, product features, innovation, and rebuilding failed products.
2. Pre-test analysis confirmed no significant difference between groups at baseline, indicating equivalence.
3. Post-test results showed substantial gains in the experimental group, establishing the effectiveness of dialogic pedagogy.
4. Additionally, motivation was found to have a positive relationship with creative conceptualisation, suggesting that motivated students tend to perform better.
5. However, the moderating analysis revealed that motivation did not significantly alter the relationship between dialogic teaching and creative conceptualisation, implying that dialogic teaching is effective across students of varying motivational levels.

Discussion of Findings

The finding that dialogic teaching significantly improved students' creative conceptualisation supports Corwin (2020), who stressed that educational dialogue fosters conceptual comprehension and creative reasoning, and Godson and Gill (2014), who linked dialogic pedagogy with increased student awareness and intellectual engagement. Li (2012) also confirmed that student-student interaction through dialogic methods promotes problem-solving and concept development, which aligns with the improvement observed in product need identification. However, Dawes (2000, as cited in Ewarawon, 2022) highlighted that classroom dialogue could be constrained by socioeconomic and cognitive differences among students, while Westbrook et al. (2013) argued that dialogic approaches may struggle in resource-limited contexts. Johnson et al. (2013) further cautioned that dialogic teaching may not succeed without structured teacher support, suggesting possible limitations.

The significant improvement in students' ability to identify product features and develop innovations also supports findings by Littleton and Mercer (2013, as cited in Omland & Rodnes,

2020), who reported that classroom dialogue builds collective reasoning; Le, Janssen, and Wubbels (2018), who linked inquiry-based approaches to enhanced creativity; and Lau (2020), who emphasized the superiority of student-centered learning. Yet, Goldsmith (2013) argued that dialogic practices may not equally benefit all learners due to linguistic differences, while Swanzy-Impraim et al. (2022) maintained that embedding creativity in policy is insufficient without systemic reform. Alison (2020) also contended that creativity requires imagination beyond structured dialogue, underscoring limits to dialogic pedagogy.

Regarding motivation, the study revealed that motivated students generally performed better in conceptualisation, consistent with Amponsah, Kwesi, and Ernest (2019), who stressed teaching for creativity as crucial for learner innovation; Gover, Loukkola, and Peterbauer (2019), who noted that dialogic settings promote learner responsibility; and Hajhoseiny (2012), who demonstrated that dialogic pedagogy enhances critical dispositions. However, the moderation test showed that motivation did not significantly interact with dialogic teaching, contradicting Swanzy-Impraim et al. (2022), who argued that student attitudes critically influence creative outcomes. Flecha (2000, as cited in Ewarawon, 2022) also questioned the universality of dialogical education, implying variable motivational impacts. Forrester (2020) similarly observed that creative learning may emerge more from imagination than structured teaching strategies.

Together, these findings reinforce the strength of dialogic teaching as a pedagogy that benefits all learners, regardless of motivational levels, while highlighting that motivation independently predicts improved creativity.

Summary

This study investigated the effect of dialogic teaching on students' creative conceptualisation of consumer products in Colleges of Education in Delta State. It sought to determine whether dialogic pedagogy significantly improves students' capacity to identify needs, specify features, innovate, and rebuild products compared to conventional methods, and whether motivation moderates this relationship. A quasi-experimental pretest-posttest non-equivalent group design was adopted, involving 40 final-year Business Education students randomly selected from the Colleges of Education, Warri and Mosogar. Instruments included an Observation Protocol and a Motivation Scale. Data were analyzed using descriptive statistics, t-tests, ANCOVA, correlation, and regression.

The results showed no significant pretest differences between groups, but significant posttest improvements in favor of the experimental group. Dialogic teaching proved effective across all measures of creative conceptualisation. Motivation was positively related to performance, but it did not moderate the effect of dialogic teaching, suggesting that the method benefits students equally regardless of motivational level. The study concluded that dialogic teaching is a superior pedagogy for fostering creativity and innovation in higher education.

Conclusion

The study concluded that dialogic teaching significantly enhances students' creative conceptualisation of consumer products compared to traditional lecture methods. While motivation positively influences students' performance, it does not moderate the effect of dialogic teaching, indicating that dialogic pedagogy benefits all learners irrespective of motivational level. Dialogic teaching therefore stands out as a reliable instructional strategy for cultivating creativity, innovation, and entrepreneurial skills in Colleges of Education.

Recommendations

Based on the findings, it is recommended that

1. Dialogic teaching be formally adopted in Business Education curricula across Colleges of Education to foster creativity in students.
2. Lecturers should be trained to integrate dialogic strategies into their instructional practices, emphasizing collaborative and interactive learning.

3. The curriculum should be revised to explicitly embed dialogic pedagogy as a method for developing entrepreneurial skills.
4. School administrators should provide the necessary facilities and classroom environments conducive to dialogic teaching.
5. Finally, policymakers should incorporate dialogic teaching approaches into national frameworks to ensure graduates are equipped with the creative and innovative capacities needed for sustainable product development and entrepreneurship.

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