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NAAN MUDHALVAN SCHEME IN ENHANCING SKILLS AMONG HIGHER EDUCATION STUDENTS IN TAMIL NADU: A THEMATIC REVIEW

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ABSTRACT

The Naan Mudhalvan Scheme, introduced by the Government of Tamil Nadu in March 2022, aims to up skill higher education students' skills and career readiness. This paper examines its potential contribution to technical competence, digital literacy, communication, soft skills, career awareness, and employability through a thematic review of programme documents, government materials, and selected literature. The analysis focuses on six themes: technical skills, digital competence, communication and soft skills, career guidance, industry–academia collaboration, and implementation challenges. Although the scheme provides a framework for aligning higher education with industry needs, its effectiveness depends on training quality, curriculum relevance, practical exposure, student participation, and institutional support. Therefore, systematic, longitudinal, and independent evaluations are necessary to assess skill development, internships, placement outcomes, and long-term employment progression across disciplines and student groups.

1. INTRODUCTION

Higher education is an important instrument for human resource development, economic advancement, and social mobility. Traditionally, universities and colleges have emphasised disciplinary knowledge and academic achievement. However, changes in technology, industrial organisation, and recruitment practices have increased the importance of competencies that extend beyond subject knowledge. Employers increasingly seek individuals who can apply technical knowledge, communicate efficiently, solve problems, linkage with colleagues, adapt to changing work environments, and learn continuously.

The relationship between higher education and employment has consequently become a major concern for policymakers, educators, and students. Graduates may possess academic qualifications without having sufficient practical experience or familiarity with workplace expectations. Skill-development initiatives seek to address this challenge by connecting educational learning with professional competencies and industry requirements.

In Tamil Nadu, the Naan Mudhalvan Scheme was introduced by state government on 1 March 2022. Government programme documentation describes its objective as developing industry-relevant skills among students and young people and strengthening their readiness for employment. The official platform provides information about skill offerings for Engineering, Arts and Science, Polytechnic, ITI, and other educational streams, alongside opportunities such as internships, apprenticeships, hackathons, and upskilling courses.

The scheme is particularly relevant to higher education because students must prepare for employment while completing their academic programmes. Technical training, digital competence, communication, professional behaviour, and career planning can complement the knowledge acquired through conventional curricula. Nevertheless, the availability of training does not automatically establish that students have acquired the intended competencies.

2. Objectives of the Paper

The paper has the following objectives:

1. To examine the policy objectives and educational significance of the Naan Mudhalvan Scheme.
2. To identify the principal skill development themes associated with the scheme.
3. To discuss the potential contribution of technical, digital, communication, and soft-skill training to students' career preparedness.
4. To examine the importance of industry–academia collaboration and career guidance.
5. To identify implementation challenges and issues relating to equitable access.
6. To suggest measures for strengthening programme delivery, monitoring, and evaluation.

3. Methodology

3.1 Research Approach

The paper adopts a thematic review approach using documentary and secondary-source analysis. It does not report a primary survey, experimental intervention, or newly collected student-level dataset. Its purpose is to organise relevant policy and educational material into themes that can inform discussion of skill development in higher education.

3.2 Sources of Information

- Official Naan Mudhalvan programme documentation and course information.
- Tamil Nadu Skill Development Corporation documents concerning training delivery and programme implementation.
- Published research relating to the Naan Mudhalvan Scheme and employability skills.
- Relevant literature on higher education, skill development, and the relationship between academic learning and employment.

3.3 Thematic Organization

1. Industry-oriented technical and domain-specific skills.
2. Digital literacy and emerging technologies.
3. Communication and soft skills.
4. Career awareness and employability preparedness.
5. Industry–academia collaboration and practical learning.
6. Equitable access, implementation challenges, and evaluation.

3.4 Scope and Limitations of the Review Method

The paper is a thematic discussion rather than a systematic review. It does not claim to have exhaustively searched every relevant publication or conducted a formal quality appraisal of all available studies.

4. Overview of the Naan Mudhalvan Scheme

The Naan Mudhalvan Scheme is a skill-development initiative of the Tamilnadu Government implemented through the Tamil Nadu Skill Development Corporation and associated programme structures. The scheme seeks to strengthen students' access to industry-relevant training and career-oriented learning opportunities.

The official portal provides information on courses and skill offerings for several educational streams, including Arts and Science and Engineering. It also identifies internships, apprenticeships, hackathons, and other opportunities connected with upskilling and career development.

An important feature of this approach is its emphasis on complementing formal academic education with additional competencies. Students can potentially use such training to develop familiarity with professional tools, emerging technologies, workplace practices, and career pathways relevant to their areas of study.

The scheme's intended educational value can be understood through three broad relationships:

- Education and Industry: Connecting disciplinary knowledge with changing workplace requirements.
- Knowledge and Application: Providing opportunities to practise skills beyond conventional classroom instruction.
- Qualifications and Employability: Supporting students in developing competencies that may assist their transition from higher education to employment.

5.Thematic Analysis and Discussion

Theme 1: Development of Technical and Industry-oriented Skills

Technical and domain-specific competence is a central dimension of employment preparation. Students need opportunities to understand and apply the tools, procedures, and technologies relevant to their chosen fields.

For Engineering students, industry-oriented training may involve software applications, engineering tools, data analysis, automation, design technologies, or other specialised competencies. For Arts and Science students, relevant training may include data handling, accounting applications, business analytics, scientific software, information technology, and other competencies appropriate to their disciplines.

The official programme portal lists distinct skill offerings for Engineering and Arts and Science students, indicating that the scheme recognises the needs of different educational streams. This differentiation is important because a uniform training model may not address the varied competencies required across academic disciplines.

Thematic Implication: The scheme can contribute to technical skill development when training is discipline-specific, practically oriented, appropriately assessed, and aligned with relevant occupational requirements.

Theme 2: Digital literacy and Emerging Technological Competencies

Digital competence has become relevant across a wide range of occupations. Students may need to use digital platforms, manage information, analyse data, communicate electronically, and work with specialised software. In some fields, familiarity with artificial intelligence, cloud technologies, cybersecurity, automation, or advanced analytics may also be important.

Digital literacy should not be understood solely as the ability to operate a computer or access online learning materials. It includes evaluating digital information, applying appropriate tools, protecting data, solving technology-related problems, and understanding the ethical implications of digital systems.

The Naan Mudhalvan platform's emphasis on upskilling and industry-oriented courses provides a framework through which students may access relevant digital and technological learning opportunities.

Thematic Implication: Digital skill development should be evaluated through demonstrated competence and the ability to apply technology effectively, rather than through course availability or participation alone.

Theme 3: Communication, Soft Skills, and Professional Development

Employability extends beyond technical knowledge to include communication, teamwork, adaptability, critical thinking, problem-solving, time management, and professional conduct. The Naan Mudhalvan Scheme recognises soft-skill development as an important component of career readiness. Presentations, group discussions, collaborative projects, case studies, and interview practice can strengthen these competencies through practical application and feedback. Ensuring language accessibility and inclusive learning opportunities is essential to supporting students from diverse educational backgrounds.

Thematic Implication: The contribution of the scheme to soft skills depends on active practice, constructive feedback, inclusive learning environments, and assessment of students' actual performance.

Theme 4: Career Awareness and Employability Preparedness

Career awareness helps students understand occupational opportunities, required competencies, and suitable career pathways. Guidance on recruitment requirements, professional documentation, and additional training enables informed career decisions. The Naan Mudhalvan Scheme supports this process by providing access to upskilling, internship, apprenticeship, and other career-development opportunities, potentially bridging academic learning and employment preparation.

A comprehensive assessment should therefore consider several indicators:

- Awareness of career options and occupational requirements.
- Ability to prepare résumés and participate in interviews.
- Completion of relevant training and professional certifications.
- Participation in internships, apprenticeships, or work-based learning.
- Demonstrated job-related competencies.
- Employment status, job relevance, and progression after graduation.

Career guidance is likely to be more useful when it begins before the final semester and is connected with academic advising, practical experience, and ongoing access to employment information.

Thematic Implication: Career guidance can strengthen students' readiness to navigate employment opportunities, but its effectiveness should be assessed separately from actual placement and long-term employment outcomes.

Theme 5: Industry–academia Collaboration and Experiential Learning

Industry and academia collaboration helps align academic learning with professional requirements through curriculum development, practical training, mentorship, internships, projects, and hackathons. The Naan Mudhalvan Scheme provides opportunities to connect students with industry expertise and emerging skill demands. However, effective experiential learning requires meaningful tasks, proper supervision, clear learning objectives, regular feedback, and systematic assessment to ensure relevant and practical skill development.

Thematic Implication: Industry collaboration can strengthen the practical relevance of skill training when

partnerships provide structured learning, meaningful student participation, and opportunities to demonstrate transferable competencies.

Theme 6: Equity, Accessibility, and Implementation Challenges

The effectiveness of the Naan Mudhalvan Scheme depends on equitable access, training quality, & institutional support. Differences in digital access, language proficiency, educational background, location, and course requirements may influence student participation and learning outcomes. Key challenges include scheduling, resource availability, consistent training, and coordination among institutions, trainers, and employers. Regular needs assessments, student feedback, attendance monitoring, academic support, and outcome evaluation can help improve implementation and ensure relevant, inclusive skill development.

Thematic Implication: Equitable implementation requires attention to students' differing circumstances and systematic monitoring of participation, learning, and progression outcomes.

6. An Integrated Framework for Understanding Skill Enhancement

The six themes can be brought together in a conceptual framework connecting programme inputs with student learning and longer-term outcomes.

Table 1. Conceptual Framework for Evaluating the Naan Mudhalvan Scheme

Dimension	Illustrative programme activity	Potential outcome	Suggested indicator
Technical skills	Discipline-specific training	Improved technical competence	Practical assessment score
Digital skills	Digital tools and technology courses	Improved digital proficiency	Demonstration of task performance
Soft skills	Communication and teamwork activities	Stronger inter-personal competence	Structured performance rubric
Career pre-paredness	Career guidance and interview practice	Improved career-planning ability	Career-readiness assessment
Industry exposure	Internships, apprenticeships, projects	Greater workplace familiarity	Internship completion and supervisor feedback
Equitable access	Academic and digital support	More inclusive partici-pation	Participation and completion by student group
Employment transition	Placement support and career follow-up	Improved employ-ment progression	Verified placement and follow-up outcomes

The evaluation framework distinguishes programme activities, immediate learning outcomes, and long-term employment outcomes. Training participation indicates implementation, demonstrated competence reflects skill development, and employment outcomes depend on additional factors. Therefore, evaluation should combine implementation indicators, direct skill assessments, student feedback, and employment follow-up data.

7. Implications for Higher Education Institutions

7.1 Align Training with Disciplinary Requirements: Training should complement the academic curriculum and address the technical and professional competencies relevant to each discipline. Periodic consultation with subject experts and employers can help maintain relevance.

7.2 Strengthen Practical Assessment: Students should be given opportunities to demonstrate what they have learned through projects, practical exercises, simulations, and structured competency assessments.

7.3 Integrate Skill Development with Academic Learning: Skill-development activities are more likely to complement higher education when they are coordinated with regular coursework, laboratory activities, projects, and academic advising.

7.4 Improve Career Guidance: Career guidance should help students identify suitable career pathways, understand occupational requirements, prepare for recruitment, and plan further learning. Support should begin before the final semester and continue as students transition into employment or further education.

7.5 Strengthen Industry Partnerships: Institutions should seek meaningful partnerships that provide structured internships, supervised projects, mentorship, workplace exposure, and feedback on student competencies.

7.6 Promote Inclusive Participation: Institutions should identify barriers related to digital access, language confidence, scheduling, and prior learning. Additional support should be offered where necessary to help students participate fully and demonstrate their abilities.

7.7 Establish Outcome-oriented Monitoring: Programme monitoring should distinguish participation, course completion, learning achievement, career readiness, and employment outcomes.

8. Recommendations for Policy and Practice

1. **Conduct Periodic Skill-gap Assessments.** Course offerings should be reviewed in relation to students' academic backgrounds, emerging occupational requirements, and feedback from relevant employers.
2. **Use Competency-based Assessments.** Training should include practical evaluations that measure what students can demonstrate, not merely what they have attended.
3. **Expand Meaningful Experiential Learning.** Internships, apprenticeships, projects, and simulations should include clearly defined learning objectives and appropriate supervision.
4. **Strengthen Faculty and Trainer Coordination.** Faculty members, trainers, programme coordinators, and industry partners should collaborate to ensure that training supports the broader academic experience.
5. **Improve Accessibility and Student Support.** Institutions should identify and address barriers affecting participation, course completion, and the application of acquired skills.
6. **Track Outcomes Beyond Course Completion.** Evaluation should include practical competency, career readiness, internships, placement, job relevance, and employment progression where appropriate.
7. **Use Disaggregated Monitoring.** Participation and outcomes should be examined across educational streams, gender, residential locality, college locality, parental educational background, and medium of instruction, where the data permit reliable comparisons.
8. **Commission Independent Evaluations.** Longitudinal studies and comparisons using appropriate research designs can help establish whether observed changes are associated with programme participation and how those changes vary across student groups.

9. Future Research Directions

- ✓ **Student Surveys:** Assess awareness, participation, satisfaction, and perceived skill development.
- ✓ **Skill Assessment:** Compare pre- and post-training competencies to measure improvement.
- ✓ **Disciplinary Comparison:** Examine differences in training outcomes between Arts and Science and

Engineering students.

- ✓ **Equity Analysis:** Investigate variations by gender, locality, parental education, and medium of instruction.
- ✓ **Longitudinal Studies:** Track students' progress from training to employment or further education.
- ✓ **Qualitative Research:** Interview students, faculty, trainers, coordinators, and employers to understand implementation and practical skill application.

10. CONCLUSION

The Naan Mudhalvan Scheme is an important policy initiative for integrating higher education with skill development and career-oriented learning in Tamil Nadu. Its focus on technical and digital competencies, soft skills, career awareness, industry–academia collaboration, and equitable implementation provides a comprehensive framework for enhancing employability. Its effectiveness depends on training quality, student engagement, practical application, institutional support, and equal access to opportunities. Therefore, independent competency assessments, longitudinal studies, and systematic evaluation of learning and employment outcomes are essential to determine its impact. Overall, the scheme offers a promising framework for strengthening skill-oriented higher education, with its long-term success depending on continuous improvement, equitable access, and evidence-based evaluation.

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