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A STUDY ON ATTITUDE OF STAKEHOLDERS TOWARDS VOCATIONAL COURSES IN THE SECONDARY SCHOOLS OF EAST SIANG DISTRICT, ARUNACHAL PRADESH

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Abstract

This study investigates the implementation of vocational courses in secondary schools within the East Siang District of Arunachal Pradesh, employing a descriptive research design to characterize the current state of vocational education. Data was collected from a sample of five schools, selected using purposive and systematic random sampling from a population of eight schools offering vocational education. The study revealed that student enrolment is rising and teachers are generally qualified (80% of schools), challenges persist in resource availability (only 40% have sufficient materials), classroom conditions (70% of teachers dissatisfied), and syllabus quality (only 30% find it well-framed). Students largely express positive attitudes towards vocational education, with 86% liking the subject and 79% believing it is essential for their future careers; however, consistent class scheduling and comprehensive examinations require improvement (53% for regular classes and 49% for practical classes). Further analysis indicated significant attitudinal differences within the student population, including disparities between male and female students. These findings suggest that boys showed more positive attitudes toward vocational education than girls highlights the need for gender-sensitive interventions. Special efforts such as motivational programs, career counseling, and providing successful female role models in vocational fields can help to build greater confidence among girls and reduce gender disparities in perception.

Keywords: Vocational Education, Secondary Schools, Implementation, East Siang, Student Attitudes

Introduction

The Indian education system deals with all levels of education including vocational education. At the secondary level of education In India the need for vocational education is of immense necessity for the enhancement of professional skill. Vocational education equips a person with all the necessary & required skills for a particular job. Vocational education & education of skill development both go hand in hand and are interrelated to each other. Vocational education plays a vital role in human resource development of the country by creating skilled manpower, enhancing a country's industrial productivity and improving the quality of life. It helps students to be skilled and in turn, offers better employment opportunities. Both of them are associated to productivity. Right from the Wardha scheme of Basic education (1937) to Kothari commission (1964) to NPE (1968, 1986 and 2020) lay due emphasis on vocational education. The Indian Education Commission (Kothari Commission (1964-66) report points out for vocationalisation of secondary education. An advisory body, National Council for Vocational Training, was set up by the Government of India plays its vital role in implementation of vocational education in India.

Vocational education plays a paramount role in human resource development of the country by not only creating skilled human power but also improving the quality of life of the students. Many commissions and committees have given emphasis to vocational education in India. Commissions like, Hunter commission (1882), Radhakrishnan Commission (1948), Mudaliar Commission (1952), Kothari Commission (1964-66), National Policy of Education (1986), National Knowledge Commission (2005), National Education Policy (2020) and committees Hartog Committee (1929), Sapru Committee (1934), Rama Rao Committee (1995), and others recommended that vocational education should be provided at school level side by side with general education. Any type of training that teaches students the specialized skills needed to carry out a particular job is referred to as vocational education (Ariyani et al., 2021).

One of the main principles emphasized in the NEP 2020 is the elimination of a rigid separation between vocational and academic streams. Instead, it promotes a more integrated approach, aiming to provide students with exposure to at least one vocational course throughout their educational journey. Further, the NEP advocated for the introduction of experiential vocational learning from Grades 9 to 12 to facilitate practical learning experiences. Socially Useful Productive Work (SUPW) as a separate subject in secondary classes and vocational degree courses at higher education levels has recommended by the new policy (Shubhangi, 2020). It also emphasizes the establishments of 'Skill Labs' within schools, along with the recruitment of sufficient teachers specializing in vocational subjects (MHRD, 2020).Vocational education prepares learners for jobs that are based in manual or practical activities, traditionally non-academic and totally related to a specific trade, occupation or vocation, hence the term, in which the learner participates" (AICTE, 2022).

According to Knowledge Commission (2009), in India, skill acquisition takes place through two basic structural streams-a small formal one and a large informal one. There has been a tremendous focus on vocational education in the five year plans. It has off late caught the fancy of the academicians, policy makers, etc. The Twelfth Five Year Plan has specially laid its emphasis on skill education in its Approach paper. However, the reality check is that, given a choice between the two options for education: general education and vocational education, the tilt has been more towards general education than vocational and compared to the western

countries the participation rate of students in the vocational courses are very less. Due to globalization and the growth of knowledge economy, there is a tough competition everywhere and therefore the only mantra to success is knowledge, skill and training. The focus is more on working skills and expertise in a particular field of one's own. Hence vocational education and training can prove to be double edged weapon to be used against unemployment problem and also producing skilled technicians and workers for the global market (Lama, 2012). There exists a National Council for Vocational Training (NCVT). NCVT is an advisory body, was set up by the Government of India in the year 1956. The National Council is chaired by the Minister of Labour, with members from different Central and State Government Departments, Employers and Workers organizations, Professional and Learned Bodies, All India Council for Technical Education, Scheduled castes and Scheduled tribes, All India Women's Organization, etc. And State Councils for Vocational Training at the State level and Trade Committees have been established to assist the NCVT. Main mandate of the NCVT, according to DGE&T, is to establish and award National Trade Certificates in engineering, non-engineering, building, textile, leather trades and such other trades which are brought within its scope by the Government of India. It also prescribes standards in respect of syllabi, equipment, scales of accommodation, duration of courses and methods of training. It also conducts tests in various trade courses and lays down standards of proficiency required for passing the examination leading to the award of National Trade Certificate etc. A new direction has been given to Vocational Education by NCVT. Vocational education refers to educational programs and courses that are designed to provide individuals with the skills, knowledge, and training needed to enter specific trades, professions, or industries. It emphasizes practical training, hands-on experience, and real-world application of skills, rather than theoretical or academic learning. Vocational education consists basically of practical courses through which one gains skills and experience directly linked to a career in future.

In Arunachal Pradesh only few vocational courses are introduced at secondary and senior secondary schools. Government of Arunachal Pradesh has initiated to impart Vocational Skills at upper Primary Level. For Secondary and Higher Secondary levels Government of Arunachal Pradesh introduced Vocational Education for class 9 – 12, as integrated with the curriculum and to be made more practical and industry oriented. Government of Arunachal Pradesh has reinforced emphasis on 'Kaushal Vikas'.

Arunachal Pradesh State of Open Schooling (APSOS), Itanagar, is an open schooling board that aims to cater to the varied academic needs of the divergent group of students up to pre-degree level including Secondary/Senior Secondary, skill and vocational education.

The Scheme envisages selection of vocational courses on the basis of assessment of manpower needs. The revised scheme of Vocationalisation of Secondary Education approved by CCA on 15.09.2011 provides financial assistance for imparting vocational education in Classes XI-XII in mainstream schools with a strong partnership with industry/employers. The components include strengthening of existing vocational schools and establishment of new vocational schools through State Government, assistance to vocational schools under PPP mode, capacity building of vocational education teachers and development of competency based modules for each individual vocational course. Assistance will also be provided to NGOs to run short duration innovative vocational education programmes.

Review of Related Literature

Vocational education and skill development play a vital role in community development, entrepreneurship and overall economic growth. Scholars have emphasized that effective vocational education requires curriculum enhancement to keep training relevant to changing labour markets (Barakaevich, 2020). This suggests that curriculum reform is central to ensuring vocational courses produce competent graduates capable of adapting to the demands of modern economies.

Recent research highlights the integration of advanced technologies in vocational training. Studies demonstrate the potential of augmented reality and digital simulations to enhance teaching and learning experiences (Chiang et al., 2022; Manubag et al., 2023; Maksum et al., 2024). Additionally, improved computer-based learning systems strengthen learners' digital competence, enabling them to adapt to technology-driven industries (Samad et al., 2023). These innovations indicate a broader movement toward digitized vocational training.

Another area of development is the strengthening of industry linkages. Collaborative initiatives such as industry partnerships and teaching factories are shown to bridge the gap between classroom learning and workplace requirements, thereby enhancing employability (Hilman & Wahyudin, 2020; Hong et al., 2021; Bernardus et al., 2023). Such partnerships help ensure that training programs remain demand-driven and responsive to local economic needs.

Career guidance also emerges as a pivotal factor in vocational education. Barigye (2024) stresses the importance of structured guidance and counselling in helping students make informed career choices, thereby aligning their training with realistic employment opportunities. Effective career support can also improve retention rates and ensure better labour market outcomes.

Assessment strategies and competence-based learning approaches also receive increasing scholarly attention. Alternative assessment methods focusing on performance and real-world tasks have been shown to better measure skills acquisition (Villarroel et al., 2024). Similarly, competence-based approaches place emphasis on learner-centered skill development, which is vital for producing graduates with practical expertise (Chen et al., 2024). Policy analyses also highlight how effective vocational education frameworks depend on government commitment to aligning training standards with national development goals (Xu, 2024).

Despite these developments, systemic challenges persist. Researchers have identified issues such as limited resources (Kichu, 2021), high youth unemployment (Nduwimana & Sindayigaya, 2023), and the need to balance general and occupational education (Junsheng, 2022). These challenges underline the importance of institutional support and adequate infrastructure for vocational training to be impactful.

Student perceptions and attitudes toward vocational training significantly shape its success. While many studies show positive interest in skill development, factors such as social stigma and limited parental encouragement often reduce enrolment (Kumar, 2021; Rathidevi & Sudhakaran, 2019; Goswami, 2023; Yadav, 2021). Addressing these perception-related barriers is crucial for expanding vocational pathways at the secondary school level.

The broader socio-economic benefits of vocational education are well-documented. Research links vocational training to sustainable development, entrepreneurship, and poverty alleviation (Hemant, 2017; Kavita & Parvanda, 2022; Dhall, 2024). Furthermore, scholars emphasize the importance of quality management and

improved implementation strategies to maximize the transformative potential of vocational education (Bhattacharyya et al., 2021; Mohammad, 2019). Integrating generic and soft skills (Chaudhari, 2016) and addressing employability challenges (Neroorkar, 2020) remain central to strengthening the system.

Policy-level reforms, particularly the National Education Policy (NEP) 2020, mark a shift toward mainstreaming vocational education into the school system. Scholars argue that systemic reforms are necessary to make vocational training more accessible and effective (Sharma, Bindu, & Sharma, Vibha, 2018; Dhall, 2024). The policy emphasizes skill development for employability, but practical implementation challenges remain.

Within the North-East region, the North Eastern Council (2018) recognized the urgent need for skilled manpower to accelerate regional development. However, evidence suggests that vocational education implementation has been uneven. Placement rates under government programs such as the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) vary significantly across states (Government of India, 2020; Ministry of Skill Development & Entrepreneurship, 2019). Despite government initiatives, the Vocational Education and Training system in the North-East continues to face challenges (Boruah, 2022; Sharma, Riba, & Padu, 2024). Progress on integrating vocational education into mainstream education has been slow, and vocational options in higher education institutions remain limited (Walia & Darlong, 2023).

Significance of the Study

This study is significant as it explores the attitudes of students towards vocational education in secondary schools of East Siang District, Arunachal Pradesh, while also assessing the availability of resources necessary for its effective implementation. The findings provide valuable insights into how vocational education is perceived at the grassroots level, highlighting differences in attitudes across gender and identifying gaps in infrastructure, teacher preparedness and course delivery. Such insights are crucial for policymakers, school administrators, and educators in aligning vocational education with the goals of the National Education Policy (NEP) 2020, which emphasizes skill development, experiential learning and integration of vocational streams into mainstream education. The study also contributes to addressing challenges unique to the North-East region, where vocational education has often been unevenly implemented, thereby offering recommendations that can improve student participation, enhance employability and strengthen human resource development. Ultimately, it serves as a foundation for bridging the gap between policy and practice, supporting local and national efforts to create a skilled workforce capable of meeting future socio-economic demands.

Objectives of the Study

i. To examine the attitude of students towards courses of Vocational Education in secondary schools.

ii. To identify the availability of resources for Vocational Education in secondary school.

Hypotheses of the Study

i. There is no significant difference in attitude of students towards courses of Vocational Education in secondary schools.

ii. There is no significant difference in attitude of Male and female students towards courses of Vocational Education in secondary schools.

Research Question

Following are the research questions for the present study

RQ-1 what are the courses of study available for Vocational Education in secondary Schools?

RQ-2 what type of resources available for Vocational Education in secondary school

Method of the Study

The present study adopted a descriptive survey research design. This design was considered suitable as it enabled the researcher to gather data on stakeholders' attitudes and the existing resources related to vocational education in secondary schools. The study aimed at describing the current status of vocational courses in the East Siang District of Arunachal Pradesh without manipulating any variables.

Population of the Study

The population for the study consisted of all secondary schools in East Siang District that offer vocational education, along with their students. At the time of the study, there were eight secondary schools in the district where vocational courses were being implemented.

Sample of the Study

From the total population of eight schools, five schools were selected using systematic random sampling. The sample comprised students enrolled in vocational courses across these schools. Care was taken to include both male and female students to examine attitudinal differences across gender. The final sample size was determined based on student availability in the selected schools.

Tools for Data Collection

The tool for the present study consists of

i. Questionnaire for the Headmaster
ii. Questionnaire for the Teachers
iii. Rating Scale for Students

Data Collection Procedure

The researcher personally visited the selected schools to administer the questionnaire. Prior permission was obtained from school authorities, and consent was sought from the respondents. The purpose of the study was explained to participants to ensure honest and unbiased responses. Data were collected over a period of one month.

Statistical Techniques Used

Collected data were systematically coded and tabulated. Both descriptive and inferential statistics were used for analysis i.e. mean, SD and t-test.

Analysis and Interpretation of Data

Attitude of Students Regarding Type of Teaching–Learning Material (TLM) Used by Vocational Education Teachers

Table 1 presents the distribution of students' responses regarding the frequency of use of different types of teaching–learning materials (TLM) by vocational education teachers in secondary schools.

Table 1: TLM Used by Teachers during Teaching

TLM	TLM used					
	Always		Sometimes		Never	
	No.	%	No.	%	No.	%
CD/DVD Player	14	7.0	48	24.0	138	69.0
Radio	1	0.5	47	23.5	152	76.0
Audio Player	51	25.5	59	29.5	90	45.0
Text Book	148	74.0	45	22.5	7	3.5
Chalk Board	48	24.0	81	40.5	71	35.5
Drawing/Picture	55	27.5	114	57.0	31	15.5
Model(Wooden/Bamboo)	27	13.5	84	42.0	89	44.5
Chart	16	8.0	109	54.5	75	37.5
Over Head Projector	7	3.5	101	50.5	92	46.0
Epidiascope	20	10.0	51	25.5	129	64.5
Television	18	9.0	61	30.5	121	60.5
Educational Film	3	1.5	57	28.5	140	70.0
Computer/Laptop	11	5.5	60	30.0	129	64.5
Computer having Internet Facility	30	15.0	46	23.0	124	62.0
Interactive White Board	101	50.5	62	31.0	37	18.5
Power Point Presentation Facility	24	12.0	82	41.0	94	47.0

Interpretation

The data in Table 1 clearly indicate that vocational education teachers employ a wide range of teaching–learning materials, although the extent of their use varies considerably.

i. It is found that 7% of the teachers always make use of CD/DVD Player, 24% does it sometimes and 69% never make use of it.

ii. Only 1% of the teachers always make use of radio, 24% does it sometimes and 76% never make use of it.

iii. Say 26% of the teachers always make use of Audio Player, 30% does it sometimes and 45% never make use of it.

iv. 74% of the teachers always make use of Text Book, 23% does it sometimes and 4% never make use of it..

v. 24% of the teachers always make use of Chalk Board, 41% does it sometimes and 36% never make use of it.

vi. 28% of the teachers always make use of Drawing/Picture, 57% does it sometimes and 15% never make use of it.

vii. 14% of the teachers always make use of Model, 42% does it sometimes and 44% never make use of it.

viii. 8% of the teachers always make use of Chart, 55% does it sometimes and 37% never make use of it.

ix. 3% of the teachers always make use of Over Head Projector, 51% does it sometimes and 46% never make use of it.

x. 10% of the teachers always make use of Epidiascope, 26% does it sometimes and 65% never make use of it.

xi. 9% of the teachers always make use of Television, 31% does it sometimes and 60% never make use of it.

xii. 2% of the teachers always make use of Educational Film, 28% does it sometimes and 30% never make use of it.

xiii. 6% of the teachers always make use of Computer/Laptop, 30% does it sometimes and 64% never make use of it.

xiv. 15% of the teachers always make use of Computer having Internet Facility, 23% does it sometimes and 62% never make use of it.

xv. 51% of the teachers always make use of Interactive White Board, 31% does it sometimes and 18% never make use of it.

xvi. 12% of the teachers always make use of Power Point Presentation Facility, 41% does it sometimes and 47% never make use of it.

Attitude of Students towards Vocational Education in Secondary Schools

Table 2 Attitude of students towards Vocational Education

SN	Statements	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	I like the Vocational Education subject very much	60 (30.0)	111 (55.5)	25 (12.5)	3 (1.5)	1 (0.5)
2	Lessons included in the Vocational Education subject are interesting	41 (20.5)	94 (47.0)	47 (23.5)	13 (6.5)	5 (2.5)
3	Vocational Education teacher teaches the lessons nicely	61 (30.5)	92 (46.0)	24 (12.0)	8 (4.0)	15 (7.5)
4	Vocational Education classes are held regularly	35 (17.5)	70 (35.0)	47 (23.5)	37 (18.5)	11 (5.5)
5	Practical classes for Vocational Education subject are held regularly	53 (26.5)	44 (22.0)	45 (22.5)	53 (26.5)	5 (2.5)
6	For Vocational Education subject both theoretical and practical examination is conducted	58 (29.0)	63 (31.5)	45 (22.5)	29 (14.5)	5 (2.5)
7	I find the Vocational Education subject very interesting	18 (9.0)	109 (54.5)	50 (25.0)	13 (6.5)	10 (5.0)
8	I am able to understand the contents of any topic taught in Vocational Education subject comfortably	36 (18.0)	104 (52.0)	39 (19.5)	17 (8.5)	4 (2.0)
9	Vocational Education subject is very much essential for our future career	54 (27.0)	103 (51.5)	25 (12.5)	14 (7.0)	4 (2.0)

10	Practical classes held for Vocational Education subject is very helpful in learning the skills	91 (45.5)	77 (38.5)	19 (9.5)	10 (5.0)	3 (1.5)

Interpretation

Attitude of students towards Vocational Education reveals the following information's:

a) 86% of the students agreed that they like Vocational Education subject very much but 2% disagreed**.**

b) 68% of the students agreed that Lessons included in the Vocational Education subject are interesting but 9% disagreed**.**

c) 77% of the students agreed that Vocational Education teacher teaches the lessons nicely but 12% disagreed**.**

d) 53% of the students agreed that Vocational Education classes are held regularly but 24% disagreed**.**

e) 49% of the students agreed that Practical classes for Vocational Education subject are held regularly but 29% disagreed**.**

f) 61% of the students agreed that for Vocational Education subject both theoretical and practical examination is conducted but 17% disagreed**.**

g) 54% of the students agreed that they find the Vocational Education subject very interesting but 12% disagreed**.**

h) 70% of the students agreed that they are able to understand the contents of any topic taught in Vocational Education subject comfortably but 11% disagreed**.**

i) 79% of the students agreed that Vocational Education subject is very much essential for our future career but 9% disagreed**.**

j) 84% of the students agreed that Practical classes held for Vocational Education subject is very helpful in learning the skills but 7% disagreed**.**

Attitude of Students towards Vocational Education Using 't'- Test

H_{01}- There is no significance difference in attitude among students towards Vocational Education in secondary schools

A *t*-test was conducted using the data presented in Table 3. The calculated *t*-value (84.7004) is greater than the tabulated value (2.59) at the 0.01 level of significance. Hence, the null hypothesis is rejected. It may therefore be concluded that there exists a significant difference in the attitude of students towards Vocational Education.

Table 3: *t*-value of Attitude among Students towards Vocational Education

Respondents	**Sample size**	**Mean**	**Standard deviation**	**df**	**t value**	**Significance**
Students	200	27.79	4.640	199	84.7004	Significant

Interpretation

The null hypothesis is rejected at 5% and 1% significant levels. There is significant difference among the attitude of students towards Vocational Education.

H_{02}- There is no significance difference in attitude among boys and girls students towards Vocational Education in secondary schools.

A *t*-test was conducted using the data presented in Table 4. The calculated *t*-value (3.456) exceeds the tabulated value (2.59) at the 0.01 level of significance. Therefore, the null hypothesis is rejected. It can thus be concluded that there is a significant difference between the attitudes of boys and girls towards Vocational Education.

Table 4: *t*-value of Boys and Girls towards Vocational Education

Gender	Sample size	Mean	Standard deviation	df	t value	Significance
Boys	115	28.74	3.952	198	3.456	Significant
Girls	85	26.51	5.188			

Interpretation

The null hypothesis is rejected at 5% and 1% significant levels. Hence, there is significant difference between the attitude of boys and girls students towards Vocational Education.

RQ–1: **what are the courses of study available for Vocational Education in secondary Schools?**

In the secondary schools of East Siang District, Arunachal Pradesh, the courses of study available for vocational education are primarily designed to equip students with practical skills along with academic knowledge. The courses generally cover areas such as Information Technology, Retail Management, Agriculture, Tourism and Hospitality and Health Care. Some schools also offer courses related to beauty and wellness, tailoring, carpentry and electrical trade, depending on local demand and resources. These vocational subjects are introduced at the secondary level to prepare students for employment opportunities, self-reliance and skill development after completing their schooling. The aim is to align vocational courses with the socio-economic needs of the district while encouraging students to take up skill-based learning alongside general education.

RQ-2 what type of resources available for Vocational Education in secondary schools ?

The resources available for vocational education in the secondary schools of East Siang District include both physical and human resources. Physical resources consist of classrooms, laboratories, tool kits, sewing machines, computers and audio-visual teaching–learning materials required for practical training. Some schools have developed vocational labs with basic infrastructure to support hands-on learning in agriculture, hospitality and IT. In terms of human resources, trained vocational teachers and instructors are appointed under the vocational education scheme to provide subject-specific knowledge and practical guidance. Apart from this, textbooks, modules and digital resources are supplied to aid classroom teaching. However, the availability of resources varies across schools; while some institutions are adequately equipped, others face limitations in terms of infrastructure and technical support, which affects the overall effectiveness of vocational education.

Finding of the Study

The study found that vocational education teachers rely heavily on traditional teaching–learning materials (TLMs). Textbooks (74% always) and interactive white boards (51% always) emerged as the most frequently

used aids in classrooms. Visual aids such as drawings, pictures (28% always), and models (14% always) are moderately used but not consistently across teaching contexts. On the other hand, modern ICT-based TLMs remain underutilized. Computers or laptops (6% always), computers with internet (15% always), PowerPoint presentations (12% always), and educational films (2% always) are rarely used by teachers. Outdated tools such as radios, CD/DVD players, overhead projectors, and epidiascopes have almost disappeared from practice. Interestingly, chalkboard use has also declined, with only 24% of teachers using it regularly, as many have shifted to interactive white boards. These findings suggest that vocational education teachers still rely more on traditional aids like textbooks and boards, with only partial integration of modern digital technologies into teaching.

The attitude of students towards vocational education was found to be largely positive. A majority (86%) expressed that they like vocational education, and 79% agreed that it is essential for their future career. Furthermore, 77% of students reported that vocational teachers deliver lessons effectively. However, the regularity of classes and practical sessions was a concern, with only 53% agreeing that classes are held regularly and 49% agreeing that practical sessions are consistently conducted. Despite this irregularity, the importance of practical training was strongly recognized, as 84% of students felt that practical classes are very helpful in acquiring skills. The examination system was also appreciated, with 61% acknowledging the balanced evaluation of both theory and practical exams. Overall, about 70% of students stated that they can comfortably understand the subject content. These responses highlight a generally positive attitude towards vocational education, particularly in terms of career relevance and skill development, though issues of class regularity remain a challenge.

The results of hypothesis testing further confirmed the positive orientation of students towards vocational education. The calculated t-value (84.70) was much higher than the critical value, establishing that students' overall attitude is significantly positive. A gender-based difference was also observed, with boys (Mean = 28.74) showing a more favorable attitude compared to girls (Mean = 26.51), as indicated by a significant t-value (3.456). This finding suggests that although vocational education is valued by students in general, boys demonstrate stronger positive perceptions than girls.

Secondary schools in East Siang District, Arunachal Pradesh, offer a diverse range of vocational courses such as Information Technology, Retail Management, Agriculture, Tourism and Hospitality, Health Care, Beauty and Wellness, Tailoring, Carpentry, and Electrical Trade. These courses are introduced to enhance students' employability, self-reliance, and skill development in alignment with local socio-economic needs.

The resources available for vocational education in the district include both physical infrastructure (labs, tool kits, sewing machines, computers, teaching–learning materials) and human resources (trained vocational teachers and instructors). However, resource availability is uneven, with some schools well-equipped while others face constraints in infrastructure and technical support, which limits the effectiveness of vocational training.

Educational Implication

i. The study shows that vocational teachers still depend heavily on traditional teaching–learning materials, while modern ICT-based tools are rarely used. This implies the need for focused teacher training programs to improve digital competency and encourage the effective use of computers, internet resources, presentations, and other ICT aids. Integrating these tools into classroom practice can make vocational education more engaging and aligned with present-day technological requirements.

ii. The irregularity of classes and practical sessions indicates the necessity of strengthening institutional planning and monitoring. Since students strongly value practical training for skill development, schools must ensure that practical classes are conducted regularly with adequate resources and proper scheduling. This would enhance the effectiveness of vocational education and better prepare students for their careers.

iii. The finding that boys showed more positive attitudes toward vocational education than girls highlights the need for gender-sensitive interventions. Special efforts such as motivational programs, career counseling, and providing successful female role models in vocational fields can help to build greater confidence among girls and reduce gender disparities in perception.

iv. Although traditional methods like textbooks and boards remain important, the study suggests the need for a balanced approach. Retaining effective traditional practices while gradually incorporating innovative digital resources can create a blended learning environment. This would not only preserve the strengths of conventional teaching but also expose students to modern practices relevant to the changing workforce.

Conclusion

The study reveals that vocational education in secondary schools of East Siang District, Arunachal Pradesh, plays a crucial role in equipping students with practical skills alongside academic learning, though several challenges persist. Teachers predominantly rely on traditional teaching–learning materials such as textbooks (74% always) and interactive whiteboards (51% always), while modern ICT-based aids like computers, PowerPoint presentations and educational films remain underutilized. This indicates a partial integration of digital technologies, with outdated tools (CD/DVD players, radios, epidiascopes) having almost disappeared from practice.

Students' attitudes towards vocational education are generally positive, with the majority appreciating its relevance to future careers (79%), practical usefulness (84%), and teacher effectiveness (77%). However, concerns regarding irregularity of both theoretical and practical classes were highlighted, with less than half of the students confirming their consistent conduct. Despite these gaps, the subject is valued for its career orientation, balanced evaluation system, and contribution to skill development.

Hypothesis testing further strengthens these findings by confirming that students' overall attitudes are significantly positive. Moreover, a gender-based difference exists, with boys showing a more favorable perception than girls.

The availability of vocational courses such as IT, retail, agriculture, hospitality, healthcare, tailoring, carpentry and electrical trades reflects efforts to align education with local socio-economic needs. Nevertheless, disparities in resource availability particularly infrastructure and technical support affect the overall effectiveness of vocational training across schools.

In conclusion, vocational education in the district is highly valued by students and has strong potential to contribute to skill development and employability. However, improving the regularity of classes, enhancing resource allocation, and promoting greater use of ICT-based teaching materials are necessary steps to strengthen its effectiveness and ensure equitable quality across schools.

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