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Research Article

National Apprenticeship Training Scheme: A Study of BOPT(ER) Performance

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Abstract
The National Apprenticeship Training Scheme (NATS), established under the Apprentices Act of 1961 amended in 1973 and 2014, provides practical On-the-Job-Training (OJT) opportunities for graduates, diploma holders in engineering and technology, as well as graduates in general streams such as B.A, B.Sc., B.Com etc. The duration of apprenticeship training varies from 6 months to 3 years, aiming to equip apprentices with valuable industry experience. Serving as a bridge between theoretical education and practical application, the scheme enhances participants' employability while contributing to industrial growth. This work focuses on evaluating the NATS within the Eastern Region of the country. The evaluation comprises two key aspects: physical achievement and financial expenditure by the Government of India on this scheme. Over the chosen period of 10 years from 2013-14 to 2023-24, this study has highlighted the increasing significance of the NATS as a socially relevant initiative by the Government of India.
Keywords: NATS, Apprentices Act, OJT, Apprenticeship, employability, industrial growth, Eastern Region.

Introduction

In India, an apprenticeship is characterized as "a course of training in any industry or establishment undertaken in accordance with a contract of apprenticeship and governed by specified terms and conditions, which may vary depending on the category of apprentices" (Ministry of Labour and Employment (MoLE), 1961). Apprenticeship is a time-tested method of preparing individuals for work, typically involving a combination of on-the-job training, off-site instruction, and an established employment arrangement [1]. Apprenticeships are widely lauded for facilitating the transition from school to work. The importance of computer-supported engineering apprentice systems [2], particularly for Graduate or Diploma Apprentices, is increasingly recognized, given the specialized nature of certain industries [3]. The shift towards competency-based IT apprenticeships, driven by digital technologies, underscores the need for flexibility in skill development approaches. India's challenge extends beyond unemployment among the highly educated; it now faces issues of skill underutilization and 'degree mania.' Quality must take precedence over quantity in skill development initiatives, ensuring that each participant emerges genuinely equipped for the workforce [4]. It is imperative for skill policies and schemes to undergo significant restructuring, drawing inspiration from successful models such as those in Switzerland and Germany. In these models, both youth and industry play central roles, with the Right to Apprenticeship emerging as a crucial agenda item. The India Skills Report 2021 presents a stark reality: close to half of India's graduates lack employability. India's vocational training landscape is predominantly driven by supply, resulting in a situation where young people receive education without acquiring genuine skills. There is a noticeable absence of employer involvement and inadequate emphasis on internships or apprenticeships. Consequently, a thorough examination of the government's skill development initiatives is warranted.

Historically, vocational education and training (VET) in India have been overlooked until the 2000s. Despite a renewed focus, notably in the 11th Five-Year Plan (2007-12) which dedicated a chapter to skill development, progress has been slow. Data from the Periodic Labour Force Survey (PLFS) shows fluctuations MoSPI 2023) in the number of formally trained individuals, with a recent slight increase. Recognizing the pivotal role of skill development, particularly amidst a rapidly evolving global economy, the Government of India has launched various schemes aimed at enhancing employability and productivity. These efforts encompass foundational vocational training to advanced technical education, tailored to diverse sectors and demographics. Out of all the schemes, the two schemes' NAPS and NATS that are implemented under the provisions of the Apprentices

Act 1961 are found to be the major schemes for providing skill training of the educated youth of the country and are being studied in this paper. Since 1961, the Apprentices Act has mandated registered firms to engage apprentices for at least a year. Subsequent initiatives such as the National Apprenticeship Training Scheme (NATS) in 2013 and the National Apprenticeship Promotion Scheme (NAPS) in 2016 aimed to strengthen this framework, bolstering the pool of skilled workers available to industries.

National Apprenticeship Promotion Scheme (NAPS):

The Ministry of Skill Development and Entrepreneurship launched the National Apprenticeship Promotion Scheme (NAPS) in 2016 to encourage businesses to hire apprentices. NAPS offers partial stipend support to apprentices and aims to improve the apprenticeship system. It's funded by the Central Government and managed by the Ministry of Skill Development and Entrepreneurship.

The goals of NAPS:

- Develop skilled workers through on-the-job training (OJT).
- Encourage businesses to hire apprentices by providing stipend support.
- Help people who have completed short-term skill training.
- Encourage small businesses and those in underserved areas to hire apprentices.

NAPS aims to train 46 lakh apprentices by 2025 and improve apprenticeship opportunities across India. It also helps apprentices find jobs after training and connects the scheme with government infrastructure projects. Under NAPS, apprentices receive training in specific trades and can get stipend support of up to Rs. 1,500 per month from Govt. of India apart from the stipend paid by the establishment. The share of the Central Govt. share of stipend is paid directly into the apprentice's bank account.

National Apprenticeship Training Scheme (NATS):

The National Apprenticeship Training Scheme stands as one of the flagship programs of the Government of India, and is Implemented by the Ministry of Education, Department of Higher Education, Government of India. It aims to provide skill training to graduates and diploma holders in Engineering & Technology, as well as graduates in the General Stream, as Graduate and Technician apprentices, under the provisions of the Apprentices Act of 1961. Under this scheme, apprentices receive on-the-job training (OJT) from employers utilizing existing industry facilities and resources, all under the guidance of trainers. Structured training modules are employed to ensure that apprentices acquire the necessary skills and competencies during their training period. NATS aims to promote Apprenticeship among Graduates and Diploma holders in Engineering and Technology and General Stream Graduates. Launched in 2013-14 under the provisions of the Apprentices Act 1961. In the year 2021, the Government of India Approved Rs. 3,054 crores of Stipendiary support up to 31/03/2026 with a target of 9 Lakhs of trained Apprentices. The scheme aims to boost apprentices' confidence and enhance their employability by equipping them with valuable skills and practical experience.

Overview of the Apprentices Act, 1961 and Its Subsequent Amendments:

The Apprentices Act, 1961, enacted by Parliament of India, aims to regulate, and organize apprenticeship training [6], ensuring a formal structure and standardization across sectors. Over the years, the Act has undergone several amendments to adapt to changing industrial and economic scenarios.

The Amendment of 1973 marked a significant expansion of the apprenticeship program by incorporating graduate and diploma holders in engineering and technology within its purview. Building upon this foundation, subsequent amendments further broadened the scheme's reach. In 1986, the amendment included 10+2 vocational certificate holders, thereby enhancing opportunities for a wider spectrum of individuals. Continuing this trend of inclusivity, the 2014 amendment expanded the purview to encompass graduates in general streams as well. These progressive amendments reflect the government's commitment to fostering skill development across diverse educational backgrounds and paving the way for greater workforce participation and economic growth. In the same amendment a new concept called "Optional Trades" are introduced giving flexibility to establishments to choose their own curriculum. Within the same amendment, a pioneering concept known as "Optional Trades" was introduced, revolutionizing the apprenticeship landscape. This innovative provision granted establishments the flexibility to design their own curriculum, tailoring it to their specific needs and industry requirements. By empowering organizations with the autonomy to select trades aligned with their operational objectives, this initiative not only promoted a more dynamic and adaptable training environment but also fostered a closer alignment between educational offerings and real-world skill demands.

Implementation of NATS

Under the Apprentices Act there are six categories of Apprenticeships currently existing.

Table 1: Categories of Apprentices

Sl. No	Category	Eligibility	Trades	Implemented by
1	Trade* Apprentices	Class 12 and below	Designated/ Optional	Ministry of Skill Development and Entrepreneurship
2	Technician Vocational Apprentices	10+2 Vocational Certificate holders	Designated/ Optional	Ministry of Skill Development and Entrepreneurship
3	Technician Apprentices	Diploma in Engineering and Technology & Non-Engineering	Designated/ Optional	Ministry of Education
4	Technician Apprentices (Sandwich)	Students undergoing the Diploma courses classified as sandwich courses.	Designated/ Optional	Ministry of Education
5	Graduate Apprentices	Degree in Engineering and Technology & Non-Engineering	Designated/ Optional	Ministry of Education
6	Graduate Apprentices (Sandwich)	Students undergoing the Degree courses classified as sandwich courses.	Designated/ Optional	Ministry of Education

* Several Graduates and Diploma holders in General Streams as well as Graduates in Engineering Technology and Diploma holders in Engineering and Technology are being engaged as Optional Trade Apprentices by Ministry of Skill Development and Entrepreneurship.

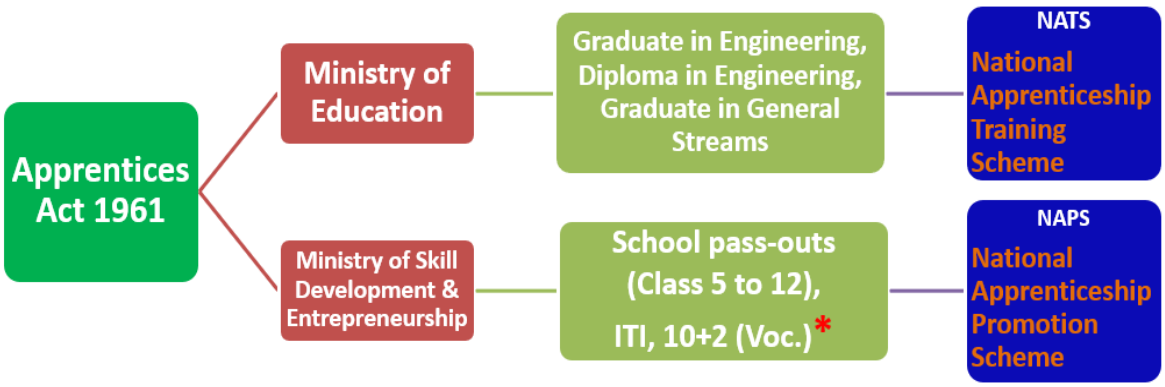

Figure 1: Implementation Schematic of the Apprentices Act 1961

Creation of Regional Boards including BOPT(ER)

In response to the increasing demand for training, the Government of India established four Regional Boards of Apprenticeship/Practical Training in Kolkata, Chennai, Kanpur, and Mumbai in 1968. These boards were designated as 'Autonomous Bodies' and comprised representatives from industrial associations, organizations, state governments, and professional bodies. Their primary objective was to operate independently and provide apprenticeship training to fresh Diploma holders and Graduates in engineering and technology and graduates in general streams in accordance with the provisions of the Apprentices Act, 1961, as amended in 1973 and 2014. These four Regional Boards were entrusted with the responsibility of implementing the National Scheme of Apprenticeship Training within their respective regions, thus serving as authorized agencies for the administration of apprenticeship programs.

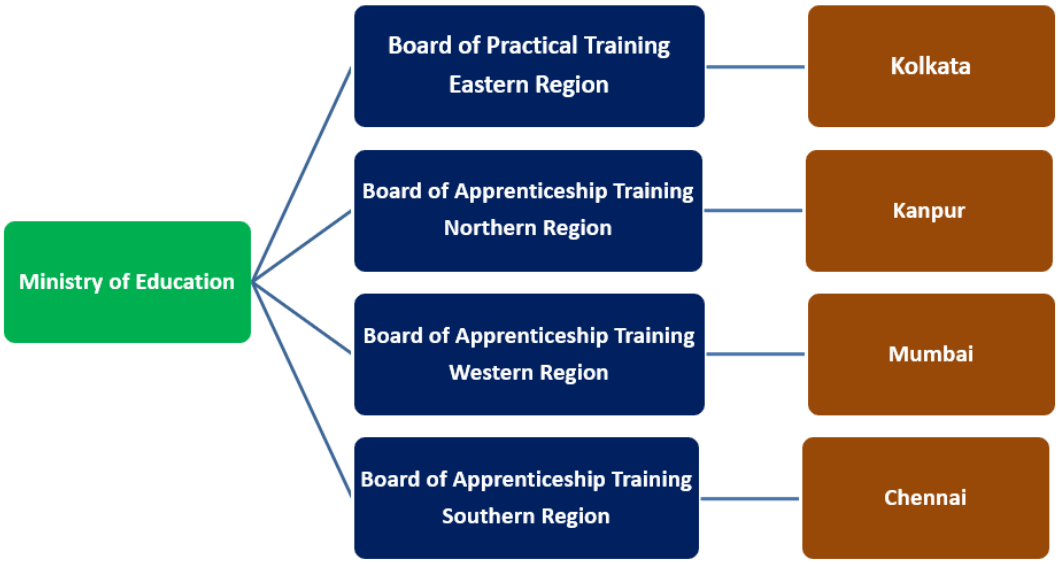

Figure 2: List of Regional Boards under Ministry of Education set up for implementation of Apprentices Act 1961

Jurisdiction of BOPT(ER) - Kolkata:
States:
Orissa, Assam, Bihar, Jharkhand, West Bengal, Manipur, Meghalaya, Mizoram, Nagaland, Arunachal Pradesh, Tripura, Sikkim. **Union Territories:** Andaman & Nicobar Islands.

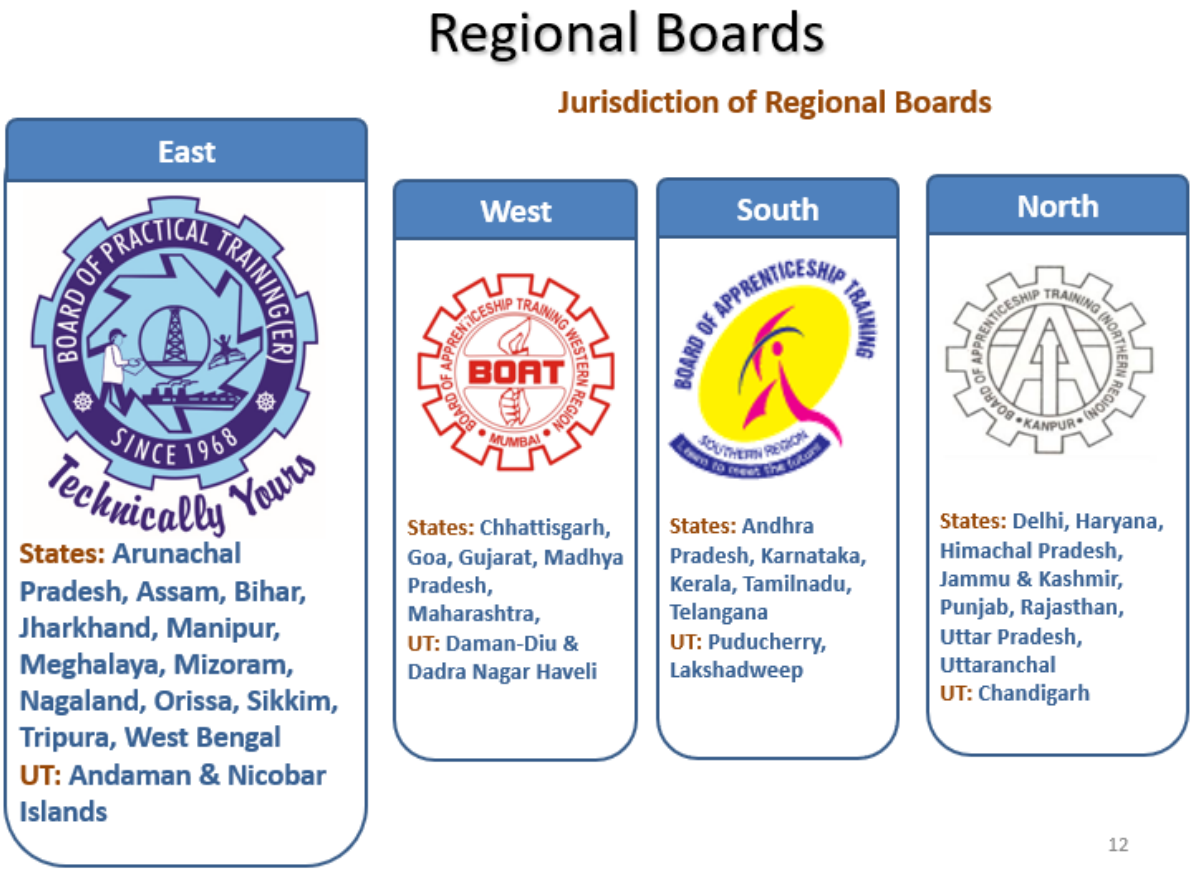

Figure 3: Jurisdiction of Regional Boards
*The logos given above are the sole property of the respective regional boards. They are given here only for the academic purpose.

Objectives:

- To address any gaps in practical experience among fresh graduate engineers, diploma holders, and graduates in general streams pass outs that they may not have acquired during their regular academic courses.
- To foster collaboration between industries and institutions with the aim of enhancing the quality of technical and General education and nurturing a skilled workforce for the industries.
- To secure training facilities in both private and public sector organizations for the students of technical and general institutions.
- To facilitate the selection process for training placements for applicants seeking such opportunities.
- To develop training programs in consultation with trainees, industries, and relevant agencies.
- To disseminate information on various aspects of practical training through lectures, films, and other communication mediums.
- To issue proficiency certificates upon successful completion of training courses.
- To enhance technical competency to improve confidence level of qualified youth.

Evaluation of NATS by reputed agencies:

NATS is beneficial to the establishments, to the people who have undergone apprenticeship specifically in helping recruitment, enhancing employability and skill, and getting trained manpower in particular. This collaborative work has brought out a very encouraging picture about NATS. To have better understanding of the scheme, a broader survey with more resources and time slot may be undertaken.

Evaluation by National Institute of Labour Economics Research & Development (NILERD) (Autonomous body of NITI Aayog:

- 79% of Trainees were employed after Apprenticeship Training.
- 41% of CPSUs, 47% of SPSUs and 56% of private establishments strongly feel that after one year of NATS training and exposure apprentices are fit for absorption.
- 85% apprentices feel that this training helps in bridging the skill gap.
- 69% of the establishments view that apprentices help in meeting the shortage of manpower.
- 71% establishments are giving higher stipend than specified by the government.
- About 87% (181 out of 209) of the surveyed private establishments are absorbing the NATS trainees after completion of their training.
- Direct involvement in the production process gives the trainees an opportunity to mingle with different skilled personnel very closely.

Evaluation by Indian Statistical Institute (ISI), Kolkata

A joint study on NATS between BOPT(ER) and the Indian Statistical Institute (ISI) in Kolkata researched into the effectiveness and repercussions of the National Apprenticeship Training Scheme (NATS) in 2017 [7]. The study garnered responses from a total of 3166 former apprentices. Among these, approximately 74% (2470 individuals) secured their initial employment within one year after completing their apprenticeship, while 17% (536 individuals) found employment within three years.

A significant majority, totalling 94% (2960 respondents), believed that NATS had been instrumental in enhancing their skills, thereby rendering them more employable. Regarding remuneration, around 39% (1220 respondents) obtained employment with salaries ranging from Rs. 20,001/- to Rs. 30,000/-, while approximately 15% (468 respondents) secured positions offering emoluments between Rs. 30,001/- and Rs. 50,000/-.

Furthermore, 43% (1369 respondents) expressed high satisfaction levels with NATS, while 51% (1605 respondents) conveyed satisfaction with the quality of training provided by the program.

Physical Performance of BOPT(ER) Kolkata:

The statistics of engagement of Apprentices and the amount of stipend disbursed between the Financial Years 2012-13 to 2022-23 [8-18] are given below including the percentage increase.

Table 2: Physical Performance of BOPT(ER) Kolkata

Financial Year	Engagement of Apprentices	Percentage increase based on previous year	Percentage increase based on 2012-23
2012-13	10052	--	--
2013-14	10606	5.511341	5.511341
2014-15	11327	6.798039	12.68404
2015-16	15483	36.69109	54.02905
2016-17	22055	42.44655	119.4091
2017-18	20022	-9.21786	99.18424
2018-19	20886	4.315253	107.7795
2019-20	21797	4.361773	116.8424
2020-21	21988	0.876267	118.7425
2021-22	42869	94.96544	326.4723
2022-23	75136	75.26884	647.4731

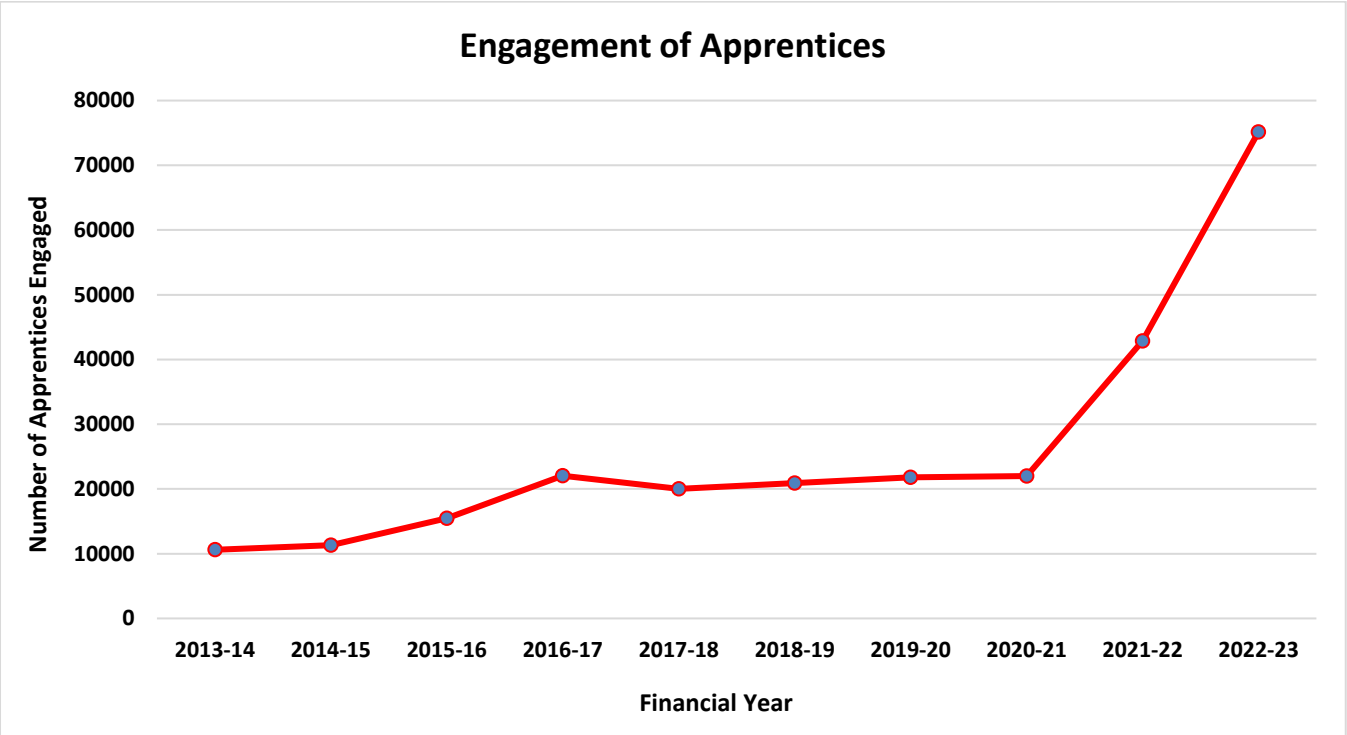

Figure 4: Graphical representation of Physical performance of BOPT(ER)

Table 2 and Figure 4 represents the engagement of apprentices in the jurisdiction of the Board of Practical Training Eastern Region Kolkata over the financial years from 2012-13 to 2022-23. The overall trend shows a clear increase in the number of apprentices engaged over the years. The engagement count has increased steadily from 2012-13 to 2022-23, indicating potential growth and expansion in the activities of the Board of Practical Training. The rate of growth in apprentice engagement seems to accelerate around the financial years 2015-16 and 2022-23. This suggests that there might have been specific initiatives, policy changes, or external factors influencing the recruitment of apprentices during these periods.

Further analysis reveals that not much increase was recorded between 2012-13 to 2014-15. However, a reasonably goo upward trend identified between the years 2014-15 to 2016-17. However, there is a declining trend identified between the FY 2016-17 to 2017-18. This decline is primarily due to transfer of Technician Vocational category Apprentices from Ministry of Education to Ministry of Skill Development. It is also found that BOPT(ER) worked hard and again picked up the upward trend from the year 2017-18. This upward trend again flattened during the years 2019-20 to 2020-21due to the effect of Covid19 virus in the industrial growth of the country there by reducing the engagement in number of industries though there were new

establishments joined hands with BOPT for Apprenticeship Training. During the FY 2020-221 to 2022-23, a steep increase is found in the engagement of the Apprentices as the Ministry of Education permitted BOPT(ER) to engage General Graduates as Graduate Apprentices for the optional trades. Till 2021-22 only Engineering trades were only offered for Engineering Graduates and Diploma holders for Apprenticeship training. The addition of Optional trades for the General Graduates has substantially raised the capacity of BOPT(ER). Further the addition of Third-Party Aggregators (TPA) also played a pivotal role in tapping the service industry mainly for Graduates in General streams. Overall, the trend shows the hard and smart work of the BOPT(ER) officials in tapping new avenues for inclusion in Apprenticeship Training for Optional trades. This is also can be explained that there is a lot of scope for Graduates in General Streams to undergo Apprenticeship Training which bridges the gap between industry and academia. Several factors could also contributed to the increasing trend in apprentices engagement, including: Government initiatives or policies promoting apprenticeship programs, increased demand for skilled labour in certain industries or sectors, outreach and awareness campaigns by the Board of Practical Training, Collaboration with educational institutions and industry partners to promote apprenticeship opportunities, economic conditions influencing employment preferences and opportunities for young professionals. The steady growth in apprentice engagement reflects positively on the efforts of the Board of Practical Training and suggests a healthy demand for apprenticeship programs. Continued expansion and strategic planning can further enhance the effectiveness of these programs in addressing skill gaps and supporting workforce development initiatives. Overall, the data indicates a promising trajectory for apprentice engagement under the purview of the Board of Practical Training Eastern Region Kolkata. Further analysis could involve exploring specific initiatives or interventions that contributed to the observed trends and assessing the impact of apprentice engagement on workforce development and industry growth in the region.

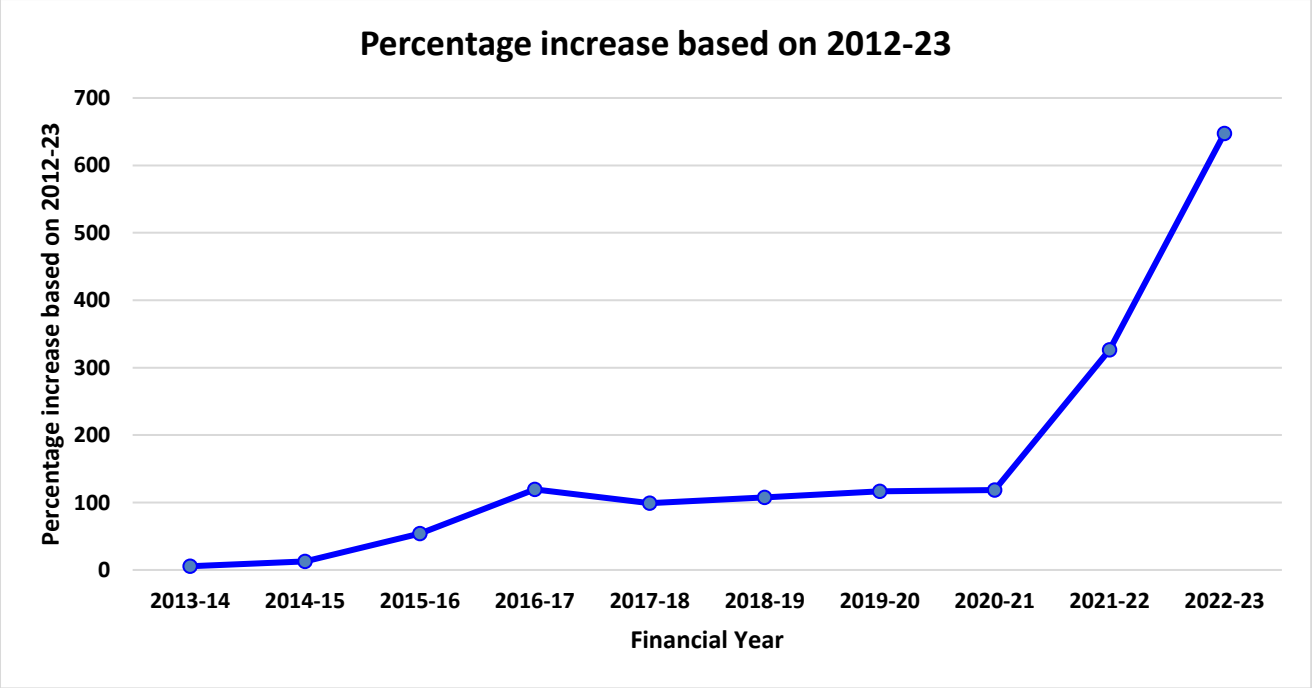

Figure 5: Graphical representation of Physical performance of BOPT(ER) based on Percentage increase in reference to FY 2012-23

A further analysis is done based on the percentage of the growth year to year and is depicted in Figure *5*. The rate of increase is calculated based on the FY 2012-13 performance. There is a clear growth rate has been recorded by BOPT(ER) and recovered very strongly from the Covid19 effect. Though lot of industries who give training to the Apprentices badly affected, the officials of BOPT(ER) commitment in finding new Avenues for Apprenticeship training for aspirants paid of well.

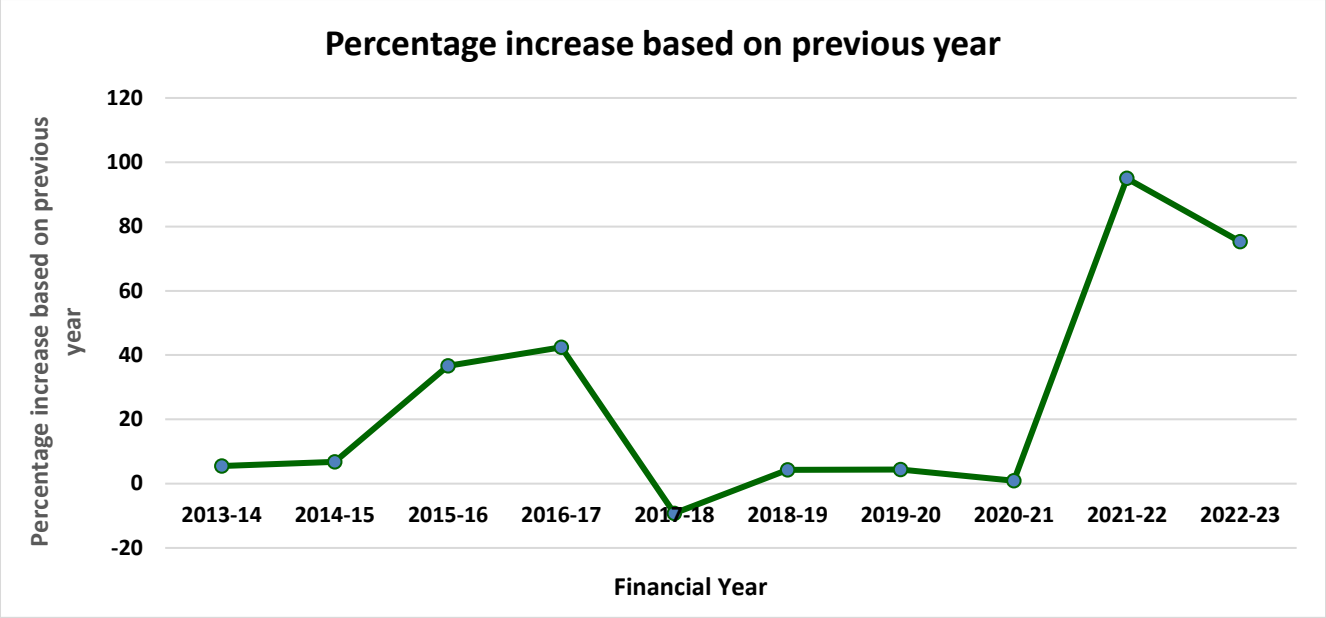

Figure 6: Graphical representation of Percentage increase of Physical performance of BOPT(ER)

A further analysis based on the percentage of the growth year to year is depicted in Figure *6*. The rate of increase is calculated based on previous years performance. This graphical representation clearly identifies the rise and fall of the performance of BOPT. The increasing trend continued up to 2016-17 from 2013-4. The physical performance reached to the negative side in the year 2017-18 when compared to 2016-17. This is mainly because Technician (Vocational) Apprentices have been moved from Ministry of Education to Ministry of skill development. Again, Fall was identified during 2020-21 whereas this time it is due to Covid19 effect. Very fast recovery is recorded by BOPT during 2021-22 from the effect of Covid 19 and including the positive effect of addition of Graduate Apprentices in General streams where there are lot of avenues available for Apprenticeship training for Graduates in General streams.

Conclusions and Future Work

The article examines the performance of the Board of Practical Training Eastern Region, Kolkata. It reveals a growing interest among newcomers in participating in the National Apprenticeship Training Scheme. Moreover, the scheme is shown to enhance employment prospects and contribute to the economic advancement of the nation. According to the NILERD study, apprentices are highly sought after for employment due to their practical training in real-world industry settings. These apprentices acquire technical skills and knowledge during their training, which they apply effectively in their respective fields of work. To enhance this research, it is suggested to consider the financial investment made by the Government of India in implementing the scheme in the Eastern Region. Additionally, extending the study to cover all four regions of the country would allow for a comprehensive analysis of the apprenticeship's impact on the national economy. In conclusion, prioritizing apprenticeship as a right for every youth is deemed an urgent necessity.

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Author Contribution: The authors confirm sole responsibility for the following: study conception and design, data collection and manuscript preparation.

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