

IMPARTING SKILLS FOR INCLUSIVE AND SUSTAINABLE DEVELOPMENT: AN OPEN SCHOOLING PERSPECTIVE

ABSTRACT

Despite the emphatic stress laid on vocational education and training in India, there is still a shortage of skilled workforce to address the mounting needs and demands of the national economy. It is estimated that only 2.2% workforce in India has undergone formal skill training while only 8.0% non-formal training.

National Institute of Open Schooling (NIOS) being a National Board may be the game changer by reaching to the unreached and skilling India by offering demand-driven market-oriented vocational courses. The paper analyzed the data of number of registered candidates for vocational courses of NIOS in past 5 years i.e. 2014-2018. The trend and pattern of enrolment have been discussed based on the characteristics of the students, enrollments, the demands of vocational courses, etc. The probable contributing factors affecting enrollment for skill development courses have also been emphasized qualitatively. It was observed that more female is taking admissions in Home Science and Hospitality sector, whereas more males are joining Health and Paramedical and Computer courses of NIOS. Certificate courses in Community health, Cutting & tailoring, Beauty culture, Early childhood care and education, Basic computing, Computer applications, Electrical technician, Cutting, tailoring & dress making, Homeopathy dispensing, etc. are the most popular vocational courses at NIOS. After completing NIOS vocational courses learners either work independently and become an entrepreneur or join a job, depending upon the course done.

This paper also attempts to provide an overview of the challenges in vocational education and open learning initiatives by the National Institute of Open Schooling (India). The paper made useful suggestions to overcome the challenges and the way ahead to fulfill the National goal of skilling India for inclusive and sustainable development.

Keywords: Skill training, Vocational courses, Inclusive education, Open schooling

INTRODUCTION

India is one of the youngest nations in the world with more than 62% of the population in the working age group (15-59 years) and more than 54% of the total population below 25 years of age (National Policy for Skill Development and Entrepreneurship, 2015). It is estimated that in the next 20 years, the labor force in the industrialized world is expected to decline by 4%, while in India it will increase by 32% (Ganesan, 2017). Therefore, for India, it is also crucial to develop skills from a socio-economic and demographic viewpoint.

However, India presently faces a dual challenge of severe lack of highly-trained, quality workforce, as well as non-employability of large sections of the educated workforce that possess little or no job skills. It is estimated that only 2.0% workforce in India has undergone formal skill training while only 8.0% non-formal training (Kumar, 2018). This implies that very few new entrants to the workforce have any marketable skills as compared to the developed economies such as Korea (96%), Germany (75%), Japan (80%) and United Kingdom (68%) (Saini, 2015). To enable employment ready workforce in the future, the youth need to be equipped with the necessary skills and education. Therefore, to empower the working population and other citizens of the country, it is essential to emphasize skill development through strengthening formal or informal education system (Skill Power 2017). It has been noted that the vocational education plays an essential role in integrating the skill set with learning ability through hands-on experience.

In India, education and training on vocational courses are delivered through a formal system of schooling and also through open schooling. The open school system has been brought to the attention of planners as an efficient alternative modality for education/training. Considering the fact of the diverse formal education system, the role of “National Institute of Open Schooling” (NIOS) and Vocational Education has evolved beyond that of traditional Skill Development Programmes to self-employment while pursuing careers. The National Institute of Open Schooling has risen to the occasion to respond to certain educational challenges; particularly the challenge of "reaching the unreached," with special concern for girls and women, rural youth, SC and ST, differently abled persons and other disadvantaged sections of the society (Annual Report, NIOS, 2017-18).

RESEARCH QUESTIONS

Specifically, this study was undertaken to find answers to the following questions:

1. What is the enrolment trend of vocational courses offered by NIOS in last five year and critically analyze information relevant to these courses & students.
2. What are the components considered by NIOS to make inclusive vocational education system?
3. What are different challenges & opportunities for an inclusive & sustainable skill development?

OBJECTIVES

Based on the research questions following are the objectives of the study:

1. To study the enrolment trends in various vocational courses of NIOS in last five years (2014 - 2018).
2. To analyse data critically gender wise, age wise, caste wise, region wise.
3. To study challenges in vocational education and training in Open Schooling.
4. To identify options to overcome challenges for an inclusive & sustainable skill development.

METHODOLOGY

The study is mainly descriptive and statistical. It is based on primary and secondary data and information which is collected from the concerned sources as per the need of the research. The relevant books, documents of various ministries/departments and organizations, articles, papers, and websites are used in this study.

FINDINGS / RESULTS

India's transition to one of the largest and fastest growing global economies during the last decade has been a remarkable phenomenon. To sustain its growth trajectory, an efficient and continuous system of skill development for its workforce is critically imperative for India. Therefore, this section portrays the current skill capacity of India; the major challenges in the successful implementation of skill development initiatives along with their way outs or suggestions in open schooling system /National Institute of Open Schooling.

Present scenario: NIOS perspective

NIOS is imparting skills to its learners using a blended learning approach of both open distance learning methodologies and hands-on training through a network of around 1500 Accredited Vocational Institutes (AVIs) (Prospectus, Vocational Educational Courses, 2019). In this endeavor, existing institutions like ITIs, Jan Shikshan Sansthan, Krishi Vigyan Kendras, Schools, Colleges, Institutes of Education & Training, Universities, Hospitals, Paramedical Training Centers, Hotels, NGOs and several other voluntary agencies are our partners.

Vocational courses of NIOS: Catalyst in skill development

Major objective of the Vocational Education Programme of NIOS is to meet the need for skilled and middle-level manpower for the growing sectors of the economy, both organized and unorganized. Presently, NIOS is offering 100 odd need-based, demand driven vocational courses in major areas of Agriculture and Animal Husbandry, Business and Commerce, Engineering & Technology, Health & Paramedical, Home Science and Hospitality Management, Computer and IT related sector and various life enrichment courses for different education levels. The range of Vocational Education courses has been expanding over the years, depending upon the need of the learners as well as market demand. NIOS provides flexibilities in studies such as round the year admission, choice of courses, examination as per learner's convenience, etc.

Analysis of enrollment to vocational courses of NIOS: Five-year journey (2014-2019)

1. Gender wise enrolment:

The enrolment trend of learners enrolled in NIOS Vocational Education Courses shows variation with a huge jump in year 2018. However, there is variation in the percentage of males and females taking admission in Vocational Education Courses (Table 1).

Table 1: Total & gender wise vocational admission, 2014-18:

Gender	2014		2015		2016		2017		2018	
	Total	%	Total	%	Total	%	Total	%	Total	%
Male	11840	36.46	11299	36.00	30951	60.05	9936	37	37458	62.43
Female	20632	63.54	19691	64.00	20585	39.95	17201	63	22549	37.57
Total	32472	100.00	30990	100.00	51536	100	27137	100	60007	100

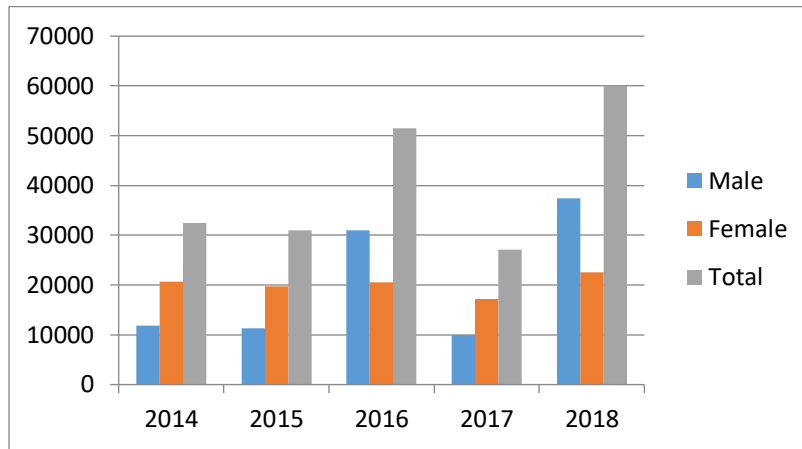


Fig.1: Gender wise vocational admission, 2014-18

The enrolment data in Table 1 reveal that in the year 2014, 2015 and 2017, more numbers of females took admissions in the vocational courses than the males. However, more males joined NIOS in 2016 and 2018. This is because of more enrollments in few sectors in that particular year. It is also observed that more female is taking admissions in Home Science and Hospitality sector, whereas more males are joining Health and Paramedical and Computer courses of NIOS.

2. Age wise distribution: It is also very interesting that the maximum number of learners taking admission in Vocational Education Courses of NIOS is in the age group of 14-20 years followed by 21-25 years (Table 2). Hence, we have a great opportunity to meet the future demands of the world and can become the worldwide sourcing hub for a skilled workforce. However, more female of the age group 14-20 years is benefitting by NIOS Vocational courses followed by age group of 21-25 and 26-30 respectively. This means young girls are joining NIOS for skill development or skill up-gradation.

Table 2: Age-wise vocational admission, 2014-18

Age Range	2014			2015			2016			2017			2018		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
14-20	4839	12961	17800	3986	12339	16325	3458	11317	14775	3215	7542	10757	5098	8277	13375
21-25	3225	3868	7093	3379	3785	7164	4641	4112	8753	2208	5357	7565	9662	5930	15592
26-30	1391	1628	3019	1507	1556	3063	4279	1997	6276	1668	1757	3425	7377	3670	11047
31-35	802	1090	1892	898	1059	1957	4919	1341	6260	1055	1114	2169	6282	2582	8864

36-40	598	551	1149	596	572	1168	3889	725	4614	803	771	1574	4198	1116	5314
41-45	356	212	568	447	205	652	4399	377	4776	557	388	945	3646	679	4325
46-50	209	90	299	226	74	300	2981	149	3130	400	246	646	1133	255	1388
Above 50	420	232	652	260	101	361	2385	567	2952	30	26	56	62	40	102
Total	11840	20632	32472	11299	19691	30990	30951	20585	51536	9936	17201	27137	37458	22549	60007

3. Category wise enrolment: It was observed that a remarkable number of under privileged learners were enrolled in NIOS Vocational Education Courses (Table 3). For children with specific needs, NIOS has Special Accredited Institutions for Education of the Disadvantaged (SAIED) Centers where education is also twined with the option of vocational training. Using the philosophy of giving equal opportunities to the integrated group of children with and without disability, one can combat the discriminatory attitudes effectively, creating supporting communities, building an inclusive society and achieving education for all.

Though a large number of learners from reserved category and disadvantaged sections avail the benefit of the Vocational Education Programme of NIOS, there is a need of improving vocational training programs and employment opportunities for people with disability for enhancing the quality of life for an individual with a disability and their families.

Table 3: Category wise vocational admission, 2014-18

Gender	2014							2015						
	Gen.	SC	ST	Ex-Service	Differently abled	OBC	Total	Gen.	SC	ST	Ex-Service	Differently abled	OBC	Total
Male	11178	203	224	4	4	227	11840	7373	981	572	27	70	2276	11299
Female	20119	244	155	1	2	111	20632	13153	2343	2009	70	43	2073	19691
Total	31297	447	379	5	6	338	32472	20526	3324	2581	97	113	4349	30990

Gender	2016							2017						
	Gen.	SC	ST	Ex-Service	Differently abled	OBC	Total	Gen.	SC	ST	Ex-Service	Differently abled	OBC	Total
Male	11981	2864	504	78	325	15199	30951	6849	753	239	11	239	1845	9936
Female	10114	3669	2447	237	88	4030	20585	8517	3731	1782	19	750	2402	17201
Total	22095	6533	2951	315	413	19229	51536	15366	4484	2021	30	989	4247	27137

Gender	2018						
	Gen.	SC	ST	Ex-Service	Differently abled	OBC	Total
Male	12635	3520	1408	244	1275	18376	37458
Female	13255	2324	1367	571	1003	4029	22549
Total	25890	5844	2775	815	2278	22405	60007

It is also observed that the persons with multiple disabilities are enrolled in courses like Certificate in Basic Computing, Beauty Culture, Catering Management, Computer Applications, ECCE, Laundry Services, House Keeping, Plumbing, Yog, Cutting, Tailoring and Dress making.

4. Region wise enrolment trend: NIOS is functioning through 23 Regional Centres, two Sub-regional centers, two NIOS cells situated across the country covering almost all states. The region wise enrolment trend in Table 4 shows that the region Patna enrolled a maximum number of learners in 2016 and 2108. However, region Jaipur has enrolled a significant and consistent number of learners in the study period followed by Delhi, Chandigarh, Kochi and Allahabad. In Patna region, learners showed interest in Certificate in Community Health program of NIOS. However, a large number of young girls from Kasturba Gandhi Balika Vidyalaya in Rajasthan are enrolling in Cutting and tailoring and Beauty culture courses of NIOS. This implies that enrolment is dependent upon the learner's choice of a particular course.

Table 4: Region-wise vocational admission, 2014-18

Region	2014	2015	2016	2017	2018
Hyderabad	1	0	1	18	174
Pune	411	282	550	424	301
Kolkata	868	893	920	688	1007
Guwahati	174	278	232	215	458
Chandigarh	3818	2891	2589	2696	2534
Kochi	2945	2109	2653	1997	1973
Delhi	5189	5059	4777	4339	5018
NIOS-HQ	0	6	0	0	41
Jaipur	8513	9128	9024	8492	8873
Patna	849	823	22655	515	30376
Allahabad	1974	1811	1516	1691	1889
Bhopal	1949	2508	1719	1573	1253
Dehradun	1112	826	640	774	925
Bhubneshwar	154	121	88	52	64
Visakhapatnam	230	50	44	36	19
Bengaluru	427	463	401	316	544
Gandhi Nagar	755	747	536	630	849
Raipur	610	486	482	325	716
Ranchi	352	601	453	437	785
Chennai	1089	887	1055	866	1090
Dharamshala	1052	1021	1201	1053	1118
Total	32472	30990	51536	27137	60007

5. Language-wise distribution pattern: NIOS offers vocational courses in Hindi and English medium. However, Hindi is the preferred language over English for their study irrespective of gender. The reason for this may be the maximum enrolment in Hindi speaking regions. More than 50% of learners have chosen Hindi as their medium of study. Many courses, as mentioned in table 5, are popular among learners from the Hindi belt.

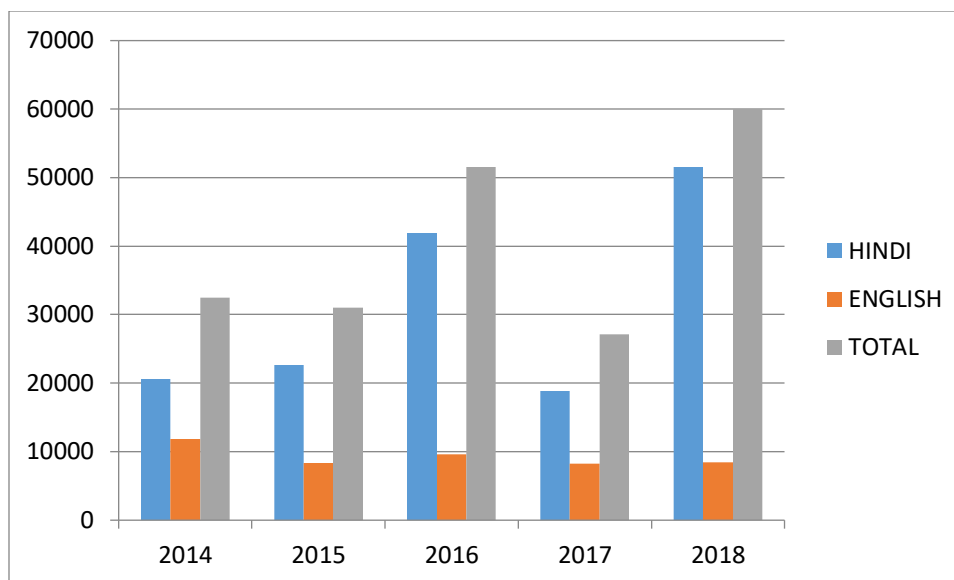


Fig: 2 Medium wise vocational admissions, 2014-18

5. Trade wise vocational admission: The NIOS Vocational courses range from Certificate to Diploma level of 6 months to 2 years duration. All the courses have different eligibility criteria and fee structure. There are certain vocational education courses which are very popular. The Certificate course in Community health, Cutting & tailoring, Beauty culture, Early childhood Care and education, Basic Computing, Computer applications, Electrical technician, Cutting, tailoring & dress making, Homeopathy dispensing, etc. are the most popular courses among learners across the country (Table 5).

Table 5: Trade wise vocational admission in a few popular courses, 2014-18

S. No.	Trade	2014	2015	2016	2017	2018
1.	Certificate in Community Health	3005	3969	25930	4092	34403
2.	Certificate in Cutting & Tailoring	5506	5396	4905	4670	4525
3.	Certificate in Beauty Culture	5392	5080	4906	4188	4426
4.	Certificate in Early Childhood Care and Education	2329	2162	2265	2395	2381
5.	Certificate in Yog	355	515	839	1190	1323
6.	Certificate in Basic Computing	3357	1810	1616	1460	1251
7.	Certificate in Computer Applications	1522	1623	1711	1159	1048
8.	Certificate in Cutting, Tailoring & Dress Making	1550	1560	1422	942	990
9.	Certificate in Electrical Technician	1649	1463	1119	822	725
10.	Diploma in Medical Laboratory Technician	267	317	387	395	525

After successful completion of NIOS vocational courses these learners work independently as an entrepreneur or join a job, depending on the course done. For example, after completing Agriculture courses learner mostly work as entrepreneur. However, after completing a computer

course, a learner may work as an Office Assistant/ Computer Programmer/ DTP Operator/ Web developer/ IT help desk attendant etc. Similarly, after completing a Health related course, a learner may work as a Lab technician/ Yoga teacher/ Community health worker/ Panchkarma assistant/ Homeopathic dispenser/ Ayurveda assistant. Also, after passing a Home science and hospitality related course, a learner may work as a Beautician/ Tailor/ Caterer/ Front Office Assistant/ Chef, etc. Thus, depending on the course done, learners certainly get opportunity for earning their livelihood. Though, NIOS does not keep database of employment of learners, but the NIOS vocational courses are functional and useful in daily life and also set the pathway to the world of work.

Challenges in Imparting Skills for Inclusive and Sustainable Development

Despite the immense opportunities in properly planned NIOS's vocational training system, it faces certain challenges about expansion, equity, access, and cost effectiveness. Few challenges are listed as follows:

- Low awareness about NIOS vocational courses, especially in rural areas.
- Target community of NIOS vocational courses belongs to weaker sections of the society that is lacking in time and money both.
- The low inclination of students towards vocational courses.
- Non recognition of vocational courses by the state government.
- Non availability of National Skills Qualifications Framework (NSQF) compliant courses.
- Competition with different schemes of government that provides free skill training, like Pradhan Mantri Kaushal Vikas Yojana (PMKVY).
- Monitoring of Practical Contact Programme/training sessions for imparting quality training.

Opportunities to overcome challenges in imparting vocational education and training in open schooling

Under the overall ambit of making vocational education reach the unreached and to address these challenges and encourage new ventures following specific measures were adopted, which will equip and facilitate the creation of technically qualified entrepreneurs:

1. **NSQF compliant courses-** NIOS is in the process to develop and revise courses as per NSQF guidelines. National Skill Qualification Committee has also approved the non-statutory awarding status to NIOS.
2. **Collaborations/ Industry linkages-** NIOS is offering few courses in collaboration with industries/ government institutions like India Tourism Development Corporation, Indian Medical Association, Insurance Regulatory, and Development Authority, St. Gobain, etc. These industries facilitate placements of trainees enrolled in the course after successful completion of the course.
3. **Project-based training programs**
NIOS is skilling large sections of society through different projects. Few are -
 - NIOS has been entrusted with the task of training 4 lakh untrained Health Workers in the state of Bihar with the Ministry of Health, Govt. of Bihar.

Accordingly, NIOS developed self-learning material for the learners, and at present training is being conducted at 238 training centers.

- To empower the weavers and enable them and their families for career progression, NIOS has entered into a MoU with Ministry of Textiles (MoT) to impart education and training to the Handloom Weavers and their children through open schooling. Secondary level course in Handloom Weaving is meant to allow the handloom weavers to earn a Secondary and Vocational Certificate, including skills such as Entrepreneurship and Soft Skills.
 - NIOS and MoT entered into a MoU to train Handicraft Artisans belonging to the Scheduled Caste category. The Artisans would be trained on Indian Embroidery and other aspects including Functional Hindi, English, and Entrepreneurship.
4. **Course fee revision-** The course fees of NIOS Vocational courses have not been increased for the past ten years. Due to low course fees, training centers were uninterested in running our courses because they found it uneconomical. Therefore, the course fee was revised, wherein the main components were a recurring expenditure, one-time cost for course development, and cumulative inflation for the last five years. This initiative of NIOS may encourage more training centers to join hands with NIOS and more enrolments in the coming years.
 5. **Linking vocational courses with Academics and Vocational courses-** NIOS has introduced Vocational Stream at Secondary and Senior Secondary Level whereby concentrated efforts will be put on skill training in the same or related areas combining it with two academic subjects to earn a Secondary or Senior Secondary certificate along with individual certificates for each vocational course. Initially, the Vocational Stream is available in the areas of Agriculture and Animal Husbandry, Beauty and Wellness at Secondary and Computer and IT and Ayurveda and Yoga areas at Senior Secondary level. This scheme may provide lateral as well as horizontal mobility of learner as per their inclination.
 6. **Learning outcomes based training schedule for quality training-** To facilitate the Learning Outcomes based approach as well as to follow NSQF guidelines; NIOS has prepared uniform training schedules for each vocational course. These training schedules have been prepared day wise and give the breakup of theory and practical lessons along with their learning outcomes and instructions to the instructor. It is envisaged that training schedules will help to bring in the uniformity of training and standardized learning outcomes at all the AVIs spread throughout India. This is one of the major steps of NIOS for imparting quality training at AVIs.
 7. **Audio and video support-** NIOS produces several audio and video programs to supplement the learner's study. Besides daily telecast of live web radio program through Mukta Vidya Vani, live TV broadcast of vocational programs is also held at VAGDA Channel (DTH 32). These Personal Contact Programs are based on different NIOS's programmes and are meant for interaction with learners and all stakeholders.

8. **Online courses through SWAYAM-** SWAYAM MOOCs (Massive Online Open Courses) platform is the online e-learning platform designed by Govt. of India. NIOS is offering 6 Vocational courses through MOOCs platform; namely Beauty Therapy, Panchkarma Assistant, Bee Keeping, Yoga Teacher Training Programme, Insurance Services, and CRM Domestic Voice. These courses can be accessed free of cost by the learners. Considerable enrolments are observed in these online MOOCs courses.

CONCLUSION

As per Census, 2011, 68% of India lives in rural areas. Therefore, in the overall population, the number of disabled is proportionately higher in rural areas, accentuated by general poverty considerations and poor access to health services. The rural disabled are significantly disconnected from skills and markets. Hence, tremendous opportunity awaits NIOS for developing entrepreneurship skills in our rural youth and makes them employed. The enrolment in vocational courses showed enormous increment in 2016 and 2018. It also depicted that learners have sector-specific choices in a particular region. Keeping in view the goal of skilling 109.73 million people by 2022, NIOS has adopted different mechanisms to improve its enrolments and contribute in Skill India Mission. It is suggested that sector specific skill development advocacy centric to target group such as dropout learners, disadvantaged group, girls, etc. using print & electronic media should be done. The challenges of Recognition, NSQF compliance, Low retention, Quality training, competition with Government schemes should be logically overcome with well-defined framework & Implementation strategies such as project mode pilots; Industry oriented collaborative courses, Monitoring & feedback, Robust placement service, Short term courses, etc. The significant steps being taken to promote vocational education and training are a beginning. It is needed to intensify efforts in all sectors involving the Government of India, National Skill Development Council, National Skill Development Agency, the corporate sector, educational institutions, the media, the community and society at large. Also, to increase the participation of girls and other special category children, specific interventions are required. There is a need for bridging gender, social, and minorities gaps in society. The achievements and advancements, however small, give us the strength to look forward and rededicate ourselves to the cause of "reaching the unreachable."

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