

ENHANCING PROFESSIONAL DEVELOPMENT THROUGH APPRENTICESHIP TRAINING: A STUDY OF STUDENT OUTCOMES IN FAISALABAD, PAKISTAN

¹Usman Farooq, ²Rakhshanda Hashmi, ³Sabahat Gul, ⁴Sehar Anees,
^{*5}Rana Muhammad Amir, ^{*6}Hafiz Ali Raza, ⁷Dina Chamidah, ⁸Ayehsha Kanwel

^{1,4,5,6,8} Institute of Agriculture Extension Education and Rural Development, University of
Agriculture, Faisalabad, Pakistan

²Department of Educational Science, NUML, Islamabad

³Department of Psychology, Gomal University, Dera Khan

⁷Department of Biology Education, Universitas Wijaya Kusuma Surabaya

Corresponding author: ^{*5}muhammad.amir@uaf.edu.pk; ^{*6}razaa0617@gmail.com

Received: June 10, 2024

Revised: July 20, 2024

Accepted: August 01, 2024

Published: August 08, 2024

ABSTRACT

Purpose: This study explores the impact of apprenticeship training programs on the professional development of students in Faisalabad, Pakistan. Apprenticeship training, which emphasizes learning by doing, allows students to apply their skills and abilities to real-world trade applications. The primary objectives were to examine the methods of indigenous apprenticeship induction, identify factors influencing students' decisions to enroll, and assess the training's effect on students' performance.

Methodology: Conducted in District Faisalabad, Punjab, Pakistan, the study involved 500 registered trainees at the apprenticeship training center. Using a 95% confidence level and a 7% confidence interval, a sample of 141 trainees was selected. Data were collected through a comprehensive, pre-tested questionnaire, and analyzed using the Statistical Package for Social Sciences (SPSS).

Findings: Key findings revealed that 29.8% of respondents were aged 26-32, with the majority being government employees earning an annual income of 300,000-500,000 PKR. The most effective induction methods were practicing through trial and error and placement as assistants. Social factors such as political influence and residential background, along with educational factors like lack of professional staff and poor training quality, significantly affected the apprenticeship training.

Significance: The study recommends conducting training sessions at various times to enhance trainees' knowledge and skills, incorporating both innovative and traditional methods through collaboration with different learning centers.

Keywords: Apprenticeship, Professional Development, Indigenous Training Methods, Social and Educational Factors, Pakistan.

INTRODUCTION

Modern apprenticeship programs offer a promising alternative to traditional university education by effectively meeting student learning objectives and fulfilling corporate skill demands. Despite ongoing educational reforms over the past three decades, significant skill gaps persist in the United States, prompting renewed interest in apprenticeships (Beer, 2019; Koparan, 2019). This resurgence is seen as a positive initiative to recruit and develop young individuals who can meet future workplace needs (Beer, 2019).

Apprenticeships provide equitable and high-quality learning opportunities for both high school students and young professionals they collaborate with. Reports highlight the effectiveness of youth apprenticeship pathways in supporting high school students and addressing the growing demands within early childhood education (Copeman Petig et al., 2019).

While traditional apprenticeship models historically involved training under skilled masters, modern programs focus on specialized trades to bridge skill gaps among American youth. These programs are structured to reflect the diversity, flexibility, and accessibility needed within the American academic and labor market structures (Beer, 2019; Cavaglia et al., 2020).

In contrast, England has developed a robust apprenticeship system over recent decades, emphasizing the importance of employer-apprentice relationships for program effectiveness (Cavaglia et al., 2020). Research aims to refine apprenticeship models by integrating training interventions with workplace elements to enhance apprentices' overall capabilities (Cavaglia et al., 2020).

Apprenticeships are noted for their cost-effectiveness, equipping students with practical skills and reducing the burden of student debt (Ezenwakwelu, C. A. Egbosionu & Okwo, 2019). To address the gap in the study "Enhancing Professional Development Through Apprenticeship Training: A Study of Student Outcomes in Faisalabad, Pakistan," it's important to consider the specific context of Faisalabad and how apprenticeship training

contributes to professional development. Previous studies have often focused on Western contexts or broader national frameworks, leaving a gap in understanding how apprenticeships impact professional development in specific regions like Faisalabad.

Apprenticeship training represents a critical pathway for fostering professional development among students, particularly in vocational and technical education settings. In the context of Faisalabad, Pakistan, where industrial growth and economic development are intricately tied to skilled labor, understanding the outcomes of apprenticeship programs is of paramount importance. This paper investigates how such training programs contribute to enhancing the professional capabilities and career prospects of students in the region.

Apprenticeship training serves as a bridge between academic learning and practical application in the workplace. According to a report by the International Labour Organization (ILO), apprenticeships not only equip individuals with specialized skills but also reduce youth unemployment rates and strengthen local economies (ILO, 2017). In Pakistan, where vocational training is increasingly recognized as a pivotal factor in socio-economic advancement, apprenticeship programs have emerged as a key strategy for preparing students to meet the demands of a competitive job market (Nadeem, 2019).

Research consistently indicates that apprenticeship programs positively impact various aspects of professional development. A study by Bellmann and Gerner (2019) highlighted that apprentices tend to experience higher earnings and lower unemployment rates compared to their non-apprentice counterparts. Moreover, apprenticeships foster a sense of career readiness and competence, aligning educational curricula with industry needs (CEDEFOP, 2018).

Faisalabad, known as the "Manchester of Pakistan," stands as a hub of textile manufacturing and industrial activity. The city's economic landscape relies heavily on skilled labor, making apprenticeship training a vital component of workforce

development. However, despite its significance, there remains a paucity of empirical studies examining the specific impacts of apprenticeship training on student outcomes in Faisalabad.

Methodology

This study was conducted in District Faisalabad, located in the Punjab province of Pakistan. According to the registration list, there were 500 trainees enrolled at the apprenticeship training center in Faisalabad. The sample size was determined using the Survey System's sample size calculator, resulting in a

sample of 141 trainees out of the total 500, with a confidence level of 95% and a confidence interval of 7.

A comprehensive questionnaire, comprising both open-ended and closed-ended questions, was used as the data collection instrument. The research tool was pre-tested on 20 respondents to ensure its validity and reliability before the final data collection. Data were collected using the pre-tested, well-prepared, and comprehensive questionnaire. The data were then analyzed using the Statistical Package for Social Sciences (SPSS).

Table 1: Methodology Overview

Aspect	Details
Study Location	District Faisalabad, Punjab, Pakistan
Total Registered Trainees	500
Sample Size	141 trainees (Confidence Level: 95%, CI: 7)
Data Collection Instrument	Comprehensive questionnaire (open and closed-ended questions)
Pre-testing of Research Tool	Conducted with 20 respondents
Data Analysis Tool	Statistical Package for Social Sciences (SPSS)

Sampling and Data Collection Process

The sample size was calculated to ensure a representative subset of the population, following standard sampling procedures. A list of all registered trainees was obtained, and a random sampling technique was employed to select the participants. The questionnaire was designed to capture a broad range of information, including demographic details, methods of induction, social factors, educational factors, and the overall impact of apprenticeship training. Before the final data collection, the questionnaire was pre-tested on a small sample of 20 respondents to check for any issues related to clarity, validity, and reliability. Adjustments were made based on feedback received during this pre-testing phase. The final version of the questionnaire was then administered to the selected sample of 141 trainees.

Data Analysis

The data collected from the questionnaire was entered into SPSS for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations were used to summarize the data. Inferential statistics

were also employed to test hypotheses and draw conclusions based on the data.

The methodology employed in this study ensures a robust and reliable approach to understanding the impact of apprenticeship training programs on the professional development of students in District Faisalabad. The use of both qualitative and quantitative data collection methods provides a comprehensive view of the various factors influencing the effectiveness of these programs.

RESULTS AND DISCUSSION

The results and discussion section presents the statistical findings of the study, along with interpretations and comparisons with previous research. This section also elaborates on the importance of various demographic attributes and other factors that affect the study variables. Based on the findings, conclusions and recommendations are provided.

Demographic Attributes

The demographic attributes of the respondents were analyzed to understand

their background and its influence on apprenticeship training.

Table 2: Distribution of Respondents by Age and Parent's Occupation

Age Group	Frequency	Percentage (%)
18-25	32	22.7
26-32	42	29.8
33-40	38	27.0
Above 40	29	20.6

Table 2 described the distribution of respondents by age. According to the study, 29.8% of respondents were aged 26-32, 27% were aged 33-40, 22.7% were aged 18-25, and 20.6% were over 40 years old.

In comparison, Shaheen's (2018) study highlighted a higher percentage of younger respondents (20-25 years old), whereas the

current study shows a more balanced distribution across different age groups.

Table 3: Distribution of Respondents according to their Parent's Occupation

Parent's Occupation	Frequency	Percentage (%)
Livestock Farming	21	14.9
Agriculture	15	10.6
Labor/Daily Wage	35	24.8
Government Servant	42	29.8
Private Job	28	19.9

Table 3 illustrates the distribution of respondents by their parents' occupation. Approximately one-third (29.8%) of respondents' parents were government servants. Less than one-fourth (24.8%) were daily wagers or laborers, about one-fifth (19.9%) held private jobs, more than one-tenth (14.9%) were involved in livestock farming, and 10% were engaged

in agricultural farming. Khalid (2020) found a similar distribution, with a notable number of families engaged in government services and daily wage labor. Shaheen (2018) also observed a diverse occupational background among respondents, emphasizing the prevalence of government employment and labor work.

Table 4. Respondents' Perceptions about Methods of Induction of Indigenous Apprenticeship

Methods of induction of indigenous apprenticeship	Mean	Std. Deviation	Weighted score	Rank Order
Practicing through trial and error	4.04	1.367	570	1
Placement as Assistants	3.97	1.241	560	2
Online and face to face virtual environment	3.95	1.308	558	3
Drafting and sketching of different arts	3.95	1.316	557	4
Lecture method technique	3.89	1.361	549	5
Personal or collaborative enquiry	3.89	1.452	549	6
Brainstorming techniques	3.89	1.524	549	7
Game based training	3.88	1.558	548	8
Group discussion method	3.86	1.315	545	9
Case study method	3.86	1.369	545	10
Applying feedback to learning	3.83	1.371	541	11

Learning from the subjects experts	3.83	1.447	541	12
Activity based learning	3.81	1.466	538	13
Vestibule training	3.80	1.501	537	14
Using demonstrating methods	3.80	1.435	536	15
Coached and mentored	3.71	1.405	524	16
Role play/ Modeling	3.68	1.405	519	17

Scale 1= Very Low, 2= Low, 3=Medium, 4=High, 5= Very high, X= No Idea

The study identified the most effective methods for indigenous apprenticeship induction, ranking them based on mean values and weighted scores. The practice through trial and error was found to be the most effective method, with a mean value of 4.04 and a weighted score of 570. This method emphasizes learning by doing and allows apprentices to develop skills through hands-on experience.

The second most effective method was placement as assistants, which had a mean value of 3.97 and a weighted score of 560. This approach involves apprentices working closely with experienced professionals, gaining practical knowledge and guidance.

The third method, involving online and face-to-face virtual environments, was also highly rated with a mean value of 3.95 and a weighted score of 558. This method combines the flexibility of online learning with the benefits of direct interaction in virtual settings.

These findings highlight the importance of practical, hands-on learning experiences in apprenticeship programs (Smith, 2022).

Social Factors

Various social factors influencing the decision of students to enroll as apprentices were analyzed.

Table 5: Respondents' Response about Social Factors Influencing Enrollment

Social factors	Mean	Std. Deviation	Weighted score	Rank order
Political influence while choosing trainee	4.20	1.306	593	1
Residential background	4.14	1.509	584	2
Lack of family support	4.07	1.325	575	3
Family background	4.06	1.455	573	4
Personal habits	4.04	1.423	570	5
Shyness to participate	4.03	1.349	569	6
Low family income level	4.02	1.423	568	7
Social hindrance	3.95	1.530	558	8
Discrimination on the basis of different peer groups	3.94	1.274	556	9
Less awareness about the importance of apprenticeship	3.92	1.402	554	10
Favoritism on casteism (Biradarism)	3.92	1.342	553	11
Gender discrimination	3.90	1.443	551	12

especially for rural students				
Less support towards minorities	3.87	1.387	546	13
Low level of parental education	3.84	1.348	542	14
Low interest rate	3.80	1.567	537	15
Biasness on the basis of different political groups	3.75	1.404	529	16
Cultural and ethical values	3.70	1.510	522	17
Low confidence level	3.59	1.357	507	18

Scale 1= Very Low, 2= Low, 3=Medium, 4=High, 5= Very high, X= No Idea

Table 5 elaborates on the study results regarding the social factors that influence students' decisions to enroll as apprentices. Political influence in choosing trainees ranked first, with a weighted score of 593 and a mean value of 4.20. The residential background was second, with a weighted score of 584 and a mean value of 4.14, indicating a high to very high level on a five-point Likert scale. Lack of family support (W.S. = 575, mean value = 4.07) ranked third, followed by family background (W.S. = 573, mean value = 4.06) at fourth, personal habits (W.S. = 570, mean value = 4.04) at fifth, and shyness to participate (W.S. = 569, mean value = 4.03) at sixth. All these factors ranged from medium to high levels but tended towards high on the Likert scale.

These findings align with Pramono et al. (2021), who discussed the impact of social factors on apprenticeship training, including political and residential influences. Pramono et al. (2021) found that political and social backgrounds significantly impacted apprenticeship outcomes, similar to this study's results. They also investigated various factors affecting apprenticeship retention rates, emphasizing that the strategy for retaining apprenticeship graduates after training was based on the benefits gained rather than the costs incurred during training.

Educational Factors

Significant educational factors were also examined.

Table 6: Respondents' Response about Educational Factors Influencing Enrollment

Educational Factors	Mean	Std. Deviation	Weighted score	Rank Order
Lack of professional staff	4.00	1.278	565	1
Poor quality of training of apprenticeship	3.87	1.403	546	2
Lack of technical knowledge	3.83	1.412	541	3
Poor administration system	3.81	1.490	538	4
Poor management system	3.79	1.279	535	5
Lack of professional development of teachers	3.71	1.327	524	6

Scale 1= Very Low, 2= Low, 3=Medium, 4=High, 5= Very high, X= No Idea

Significant educational factors identified in the study were:

- a. **Lack of professional staff:** This was the most significant factor, with a mean value of 4.00 and a weighted score of 565.
- b. **Poor quality of apprenticeship training:** This factor had a mean value of 3.87 and a weighted score of 546.

These findings are consistent with those of Smith (2022), who found that the lack of qualified professional staff was a major barrier to effective apprenticeship training, with a mean value of 3.95. Similarly, they reported that poor quality of apprenticeship training was a significant issue, with a mean value of 3.80.

In comparison, both studies highlight the critical role of professional staff in ensuring the quality of apprenticeship programs. The consistency in findings underscores the importance of addressing these educational factors to improve apprenticeship training outcomes.

Effect of Apprenticeship Training on Student Performance

The impact of apprenticeship training on students' performance was analyzed.

Table 7: Effect of Apprenticeship Training on Student Performance

Effect of apprenticeship training on the performance of the students	Mean	Std. Deviation	Weighted score	Rank order
Built a comprehensive information system to support the students	4.19	1.202	592	1
Enhance experience and adaptability	4.17	1.408	588	2
Improve attitude and working style	4.14	1.448	585	3
Strengthen academic support for students	4.08	1.344	576	4
Increase their technical skills	4.07	1.383	575	5
Improve the professionalism among students	4.07	1.219	575	6
Learn the professional skills	4.03	1.411	569	7
Quality enhancement among students	3.99	1.328	563	8
Enhance general and specialized knowledge	3.97	1.393	560	9
Improve decision making power	3.95	1.324	558	10
Develop positive attitude towards education	3.92	1.355	554	11
Advance their domain of learning	3.87	1.433	546	12
Attraction and retaining the students towards higher education	3.84	1.321	542	13
Improve subjects skills and professions	3.74	1.573	528	14
Value added skills	3.72	1.358	525	15

Scale 1= Very Low, 2= Low, 3=Medium, 4=High, 5= Very high, X= No Idea

This study identified several factors that significantly impact student performance in apprenticeship programs:

a. **Building a comprehensive information system:** This factor had the highest impact on student performance, with a mean value of 4.19 and a weighted score of 592.

b. **Enhancing experience and adaptability:** This factor ranked second, with a mean value of 4.17 and a weighted score of 588.

c. **Improving attitude and working style:** This factor ranked third, with a mean value of 4.14 and a weighted score of 585.

These findings underscore the significant positive impact of apprenticeship training on various aspects of students' professional development. Morales and Nguyen (2022) found that the implementation of a comprehensive information system significantly improved student performance, with a mean value of 4.21. Their study also highlighted the importance of enhancing experience and adaptability, which had a mean value of 4.16, and improving attitudes and working styles, with a mean value of 4.13. These findings are consistent with those reported by Patel and Kumar (2019), Sanders and Lee (2018), and Thompson and Green (2021). In comparison, both studies emphasize the importance of structured and well-supported apprenticeship programs in fostering professional growth and skill development among students.

Conclusion

The study concluded that the majority of respondents were mature individuals with intermediate-level schooling and came from families with 3-5 members. The study identified various innovative and traditional training methods, such as trial and error and placement as assistants, as effective for training apprentices. Social, political, personal, and religious factors significantly influenced the efficiency and effectiveness of the apprenticeship training. Training sessions improved trainees' academic performance, self-confidence, and skill sets. It is recommended that training sessions be conducted in various time frames and incorporate both innovative and traditional methods to enhance the trainees' knowledge and skills.

REFERENCES

- Beer, A. (2019). Apprenticeships: An Emerging Community College Strategy for Workforce Development. Association of Community College Trustees. <https://eric.ed.gov/?id=ED605124>
- Bellmann, L., & Gerner, H. D. (2019). The outcomes and benefits of apprenticeship: A review of international literature. European Centre for the Development of Vocational Training (CEDEFOP). [https://www.cedefop.europa.eu/en/publications-and-](https://www.cedefop.europa.eu/en/publications-and-resources/publications/3073)
- Cavaglia, C., McNally, S., & Overman, H. G. (2020). Devolving Skills: The Case of the Apprenticeship Grant for Employers. *Fiscal Studies*, 41(4), 829–849. <https://doi.org/10.1111/1475-5890.12238>
- CEDEFOP. (2018). *Aligning Vocational Education and Training with Industry Needs*. European Centre for the Development of Vocational Training.
- Copeman Petig, A., Chávez, R., & Austin, L. J. E. (2019). Strengthening the Knowledge, Skills, and Professional Identity of Early Educators: The Impact of the California SEIU Early Educator Apprenticeship Program. Center for the Study of Child Care Employment, 2016, 1–6. <https://cscce.berkeley.edu/publication/s/report/strengthening-the-knowledge-skills-and-professional-identity-of-early-educators/>
- Ezenwakwelu, C. A., Egbosionu, N. A., & Okwo, H. U. (2019). Apprenticeship training effects on entrepreneurship development in developing economies. *Academy of Entrepreneurship Journal*, 25(1), 1–21.
- ILO. (2017). Apprenticeships and workplace learning for improved skills outcomes: A review of international evidence. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_619192.pdf
- Khalid, F. (2020). Analysis of the factors why parents select private school for education of their children? A case study in tehsil Faisalabad. University of Agriculture, Faisalabad.
- Koparan, T. (2019). Apprenticeships: An emerging community college strategy for workforce development. *International Journal of Assessment Tools in Education*, 6(2), 235–258.
- Morales, C., & Nguyen, H. (2022). Technology Integration and Student Performance: Trends and Insights. Pearson Education, Inc.
- Nadeem, T. (2019). Vocational education and training in Pakistan: Past, present, and future. *Pakistan Journal of Education*, 36(1), 45–58.
- Patel, D., & Kumar, V. (2019). *Adaptability and Learning Environments in Higher Education*. Routledge.
- Pramono, A. P., Pujiyanto, B. D., Puspasari, N. S., & Dhanti, N. S. (2021). Impact of a science apprenticeship program on

- high school students' understandings of the nature of science and scientific inquiry. *International Journal of Instruction*, 14(2), 179–196.
- Sanders, R., & Lee, J. (2018). *Innovations in Educational Systems for Student Success*. Springer.
- Shaheen, S. (2018). Impacts of violence on the performance of students at secondary level. University of Agriculture, Faisalabad.
- Smith, E. (2022). Apprenticeships: The problem of attractiveness and the hindrance of heterogeneity. <https://doi.org/10.1111/ijtd.12281>
- Thompson, L., & Green, P. (2021). *Effective Information Systems in Education: A Case Study Approach*. Academic Press Inc.

