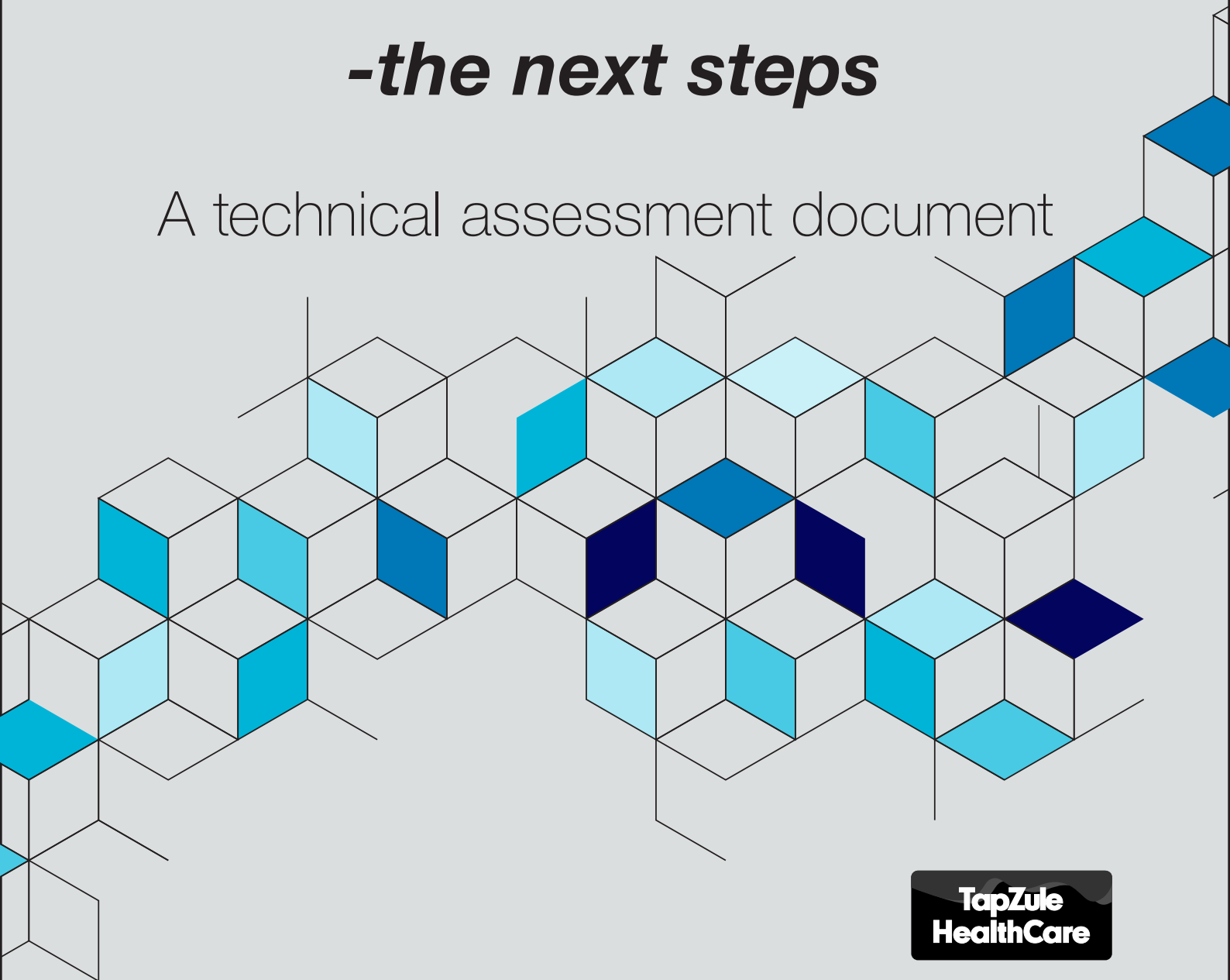


# ONLINE HEALTHCARE SKILLING & CERTIFICATION

*-the next steps*

A technical assessment document



# EXECUTIVE SUMMARY

On-line education platforms have come a long-way in terms of providing quality, cost-effective, easy-to-use/learn opportunities to the masses. One estimate indicates<sup>1</sup> that the current market is worth over **USD 1.96 billion** and is expected to increase **8x in the future**.

Today, there are *5 major categories* of education that are increasingly adopting the on-line education model; they are **1) Primary and Secondary Supplemental Education, 2) Test Preparation, 3) Reskilling and On-Line Certification, 4) Higher Education, and 5) Language and Casual Learning**. Amongst these, the *Reskilling and on-line Certification* category currently, account for over **38% of the on-line education market in India**.

However, both **courses and content** in this category of education (reskilling and on-line certification) currently available in India, is *woefully inadequate*. It is pretinent to realise that the requirements of this category are unique, and that there are several *technical & pedagogically challenges* to be met.

Through this document, **TapZule** intends to inform you about the **challenges and opportunities** that exist in the reskilling and on-line certification category. The current gaps in the exisiting, on-line healthcare education platforms, are discussed and detailed solutions to counter these challenges are discussed in the following sections.

On-line education platforms catering to this category need to be robust, secure and convienent to be able to cater to the requirements of trainees and trainers. As part of the poposed solutions **a novel, cloud-based education platform** is proposed here. It is hoped you will learn about the opportunities that exist in this category, specifically, the **opportunites to expand the scope of the on-line reskilling and on-line certification category**.

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<sup>1</sup> [Online Education in India: 2021, A study by KPMG in India & Google](#)

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# ABOUT TAPZULE

TapZule HealthCare is a **Med-Edu-Tech** company involved in the development of tech-enabled platforms for the medical students, insitutions, academicians, and working professionals. TapZule is also activitly involved in *policy-advocacy* related to **medical education and training** in India.

## CONTACT INFORMATION

The logo for TapZule HealthCare is displayed within a black rounded rectangle. The text "TapZule" is in a white, bold, sans-serif font, and "HealthCare" is in a slightly smaller, white, bold, sans-serif font directly below it.

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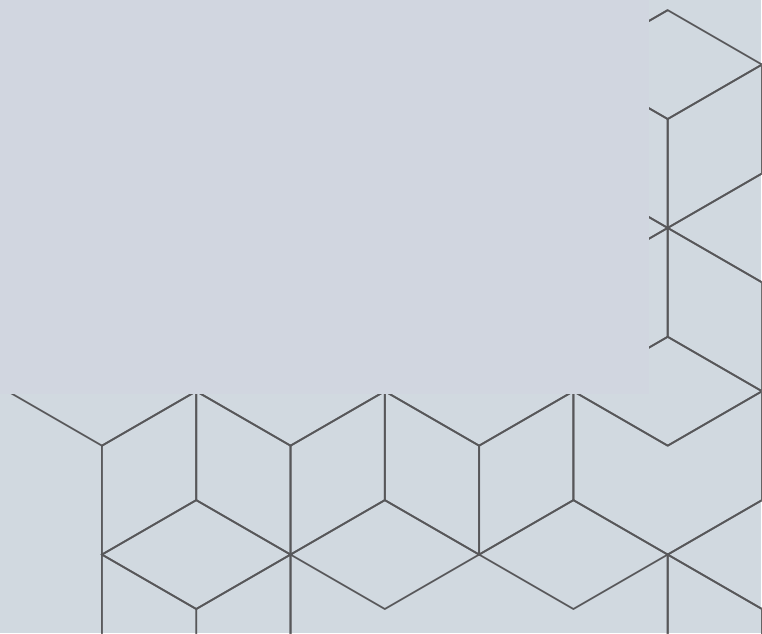
# INTRODUCTION

An on-line learning platform has the potential to address a wide-range of challenges that **governments, training agencies, institutions & trainees** face today. An effective and customised platform must be able to educate the masses in a wide-range of courses, analyse the progress of every trainee, certify a specific set of skills '**on-line**', and also enhance employee-specific career goals in the shortest possible time.

Apart from providing a cost-effective learning solutions to trainees, institutions and organisations, on-line education platforms allow trainees to study at their own pace and convenience. Varied and differentiated learning helps trainees attain their career related goals in a flexible manner.

Such on-line platforms enable **employers, administrators, HR personnel** to effectively track and monitor training programmes and the progress of their trainees.

In the reskilling and certification category, **on-line education platforms** have an *important role to play*. When implemented effectively, it will go a long way in not only improving the skills of the existing healthcare workforce, **but also provide an opportunity for the public to engage, learn, and get certified in healthcare related courses**. Such on-line platforms should have a mechanism through which, atleast, a part of the certification process can happen remotely, thereby allowing the trainees to not just train, but also get certified at their convenience.



# THE EXISTING GAPS

At present, the on-line education market, in the healthcare based reskilling and certification category, is flooded with providers from various backgrounds (private, not-for-profit, government and others). A majority of them are private companies/training agencies, who provide a wide variety of courses on various topics, while often charging a premium.

In India, most of these platforms provide avenues for on-line skilling, reskilling, upskilling, but are at a nascent stage.

In addition, the current on-line platforms are *woefully inadequate*. Some of the shortcomings<sup>1</sup> of the existing platforms are listed below.

1. Lack of reliable training materials.
2. Lack of quality content in these training materials.
3. No documentation or records of training conducted and undertaken.
4. Work overload-excess *cramming of training materials into these on-line courses*.
5. Lack of motivation, *on part of both trainees and organisations*.
6. Lack of effective trainers.
7. Non-user friendly training modules and platforms-*most platforms today require a desktop with an internet connection*.
8. Expensive training courses.
9. No feedback mechanism to improve courses.

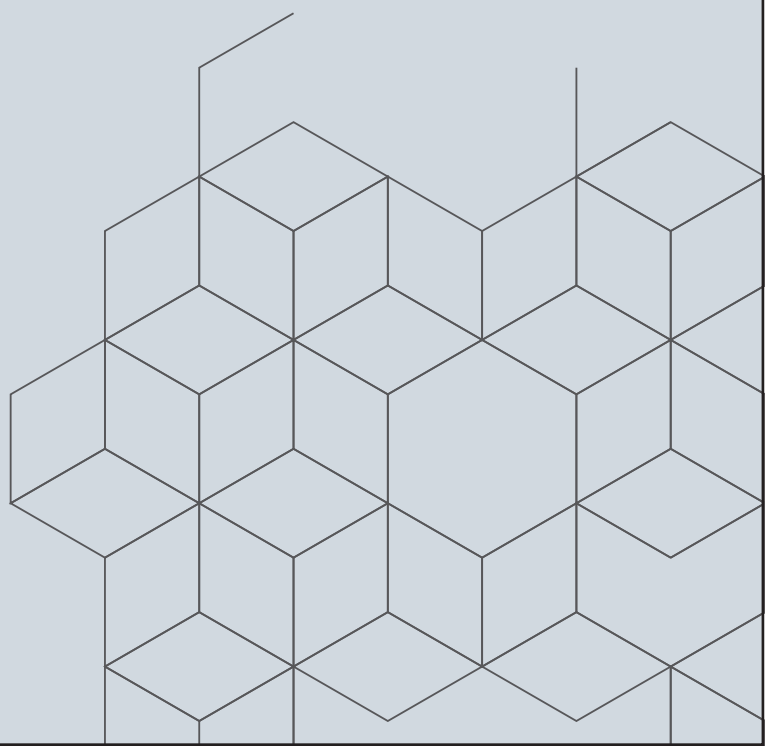
This document aims to serve as a **technical document** and a *starting point* for the next steps in improving the reskilling and on-line certification platform. Proposed solutions to counter the existing, *healthcare education*-specific issues prevalent today, are listed and discussed in detail.

---

<sup>1</sup> [The state of Skills in the Indian Healthcare Industry: 2020 Annual Report, IPC Health](#)

Discussions with stakeholders (*potential trainees, trainers, content creators, educators, technologists and academicians*) were conducted to understand the shortcomings and expectations.

The following sections of this document proposes **novel solutions and concepts** that are needed to take the reskilling and on-line certification platform to the next level.



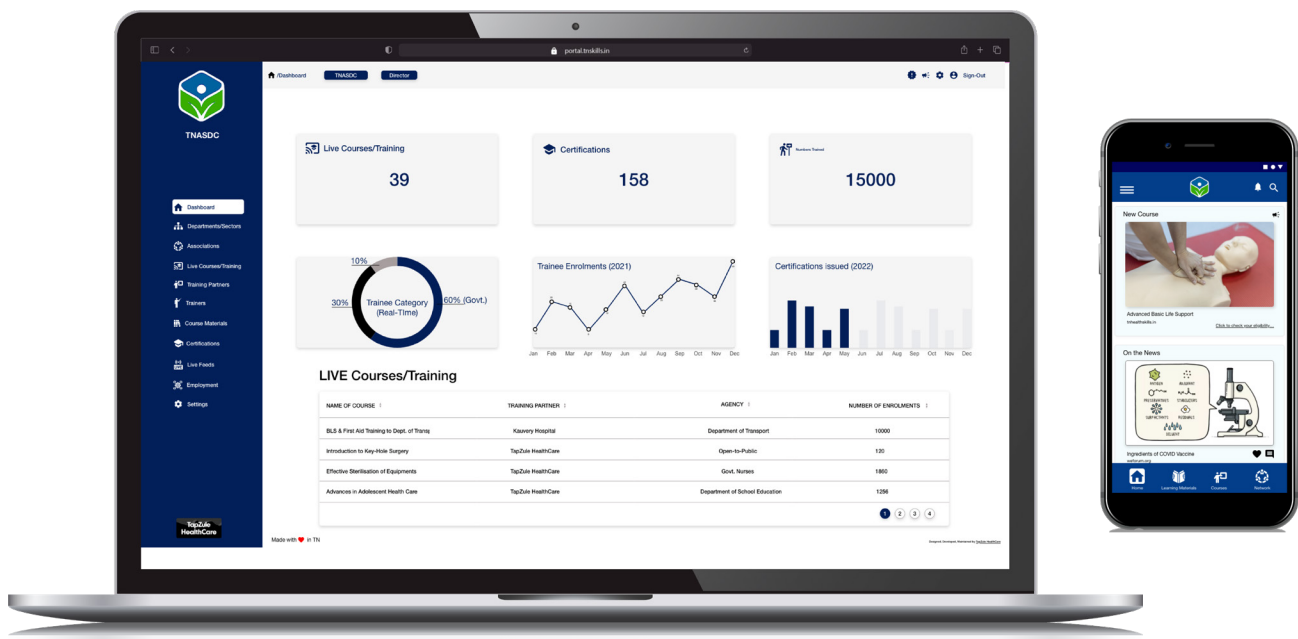
# PROPOSED SOLUTIONS

1

## A cloud-based, multi-platform for teaching & testing the masses effectively

Rapid and continuous skilling of large sections of the population requires a robust, easy-to-use and a versatile **cloud-based** platform. It should be capable of delivering content, conduct tests & certifications on multiple platforms (*mobile<sup>1</sup>, tablet<sup>2</sup> & desktop*) in the shortest amount of time.

In order to be able to cater to the requirements of a modern society, online courses should be designed to attract trainees from various backgrounds and offer a variety of courses at *low or no cost*. Such a platform should also be capable of addressing a wide variety of needs of a trainee; for example, It should be capable of providing avenues for continuous interaction with the professional community.



A novel cloud-based platform combining a robust and secure cloud-portal is proposed exclusively for the trainers, to be able design & delivery a variety of courses and certifications. And, a mobile (and tablet) application for trainees to enroll, take course, receive learning materials, engage with other members of the community in a seamless manner is also proposed.

<sup>1</sup> Android & iOS versions

<sup>2</sup> Android & iOS versions

It may be noted that there are not many healthcare-related reskilling and on-line certifications platforms operating at the national level. However, this will change in the future and the proposed platform should be able to invite courses and content from various training partners, from India and abroad.

## 2 Department and Sector specific training

Skilling and certification courses on the proposed cloud platform should be specific and categorised on the basis of the **department or the focus sector**. As shown in the image below, courses specific to the departments of the Government of Tamil Nadu and other focus sectors should be created on the platform easily. Such deliberate anchoring of courses provides clarity to the training partners and trainees alike.

The screenshot displays the TNASDC web application interface. The left sidebar contains navigation links: Dashboard, Departments/Sectors (active), Associations, Live Courses/Training, Training Partners, Trainers, Course Materials, Certifications, Live Feeds, Employment, and Settings. The main content area is titled 'Departments/Sectors' and includes a search bar. Below this, a row of icons represents various sectors: Fire & Rescue, School Edu., Road Transport, Env. & Forest, College Edu., Police, Public Health, Agriculture, Defence Forces, Construction, and Industries. The 'Your Courses' section shows a table of courses with filters for 'All: 105' and 'Live: 4'. The table lists courses such as 'Gearing-up for a natural calamity', 'Adolescents & Sex Education', 'COVID Vaccination in rural areas', and 'Dealing with Fire Accident Patients', each with details on department, focus group, enrolments, and status. The 'Training Partners Courses' section follows a similar format, listing courses offered by partners like 'kauvery hospital' and 'Aardram'.

NAME OF COURSE	DEPARTMENT/SECTOR	FOCUS GROUP	NUMBER OF ENROLMENTS	STATUS
Gearing-up for a natural calamity	Department of Home, Prohibition & Excise	Sub-Inspector, Inspector	10000	LIVE
Adolescents & Sex Education	Department of School Education	Higher Secondary, Headmaster/Head	120	LIVE
COVID Vaccination in rural areas	Department of Public Health	Govt. Nursing Sta., Paramedical Staff	1860	LIVE
Dealing with Fire Accident Patients	Fire & Rescue Services	Fire Marshal	1256	LIVE

NAME OF COURSE	DEPARTMENT/SECTOR	FOCUS GROUP	TRAINING PARTNER	NUMBER OF ENROLMENTS	STATUS
Basic First Aid	Construction	Civil Labour, Groundmen	kauvery hospital	10000	LIVE
Adolescents & Sex Education	Department of School Education	Higher Secondary, Headmaster/Head	kauvery hospital	120	LIVE
COVID Vaccination in rural areas	Department of Public Health	Govt. Nursing Sta., Paramedical Staff	Aardram	1860	LIVE
Dealing with Fire Accident Patients	Fire & Rescue Services	Fire Marshal	kauvery hospital	1256	LIVE

Courses designed in this manner can go a longway in skilling the masses. Specialist agencies can be invited to provide courses in *specific areas of interest* to that particular organisation. The following image represents a *sample course* that can be designed to teach about Road Accidents and First Aid to members of the Department of Motor Vehicle Department, Department of Highways and the so-forth.

### About the course

#### Road Accidents and First Aid

Life of an accident victim can be saved by administering timely medical aid. The 'GOLDEN HOUR', the first hour after the trauma is called the 'golden hour'. Instant and proper first aid given to road accident victims during this hour increases the chance of survival manifold and reduce the severity of injuries. Many deaths and impact of injuries can be prevented with First Aid if casualties are treated immediately.

First aid is the initial care given to an injured person. This timely care prior to the arrival of the medical help means the difference between life and death. As it is not always possible that proper medical care reaches the victim within an hour. In that case the passerby, onlookers and other people involved can provide the first aid to serious victims. However, improper handling to victims sometime worsens the situation. Though providing proper first aid to an accident victim is not so complicated but one should be aware of the procedures and precautions.

One of the misconceptions about road accidents death is that most of them happen due to sever injury and loss of blood. But reality is that most common cause of death in road accidents due to loss of oxygen supply. Most of the times it happens because airway gets blocked due to great impact and shock to body. Normally it takes less than four minutes for a blocked airway to cause death.



[Previous](#)

[Next](#)

300  
Graduations

10000  
Views

10000  
Likes

#### About the Trainer



Dr. Anurag Shrivastava is a specialist in Emergency Medicine. She has over 15 years of teaching courses on first aid, more specifically for road accident victims. She has degree in medicine (MBBS) from DY Patil Medical University, Mumbai and a Diploma in Emergency Medicine from Harvard University, USA.

### Sections

- About this course
- How to approach a road accident victim?
- Precautions to be taken while attending a road accident victim?
- Essentials of communication during an emergency.

### Additional Sections

- Tests & Certifications
- External References
- References
- Videos

### How to approach a road accident victim?

#### Road Accidents and First Aid

#### Priorities of treating an accident victim

1. Asphyxia (loss of oxygen)
2. Cardiac Arrest
3. Severe Hemorrhage (Bleeding)
4. Other Injuries/illnesses

#### IMMEDIATE REQUIREMENT

Critical four minutes - One of the most common causes of a road accident death is due to loss of oxygen supply. This is mostly caused by a blocked airway.

#### Remember:

1. Make the Scene safe
2. Look for the injured
3. Assist them
4. Call help & Look for the unconscious victims

#### Follow the rule of ABC

##### Clearing Airway

1. Airway - Clear the airway i.e., breathing tract
2. Breathing - Help restore it by mouth to mouth resuscitation
3. Circulation - Stop any bleeding

##### Clearing Airway

Put the victim on ground very gently and cautiously without vigorous handling to prevent further injury. Turn the victim to one side. Loosen clothing at neck, chest and waist. Tilt the head back, point the face slightly down so the tongue can fall forward allowing blood and vomit to drain out. Remove dirt, blood, vomit or loose teeth from mouth. Restoring breath - mouth to mouth resuscitation. If the victim is still not breathing, give him artificial breathing.

Turn the victim onto the back and start mouth-to-mouth resuscitation immediately. Tilt head back, support jaw, keep your fingers clear of throat. With good mouth to mouth seal and your cheek sealing the victim's nose, blow into the mouth until the chest rises. Lift your mouth, turn your head to see chest fall and listen and feel for air escaping from nose and mouth. If chest does not rise, check; For blocked airway. Mouth to mouth seal. Continue mouth-to-mouth resuscitation until breathing is restored. Blow every four seconds with adults and every three seconds with children.

[Previous](#)

[Next](#)



### Sections

- What is First Aid?
- How to approach a road accident victim?
- Precautions to be taken while attending a road accident victim?
- Essentials of communication during an emergency.

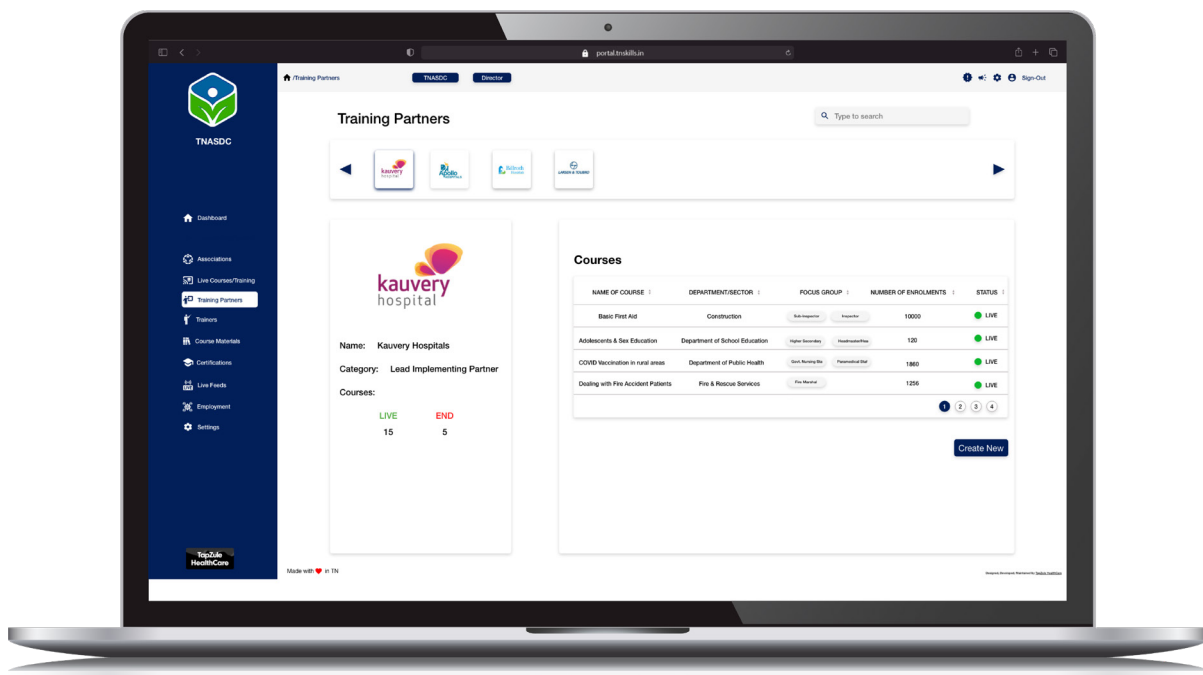
### Additional Sections

- Tests & Certifications
- External References
- References
- Videos

### 3 Easily attract large number of training partners to conduct their courses

The proposed platform should be convenient for a variety of skill development organisations/ training partners to be able to participate and conduct courses. There should be a **uniform and standard course and curriculum development mechanism**, using which training partners can easily develop standardised and quality courses to be delivered on the proposed platform.

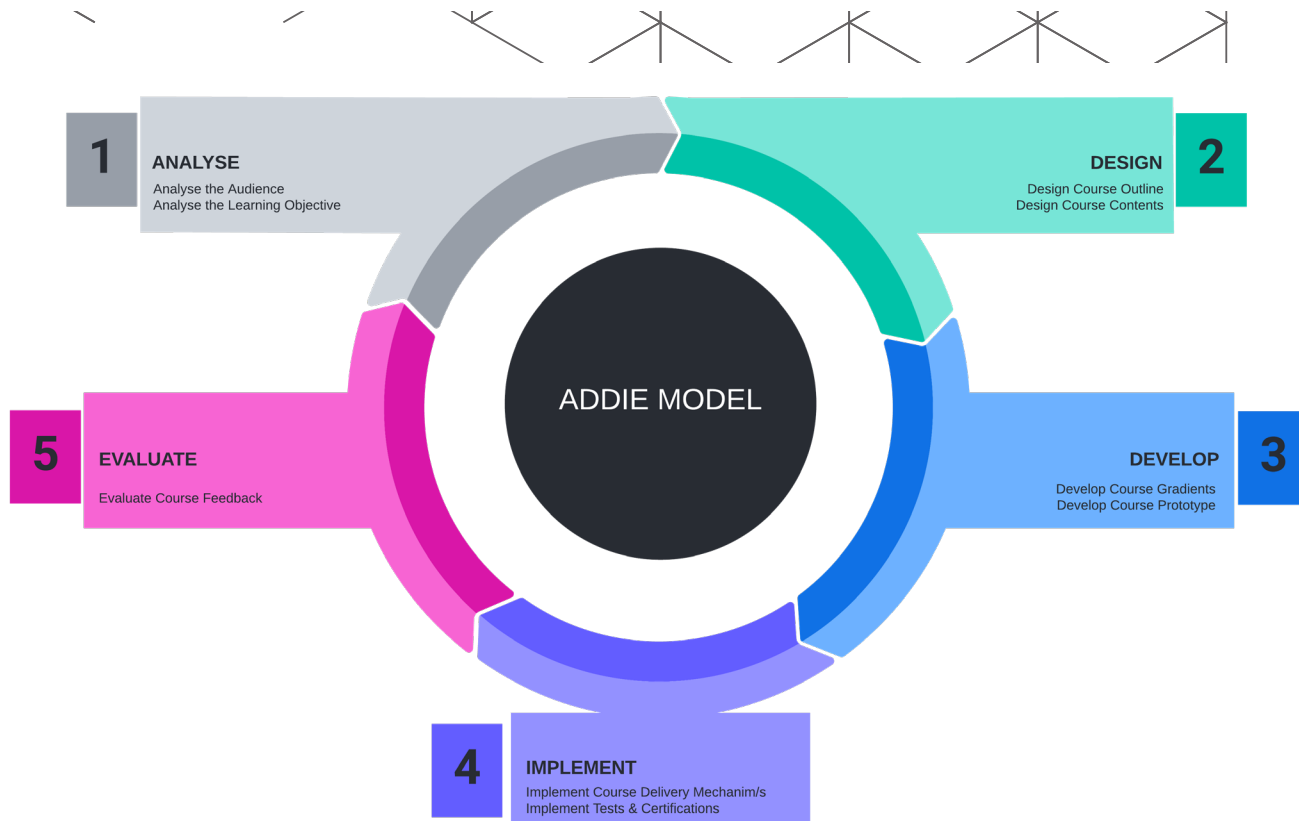
With a variety of *standardised courses*, trainees have the opportunity to opt and undergo training in several areas, one after the other or in parallel.



There should be a mechanism for **approved training partners** to submit courses content, on-line. Course committee members, should then be able to review and approve courses, receive feedback, monitor the course and trainee progress easily, on-line and remotely.

For the training partners to be able to design, develop and conduct courses online, it is proposed that an **ADDIE model** for course and curriculum developed is used as the base model for creating a courses on the proposed platform. The next picture is indicative of the ADDIE model embedded on the proposed platform. The following flow-chart depicts how the courses can be created on the platform. Majority of the course-development steps should be automatic. Once a certain approval threshold is met, the course should automatically become LIVE.

As shown in the image below, the proposed platform should have provisions to collect as much details about the courses from the training partners. There should also be a mechanism on the platform, using which courses could be linked and delivered to the trainees. This is further elaborated in Section 6.



**TNASDC**

- Dashboard
- Departments/Sectors
- Associations
- Live Courses/Training
- Training Partners
- Trainers
- Course Materials
- Certifications
- Live Feeds
- Employment
- Settings

TopZule HealthCare

/LIVE Course/New Course

Anna University Director

Sign-Out

**General Information**

Name of course: Road Accidents & First Aid

Department/Sector: Department of Motor Vehicles

12/12/2022 05/02/2021

Department/Sector: Department of Motor Vehicles

**Course Description**

Life of an accident victim can be saved by administering timely medical aid. The 'GOLDEN HOUR', the first hour after the trauma is called the 'golden hour' Instant and proper first aid given to road accident victims during this hour increases the chance of survival manifold and reduce the severity of injuries. Many deaths and impact of injuries can be prevented with First Aid if casualties are treated immediately.

**Course Requirements**

Minimum Qualification: Bachelors Degri

Minimum Age Requirement: 22

Does this course require Applicant Verification?

Yes

Select Applicant Verification Method

Aadhar verification

Select Certification Method

Select Method\*

Enter Certification Mark

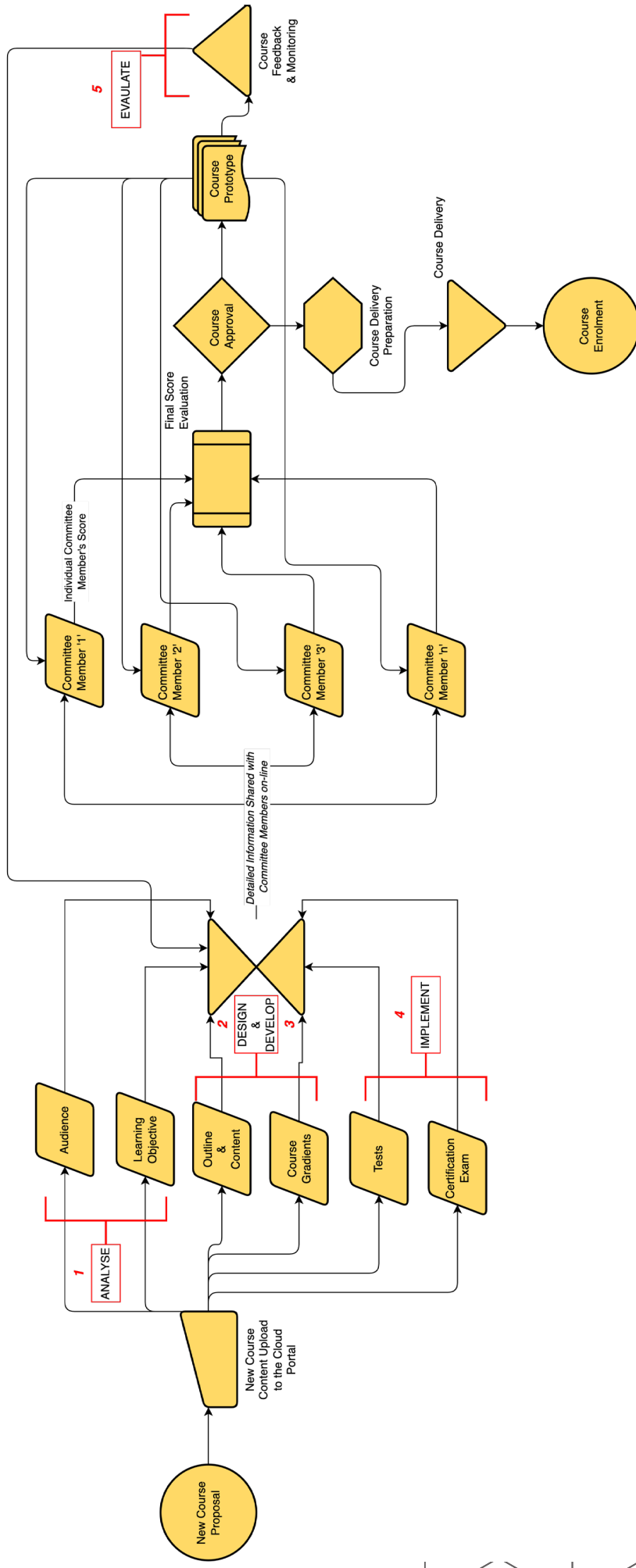
Enter Mark\*

**Approval Progress**

- Training Partner Approved
- Course Gradients Set
- Trainee Progress Markers Set
- Trainer's Approved
- Course Content Approved
- Trainee Selection Completed
- Course Content Delivery Mechanism Set
- Course Content Delivered

Next



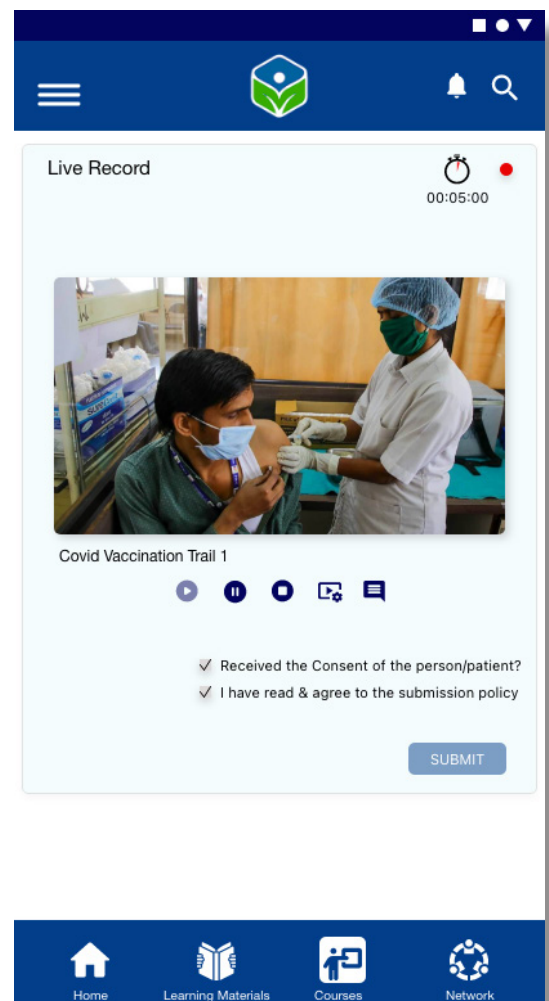


# 4

## On-line LIVE practical assessment & certification

The proposed on-line platform should be capable of conducting exams and certifications on-line and remotely. Trainees should have the facility to remotely undertake tests and even the certifying examination. Such events on the proposed platform can have a remote procturing facility to enhance the effectiveness.

Also, trainees should have a facility, on the proposed platform, to upload *exercise videos* that they record as part of the course requirements. **Automatic trainee verification and authentication** can be enabled for such essential activities. The trainees, through this facility, can upload training/trail videos that they shoot on their mobile applications. Such videos can later be reviewed by the trainers on the cloud-portal.



# 5

## Open courses to the general public

A mass skilling platform should attract trainees for a wide variety of backgrounds. A majority of the courses on the proposed platform should be based on the **MOOC model (Massive, Open, Online Course)**.

Certain courses can be designed to cater to this requirement, which will go a long way in terms of public-good. The general public may be encouraged to join certain courses and get themselves certified.



Advertisements such as the one shown in the above image may be attempted to attract mass registrations. The proposed platform should be designed to attract such audiences (general-public) easily, allow them to take courses for free and get certified instantaneously.

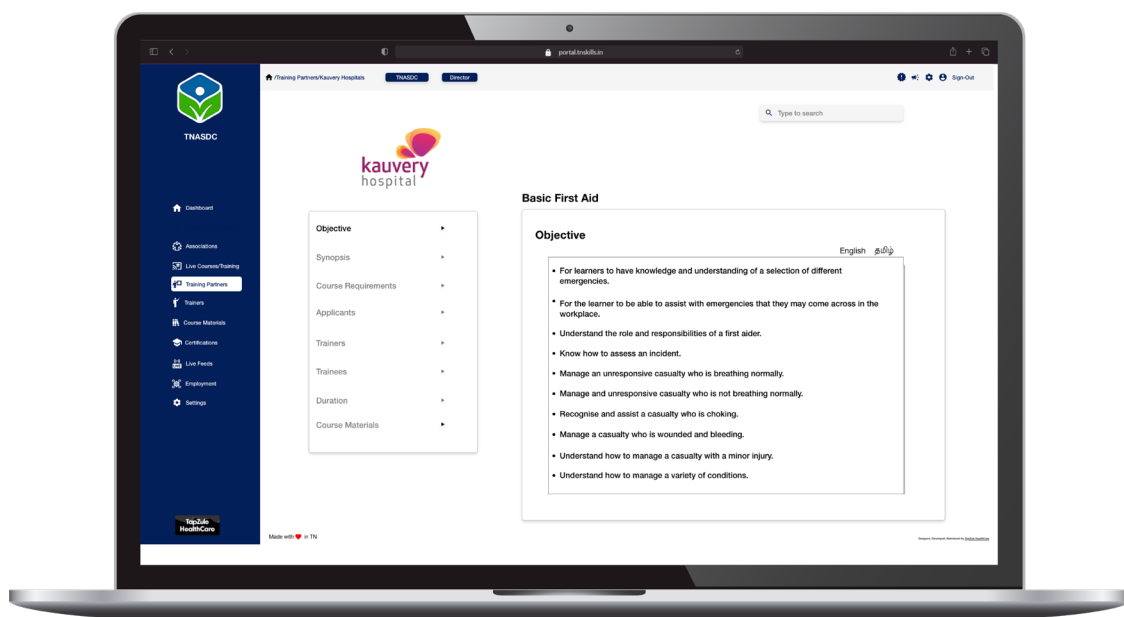
The proposed platform should allow the public to be able to download the mobile app, register and be able to take specific course seamlessly.

# 6

## Provide quality course content in several fomats

The proposed platform should have the provisions to support content in *various popular formats*. Majority of the course content delivery should take place automatically, once the trainee is approved to take such a course.

Several popular formats like video-based learning, text with visual representation of the scenarios can be used to explain the concepts involved.



Teaching Materials

Basic First Aid

What is First Aid?

First aid is the first and immediate assistance given to any person suffering from either a minor or serious illness or injury, with care provided to preserve life, prevent the condition from worsening, or to promote recovery. It includes initial intervention in a serious condition prior to professional medical help being available, such as performing cardiopulmonary resuscitation (CPR) while waiting for an ambulance, as well as the complete treatment of minor conditions, such as applying a plaster to a cut. First aid is generally performed by someone with basic medical training.

FIRST AID INFOGRAPHIC

IMPORTANT STAGES OF REANIMATION

25%

37%

38%

ACTIVITY BEFORE AMBULANCE ARRIVING

36%

26%

14%

25%

MERGENCY ACTIONS OF DOCTORS ON ADMISSION AFFECTED

300

Graduations

10000

Views

10000

Likes

About the Trainer

Sumran Charan is a First Aid Responder with the Tamil Nadu Fire & Rescue Service. He has over 12 years of field experience in providing First Aid. He has received several awards for his work during the 2003 Tsunami and the 2015 floods in the state of Tamil Nadu.

Sections

What is First Aid?

Elements of a good First Aid kit

Precautions to be taken during a First Aid

Essentials of communication during an emergency.

Additional Sections

Tests & Certifications

External References

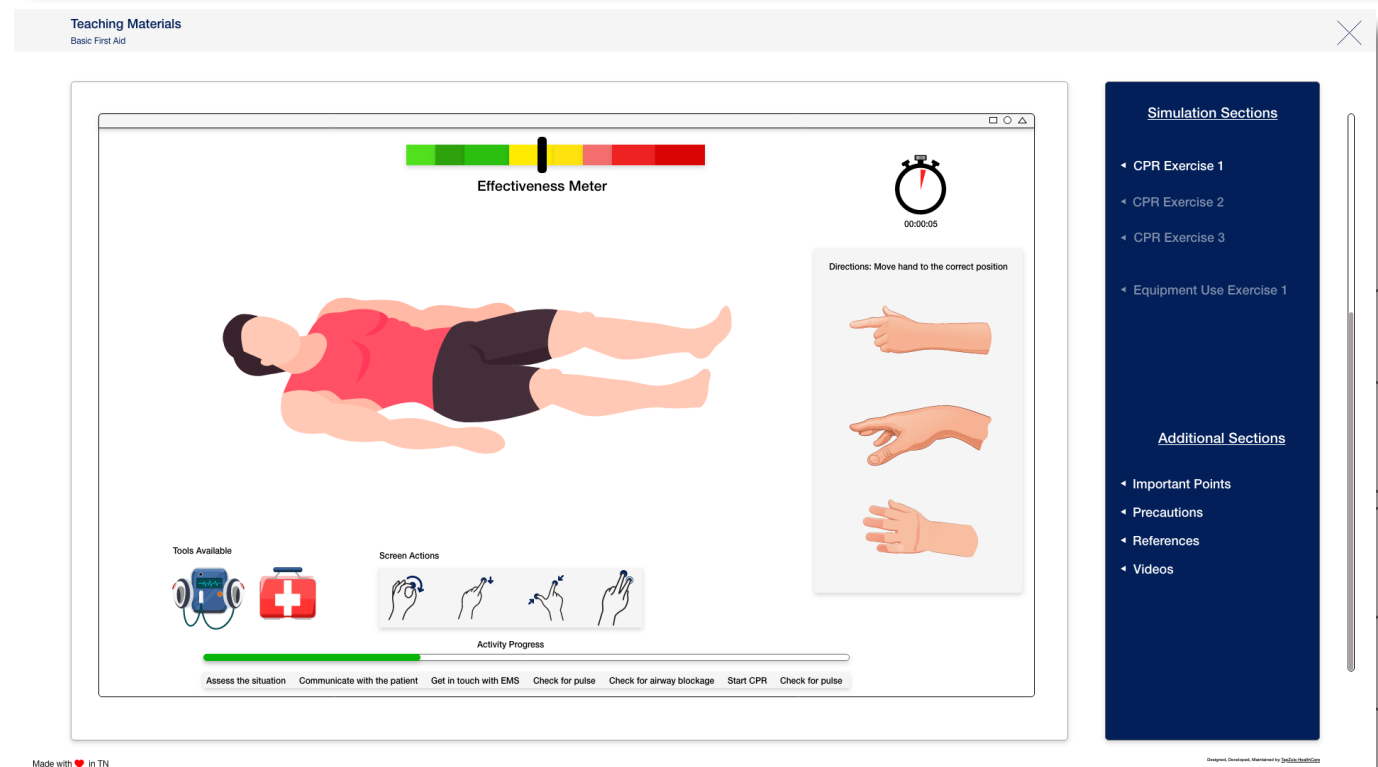
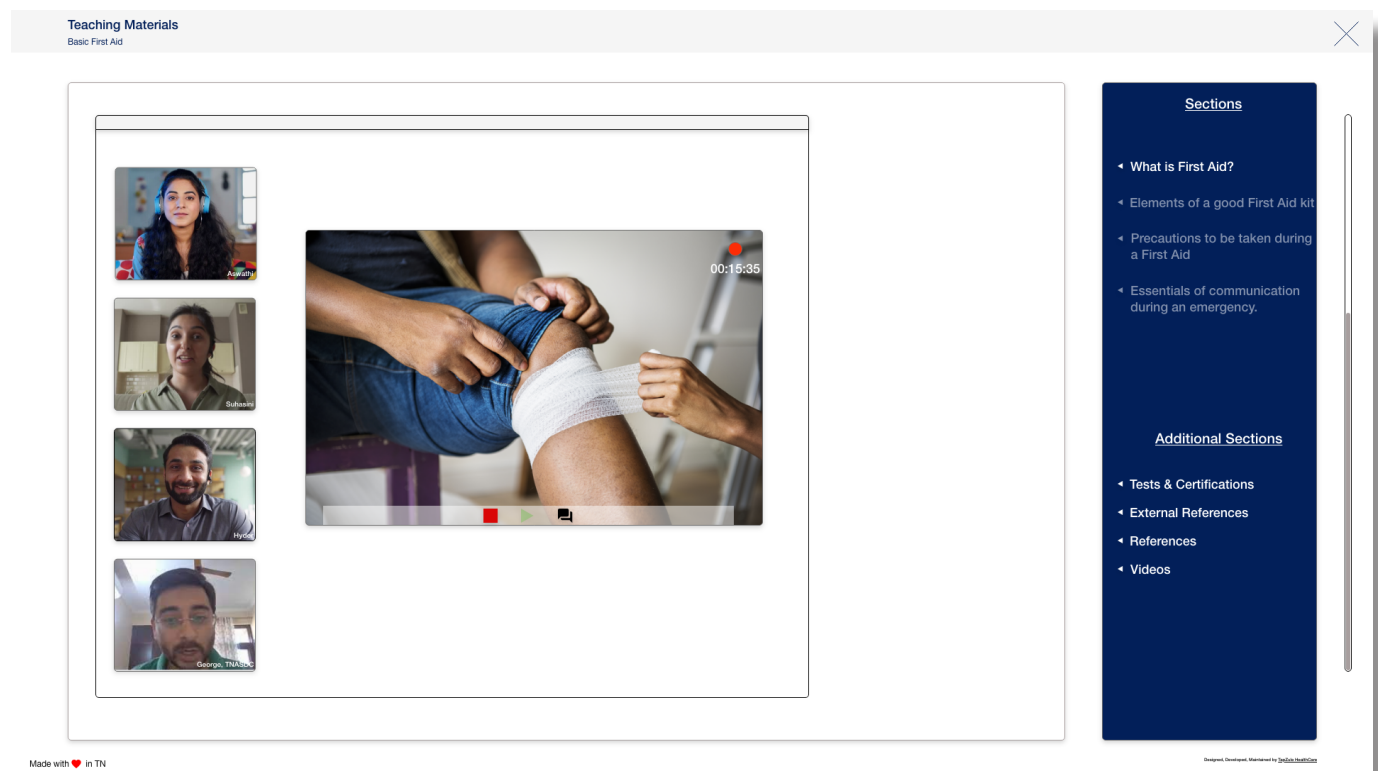
References

Videos

Made with ❤️ in TN

Designed, Developed, Maintained by [IndusNation](#)

The following images show different teaching, learning and testing formats on the proposed platform. Several *live interactive tools for learning and testing* can be provided to enhance the learning experience of the trainees. **Simulation based exercises** also can be incorporated on the proposed platform. The images below depicts a sample exercise in the First Aid course. Interactive sessions (LIVE) should also be provided to increase the engagement of trainees with the trainers from time-to-time.





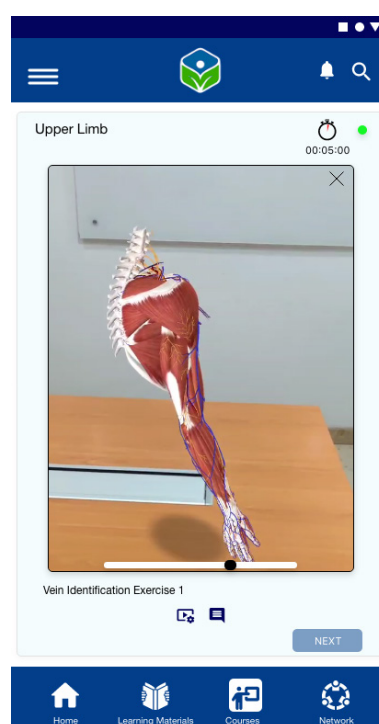
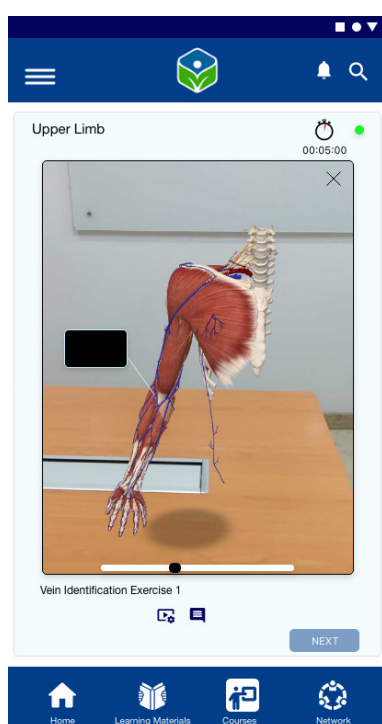
# 8

## Immersive Learning and Training Tools

Immersive tools should be custom built and embedded into a majority of the courses on the proposed platform to enhance the learning experiences. Immersive learning is an intricate part of the entire gamification process and It includes virtual simulation tools like **AR** and **VR**.

In nursing, a simulation has been defined as *“an activity or event replicating clinical practice using scenarios, high-fidelity manikins, medium- fidelity manikins, standardized patients, role playing, skills stations, and computer-based critical thinking simulations<sup>1</sup>”*.

Virtual nursing simulations are a type of clinical experience where interactions with patients are performed virtually on the mobile application, in ways that parallel real-world engagement. Trainees will certainly appreciate the flexibility of navigating and learning on the



platform at their own convenience.

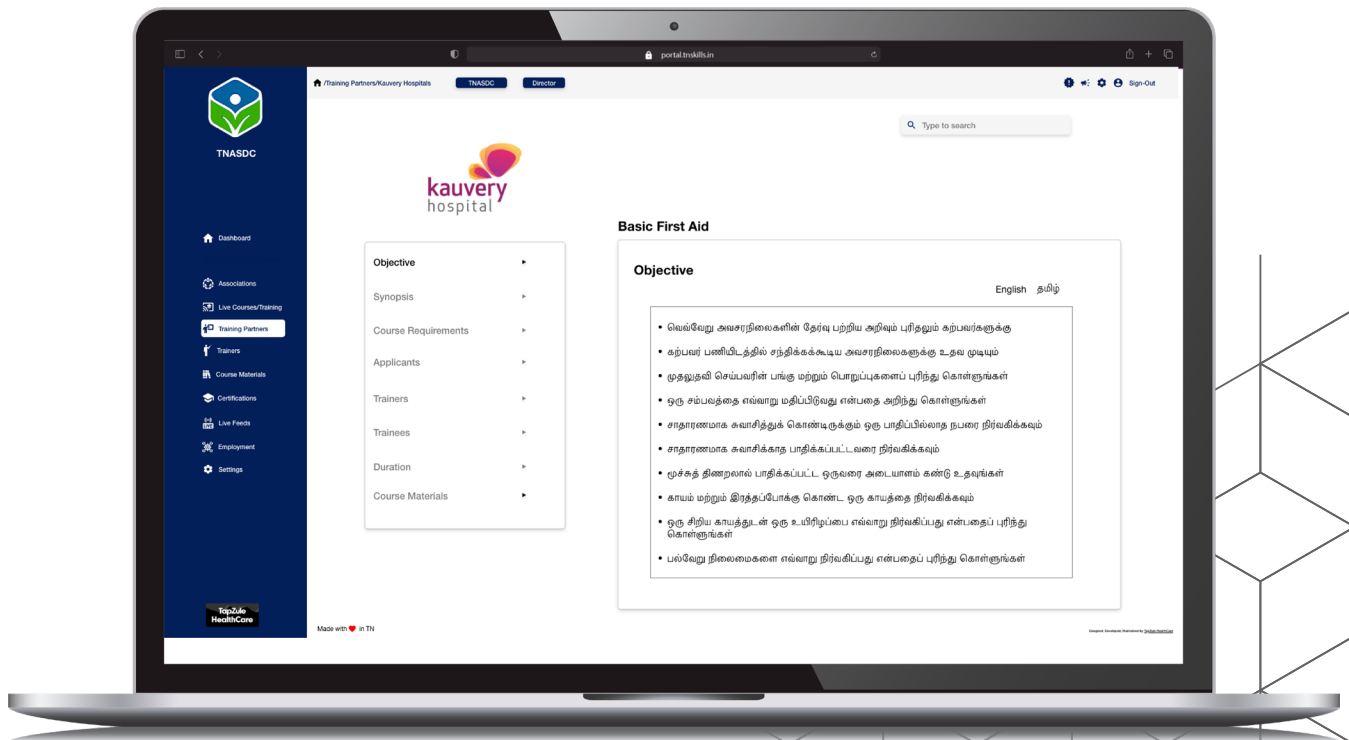
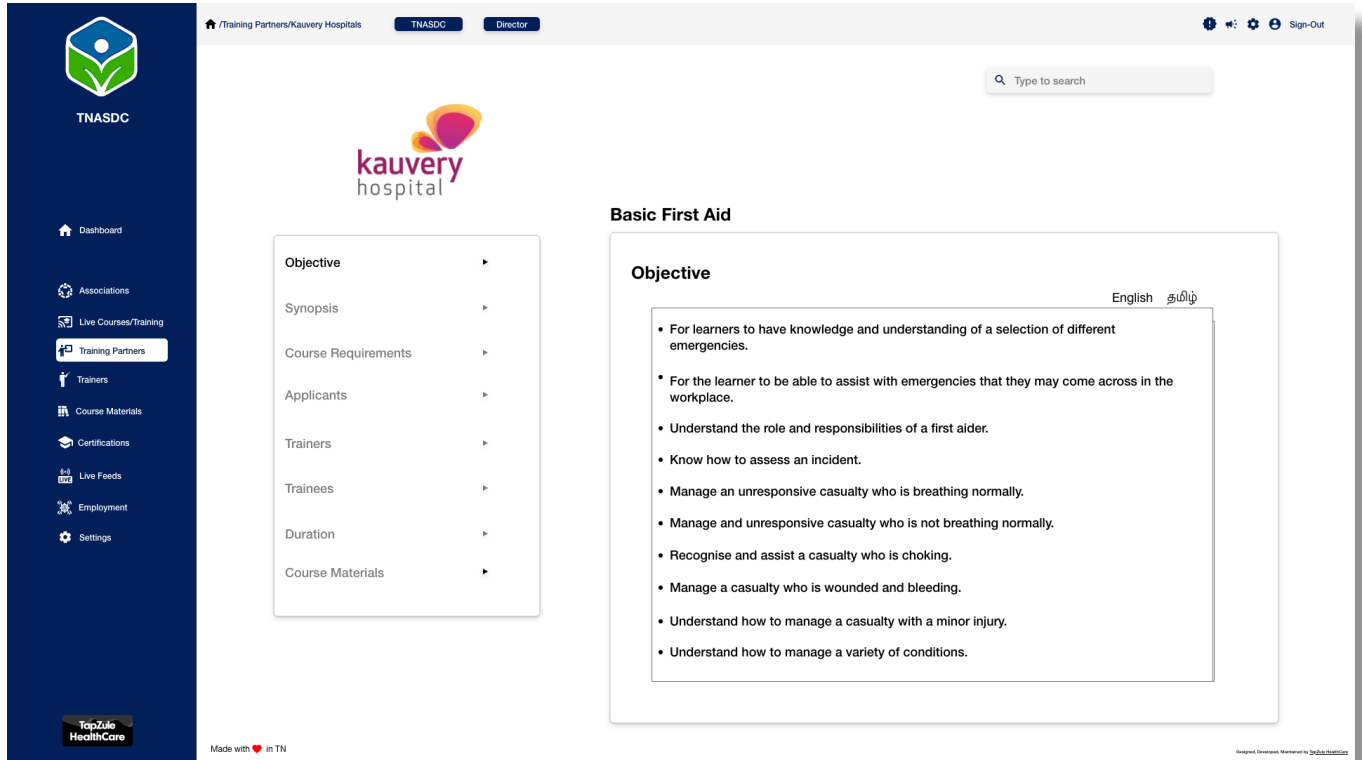
AR tools can easily be embedded on the mobile application for trainees to have a real-world experience while learning on the proposed platform.

<sup>1</sup> American Journal of Nursing Reports, April 2018

# 9

## Training in vernacular languages

The proposed platform should have the ability to provide content in vernacular languages. This is essential while providing courses for the masses.



## 10

# Automate the content delivery & testing mechanism

A majority of the courses on the proposed platform should require **very little or no manual intervention**, when it comes to course delivery and testing. This will ensure that the course-time-line are met 100% of the time. The proposed platform should have in-built mechanisms to ensure that *automations are the norm*. The image below depicts such an automation that a training partner experiences while setting up a course.

**Learning Objectives**

LO-1 Add

**Learning Objectives-details**

Enter a Learning Objective Title\*

Enter a Learning Objective Description\*

Edit Save

**Set Course Requirements**

Set Minimum Qualification\* ▼

Set Minimum Age Requirement\* ▼

Department/Sector\* ▼

Does this course require Applicant Verification? Select Response\* ▼

Select Applicant Verification Method Select Method\* ▼

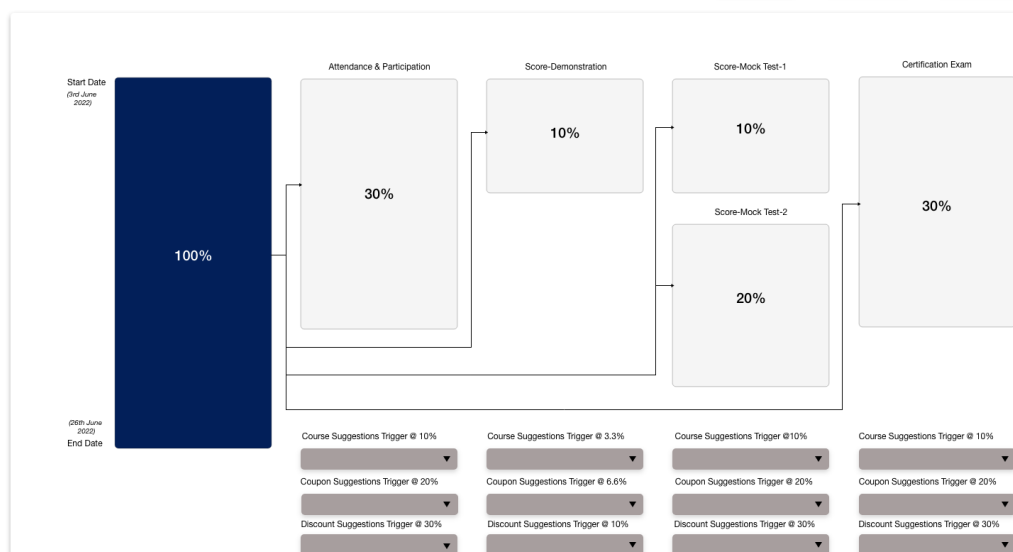
Select Certification Method Select Method\* ▼

Enter Certification Mark Enter Mark\* ▼

Edit Next

Made with ❤️ in TN

## Set Course Gradients

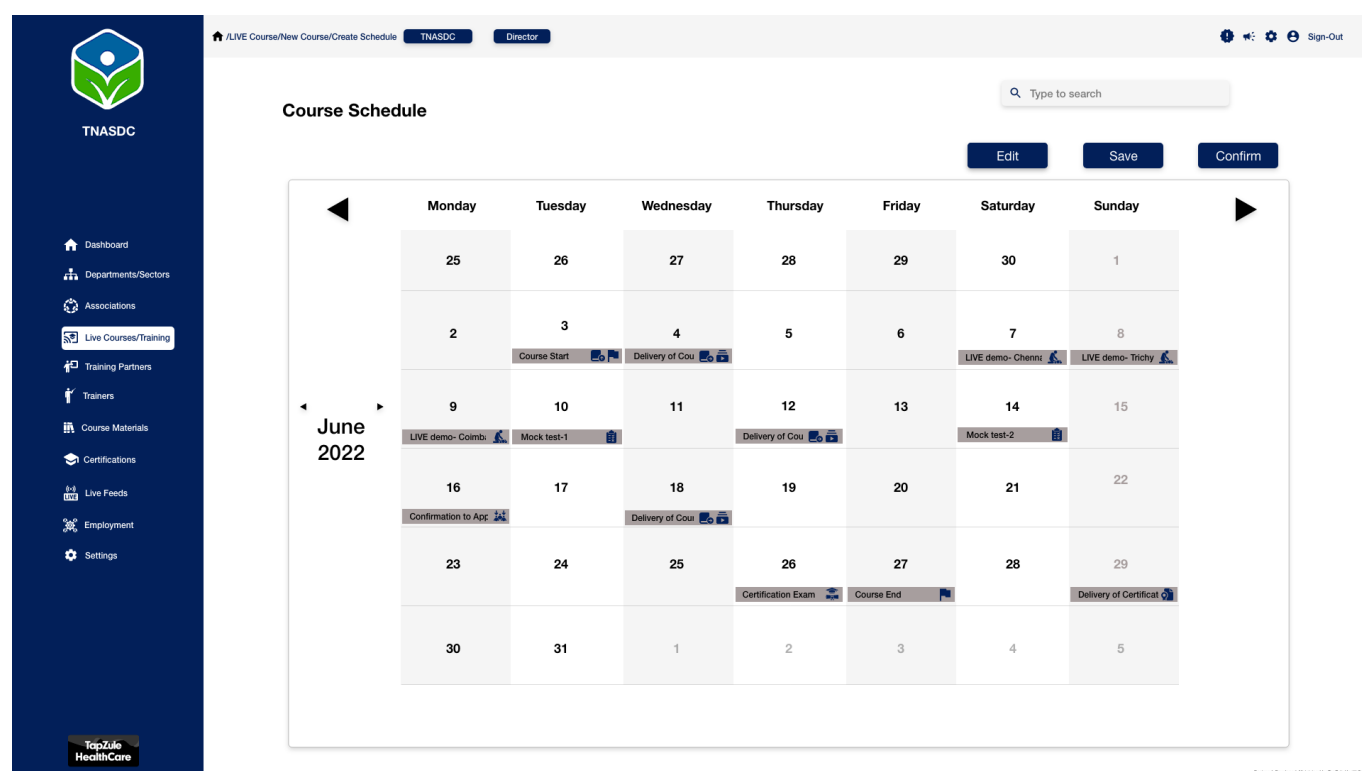




# 11 Reduce off-line & live lecture requirements

It is proposed that about **80-85%** of the course content delivery should take place on-line and automatically, thereby reducing the requirement of the trainees to be actually be present during lecture, or visit the training centre more often than actually needed. This ensures that trainees actually take the courses at their convenience.

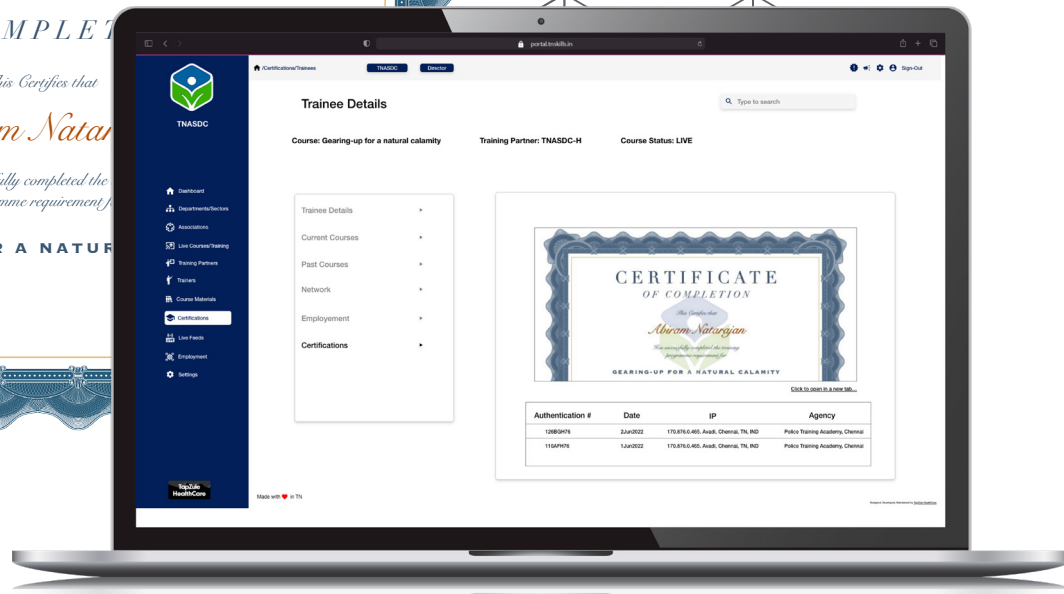
A simple *track-follow-resume* mechanism for trainees is indicated in the image below. In this manner, the trainees are well aware of the course schedules and requirements.



# 12 Authenticate training records on demand

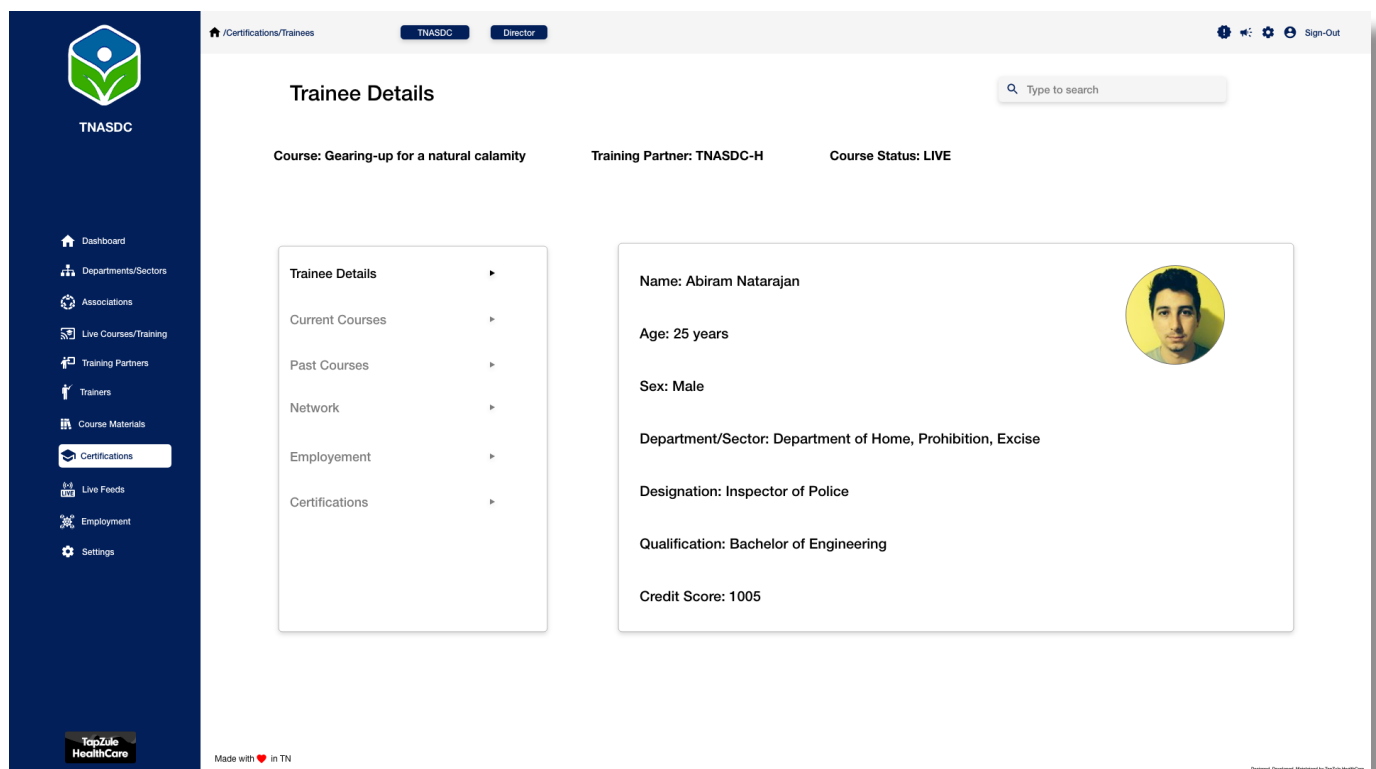
The proposed on-line platform should have provision for **quick authentication** of records of trainings and certifications. This will help trainees provide authentic certificates when requested.

Agencies requiring such authentications can present a request with the trainee's details and receive authenticated records of the certificates and other credentials.



# 13 Track, report & incentivise individual performance

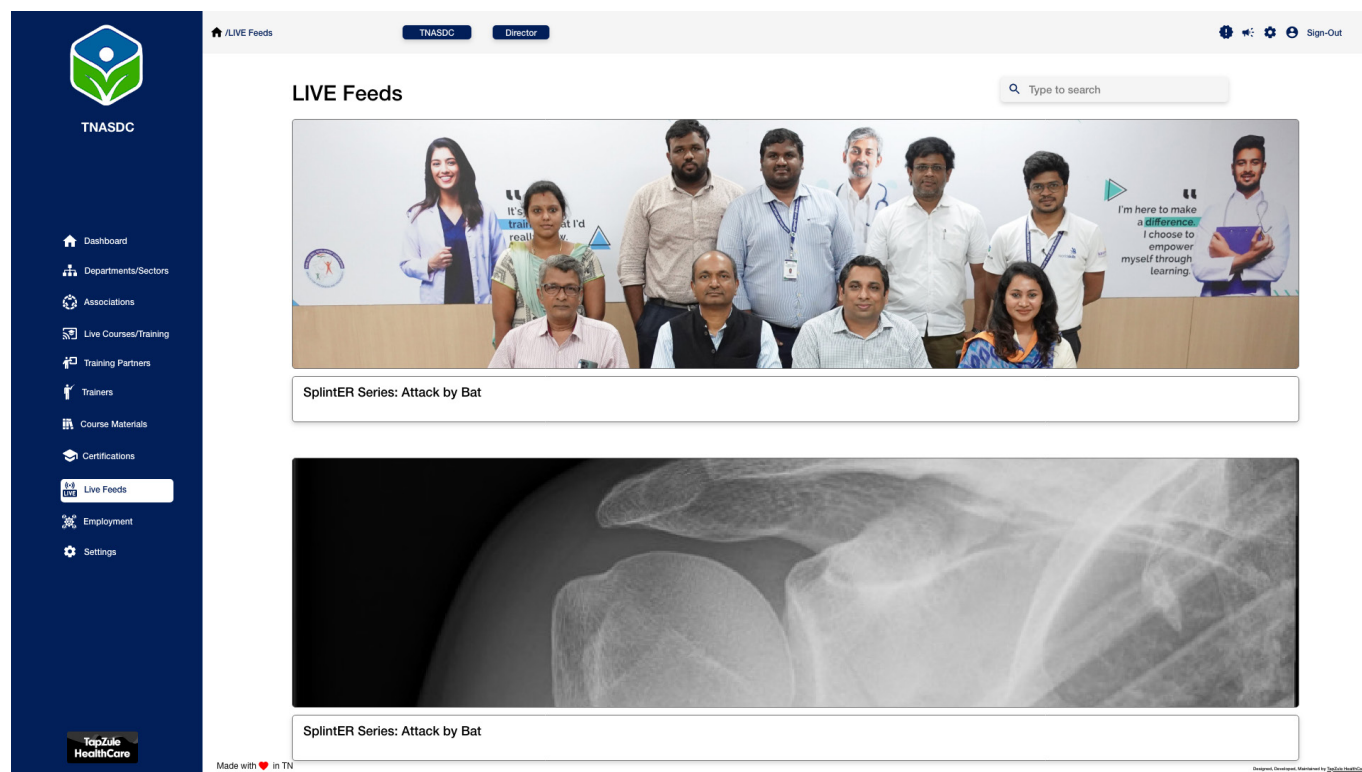
The proposed platform should have provisions for the trainees to track their progress throughout their time on the platform. Optional courses, that may benefit them professional or personally, should be indicated to them at the appropriate instances to enthuse them. Gamification concepts should be in-built on the proposed platform to ensure continuous participation.



# 14 LIVE feeds and continous engagement

A LIVE feeds section on the proposed platform should be provided where, all latest information about the courses, training programmes, success stories should be shared instantenously.

It can be expected that such a space, when provided will become the meeting place for trainers and trainees on the proposed platform.



# 15 Continuting Medical/Nursing Education certifications

As part of Continuing Medical/Nursing Education (CME/CNE), there is a need to provide a mechanism on the proposed platform to **Certify, Re-certify and Renew Education requirements** of healthcare professionals to ensure that they are able to provide the best care to their patients.

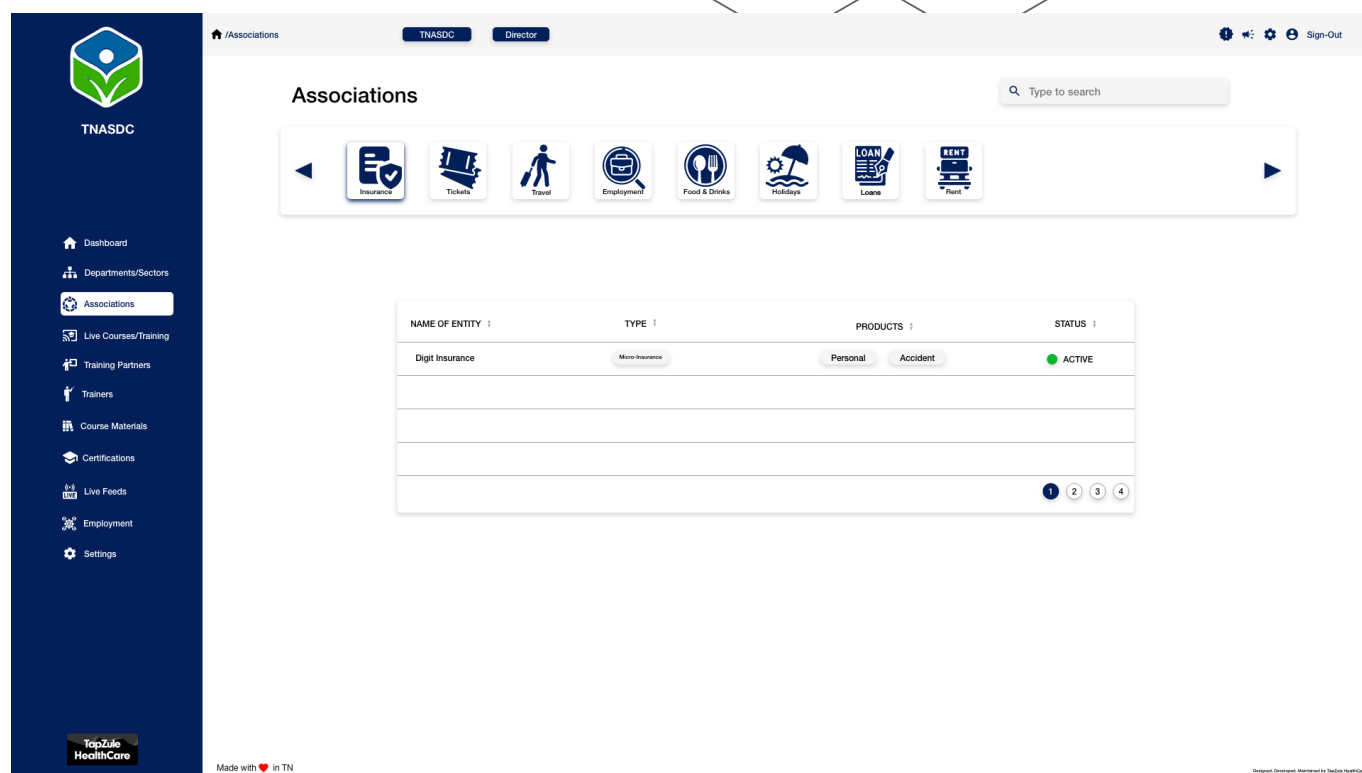
The proposed platform should have provisions for agencies to conduct re/certification courses and permit their candidates to train, take tests and certify themselves remotely.

# 16

## Cross-linking and incetivising continous participation

The proposed platform should have avenues for the trainees and trainers to recieve rewards and benefits for the continous participation on the platform. Third-party offering and discounts, specifically developed for the proposed platform should be onboarded. As and when, the trainers and trainees qualify, rewards and benefits should be made available for them use at their discretion.

The image below depicts one such association with an insurance agency providing customised insurance solutions to individuals on the proposed platform.



# 17

## Training the trainers

There should be provisions on the proposed platform to identify future trainers. Such trainers can be utilised to train the massess. A database of trainings and performances should be readily available to identify future trainers, provide them with all assistance, so as to enable to become trainers of the future.

**Trainers**

Search: Type to search

Trainers: TNASDC-H, Kauvery Hospital, Apollo Hospitals, Bilech Hospital, LARSEN & TOUBRO

**Courses**

NAME OF COURSE	DEPARTMENT/SECTOR	FOCUS GROUP	NUMBER OF ENROLMENTS	STATUS
Advanced First Aid Techniques	Construction	Sub-Inspector, Inspector	10000	LIVE
Road Accidents and First Aid	Dept. of Transport	Road Transport O, Drivers, Conductors	120	LIVE
Dealing with depression	Dept. of Public Health	Genl. Doctors, Pk. Doctors	1860	LIVE
Dealing with Fire Accident Patients	Dept. of Home, Prohibition & Excise	Fire Marshal	1256	LIVE

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# 17 Employment opportunities listing

The proposed platform should connect the trainees with potential employers automatically. There should be a provision to create or list employment requirements on the platform for the training partners and other agencies.

The trainees should be able to apply for jobs on the proposed platform itself.