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Centre for Research in Schemes and Policies

National Initiative on Skill Integrated Higher Education (NISHE)

Implementation of Apprenticeship Embedded Degree Programs (AEDPs) in Andhra Pradesh from AY 2024-25

1. Introduction

1.1 India has been witnessing a rapid economic growth in a multi-sectoral pattern across industry and service sectors. While the growth has multiplied and diversified exponentially, it is the employment aspect that has not kept pace with the growth momentum. Employment is the significant outcome for the bulk of the college-going youth. However, the critical component of employability determines employment prospectus and this is an area of concern, more so for the 43,000 Conventional Degree Colleges in the country and within them, the Government Degree Colleges (GDCs).

1.2 The main reason why 55 lakh students out of the annual 1 lakh non-professional degree pass outs in India remain unemployed & unemployable is that industry-demanded skill-sets are not embedded in the college curricula. There is a dire need to transform the curricula of B.A., B.Sc. and B.Com. through the introduction of new and industry-aligned courses with hands-on work exposure integrated into the curriculum. This work exposure should be in the form of apprenticeship during the period of learning. A transformatory approach of this nature would equip students with professional abilities and make them industry-ready.

1.3 Past efforts have been undertaken in the states of Telangana, Andhra Pradesh, Uttar Pradesh and Himachal Pradesh, and as of now more than 50 colleges mentored by the Centre for Research in Schemes and Policies (CRISP) are implementing Apprenticeship Embedded Degree Programmes (AEDPs). The Logistics, Retail, and Tourism & Hospitality Sector Skill Councils (SSCs) are additionally implementing such programmes in a combined set of about 100 more colleges. Apprenticeship linkage has been successful in all colleges. **In Andhra Pradesh, the implementation of AEDPs was piloted in AY 2018-19 in 04 GDCs. The pilot was successful and all the students completed their apprenticeships and got placed. However, the phenomenon hasn't been spread to other colleges in the state. There is a need and opportunity to expand the implementation of AEDPs in the state from the upcoming academic year.**

2. State Overview

2.1. Andhra Pradesh, set for significant economic growth, is driven by a vision to become the best state by 2029, ultimately aiming to be the most preferred global investment destination by 2050. The state presents to be a significant reservoir of human capital, with about 70% of the population of Andhra Pradesh falling within the working age group of 15-59 years. The state holds a demographic advantage that has immense potential to fuel its economic progress.

2.2. The state's strategic location grants it access to crucial markets, positioning it ideally in the India's economic landscape. Andhra Pradesh shares borders with Telangana, Tamil Nadu, Karnataka, and Odisha, alongside a coastline along the Bay of Bengal, which makes the state a haven for trade and commerce. This geographical advantage facilities seamless connectivity between the state and its neighbouring regions, contributing to its economic growth.

2.3. Andhra Pradesh's economy heavily relies on its agriculture, industry, and tourism sectors, which could greatly benefit from a skilled workforce. Additionally, the state has witnessed significant growth in various sectors like Energy and Logistics offering promising avenues for substantial employment opportunities. Visakhapatnam, Vijayawada, and Tirupati are key hubs likely to offer opportunities for skilled workers across multiple sectors.

2.4. Key Sectors in Andhra Pradesh:

S No.	Sector	Key Activities	Major Industrial Hubs
1	Primary (Agriculture and Allied)	• **Rice** is the major crop and staple food of the state and contributing about 80% to 85% of the total food-grain production of the state. • Other important crops are **Jowar, Bajra, Maize, Ragi, Small Millets, Pulses, Castor, Tobacco, Cotton Sugarcane, Groundnut and Banana.** • The state accounts for about 55% of the country's entire production of **castor** and 94% of **Virginia tobacco.** • Important forests products are **teak, eucalyptus, cashew, casuarina, bamboo, soft wood,** etc.	State-wide

2	Secondary (Manufacturing)	• **Machine tools, synthetic drugs, pharmaceuticals, heavy electrical machinery, fertilizers** • Electronic equipment, aeronautical parts, cement, chemicals, asbestos, glass, watches • Accounts for 93% of India's **barite production**, sixth in **manganese ore production** • - Significant production of **mica, limestone, copper ore, bauxite, iron ore, lead-zinc, tungsten,** etc.	**Visakhapatnam** shipbuilding industry is prominent.
3	Tertiary (Services)	• **Irrigation projects**: Nagarjuna Sagar, Prakasam Barrage, Sir Arthur Cotton Barrage, etc. • **Power projects**: Nagarjuna Sagar, Srisailam, Upper Sileru, Tungabhadra, thermal power plants, etc. • **Transport**: Aviation (Tirupati, Vijayawada, Visakhapatnam), Ports (Visakhapatnam, Kakinada, etc.) • **Tourism**: Visakhapatnam, Tirupati, etc. • Other sectors: **Education, Health, Telecommunication**	Tirupati, Visakhapatnam, Vijayawada, Kakinada.

2.5. The employment landscape in Andhra Pradesh presents significant challenges, particularly in the informal sector, where a large portion of the workforce remains unskilled. Even in the formal sector, there is a significant gap between the skilled and unskilled population, which affects the overall employment and economic growth.

2.6. To address these challenges, it is imperative to implement strategies focused on upskilling the state's workforce based on the specific requirements of Andhra Pradesh's industries. By offering targeted training and development programs aligned with local industrial needs, Andhra Pradesh can ensure the availability of an industry-ready workforce capable of meeting the demands of the job market.

3. Industry Overview

3.1. The state is on a path of growth which will be an opportunity in terms of generation of skilled manpower, it is a necessity for those who are seeking employment in the new generation sectors. With proper skill training it can be expected that it will result in realignment of workforce distribution in the workforce.

3.2. According to the National Skill Development Report 2021-2022, the state has an immediate need of professionals in the following sectors. The table below details the requirement in the year 2021-2022 in the following sectors:

S.No.	Sector	Required Manpower
1	Education and Training	3,80,800
2	Banking and Financial Services	9,64,300
3	Communication	6,39,700
4	Hospitality	3,30,900
5	Retail	1,783,700
6	Transportations and Logistics	9,62,100
7	Healthcare	1,87,800
8	IT & ITeS	1,31,700
9	Construction	11,35,000
10	Manufacturing of Electrical Products	9,500
11	Textiles	74,800
12	Auto and Auto Components	24,900
13	Mineral Processing	50,000
14	Construction Based Material	28,300
15	Chemical & Chemical Products	90,500
16	Paper & Paper Products	12,900
17	Fabrication	21,500
18	Food Processing	170,600
19	Rubber and plastics products	26,800

20	Pharma & Medicinal Products	7,600
21	Agriculture & Allied Activities	782,000

4. Approach in Andhra Pradesh

4.1. Andhra Pradesh is a pioneer in initiating and implementing the reforms in Higher Education space. Andhra Pradesh is the first state to implement NEP 2020, introduce 4-year degree program, initiate 10-month mandatory internship including 2-month Community Service Project (CSP), launch a robust Learning Management System (LMS) that promotes virtual learning, tie up with EdTech organizations to provide quality e-content, etc.

4.2. Even though many reforms were undertaken by the state government, the problem of employability persists among the students from non-professional degree colleges, mostly from the GDCS in the state. Out of the 2602 colleges in Andhra Pradesh, approximately 1800 primarily offer general degree programs. These General Degree Colleges don't equip students with the necessary skill sets demanded by the industry, highlighting the urgent need to embed practical skills into their curriculum. Hands-on work experience provided during these degree courses in the form of apprenticeships will significantly enhance the employability of these students.

4.3. Andhra Pradesh is a growing state and there is a tremendous potential across sectors in terms of generation of skilled manpower. Implementing Apprenticeship Embedded Degree Programs (AEDPs) across these sectors will not only enrich students' educational experience but also directly address the need for skilled manpower, fostering sustained economic growth. These programs offer hands-on work experience during degree courses, aligning education with industry requirements and enhancing students' employability.

Hence, as a policy & implementation objective, about 84 colleges in the state with a rational district-wise spread can be identified for a cohesive effort where every identified college offers skill-embedded degree programs. The programs would be degree courses integrated with industry demanded skills woven into the curriculum with apprenticeship/internship linkage as per the UGC stipulated credit structure and guidelines. Alignment of the colleges with industry would establish a relationship where dynamic changes in curriculum at pace with industry changes are affected, with the entire skilling component being imparted in accordance with the

National Skill Qualification Framework (NSQF), regulated by the National Council for Vocational Education and Training (NCVET) under the umbrella of the Ministry of Skill Development and Entrepreneurship (MoSDE). For the education system in India, especially colleges, the most direct, sustainable and credible industry-connect will come from the SSCs, whose mandate is to provide skilled work force to the industry group they represent. Cutting edge training is facilitated by the SSCs through Qualification Packages (QPs) designed based on National Occupancy Standards (NOS). Although there is an SSC for every industry vertical in the country, in this exercise, we are considering 10-11 SSCs, active in the college system.

4.4 As per extant UGC guidelines and the flexibility provided therein, skill integration into education can take place through:

(i) Full-fledged degree programs
(ii) 35-40 credit elective courses
(iii) 1-year diploma courses

Examples of full-fledged degree programs would be BBA (Logistics), BBA (Retail), B.Sc. (Life Sciences), BBA (Healthcare), B.Sc. (Tourism & Hospitality) etc. Industry Apprenticeship would be an integral part of such courses.

4.5 35-40 credit elective courses during second/third years in sectors like Green Jobs, Electronics, Media & Entertainment, Logistics, Agriculture etc., are also possible. On-the-Job Training (OJT) would be part of such courses.

5. Steps and Timelines

The following is the suggested timeline for starting of AEDPs from AY 2024-25. The State Government may consider and approve it so that all participating agencies follow it.

S.No.	Activity	Date for Completion	To be done by
1	Communication of Selected Colleges & AEDPs to CRISP	12.03.2024	State Govt.
2	Meeting with Govt., VCs, Colleges & SSCs	15.03.2024	CRISP & State Govt.
3	Signing of MoU between CRISP & State Govt.	15.03.2024	CRISP & State Govt.

4	Curriculum Finalisation by CRISP and UGC Officers	15.03.2024	CRISP
5	Communication of Approved/ Scrutinized Curriculum to Universities	16.03.2024	CRISP
6	SSCs signing individual MoUs with Affiliating Universities or Autonomous Colleges	15.04.2024	State Govt., SSCs & Colleges
7	Approval by Universities BoS and Academic Council to selected colleges	30.04.2024	State Govt./Universities
8	Training of Teachers	01 to 31 May	SSCs / CRISP
9	Identification of Industries/Establishments for providing Apprenticeship	31.05.2024	SSCs
10	Classrooms & Labs Preparation	15 April to 15 June	Colleges
11	Information, Education & Communication (IEC) Programs (Coinciding with Admission Process)	15 June to 15 July	State Govt.
12	Preparation of Admissions Portal	01 to 15 July	State Govt.
13	Start of Classes	01.08.2024	Colleges

6. NISHE: Proposed Numbers for AY 2024-25

The following table highlights the proposed sector-wise AEDPs that CRISP envisages for the upcoming AY. The college numbers (with a class strength of 60 students each) have been projected after discussions with the SSCs on the estimated apprenticeship potential:

S.No.	Sector Skill Council (SSC)	Colleges for AY 2024-25	Students for AY 2024-25 (No of Colleges* 60 Students per batch)	Students for next 03 AYs (No of Colleges*60 Students per batch*3 years)
1	IT & ITeS	20	1200	3600
2	Banking, Financial Services & Insurance (BFSI)	10	600	1800
3	Logistics	10	600	1800
4	Tourism & Hospitality	7	420	1260
5	Healthcare	10	600	1800
6	Retail	10	600	1800
7	Life Sciences	10	600	1800
8	Media & Entertainment	5	300	900
9	Fashion Design	2	120	360
10	Electronics	0	0	0
11	Capital Goods	0	0	0
Total		**84**	**5,040**	**15,120**

7. Roles of Different Stakeholders

The exercise of introducing AEDPs in Andhra Pradesh's colleges needs to commence from the academic year 2024-25 for the benefit of employability of students and enabling them to capture job opportunities across the state and country. In this exercise, the roles of different entities are very clear and laid out as follows:

7.1. Sector Skill Councils (SSCs)

i. The chief role of the SSCs is to bring industry standards into the skill component of the curricula, set occupational standards, provide course curriculum & Qualification Packages (QPs) for training, tie-up apprenticeship and carry out assessment & certification of students. The presence of the top companies of that sector in the Governing Body of each SSC provides a direct industry connect which is leveraged and utilized for demand-based skilling, apprenticeship, and employment. They are regulated by MoSDE through the National Skill Development Corporation (NSDC).

ii. SSCs will provide customization of the curriculum to evolve a basic degree or elective or diploma to cater to college-specific requirements.

iii. All SSCs have the capacity for carrying out Training of Trainers (TOTs) or Teachers' Training which would be the first exercise in Andhra Pradesh after course choice by colleges and before launching the courses. The SSCs would help to select trainers or assign their training partners to a college only in case no suitable faculty is available for training. The fee chargeable by the SSCs for Training of Teachers is as per the prescribed common norms and is usually added to the annual fees of the student or met by the institution.

7.2. Colleges/Universities

i. The chosen colleges would have the responsibility of providing classroom space for the new programs as well as Wi-Fi connectivity. Certain sectors would require a laboratory facility for which the college may have to carry out some site preparation & purchase equipment so that the SSC can function. This will be a cost to the College/University undertaking certain courses like Electronics, Capital Goods, Apparel etc. They would also need to identify some of their own faculty for a Teachers' Training exercise. During the annual admission process, college principals would need to impart adequate publicity to the new skill-embedded courses on offer, highlighting their job relevance, apprenticeship & employment potential and prevent any awareness gap. SSCs will participate on their own whenever required by the State Government in awareness generation activities, so that

students across the state are well informed about the prospects of various skill-embedded courses. This can be carried out during the pre-admission period leading to counselling and course choice.

ii. College Principals would need to adopt a progressive and dynamic approach to the education system in their respective colleges and also motivate suitable faculty in their colleges to re-orient their minds & teaching methods to such skill-embedded courses which are very different from usual pedagogy. Principals must also be open to hiring contract faculty or trainers for the courses they may opt for in this sphere.

iii. State Universities may provide authorization to the affiliated colleges for offering skill-embedded courses. These courses are in line with UGC guidelines. Such an authorization by the Universities to their Colleges may be omnibus/generic and the colleges may not be required to seek approval of the University for every new course in future.

iv. State Universities may dedicate some space and manpower for setting up Centers of Excellence/ Common Facilities in selected sectors and prepare themselves for functioning as a Hub and Spoke model for higher end skills in favor of their affiliated colleges. Several SSCs/Industry Partners are eager in this regard and quick, facilitating decision making may result in several such Centers across the education landscape of Andhra Pradesh.

This is a sustainable direction in which multi-sectoral, permanent industry-connect can be secured with minimal cost to the Government.

7.3. State Government of Andhra Pradesh

i. The State Higher Education Department/Higher Education Council may accord approval/direction to all State Universities to undertake AEDPs by themselves and their affiliated colleges. Autonomous Colleges would be free from such an approval. This may be essential in states where a State University may require government approval to authorize its affiliated colleges to undertake new skill-embedded courses.

ii. The State Government has a very instrumental role to play in inviting high-CSR IT, Engineering and Service Sector Companies to adopt certain State Universities and Women's Colleges. Microsoft, Google, TCS, etc., can have focused interventions in certain educational institutions in providing labs, laptops, etc. CRISP opines that most Companies would participate in long-term curriculum provision and mentoring, provided the institutions come up with clear-cut proposals and have an interactive engagement. There are examples in other states where colleges have tied up with IT companies for a 3-year IT course where the Company provides the entire content and guaranteed placement. Such an

effort can be initiated in Andhra Pradesh for about 10 colleges. Companies do respond positively to a government-led initiative.

iii. The entire process of college-course mapping, earmarking classroom and lab facility, identification of teachers for training/hiring trainers, finalizing course content with the SSCs, MoUs with the SSCs and awareness generation before admission process must be completed before formal admissions start. To meet such timelines, it is essential that the State Government/Universities give the go ahead to the identified colleges quickly so that college-course mapping can be concluded as per timelines indicated in point number 3.

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