Students Readiness after 12th in the Stream of Engineering, Medical, Paramedical and Law with Reference to Central and State Government of Tamil Nadu by the Support of Career Chart

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Abstract: *Student readiness refers in preparing students for their career after 12th class and this will support for their career enrichment. Career readiness helps the students to understand the world of work with the courses available in different streams and it helps the student to relatively choose the course with their interest. Career readiness in this study explains more about the streams and courses available commonly in all government universities in Tamilnadu and also explains about the career information and admission process in the streams like Medical, Paramedical, Engineering and law in the government institutions in national and state level in Tamil Nādu.*

Keywords: Career readiness, career information, Engineering, Medical, Paramedical and Law

1. Introduction

Career readiness encompasses that a student to attain a successful occupational career, that includes career exploration, where career information plays an important factor to provide required and available career information after 12th standard. career readiness refers to readiness for courses specific to an occupational area or certificate. According to David T Conley, career readiness is that a student who is ready for college and career can qualify for and succeed in entry - level, credit - bearing college courses leading to a baccalaureate or certificate, or career pathway - oriented training programs without the need for remedial or developmental coursework. stated that the foundational content knowledge is similar in all cases, the precise skill profile associated with success in a career course pathway may be more focused than that required for a bachelor's degree.

2. Review Article

According to Sandra McNally (2016), the provision of tailored information might help young people make better - informed decisions about their educational investment. Researchers and policymakers can benefit from the growing body of literature on this topic. Most of the relevant studies suggest that information on the costs and benefits of educational choices and the application process for attending university and/or applying for financial aid does impact knowledge and expectations for those participating in the studies.

According to the study of Career Guidance, Participation of Students and its Implication for Kano (2013) mentioned that good quality career information is a crucial factor for first-rate career decision - making. Career information should include relevant information about education and training opportunities, occupations and their characteristics; labour market supply and demand. Similarly, career information should contain occupational implications of educational decisions and the learning pathways that lead to particular occupational destinations.

The study of The Role of Information on Students' Career Choice and School Effort Experimental Evidence from Bogota, Colombia (2015) it mentioned that information has a role to play by promoting upward educational mobility in middle - income countries that will allow individuals to escape inequality traps and break the vicious cycle of poverty.

3. Challenges in career information

According to organisation for economic co - operation and development the European com (OECD) in 2004 where research was conducted in 34 countries and European Union the challenges and policy in providing career information was there is often a lack of collaboration between different government agencies, and in particular between education and labour portfolios, and between different levels of government - and in particular between national and regional governments - in providing and sharing career information. This leads to costly overlap, fragmentation, and lack of transparency and comprehensiveness.

4. Career Chart

As mentioned in Osuala (1985), career information means accurate, understandable, and useable facts that describe exploring and interpreting occupations, vocations, careers, and jobs. Career information is most important factor for student readiness after 12th, even though career information

is available in various sources in printable and digital format. Most of the career information is available only in the digital format, but students from rural areas, hilly region and remote area, these students are not much aware about the career information in digital format. So to conclude career information is the most important factor, to provide career development for the students in various factors.

The Department of Extension and Career guidance has Published a career chart which contains career information for various streams, eligibility, and entrance exams for school students, which covers the courses in government colleges in Tamilnadu state and this paper talks about the Medical, Engineering, Paramedical, Veterinary, Fishery and law in detail.

5. Methodology

Analytical research has followed for collecting the data through secondary sources like government websites for each stream such as Engineering, Medical, Paramedical and Law courses.

6. Objective

The objective is to understand the career information available to make student readiness in various streams.
- To assess and understand the career information in detailed for courses like Medical and Paramedical courses.
- To assess the career information in streams like Engineering and law courses.
- To understand the career information about the number of colleges in streams like Engineering, Veterinary, Fishery and law courses in Tamil Nadu.

7. Various stream and Procedure for admission

7.1 Engineering

According to Cambridge, engineering is the study of using scientific principles to design and build machines, structures, and other things, including bridges, roads, vehicles, and buildings.

Admission Process on National Level
Joint entrance examination (JEE) which is conducting by national testing agency, JEE (Main) comprises two papers. Paper 1 is conducted for admission to Undergraduate Engineering Programs (B. E/B. Tech.) at NITs, IIITs, other Centrally Funded Technical Institutions (CFTIs), and Institutions/Universities funded/recognized by participating State Governments. JEE (Main) is also an eligibility test for JEE (Advanced), which is conducted for admission to IITs. Paper 2 is conducted for admission to B. Arch and B. Planning courses in the country.

JEE main Paper 1 is conducting for 300 marks which covers subject like Physics, Chemistry, and Mathematics and paper 2 is for 400 marks which covers subject like Mathematics, Aptitude Test, and Drawing Test, both are objective type.

The JEE Advanced question paper will be divided into two papers - papers I and II. Attempting both papers is compulsory, and they all need to be completed within 6 hours and it is objective type, JEE Advance's total marks is 306 marks, and each paper carries a total of 183 marks.

Admission process in the State of Tamil Nadu
Inthe state level, Tamil Nādu Engineering admission by online (TNEA) is conducting by the DOTE (Directorate of technical education). At present 2022, 461 colleges are included in counselling and total available seats are 151870. According to Tamil Nadu engineering admission allocation of seats in colleges
a) Seats in Government Engineering Colleges
b) Seats in Aided and self - supporting courses in Government Aided Engineering Colleges
c) Seats surrendered by Central Government Institutions
- Central Electro Chemical Research Institute (CECRI), Karaikudi
- Central Institute of Plastic Engineering and Technology (CIPET), Chennai
- Indian Institute of Handloom Technology (IIHT), Salem
d) Seats in B. E. & B. Tech. Degree Courses in University Departments and Constituent Colleges of Anna University.
e) Seats in B. E. Degree Courses in Mechanical Engineering and Civil Engineering (Tamil Medium) in university
f) Departments and Constituent Colleges of Anna University.
g) Seats in B. E. /B. Tech Degree Courses in Annamalai University, Annamalai Nagar, Chidambaram.
h) Seats surrendered by Self Financing Engineering Colleges

Table 7.1: Engineering Courses

Course	Engineering Courses
National level Entrance	JEE/NATA
State level	Counselling and Cut - off
Course Duration	4 - years
S. No	Courses
1	Civil Engineering
2	Mechanical Engineering
3	Electrical & Electronics Engineering
4	Electronics & Communication Engineering
5	Computer Science / IT Engineering
6	Electronics Engineering
7	Aerospace Engineering
8	Aeronautical Engineering
9	Automobile Engineering
10	Industrial Engineering
11	Petroleum Engineering
12	Chemical Engineering
13	Marine Engineering
14	Electronics & Instrumentation Engineering
15	Information Technology Engineering
16	Artificial Intelligence Engineering
17	Production & Industrial Engineering
18	Industrial & Systems Engineering
19	Mechanical & Aerospace Engineering
20	Pharmaceutical Science Engineering
21	Polymer Science Engineering

22	Mineral Engineering
23	Mining Machinery Engineering
24	Ocean Engineering & Naval Architecture
25	Ceramic Engineering
26	Engineering Science
27	Bio - Technology
28	Industrial Architecture Engineering
29	Food Technology
30	Chemical & Electro - Chemical Engineering
31	Leather Technology
32	Rubber & Plastics Technology
33	Textile Engineering
34	Manufacturing Engineering
35	Printing Technology
36	Apparels technology
37	Bio - medical Engineering
38	Chemical and Electro Chemical Engineering
39	Electronic and Telecommunication
40	Environmental Engineering
41	Fashion Technology
42	Geo - Informatics
43	Handloom and Textile Technology
44	Industrial Bio - Technology
45	Instrumentation and Control Engineering
46	Industrial Engineering
47	Material Science and Engineering
48	Mechatronics

49	Petroleum Engineering and Technology
50	Production Engineering
51	Robotics and Automation
52	Textile Technology

7.2 Medical Courses and NEET exam

According to NTA (National Testing Agency), national eligibility cum entrance test [NEET (UG) – 2022] will be conducted by National Testing Agency (NTA) in Pen and Paper mode in 13 languages, as a uniform entrance examination for admission to MBBS/BDS/BAMS/BSMS/ BUMS/BHMS and other undergraduate medical courses in approved/recognized Medical/Dental /AYUSH and other Colleges/ Deemed Universities /Institutes (AIIMS & JIPMER) in India. The languages in which the NEET (UG) 2022 would be conducted are: English, Hindi, Assamese, Bengali, Gujarati, Kannada, Malayalam, Marathi, Odia, Punjabi, Tamil, Telugu, and Urdu.

NEET will be conducted for 720 marks for four subjects Physics, chemistry, Botany andzoology. Each subject will consist oftwo sections. Section A will consist of 35 Questions and Section B will have 15 questions, out of these 15 questions, candidates can choose to attempt any 10 questions, total question for each subject are 50 questions.

Table 7.2.1: Medical Courses

Course	Medical/BDS/AYUSH Courses	
Eligibility for State& National level	NEET Entrance exam (National Eligibility Entrance Test)	
S. No	Courses	Course Duration
1	MBBS - Bachelor of Medicine and Bachelor of Surgery	5.5 years
2	BDS - Bachelor of Dental Medicine	5 years
3	BAMS - Bachelor of Ayurvedic, Medicine and Surgery	5.5 years
4	BNYS - Yoga & Naturopathy (Cut - off &Counselling)	5.5 years
5	BUMS - Bachelor of Unani Medicine and Surgery	5.5 years
6	BUMS - Bachelor of Siddha Medicine and Surgery	5.5 years
7	BUMS - Bachelor of Homeopathy Medicine and Surgery\	5.5 years

In India, the entrance exam NEET is mandatory to get admission in Medical, Dental, and Ayush courses. For all the above courses in Tamilnadu the affiliating university is Dr. MGR. Medical University. There are 37 Government medical colleges, 2 dental colleges, 19 self - financing medical colleges and 18 self - financing dental medical colleges, 8 Government colleges and 55 Self - financing colleges for AYUSH is available in Tamilnadu.

7.3 Paramedical course

College of Paramedics (2018) A paramedic works autonomously as a generalist clinician across a range of healthcare settings, usually in emergency, primary or urgent care. They may also specialize in clinical practice, education, leadership or research.

Table 7.3.1: Paramedical Courses

Course	Paramedical Courses	
State level	Counselling & Cutoff	
National level	Varies according to college and courses	
S. No	Paramedical courses	Duration
1	BPT - Bachelor of Physiotherapy	4.5 years
2	BOT - Bachelor of Occupational Therapy	4.5 years
3	BASLP - Bachelor of Audiology & Speech Language Pathology	4 years
4	B. Pharm - Pharmacy	4 years
5	B. Sc. Nursing	4 years
6	B. Sc. Respiratory Therapy	4 years
7	B. Sc. Radiology & Imaging Technology	4 years
8	B. Sc. Physical assistance	4 years
9	B. Sc. Cardiopulmonary	4 years
10	B. Sc. Cardiac care Technology	4 years
11	B. Sc. Optometry	4 years
12	B. Sc. Medical Laboratory Technology	4 years

Course	Paramedical Courses	
State level	Counselling & Cutoff	
National level	Varies according to college and courses	
S. No	Paramedical courses	Duration
13	B. Sc. Critical Care Technology	4 years
14	B. Sc. Dialysis Technology	4 years
15	B. Sc. Accidental & Emergency Care	4 years
16	B. Sc. Operation theatres & anaesthesia	4 years
17	B. Sc. Neuro electro physiology	4 years
18	B. Sc. Clinical nutrition	4 years
19	B. Sc. Radio therapy technology	4 years

According to Tamilnadu state and Tamilnadu medical selection board, all paramedical courses are affiliated under Dr. MGR. Medical University and it is a single window application for admission.

7.4 Law

Table 7.4.1: Law Courses

Course	Law - Courses
National level	CLAT Exam
State Level	12th Pass Counselling and Cut - off
Course Duration	5 - Years
S. No	Courses
1	B. A LL. B
2	B. COM LL. B (Hons)
3	B. C. A LL. B (Hons)
4	BBA LL. B (Hons)

The Tamil Nadu Dr. Ambedkar Law University is functioning as the nodal agency of the Government of Tamil Nadu for selection of candidates for admission to 3 - Year LL. B. Degree Course and 5 Year B. A. LL. B. Degree Courses (Regular), offered in Government Law Colleges located in the State of Tamil Nadu, under the unified Single Window Admission System.

According to Dr. Ambedkar Law university, B. A LL. B is the only course provided in government and government affiliated colleges in Tamilnadu. And as per the data, there are 15 government colleges and 9 private colleges in Tamilnadu to offer law courses.

8. Conclusion

To conclude every school should have a career cell for career counselling to offer a counselling and guidance from class 9 to class 12, which tellsabout various sector from entrance exam, eligibility, streams and courses availability according to centre and state which was listed in the article.

Career information should also include government colleges, university and central universities in state level and National level.

So the government has to initiate to recommend all the schools, irrespectively of centre and state they have to place the career chart in the school campus to make the students for understanding various courses and its entrance exam by themselves.

National and state level providing career information should be available in single window, career centre should be established in each district, which should be one stop centre which should help the student in their career choice, and career development.

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Annexure

Table 1.1

Engineering Universities & colleges under TNEA	Count
Government Engineering colleges	10
Government aided Engineering colleges	3
Anna university campus	3
A constituent college of Anna University	16
Central University for Engineering course	3
Annamalai University	1
Private colleges affiliated with Anna University	425
Total	461

Table 2.1

Medical and Dental Colleges	Count
Government Medical colleges	37
Government Dental Colleges	2
Self - Financing Medical Colleges	19
self - financing Dental colleges	18
Total	76

Table 2.2

Courses	Government colleges	Private colleges	Total
B. A. M. S (Ayurvedic)	2	17	19
B. N. Y. S (Yoga and Naturopathic)	2	17	19
B. U. M. S (Unani)	1	0	1
B. S. M. S (Siddha)	2	9	11
B. H. M. S (Homeopathic)	1	12	13

Table 2.3

Course	Government College	Private College	Total
Law	15	9	24

கல்வித்தகுதி : 12-ஆம் வகுப்பு தேர்ச்சி
மத்திய / மாநில அரசு சேர்க்கை - நீட் (NEET)

மருத்துவம் (MBBS)
பல் மருத்துவம் (BDS)
ஆயுர்வேதம் (BAMS)
யோகா மற்றும் இயற்கை மருத்துவம் (BNYS)
யுனானி (BUMS)
சித்த மருத்துவம் (BSMS)
ஓமியோபதி (BHMS)

Allied and Paramedical

கல்வித்தகுதி : 12 -ஆம் வகுப்பு தேர்ச்சி
மத்திய / மாநில அரசு சேர்க்கை - கலந்தாய்வு & கட்-ஆஃப்

துணை மருத்துவப்படிப்புகள் - (Paramedical)
மிசியோதெரபி - Physiotheraphy (BPT)
தொழில்முறை சிகிச்சை - Occupational theraphy (BOT)
ஒலியியல் & பேச்சு சிகிச்சை
Audio and Speech Pathology (BASLP)
மருந்தகம் - Pharmacy (B.Pharm)
ரேடியோ சிகிச்சை தொழில்நுட்பம் - Radio therapy Technology
கார்டியோ நுரையீரல் ஊடுருவல் தொழில்நுட்பம் - Cardio pulmonary perfusion
மருத்துவ ஊட்டச்சத்து படிப்புகள் - Clinical nutrition courses
நரம்பியல் எலக்ட்ரோ உடலியல் - Neuro Electro Physiology

இளங்கலை மருத்துவம் (B.Sc)
செவிலியர் - (Nursing)
சுவாசவியல்- (Respiratory)
ரேடியாலஜி மற்றும் இமேஜிங் தொழில்நுட்பம்
(Radiology & Imaging Technology)
மருத்துவ உதவியாளர் - (Physician Assistant)
இதயம் மற்றும் நுரையீரல் - (Cardio Pulmonary)
இதய பராமரிப்பு தொழில்நுட்பம் - (Cardiac care Technology)
பார்வை அளவையியல் - (Optometry)
மருத்துவ ஆய்வக தொழில்நுட்பம் - (Medical Laboratory Technology)
தீவிர பராமரிப்பு தொழில்நுட்பம் - (Critical Care Technology)
டயாலிசிஸ் தொழில்நுட்பம் - (Dialysis Care Technology)
விபத்து மற்றும் அவசர சிகிச்சை - (Accidental & Emergency Care)
ஆபரேஷன் தியேட்டர் மற்றும் அனஸ்தீசியா
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(பி.ஏ.எல்.எல்.பி) BA.LL.B
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BBA LL.B (Hons.)
BCA LL.B (Hons.)
LL.B (After UG) (Hons.)
BA.LL.B (Hons.)

பொறியியல் (Engineering)

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தேசிய அளவில் / நுழைவுத் தேர்வு : JEE - முதன்மை / அட்வான்ஸ்

இளங்கலை B.E. / B.Tech.
கட்டடக்கலை - (Civil)
இயந்திரவியல் - (Mechanical)
எலக்ட்ரிக்கல் மற்றும் எலக்ட்ரானிக்ஸ் - (Electrical & Electronics)
எலக்ட்ரானிக்ஸ் மற்றும் கம்யூனிகேஷன் - (Electronics & Communication)
கம்ப்யூட்டர் சயின்ஸ் / ஐ.டி - (Computer Science / IT)
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ஆட்டோமொபைல் - (Automobile Engineering)
தொழில் / இண்டஸ்ட்ரியல் - (Industrial Engineering)
பெட்ரோலியம் / இரசாயனம்- (Petroleum / Chemical Engineering)
கடல் சார் - (Marine Engineering)
எலக்ட்ரானிக்ஸ் மற்றும் இன்ஸ்ட்ருமென்டேஷன்
(Electronics & Instrumentation)
தகவல் தொழில்நுட்பம் / ஐ.டி - (Information Technology)
செயற்கை நுண்ணறிவியல் - (Artificial Intelligence)
உற்பத்தி மற்றும் தொழில்துறை - (Production & Industrial)
தொழில்துறை மற்றும் அமைப்புகள் - (Industrial & Systems)
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உயிரி தொழில்நுட்பவியல் - (Bio-Technology)
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மருந்து அறிவியல் - (Pharmaceutical Science)
கனிமம் / சுரங்கப் பொறியியல் - (Mineral / Mining Engineering)
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