STRATEGIES FOR YOUTH SUSTAINABLE DEVELOPMENT IN MECHANICAL TECHNOLOGY AMONG TECHNICAL COLLEGE STUDENTS IN OIL SPILT COMMUNITIES OF RIVERS STATE.

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Abstract
The aim of this study was to investigate the strategies for youth sustainable development in mechanical technology among technical college students in oil spill communities of rivers state. Three purposes and three research questions guided the study. Two null hypotheses which were tested at 0.05% level of significance were formulated. This study adopted a descriptive research design and was carried out in four technical colleges situated in Rivers State. The total population for the study was 172 respondents. No sampling was done as the population was of manageable size. A questionnaire based on four point scale was used as the data collection instrument. The instrument used for data collection was a structured questionnaire. The instrument was structured on a 4-points scale of strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD). The questionnaire was validated by three experts from the Department of Industrial Technology Education, Ignatius Ajuru University of Education, Rumuolumini. The study has a reliability index of 0.832 using Cronbach Alpha reliability method. Results were analyzed using the followings: item with a mean value within the real limit of numbers 0-1.49 was regarded as strongly disagreed, 1.50-2.49 was regarded as disagreed, 2.50-3.49 was regarded as agreed and 3.50-4.00 was regarded as strongly agreed. T-test was used to test the Null Hypothesis of no significant difference at a 0.05% level of Significance. Any item whose P-Value was greater than 0.05 was accepted while any Item whose P-value was less than 0.05 was rejected. The findings of the study revealed that the two hypotheses were accepted which indicated that there were no significant differences in the opinions of teachers and students on the Strategies that can enhance Youth Sustainable Development in Mechanical Technology Among Technical College Students in Oil Spill Communities of Rivers State. Recommendations were also made which included retraining of metal work teaches and attending seminars and conferences organized by appropriate government agencies.

Key-Words: *Sustainable Development, Mechanical Technology, Technical College, Oil Spill Communities.*

Introduction

Oil spillage is a major environmental problem associated with oil exploration activities. This has led to very serious pollution and destruction of farm land, flora, Fauna and resort centers. Oil spillage has also caused pollution of drinking water, destruction of properties and lives along the Rivers state coast (Ayaweip, 2000). Factors responsible for oil spillage in the zone are: Corrosion of oil pipes and tanks, sabotage, port operation and inadequate care in oil production operations, environmental degradation and Engineering drills by the multinational companies.

Several years of oil exploration activities by Multinational companies, and the hazards of gas flaring which accompany oil exploration, have degraded the environment of the region and left the land of the communities desolate. Not only have farming and fishing, the major occupations of these mostly Riverine minorities been decimated, their territories have continuously lacked basic infrastructure and amenities such as electricity, roads, schools, hospitals, portable water, etc. Environmental degradation issues are of topical concern to communities of the region as it is a major cause of low agricultural productivity and loss of aquatic lives. This is the main reason why exploration impact on the region cannot be overemphasized as the dominant view blames the oil production and its attendant consequences for the declining productivity of the region which is predominantly based on fisheries and other agricultural activities (Wilberforce , Patrick, and Valentine, 2015). It is argued in this study that ecologically unfriendly activities of the multinational companies engaged in oil exploration have led to environmental degradation of the region which has in turn led to acute poverty and hunger in the region.

The above gave rise to changes in physical environment such as global warming, changing weather patterns, floods, rising sea levels and scarcity of natural resources which requires adaptation measures. These changes are being felt all over the world especially in some selected communities in Rivers state where sustainable development is compromised. Hence, sustainable development is defined as development which meets the needs of present generations without compromising the ability of future generations to meet their own needs. Therefore this development can only be achieved through technical vocational education and training (TVET).

It is quite obvious that education is the key to increased productivity. In line with this view, Okolocha (2006) stated that technical and vocational education is the bedrock of sustainable development of any nation. Vocational education is defined by the National Teachers' Institute (NTI, 2008) as the type of education that involves the use of the right instructional devices, methods, techniques and knowledge for developing skills. Similarly the Federal Republic of Nigeria (2004) defined technical education as that aspect of education that leads to the acquisition of practical and applied skills as well as basic scientific knowledge. Technical education is a comparatively new phase of vocational education which is designed to meet the complex technological needs of modern industries. The goals of technical and vocational education as stipulated in the NPE (2004) are to;

- Provide trained manpower in the applied sciences, technology and business particularly at craft,

advanced craft and technical levels;

- Provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development;
- Give training and impart the necessary skills to individual who shall be self-reliant economically.

Technical and vocational education UNESCO & ILO (2002) is that form of education which begins with a broad base which facilitates horizontal and vertical articulation within the education system and between school and the world of work, thus contributing to the elimination of all forms of discrimination. It also prepares the individual for lifelong learning of developing the necessary mental tools, technical and entrepreneurial skills and attitudes. Technical and vocational education develops in the individual capacities for decision making and the qualities necessary for active and intelligent participation, team work and leadership at work and in the community as a whole. It is needed for the industrial development of nation. The rapid industrialization of any nation is tied to acquisition of vocational and technical education. Fundamentally, it is a systematic way of exposing individuals to the practical training of developing and producing goods and services for the citizens' in any country. Nigeria as a developing country has failed to achieve any meaningful sustainable development because of a number of factors principal among which is overdependence on imported goods from the developed countries. The nation is endowed with abundant natural resources but lack the necessary vocational and technical knowledge to transform these resources into finished products. Therefore, acquisition of vocational and technical education is imperative to attaining sustainable development in mechanical technology.

However, the aims of mechanical technology according to National Board for Technical Education (2001) states that graduate of mechanical technology should be able to:

1. Understand the ISO system of tolerances and fits their application in engineering production.
2. Know the physical properties, manufacturing process and application of ferrous and nonferrous metals in common use
3. Select and use common measuring, marking out, cutting and striking tools.
4. Understand the basic working principles of drilling machine and be able to use it for various types of screws treads rivets, and be able to rivet and cut screws by hand.
5. Understand the application of various types of screw threads and rivets, and be able to rivet and cut screws by hand.
6. Understand workshop safety rules and their application in machine shop.
7. Produce simple engineering components on the bench.
8. Understand the essential features and working principles of the center, lathe and carry out basic operations such as turning, step turning facing, taper turning., knurling, chamfering and undercutting. This area of specialization in TVET (mechanical technology) is one of the skills oriented programmes that must be acquired through teaching and learning (Bassauldo and Toby, 2004).

Vocational Technical Education and Training (TVET) ought to attract many

students, farmers and civil servants because of its laudable importance, but reverse has been the case in Nigeria. This is probably due to people's believe that, it is for the educationally disadvantaged students. The students themselves appear to have the feelings that, they can easily learn vocational skills such as the required skills needed for instance, cooking, farming; welding, etc. at home, without formal training. People seem to be ignorant of the importance of the vocational Technical Education and training (TVET) which could help students, farmers and civil servants receive adequate skills or knowledge and information that can help them to work solution to nation's problems, and also enable them acquire skills and abilities essential for independent and functioning life. Technical Vocational Education and Training is result oriented. It brings about technological advancement and aims to fit new manpower for employment and provide continuing training for students, farmers and civil servants, so that they can keep pace with modern and emerging work environment. TVET are by design intended to develop skills that can be used in specific occupation or job (Olaitan 1998). The National Policy on Education (2004) explained the purpose of TVET as:

(i) To enable individuals acquire vocational and technical skills.
(ii) To expose the individuals to career awareness by exposing useable options in the world of work.
(iii) To enable youth acquire an intelligent understanding of the increasing complexity of technology, and
(iv) To stimulate creativity.

In 1995, the World Bank conducted a study of the environmental hazards in Niger Delta. The study entitled "Defining an Environmental Development Strategy for the Niger Delta" was quick to note that "the Niger Delta has been blessed with an abundance of physical and human resources, including the majority of Nigeria's oil and gas deposits, good agricultural land, extensive forest, excellent fisheries, as well as developed industrial base, and a vibrant private sector" (World Bank Report, 1995). However, the region's tremendous potential for economic growth and sustainable development remains unfulfilled and its future is threatened by deteriorating economic conditions that are not being addressed by government policies and actions. The report went on to say that despite the vast oil reserve in the Niger Delta; the region remains poor with education level below the national average. According to the report, while seventy six percent (76%) of Nigerian children attend primary schools, the level in some parts of the Niger Delta has dropped. Oil exploration and exploitation in the Niger Delta region has destroyed the means of livelihood of the inhabitants which include: ecosystems, mangrove forest, wildlife and farm lands. Lack of employment has led many jobless youths to emigrate to the towns and cities where they are not guaranteed to have jobs. In extension, the Niger-Delta has suffered the degradation effects of oil exploration and exploitation. Land, streams and creeks are totally and continually polluted, the atmosphere is continually charged with hydro-carbon monoxide and carbon dioxide. Many villages experience the internal quaking of the wrath of gas flames. The substances generated into the air in form of vapour, carbon monoxide and dioxide are innumerable. It is only oil producing areas in Nigeria that had acknowledged the environmental degradation of oil

activities and the effects on man and his economic survival (Leton, 1990).

This unsatisfactory situation could lead to breakdown in the economy, industrial, technological and educational growth of the communities since they depend largely on local farming and fishing for their livelihood. It is the dynamics of this interconnectedness that this study wishes to explore the strategies of TVET for sustainable development among oil spill communities of rivers state. Therefore, the problem of this study is: what are the strategies for youth sustainable development in mechanical technology among technical college students in oil spilt communities of rivers state?

The general purpose of the study is to strategies for youth sustainable development in mechanical technology among technical college students in oil spill communities of rivers state. Specifically, the study investigated the following:

1. Production of simple engineering components on the bench operation.
2. Working principles of the center lathe and it basic operations.

Research Questions

Three research questions were formulated to guide the study:

1. To what extent can Production of simple engineering components on the bench operation enhance Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State?
2. To what extent can working principles of the center, lathe and it basic operations enhance Youth Sustainable Development in Mechanical Technology Among Technical College Students in Oil Spill Communities of Rivers State?

Hypotheses

Two hypotheses were formulated to guide the study and was tested at 0.05% level of significance.

H_{O1} There is no significant difference in the mean ratings of the respondents on Production of simple engineering components for Youth Sustainable Development in Mechanical Technology Among Technical College Students in Oil Spill Communities of Rivers State?

H_{O2} There is no significant difference in the mean ratings of the respondents on working principles of the center, lathe and it basic operations for Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State?

METHOD

This study adopted a descriptive research design and was carried out in three selected oil spills communities in Rivers State. The total population for the study was 172 respondents. No sampling technique as the population is of manageable size. A questionnaire based on four point scale was used as the data collection instrument. The instrument used for data collection was a structural questionnaire. This developed questionnaire was structured and grouped into five parts. Part1: Seeks on personal data of the respondents. Part 2: Contains items which seek information on adequacy of Domestic installation skills among electrical technology students in Rivers State Technical Colleges. Part 3: Deals with items which seek information on adequacy of Different types of domestic conduit wiring skills among

electrical technology students in Rivers State Technical Colleges. Part 4: Deals with items which seek information adequacy of Principles of protecting electrical devices and installation skills among electrical technology students in Rivers State Technical Colleges. Section 2 was structured on a 4-points scale of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD). The questionnaire was validated by three experts from the Department of Industrial Technology Education, Ignatius Ajuru University of Education, Rumuolumini. For the purpose of obtaining the internal consistency of the instrument, Cronbach Alpha reliability method was used and Cronbach alpha of 0.942 value obtained represent the reliability coefficient of the instrument.

Method of Data Analysis

Results were analyzed using the following: Any item with a mean value within the real limit of numbers 0-1.49 was regarded as strongly disagreed, 1.50-2.49 was regarded as disagreed, 2.50-3.49 was regarded as agreed and 3.50-4.00 was regarded as strongly agreed. T-test was used to test the Null Hypothesis of no significant difference at a 0.05 level of Significance. Any item whose P-Value is greater than 0.05 was accepted while any Item whose P-value is less than 0.05 was rejected.

RESULTS

Research Question 1: To what extent can Production of simple engineering components on the bench operation enhance Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State?

Table 1: Mean and SD of Respondents on the Production of simple engineering components on the bench operation for enhancing Youth Sustainable Development in Mechanical Technology Among Technical College Students in Oil Spill Communities of Rivers State.

S/N	Items	X	SD	Remark
1.	Select and use of hand tools	3.27	.833	A
2.	Perform basic, routine layout	3.12	.708	A
3.	Read and comprehend information on orthographic prints and job process sheets for routine manufacturing operations.	3.10	.930	A
4.	Perform hand fitting and minor assembly.	2.98	.905	A
5.	Perform bench cutting tasks such as sawing, reaming, and tapping.	3.03	1.035	A
6.	Perform basic housekeeping responsibilities.	3.08	.827	A
7.	Describe the essential features and use of the following: micrometer, vernier caliper, Venier height gauge and combination set	3.09	.899	A

8.	Perform marking out exercise on plane surfaces including profiles	3.19	.934	A
9.	File a piece of metal to given specifications using any of the following: Cross filing, draw filing, filing square and flat surfaces	3.21	.855	A
10.	Test surface for flatness using surface plate and try square and state precautions to be taken to avoid pinning	3.29	.764	A
11.	Maintain files in good working Conditions	3.28	.907	A
12.	Apply various hammers and mallets e.g ball pein, rubber mallets, etc for engineering purposes	3.14	.880	A
13.	Apply various hammers and mallets e.g ball pein, rubber mallets, etc for engineering purposes	3.12	.958	A
14.	Select and insert hacksaw blade Correctly	2.99	.968	A
15.	Cut metal and other engineering materials to given specification using the adjustable hacksaws, junior hacksaw piercing saw, etc drills and Drilling.	2.87	.880	A
16.	Identify basic metallic and non -metallic materials	3.29	.832	A
17.	Identify and use most accessories and tooling for machining operations	2.74	1.046	A
18.	Choose an appropriate speed and feed for a given operation	3.18	.884	A
19.	Perform basic process planning, setup, and operation of common classes of machine tools such as turning, milling, drilling, or surface grinding machines	3.26	.824	A
20.	Select and use coolants appropriately.	3.05	.944	A

Table1 revealed that item 1 - 20 had mean of 2.74-3.29. The values of the 20 items were within the real limit of numbers 2.50-3.49 indicating that the 20 items are in agreement with the items as the Production of simple engineering components on the bench operation can enhance Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State.

Research Question 2: To what extent can working principles of the center, lathe and it basic operations enhance Youth Sustainable Development in Mechanical Technology Among Technical College Students in Oil Spill Communities of Rivers State?

Table 2: Mean and SD of Respondents on the working principles of the center, lathe and it basic operations for enhancing Youth Sustainable Development in Mechanical Technology Among Technical College Students in Oil Spill Communities of Rivers State.

S/N	Items	X	SD	Remark
1.	Setting up and operate a drilling machine in given situations	3.32	.828	A
2.	change of spindle speed	3.06	.770	A
3.	adjustment of drilling table to required height and angle, holding of work on drilling table to required height and angle, using clamping devise	3.15	.936	A
4.	Install up the drill bit in Chuck	3.18	.882	A
5.	Sharpen a twist drill correctly to manufactures' specification	3.26	.859	A
6.	drilling blind holes	3.03	.908	A
7.	drilling round stock	3.27	.905	A
8.	counterboring and counter-sink	3.01	.930	A
9.	drilling large diameter holes	2.92	.972	A
10.	List the operation sequence and cut internal (through and blind) and external threads by hand method and state precautions to be taken when taping on the bench	2.95	.941	A
11.	Rivet metals together in any given Situations	3.04	1.107	A
12.	Mark out only given bench work using datum points, datum lines, datum faces, chalk or marking solution center or dot, punch, scribing block or measurement transfer.	2.95	.863	A
13.	Sharpen cutting tool for plain turning, shouldering, parting off and facing operations	3.06	.940	A
14.	Set up rough and turned stock in 3- jaw-chuck	3.08	.967	A
15.	Select appropriate cutting tool and set them up to center height for turning or facing operations	3.17	.895	A

Table2 revealed that item 1 - 15 had mean of 2.92-3.32. The values of the 15 items were within the real limit of numbers 2.50-3.49 indicating that the 15 items are in agreement with the items as the working principles of the center lathe and it basic operations can enhance Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State.

Hypotheses

Hypothesis 1: There is no significant difference in the mean ratings of the respondents on Production of simple engineering components for Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State?

Table 3: The t-test analysis of Difference between Students and Lecturers on Production of simple engineering components for Youth Sustainable Development in Mechanical Technology Among Technical College Students in Oil Spill Communities of Rivers State.

S/N Items		X	SD	T-test	Remark
1. Select and use of hand tools	Students	3.040	1.026	.812	Accepted
	Lecturers	2.966	1.040		
2. Perform basic, routine layout	Students	3.244	.824	.639	Accepted
	Lecturers	3.166	.826		
3. Read and comprehend information on orthographic prints and job process sheets for routine manufacturing operations.	Students	3.183	.914	.537	Accepted
	Lecturers	3.300	.888		
4. Perform hand fitting and minor assembly.	Students	3.006	.996	.403	Accepted
	Lecturers	3.016	.965		
5. Perform bench cutting tasks such as sawing, reaming, and tapping.	Students	3.183	.914	.948	Accepted
	Lecturers	3.366	.862		
6. Perform basic housekeeping responsibilities	Students	3.081	.989	.186	Accepted
	Lecturers	2.750	.875		
7. Describe the essential features and use of the following: micrometer, vernier caliper, Venier height gauge and combination set	Students	2.755	1.037	.025	Rejected
	Lecturers	3.066	.954		
8. Perform marking out exercise on plane	Students	2.884	.982	.046	Rejected
9. File a piece of metal to given specifications using any of the following: Cross filing, draw filing, filing square and flat surfaces	Students	3.051	.655	.743	Accepted
	Lecturers	3.063	.648		
10. Test surface for flatness using surface p late and try square and state precautions to be taken to avoid pinning	Students	1.108	.424	.902	Accepted
	Lecturers	1.133	.342		
11. Maintain files in good working Conditions	Students	2.877	1.163	.693	Accepted
	Lecturers	3.000	1.041		

12. Apply various hammers and mallets e.g ball pein, rubber mallets, etc for engineering purposes	Students	2.884	.925	.480	Accepted
	Lecturers	2.983	.853		
13. Apply various hammers and mallets e.g ball pein, rubber mallets, etc for engineering purposes	Students	3.047	.938	.476	Accepted
	Lecturers	3.100	1.003		
14. Select and insert hacksaw blade Correctly	Students	3.061	.987	.721	Accepted
	Lecturers	3.200	.819		
15. Cut metal and other engineering materials to given specification using the adjustable hacksaws, junior hacksaw piercing saw, etc drills and Drilling.	Students	3.197	.903	.338	Accepted
	Lecturers	2.850	.971		
16. Identify basic metallic and non-metallic Materials	Students	3.108	.951	.015	Rejected
	Lecturers	3.083	.808		
17. Identify and use most accessories and tooling for machining operations	Students	3.122	.913	.855	Accepted
	Lecturers	3.100	1.068		
18. Choose an appropriate speed and feed for a given operation	Students	3.136	.918	.879	Accepted
	Lecturers	3.000	.863		
19. Perform basic process planning, setup, and operation of common classes of machine tools such as turning, milling, drilling, or surface grinding machines	Students	3.122	.905	.327	Accepted
	Lecturers	3.300	.888		
20. Select and use coolants appropriately.	Students	2.979	.996	.200	Accepted
	Lecturers	2.850	.860		

Table 3 presents the summary of t-test analysis of the responses of the respondents on Production of simple engineering components for Youth Sustainable Development in Mechanical Technology among Technical College Students. Data from the table revealed that item 1, 2, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19 and 20 had P-values ranged from 0.200-0.948 which are all greater than 0.05% level of significance. However, item 7, 8 and 16 had p-values of 0.25, 0.46 and 0.15 which is below 0.05% indicating that there is a significant difference in the mean response of the respondents on Production of simple engineering components for Youth Sustainable Development in Mechanical Technology among Technical College Students.

Hypothesis 2; There is no significant difference in the mean ratings of the respondents on working principles of the center lathe and it basic operations can enhance Youth Sustainable Development in Mechanical Technology Among Technical College Students in Oil Spill Communities of Rivers State?

Table 4: The t-test analysis of Difference between Students and Lecturers on working principles of the center lathe and it basic operations for Youth Sustainable Development in Mechanical Technology Among Technical College Students in Oil Spill Communities of Rivers State.

S/N Items		X	SD	T-test	Remark
1. Setting up and operate a drilling machine in given situations	Students	1.108	.424	.692	Accepted
	Lecturers	1.133	.342		
2. change of spindle speed	Students	3.183	.943	.329	Accepted
	Lecturers	3.033	1.134		
3. adjustment of drilling table to required height and angle, holding of work on drilling table to required height and angle, using clamping devise	Students	3.136	.926	.491	Accepted
	Lecturers	3.033	1.073		
4. Install up the drill bit in Chuck	Students	2.925	1.060	.049	Rejected
	Lecturers	3.233	.889		
5. Sharpen a twist drill correctly to manufactures' specification	Students	2.966	1.028	.585	Accepted
	Lecturers	3.050	.928		
6. drilling blind holes	Students	2.952	.967	.568	Accepted
	Lecturers	3.050	.946		
7. drilling round stock	Students	3.238	.924	.508	Accepted
	Lecturers	3.083	.944		
8. counter-boring and counter-sink	Students	2.870	1.160	.279	Accepted
	Lecturers	2.666	1.109		
9. drilling large diameter holes	Students	2.993	1.023	.236	Accepted
	Lecturers	2.950	.998		
10. List the operation sequence and cut internal (through and blind) and external threads by hand method and state precautions to be taken when taping on the bench	Students	3.197	.941	.782	Accepted
	Lecturers	3.183	.929		
11. Rivet metals together in any given Situations	Students	2.993	1.010	.923	Accepted
	Lecturers	2.900	.969		
12. Mark out only given bench work using datum points, datum lines, datum faces, chalk or marking solution center or dot, punch, scribing block or measurement transfer.	Students	3.045	.708	.543	Accepted
	Lecturers	3.018	.691		
13. Sharpen cutting tool for plain turning, shouldering, parting off and facing operations	Students	1.108	.424	.801	Accepted
	Lecturers	1.33	.342		
14. Set up rough and turned stock in 3- jaw-chuck	Students	3.163	.951	.692	Accepted
	Lecturers	3.133	.910		
15. Select appropriate cutting tool and set them up to center height for	Students	2.966	.879	.835	Accepted
	Lecturers	2.933	.936		

turning or facing operations

Table 4 presents the summary of t-test analysis of the responses of the respondents on working principles of the center lathe and it basic operations for Youth Sustainable Development in Mechanical Technology Among Technical College Students. Data from the table revealed that item 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15 had P-values ranged from 0.236-0.835 which are all greater than 0.05% level of significance. However, item 4 had p-values of 0.049 which is below 0.05% indicating that there is a significant difference in the mean response of the respondents on working principles of the center lathe and it basic operations can enhance Youth Sustainable Development in Mechanical Technology among Technical College Students.

Findings of the Study

Findings of the study revealed that Production of simple engineering components on the bench operation would enhance Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State. This is in line with Oranu, Nwoke and Ogwo (2002) who explained that metalwork involves activities in occupations that entail designing, processing and fabrication of metal products; it includes activities in foundry, forging, machine shop and welding.

Findings of the study also revealed that skills working principles of the center lathe and it basic operations would enhance Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State. This is in line with Sowande (2002) who explained that technological skill competence is required by metalwork students in the use of machine tools.

Conclusion

The findings of the study revealed that handling and using hand tool, portable power tools and machines, left on floors or benches, lifting, moving and storing, materials or jobs; using inflammable or corrosive, liquids and gases; inhaling vapours or fumes, Perform basic, routine layout, Read and comprehend information on orthographic prints and job process sheets for routine manufacturing operations, Perform hand fitting and minor assembly, Perform bench cutting tasks such as sawing, reaming, and tapping, Perform basic housekeeping responsibilities , change of spindle speed, adjustment of drilling table to required height and angle, holding of work on drilling table to required height and angle, using clamping devise, Install up the drill bit in Chuck, Sharpen a twist drill correctly to manufactures' specification are the Strategies that can enhance Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State. The two hypotheses were accepted which indicates that there is no significant difference in the opinions of teachers and students on the Strategies that can enhance Youth Sustainable Development in Mechanical Technology among Technical College Students in Oil Spill Communities of Rivers State.

Recommendation

Based on the findings of the study, the following recommendations were made:

• Metalwork teachers should be retrained on those technical skills that can enhance sustainable development in the use of centre lathe, milling and grinding machines.

• Technical skills that were not possessed by mechanical teachers in the use of centre lathe, milling and grinding machines should be integrated into the curriculum of mechanical technology teacher preparation institutions such as technical colleges and universities.
• Government and administrators of technical colleges should organize seminar and workshop for mechanical technology teachers on technical skills in the use of centre lathe, milling and grinding machines.

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