

Assessment Processes and Protocols: Guide for Short-Term Skill Training Programs



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GLOSSARY

- **Artificial Intelligence (AI):** AI refers to system intelligence that enables machines to learn from experience, adjust to the environment, and thereby perform human-like activities. Using deep learning algorithms, machines can be trained to accomplish specific tasks by processing large amounts of data and recognizing patterns. Some benefits of using AI in assessments are flagging of anomalies, reduction in cheating, reduced human intervention, precision in testing and auditability.
- **Artificial Intelligence (AI) based Proctoring:** Artificial intelligence (AI) based proctoring solutions refer to the usage of machine intelligence for proctoring. Tools such as object detection, face detection and anomalous behaviors are detected using smart algorithms to prevent, flag, and record malpractices.
- **Assessment:** An Assessment is a test, examination, or observation that is the measurement in which a sample of an examinee's behavior in a specified domain is obtained and subsequently evaluated and scored using a standardized process. TVET assessments focus on gathering cumulative information on a candidate's knowledge, skills/competencies, abilities, traits, dispositions, values, and other characteristics, in a specific domain, at or for, a specific span of time.
- **Augmented Reality (AR):** AR is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory and olfactory. The computer-generated virtual elements are projected over real-life physical surfaces using devices such as smartphone screens.
- **Assessment Blueprint:** The Assessment Blueprint is a document that is attached to the qualification that is to be assessed. The Assessment Blueprint gives a detailed outline of how the assessment shall be designed, allowing stakeholders to define the complex relationship between performance outcomes/ assessment criteria, theory and practical items, difficulty levels, time and marks allocated to each question, assessment methodology, and the evaluation thereof.
- **Assessment Platform:** An Assessment Platform is the software that facilitates the assessment. It refers to the platform where questions are hosted, proctoring features are configured and the interface that the candidate/ assessor/ proctor interacts with for conduct of the assessment.
- **Assessor Guide:** This Assessor Guide is a manual used by an assessor for conducting and evaluating assessments. An Assessor Guide is based on a QP/NOS and gives a clear standard operating procedure on how one must assess a specific qualification.
- **Certification:** Certification (or award, credential, license, diploma, degree, etc.) follows the process of assessment and is a record that the individual's competency has been validated. The certificate is usually issued by an Awarding Body, which has public trust and competence; conferring official recognition of an individual's value in education, the labour market and training.
- **Competency:** Competency describes a cluster of related knowledge, skills and attitudes that are observable and measurable, necessary to perform a work activity independently at a prescribed proficiency level.
- **Competency-based Assessment:** Process of collecting evidence to show that candidates are able to perform to the required standards of a particular job or a specific task in the workplace and making a judgement on the competency of the candidate.
- **Digital Assessment:** Any assessment that can be administered using a technology platform is termed as Digital Assessment. Digital Assessments use designated, secure, testing devices such as computers, tablets or smartphones. Digital Assessments can be conducted online (using internet) or offline (without internet - with Local Area Network (LAN)/pre-loaded application on the device).

- **Distractors:** The incorrect alternatives or choices in a selected response item.
- **IP-based Camera:** IP-based cameras are prefixed hardware, envisioned to be situated at the Assessment Center to record and monitor the complete assessment process and allow the video recording to be available to stakeholders.
- **Item:** An individual question in a test that requires the test-taker to produce an answer.
- **Item Bank:** An item bank is a repository of test items. A selection of items from the item bank is used for creating a test form that assesses competency in a certain domain.
- **Local Area Network (LAN):** A LAN is a computer network that interconnects computers/tablets within a limited area such as a residence, school, laboratory, university campus or office building.
- **Non-Digital Assessments:** Non-Digital Assessments are administered completely without the usage of technology, using pen-paper mode for theory assessment. The assessments are administered by the Assessor on-ground at the assessment location and may be supported by a proctor. The assessor manually processes the assessment score and shares it with the Assessment Agency.
- **Offline Digital Assessments:** Offline Digital Assessments are a subset of digital assessments and are conducted on assessment servers created locally (e.g. Local area network (LAN) or on an application within which the assessment is preloaded). This mode of assessment is preferred for locations where internet bandwidth and speed are not as per the requirement of the assessment platform.
- **Online Assessments:** Online Assessments are a subset of digital assessments and are conducted using internet over a secure server on a technology platform. Online assessments can be conducted on-ground or remotely using a combination of online proctoring tools like remote human proctoring and auto proctoring tools.
- **Remote Assessments:** Remote Assessments are a subset of online assessments and allow the test-taker to undergo an assessment from a remote location. Remote assessments are monitored through live-streaming (via a human proctor) and/or automated proctoring tools.
- **Simulations:** Simulations are technology driven manifestation of real-life scenarios/situations, on a digital device. Simulation-based assessments are used to assess how one would react to situations one may encounter while working and how one thinks critically to solve problems.
- **Stem:** A question or statement followed by a number of choices or alternatives that answer or complete the question or statement. (Stems are most commonly found in multiple-choice questions.)
- **Test Form:** A Test Form is a question paper/task set that contains a selection of items from an item bank, such that it aligns with the requirements and mapping in the Assessment Blueprint.
- **Virtual Reality (VR):** VR is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience. Instead of viewing a screen in front of them, users are immersed and able to interact with three-dimensional worlds in a seemingly real or physical way using special electronic equipment, such as a helmet with a screen inside or gloves fitted with sensors.



ACRONYMS

AA	Assessment Agency
AC	Assessment Criteria
AEBAS	Aadhaar Enabled Biometric Attendance System
DGT	Directorate General of Training
ITI	Industrial Training Institute
LAN	Local Area Network
MC	Model Curriculum
MCQ	Multiple Choice Question
MSDE	Ministry of Skill Development & Entrepreneurship
NCVET	National Council for Vocational Educational Training
NOS	National Occupational Standard
NSDC	National Skill Development Corporation
NSQC	National Skills Qualification Committee
NSQF	National Skills Qualification Framework
PC	Performance Criteria
PMKVY	Pradhan Mantri Kaushal Vikas Yojana
QP	Qualification Pack
RFP	Request for Proposal
RPL	Recognition of Prior Learning
SME	Subject Matter Expert
SP	Special Project
SSC	Sector Skill Council
SSDM	State Skill Development Mission
STT	Short Term Training
TC	Training Center
ToA	Training of Assessors
ToT	Training of Trainers
TP	Training Partner
TVET	Technical and Vocational Education and Training

EXECUTIVE SUMMARY

The purpose of the *Assessment Processes and Protocols: Guide for Short-Term Skill Training Programs* is to address the key subject of skill assessments, which are pivotal in assuring that the outcomes envisaged in the 'Skill India Mission', a flagship initiative of the Government of India, are of benchmark quality, and moreover contribute to enhancing the employability and productivity of the Indian workforce. To that end, NSDC, under the aegis of the Ministry of Skill Development & Entrepreneurship, worked with leaders in the skill ecosystem to frame recommendations and frameworks for assessments. There are a range of stakeholders involved in the process of designing and conducting assessments, all of whom must work in tandem to make assessments possible. SSCs, AAs, Training Centers, Assessment Centers, Assessors and Proctors are some of the key stakeholders – each performing a specific role in the assessment process. Assessments have a cycle that is linear yet iterative, proceeding from design to planning, to conducting the assessment, all the while being underpinned by a quality assurance framework.

The **Assessment Design** section covers the design and development of the assessment blueprint, a unique document attached to every QP/NOS, essential for defining the rules and structure of the assessment for the said qualification. Blueprints indicate a mapping of the performance criteria with the items in the assessments, such that the competency of the candidate can be effectively and meaningfully addressed. Blueprints also help define variables such as time duration for the assessment, allocation of scores, difficulty levels of items, suitable types of items, the role of the assessor in the assessment, target group and language considerations etc.

The **Assessment Planning** section details the activities that must be completed in anticipation of assessments. This includes Annual Assessment planning by SSCs, parameters to be used for empanelment and performance measurement of Assessment Agencies, various digital solutions to assessments, including proctoring considerations and assessment interfaces. The document also clearly defines three primary modes of assessments, i.e., center-based digital assessments, center-based non-digital assessments, and remote online assessments, and the suitability of all these modes, dependent on factors such as availability of internet, use of domain equipment, role of assessor/proctor, etc. Finally, this section covers the orientation or training programs required for personnel involved in order to ensure preparedness for the assessment.

The **Assessment Administration** section lists activities pre, during, and post an assessment, starting from ensuring infrastructure and technical readiness on the day of assessment to finally approving results and generating certificates. Each activity is performed by a specific stakeholder, and each step is crucial in ensuring the assessment proceeds smoothly.

Finally, the cycle is closed with a robust **Quality Assurance** framework that includes monitoring of the overall assessment process including collection of evidence under strict data security norms, meticulous reviews of the blueprint and item banks, grievance redressal for cases of maladministration and malpractice, and assessment reports and analytics.

SCOPE

In India, the skill training and assessment ecosystem has historically existed in two parallel paradigms, consisting of long-term training programs at Industrial Trainings Institutes (ITI) under the Directorate General of Training, and short-term training programs under Sector Skill Councils (SSCs) led by National Skill Development Corporation (NSDC). Over the years, the skill training and assessment practices of both these skilling systems have evolved independently to bring in quality assurance and frameworks for standardization. With the constitution of the National Council for Vocational Education Training (NCVET) by the Government of India in 2018, the independent functioning of these parallel skilling systems has come under a unified regulation. **The scope of this Guide pertains to the processes and protocols to be followed in the short-term skill training and assessment ecosystem** wherein the following stakeholders perform major functions:

1. **Awarding function** is performed by Sector Skill Councils
2. **Assessment function**, performed by Assessment Agencies on behalf of Sector Skill Councils
3. **Governance function** of SSCs by NSDC

Henceforth, all references to skill training and assessment in the document shall be limited to the short-term skilling system operating with the above mentioned stakeholders.

The focus on skilled manpower by the Government of India has led to a rapid development in the need for swift and targeted skill training. The success of a training program is adjudged through an assessment, and the same is true when it comes to the recognition of previously acquired skills of the existing skill labor force. The short-term skilling ecosystem conducts standards-referenced assessments based on National Occupational Standards (NOS) primarily falling in the following two categories:

- Short Term Training programs (STT) consisting of training followed by assessment and certification
- Recognition of Prior Learning (RPL), which refers to an assessment process used to evaluate a person's existing skill sets, knowledge and experience gained either by formal or informal learning

In the government's flagship PMKVY alone, 36,31,707 and 52,04,544 candidates have been assessed till March 2020 in STT and RPL programs respectively. Besides PMKVY (2016-2020), there is a high-volume of assessments being conducted in programs such as schemes under State Skill Missions and Central line ministries, apprenticeships, fee-based programs, CSR-funded programs, vocationalization of education in schools and colleges, and more. Given the immense scale of assessment activity that has emerged to fulfil the needs of the ecosystem, there has been a need to develop quality assurance and standard frameworks for administering assessments. **This Guide aims to interpret the assessment value chain starting from designing to planning & conduct to review of assessments, deconstruct the roles and responsibilities of stakeholders involved, and define frameworks and procedures to ensure quality and standardization.**

BACKGROUND

An Assessment is a test, examination, or observation that is the measurement in which a sample of an examinee's behavior in a specified domain is obtained and subsequently evaluated and scored using a standardized process. TVET assessments focus on gathering cumulative information on a candidate's knowledge, competencies, abilities, traits, dispositions, values, and other characteristics, in a specific domain, and categorically serve the purpose of signaling employability, competence to work, and specialization.

In the short-term skill training ecosystem in India, assessments are administered in a variety of contexts, for a variety of purposes, ranging from assessments of learning after a short training program, assessments of apprentices who have undergone on-the-job training at workplaces, to recognition of already skilled personnel in the ecosystem. With the high volumes of assessments being administered in short-term skill training programs, NSDC, under the aegis of Ministry of Skill Development and Entrepreneurship, identified a need to delve further into the quality assurance and standardization of the assessment systems in skills.

Over the years, NSDC has originated a sustained effort towards strengthening assessment processes and protocols with SSCs. Some of the initiatives include the release of Assessment Reforms in July 2018, the issuing of the Criteria for the Empanelment of Assessment Agencies by SSCs' in August 2018, followed by a series of consultations in January 2020, towards understanding existing assessment practices and developing recommendations with key stakeholders involved in skill assessments. The stakeholders consulted were:

- a) Assessors, for their direct involvement in administering assessments and scoring candidates;
- b) Training partners/centers, for providing the venue and tools for assessment and also being impacted by assessment results under Government schemes;
- c) Assessment agencies, the empaneled bodies through which SSCs/Awarding Bodies design, facilitate, and manage the complete assessment cycle; and
- d) SSCs/Awarding Bodies, responsible for issuing certificates and ensuring quality assurance in assessments.

The outcome of the consultations was an identification of the primary roles and responsibilities of various stakeholders during the assessment process, and delineated areas of improvement and recommendations on optimizing operational efficiency and quality.

With a vision to strengthen assessments for short-term skill training programs, NSDC constituted a working group of experts on assessments in April 2020 to come together and outline robust frameworks and processes that could be instituted through a Guide on Assessments for Short Term skill training programs. The working group consisting of 25 representatives from SSCs, Assessment Agencies and NSDC, deliberated on the following key intervention points concerning assessments:

- a) Assessment Design and Blueprint for a Qualification Pack
- b) Digital Assessments and Proctoring Solutions
- c) Assessment Administration and Processes
- d) Assessor Guides for the conduct of Assessments

The expertise of the working group was formalized after multiple discussions through chapters drafted on each intervention point. Assessment Processes and Protocols: Guide for Short-Term Skill Training Programs is a thorough document that aims to summarize the recommendations of the working group in a lucid and exhaustive manner, to be taken up for implementation by the concerned stakeholders in the short-term skill development system.

ACKNOWLEDGEMENTS

In the pages to follow, the Guide undertakes the gargantuan task of framing protocols and processes governing skill assessments within the NSDC-led ecosystem, in a landscape as vast, varied, and complex as India. The contents of the document are a collaborative work created by leaders, experts and innovators at the forefront of skill assessment in India, constituted into a working group led by NSDC. The chapters in this document have emerged after several rigorous rounds of deliberations spanning three months, thorough chapter writing and exacting reviews and re-works. This document owes its thanks to the working group members who worked tirelessly with a determined commitment to bring forth an output of supreme quality that would serve as a guide for Sector Skill Councils, Assessment Agencies and other stakeholders in assessments. For their contribution to the making of this Guide, National Skill Development Corporation acknowledges the working group members, divided into four sub-groups, as follows:

Assessment Blueprint	Digital Tools and Proctoring Solutions	Assessment Administration	Assessor Guide
<ul style="list-style-type: none"> ■ Chairperson: Dr. Sandhya Chintala, IT-ITeS Sector Skills Council NASSCOM 	<ul style="list-style-type: none"> ■ Chairperson: Tarun Girdhar, Mercer-Mettl 	<ul style="list-style-type: none"> ■ Chairperson: Arindam Lahiri, Automotive Skills Development Council 	<ul style="list-style-type: none"> ■ Chairperson: Mrinal Kumar, Navriti Technologies
<ul style="list-style-type: none"> ■ Anand Patil, City & Guilds 	<ul style="list-style-type: none"> ■ Amit Singh, Aon's Assessment Solutions 	<ul style="list-style-type: none"> ■ Ajit Padhi, IT-ITeS Sector Skills Council NASSCOM 	<ul style="list-style-type: none"> ■ Anand Kumar Singh, Construction Skill Development Council of India
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<ul style="list-style-type: none"> ■ Tarun Girdhar, Mercer-Mettl 	<ul style="list-style-type: none"> ■ Varun Nagpal, SHL India 	<ul style="list-style-type: none"> ■ Vasundhara Singh, Mercer-Mettl 	<ul style="list-style-type: none"> ■ Varun Nagpal, SHL India
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The representatives from NSDC involved in the consultations of the working group and drafting the Guideline were:

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Deepti Saxena

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KEY STAKEHOLDERS

Through the assessment process, various stakeholders perform different functions to ensure that an assessment proceeds smoothly. The following section defines and details the role of each stakeholder specifically with respect to assessments in the short-term skill system.

SECTOR SKILL COUNCIL

Sector Skill Councils are Industry-led autonomous awarding bodies that are responsible for assessment and certification on Qualification Packs for the short-term trainings. SSCs empanel/ select Assessment Agencies, administer assessments on-ground and are responsible for ensuring quality in all aspects of the assessment process including design and operations.



Responsibilities:

1. **Creation of Qualification Pack and Assessment Criteria:** SSCs are responsible for creating qualifications and strengthening them through various levels of review, and clearly defining assessment criteria across theory, practical and other components, with Occupational Standards weighted appropriately for the assessment.
2. **Creation of Assessment Blueprint:** SSCs are responsible for creating Assessment Blueprint for each Qualification Pack to ensure standardization of the assessment. They may do so in conjunction with Assessment Agencies or Subject Matter Experts. The blueprint must be validated by two independent SMEs.
3. **Ensuring Quality Question Bank:** SSCs hold responsibility of ensuring quality assessments by creating and/or validating questions used in assessments. Questions sets should be aligned to the Assessment Blueprint. SSCs may create item banks through in-house expertise or align experts/ agencies for the task. A sample question set or question paper should be placed in public domain for the reference of the candidates.
4. **Empanelment and Performance Evaluation of AAs:** AAs shall be empaneled by NCVET and can be further selected by SSCs on standardized norms. SSCs conduct continuous performance evaluations of AAs.
5. **Training of Assessor Programs:** SSCs certify assessors to the requirement of the assessment process, thereby making them eligible to conduct the assessments in the skill ecosystem.
6. **Coordination:** SSCs have visibility on upcoming assessments and align assessment agencies for administration of assessment in a timely manner. SSCs also coordinate with the AA and TP/TC to guide and assist the stakeholders, if required.
7. **Assignment of Assessment Center:** SSCs assign Assessment Centers for the assessment depending on geographical and domain coverage, in alignment with the scheme requirements, wherever applicable.
8. **Result Approval:** SSCs validate the scores submitted by the Assessment Agency and publish results in the required formats.
9. **Certification:** SSCs, in their capacity as the Awarding Body of the qualification, give the final sign off on the results and generate certificates for successful candidates.
10. **Monitoring & Compliance:** SSCs are accountable for regulating the assessment process by defining and following a monitoring framework. They must also ensure the requisite scheme compliances are met during the assessment process.
11. **Grievance Redressal:** SSCs are responsible for addressing grievances and taking swift action in case an issue is detected in the assessment process.
12. **Review of Question Set & Blueprint:** SSCs are responsible for conducting periodic item analysis on assessment data collected by AAs. Once a review is conducted, corrective action must be taken to ensure the validity, reliability and fairness of the assessment.

ASSESSMENT AGENCY

Assessment Agencies are bodies that facilitate the entire assessment process for SSCs. Assessment Agencies often design and detail assessments in conjunction with Awarding Bodies, use their software and technology in delivery of assessments, empanel assessors, and administer assessments through assessors and proctors.



Responsibilities:

- 1. Assessment Blueprint and Item Bank:** AAs are responsible for ensuring the question sets and assessment process is aligned to the Assessment Blueprint of the QP and is vetted by the SSC. The item bank must be regularly updated, and items not performing as expected should be retired.
- 2. Trained Personnel:** AAs must ensure that the personnel (assessor, proctor) meet the eligibility criteria specified by the Awarding Bodies and are trained/ oriented and certified as per the requirements of the assessments.
- 3. Coordination:** AAs are expected to coordinate with the TP, SSC and Assessment Center in a timely manner, and address communication points such as the assessment schedule (Date, Time and Place), IT infrastructure, requirement for equipment and consumables, language preferences, documentation requirements and details of assessment procedure and personnel, if required.
- 4. Candidate verification:** It is the responsibility of the AAs to verify the identity of the candidate before permitting them to appear for assessment. In some cases, the AA may need to check the eligibility of candidates through biometric attendance or other means, as per the direction in the scheme guidelines.
- 5. Candidate orientation:** AAs must orient the candidates with the process to be followed for assessment, including the functionalities of assessment interface and requirements from the candidate. They may do so through the assessor/proctor/demo-login/tutorial or other methods.
- 6. Assessment Administration:** AAs are responsible for overseeing the complete assessment process and ensuring assessment is facilitated smoothly.
- 7. Documentation & Compliances:** AAs are responsible for ensuring all documentation and compliance requirements are met on the day of assessment.
- 8. Proctoring & Invigilation:** AAs must depute proctoring solutions (human proctor/AI-enabled proctor/remote proctor) to ensure that cheating and malpractice of any sort is deterred.
- 9. Evidence Gathering & Audit:** AAs must collect and store evidence as per requirement, for a minimum duration of 5 years, or as mandated by the scheme. The AA should also maintain a detailed audit log of each assessment, which is administered on their technology platform, including time logs, response logs and image captures. The evidence and audit log may be maintained and retrievable for scrutiny purposes. Physical documents are recommended to be stored in soft copy.
- 10. Upload of Scores:** It is the responsibility of the AAs to upload scores on the Skill India Portal in the specified format.
- 11. 360-degree feedback collection:** AAs should enable a mechanism to capture feedback of candidates and training partner digitally after the completion of assessments.
- 12. Score Analysis:** AAs are responsible for compiling, preparing and sharing score analyses with SSCs, and incorporating any corrections/feedback in the item bank.
- 13. Reports & Analyses:** AAs are expected to generate assessment reports and analyses indicating batch performance statistics, item performance, etc.

ASSESSOR

Assessors are stakeholders who are directly involved in conducting and scoring assessments. They interface with trainees, training centers and assessment agencies. They also undergo a ToA program conducted by the SSC that aligns them with the assessment requirements in the short-term skill ecosystem.



Responsibilities:

1. **Candidate Orientation:** Assessors must orient candidates with the process to be followed for the assessment, including the functionalities of the assessment interface and requirements from the candidate.
2. **Availability of Domain Infrastructure, Tools, Equipment and Consumables:** Ensuring that the domain requirements are available in sufficient quantity for the conduct of the assessment.
3. **Assessment Conduct and Scoring:** Assessors are responsible for assessing the competency of each candidate on the assessment. Assessors may do this through conducting viva voce, assessing practical competency or evaluating theory papers, by following the instructions present in the Assessor Guide, limiting themselves to the designated question set. Assessors are required for all assessments where evaluation is not undertaken by system intelligence.
4. **Invigilation:** Assessors must uphold the integrity of the assessment by ensuring that no malpractice takes place during assessment.

Note:

1. Assessments with no accompanying Proctor: In assessments where there is no accompanying proctor on the day of assessment, assessors are also expected to perform the following functions:
 - **Candidate verification:** Original Government photo ID of candidates must be checked for identity verification before starting the assessment to ensure participation of only genuine candidates. In some cases, the assessor may need to check the eligibility of candidates through biometric attendance or other means, as per the direction in the scheme guidelines.
 - **Attendance capture:** Attendance of all candidates appearing for assessment is required to be marked correctly on the Assessor/Proctor App, unless indicated otherwise in the scheme guidelines.
 - **Geo-tagging:** To meet compliance requirements, the location of the assessment must be geo-tagged in the Assessor/Proctor Application.
 - **Documentation:** Documentation should be completed as per the requirement of the scheme/SSC.
 - **Evidence collection:** Photos/videos or any other media should be captured as evidence prior to assessment (infrastructure check, documentation) and during the progression of the assessment (videos of candidates) as per the requirements of the scheme or SSC.

PROCTOR

Proctors are technical support executives who participate in the assessment by ensuring readiness and assistance on technology and technology-enabled infrastructure requirements, fulfilling documentation requirements, invigilating the assessment and alerting authorities in case of any anomalies.



Responsibilities:

- 1. Technical readiness:** Proctors are responsible for ensuring readiness of technology systems for assessments:
 - If assessment is being administered on computer systems, then ensuring that the computer systems are compatible and configured for the assessment platform
 - If assessment is being administered on tablets, then ensuring that the tablets are fully charged and configured for the assessment platform
- 2. Technical assistance:** Proctors are responsible for debugging and troubleshooting any technical issues or queries arising in the assessment platform during assessment.
- 3. Candidate verification:** Proctors must check original government photo ID of candidates for identity verification before starting the assessment to ensure participation of only genuine candidates. In some cases, the proctor may need to check the eligibility of candidates through biometric attendance or other means, as per the direction in the scheme guidelines.
- 4. Invigilation:** Proctors are responsible for invigilating assessments and ensuring that there is no malpractice/cheating during assessment.
- 5. Attendance capture:** Proctors are required to mark the attendance of all candidates appearing in the assessment correctly on the Assessor/Proctor App, unless indicated otherwise in the scheme guidelines.
- 6. Geo-tagging:** Proctors should geo-tag the location of the assessment on the Assessor/Proctor App as a compliance norm.
- 7. Documentation:** Proctors are required to complete documentation and compliance requirements as per the scheme/ SSC.
- 8. Evidence collection:** Proctors should capture photographs, videos or any other media as evidence, as per requirement. This could include images of infrastructure availability, video recording or practical skills assessment, audio recording of viva, intermittent images during theory examination, etc.

Note:

- 1. Assessments with no assessor:** In assessments wherein there is no assessor, the proctor should brief candidates about the assessment procedure and share the instructions familiarizing the candidates with the assessment platform.
- 2. In Assessments where there is a remote assessor:** In such cases, proctors are expected to video-record the assessment as per directions given by the AA and/or enable the Assessor to interact with candidates through a video call.
- 3. Remote online assessments:** In remote online assessments, proctors must perform their functions remotely, including candidate verification and attendance, troubleshooting, invigilation with AI-enabled support, etc, during the assessment.

TRAINING PARTNER/ TRAINING CENTRE

Training Partners are bodies that conduct skill trainings in various sectors and job roles across the country through subsidiary Training Centers. Trainees at the training center undergo assessments by the SSC at the close of training in order to earn a certificate.



Responsibilities:

1. **Coordination:** The TC needs to coordinate with and respond to the AA and SSC in a timely manner to confirm the schedule of assessment, language preferences, assessment center location or any other requirement. The TC also needs to coordinate with the Assessment Center to clarify expectations and formalities for the day of assessments, if the assessments are not conducted at the training center location.
2. **Ensure availability of genuine candidates:** The TC should ensure that genuine candidates are present on the day of assessment, carrying original government photo IDs.
3. **Attendance:** The TC should ensure that either of the following are made available to the AA 5-7 days prior to assessment to enable the AA to make necessary preparations for the assessment:
 - Biometric attendance logs
 - Manual attendance
4. **Candidate orientation:** The TC should ensure that all candidates should participate in the orientation program by AA.
5. **Documentation:** The TC is required to complete any documentation and compliance requirements for assessment.

Note:

1. A training center may also serve as an assessment center for batches trained at their center, or for batches from neighboring TCs. In such circumstances, a TC must ensure that it performs the role of an Assessment Center during the assessment (covered in the following page).
2. In case of online remote assessments, it is the TC's responsibility to ensure that candidates have access to the required infrastructure:
 - Minimum required internet bandwidth (2-4 MBPS), or internet bandwidth as indicated by the AA
 - A working and sufficiently charged computer/laptop/tablet/mobile phone with webcam or front camera
 - The device is compatible and has the browser requirements needed for the assessment

ASSESSMENT CENTER

An Assessment Center is a location fully equipped with domain infrastructure, tools and consumables, where assessment of candidates (STT, RPL, walk-ins) may be undertaken. Assessment Centers can be independent facilities, a candidate's training location, or any other location fit for the conduct of assessment in the specified domain.



Responsibilities:

- 1. Assessor and/or proctor verification:** The Assessment Center should check original government photo ID and verify the identity of the deputed assessor(s) and/or proctor(s).
- 2. Coordination:** The Assessment Center needs to coordinate and respond in a timely manner to the AA and SSC to confirm schedule of assessment, availability of infrastructure, equipment and consumables, language preferences and any other requirement. The Assessment Center also needs to coordinate with the TC to ensure candidates shall be present for assessments.
- 3. Infrastructure Requirement at Assessment Center:**
 - Minimum required internet bandwidth (2-4 MBPS), or internet bandwidth as indicated by the AA
 - Sufficient computer systems/laptops/tablets/mobile phones with webcams/front cameras to cater to the assessment for candidates in a batch
 - Compatible and up-to-date browsers as per the requirement shared by AA on devices to be used for assessment
 - Camera or appropriate equipment to capture live feed of assessment
 - Creating a cheat-proof environment for assessment
- 4. Domain infrastructure, equipment & Consumables:** The Assessment Center should ensure that the domain infrastructure, tools, equipment and consumables are available as per the assessment requirements for the sector and job role.
- 5. Documentation:** The Assessment Center is required to complete the documentation and compliance requirements for assessment.
- 6. Proctoring:** The Assessment Center needs to ensure staff is available on ground for technical support and invigilation on the day of assessment.

Other Stakeholders

I. Assessment Designers are Subject Matter Experts (SME) who are responsible for ensuring fairness, reliability, content validity and relevance of assessment by creating items (theory/practical/viva voce) that measure specific skills/NOS and assess comprehension of concepts at different cognitive levels. They align the items to the Assessment Blueprint, follow standard assessment methodologies, and utilize the expertise of assessment reviewers, language experts, translators for item review and correction. The key responsibilities of an Assessment Designer are:

- Adhere to the item writing principles and techniques when developing test items
- Recruit SMEs, moderators, instructional designers, language experts, and translators to review
- Conduct training and workshops for SMEs, Moderators, IDs, Language Experts, and Translators on different process and principles
- Prepare test strategy as per the Assessment Blueprint taking into account target groups
- Develop and maintain different assessment materials
- Perform editing and proofreading of assessments
- Conduct editing meetings with other designers, SSC members, etc
- Perform post moderation checks
- Perform entire process within the agreed budget, timeline and quality standards
- Understand the applicability of different types of items like simulations, gamification, AR/VR based questions, etc

II. Assessment Reviewers are Subject Matter Expert (SME) who have distinct skills or specialized knowledge and expertise on a specific job or topic. These SMEs are accessed by instructional designers for designing course material and learning programs, and by assessment designers for developing assessments. Assessment reviewers could be a highly qualified instructional designers or industry experts. In the assessment process, the role of the reviewer is to validate the blueprint and the item bank developed by the assessment designer. Sometimes they also partake in item writing or serve as technical consultants. An SME is often required to sign off on the assessment developed by evaluating the following:

- The structure and suitability of the assessment blueprint developed for the specified job role
- The relevance, suitability and clarity of the items prepared and their alignment to the assessment blueprint
- The appropriateness of the language used in the items to assess competence vis-à-vis the target group
- The appropriateness of the difficulty categorization of the questions
- Sufficiency of the items to adequately assess and judge the competence of the QP/NOS
- The alignment of the items with the NSQF level of the job role

The table below details the criterion that may be used by SSCs and AAs to empanel SMEs as Assessment Designers and Assessment Reviewers:

	Assessment Designer (SME)	Assessment Reviewer (SME)
Experience	5 years in the relevant job role / higher job role	7 years in the relevant job role / higher job role
Criteria	<ul style="list-style-type: none"> ■ Must not be associated with any Training Partner (conflict of interest) ■ Must possess good writing skills 	
Other Criteria	Must meet the minimum eligibility criteria suggested for an assessor for the domain job role	Must meet the minimum eligibility criteria suggested for a lead assessor for the domain job role
Responsibility	<p>Ensure:</p> <ul style="list-style-type: none"> ■ Language & terminologies of the questions are as per the target group ■ Items are aligned to the blueprint ■ The difficulty level tagging of the questions is correct ■ The Bloom's taxonomy levels are followed ■ Questions are mapped to the appropriate NOS & PC ■ Questions are unambiguous and understandable ■ Questions are technically correct ■ Answers contain appropriate distractors ■ Consistency in terminology used ■ Equipment list, steps, suggested solution of practical and viva voce questions are mentioned ■ Content is grammatically correct without spelling or punctuation errors ■ Content is not plagiarized ■ Adherence to specific assessment guidelines shared by the respective SSC 	<p>Ensure and verify:</p> <ul style="list-style-type: none"> ■ Language & terminologies of the questions as per the target group ■ Items and distractors are unambiguous ■ Questions are technically correct and relevant for the job role ■ Answers contain appropriate distractors ■ Correct answers, equipment list, steps, suggested solutions are mentioned ■ Adherence to specific assessment guidelines shared by the respective SSC

Table 1: Parameters for selection of SMEs with AAs/ SSCs

III. Translators are persons who decipher items in one language and render them in another language such that the intent and sanctity of the test item remains. Translators are required for delivery of assessments in the language of the target group. Once a test form has been translated, it should be reviewed by local experts for decipherability. The translator's task is to:

- Work with assessment coordinators to create translated copies of given test papers
- Understand the content context in one language and convert it into the second language
- Ensure translated content conveys the original meaning
- Absorb and act upon the feedback given by assessment coordinators
- Edit and proofread the created content to maintain quality
- Review translation work for the given subject
- Work with regional fonts to present digital copies of translation

Ownership Matrix of Assessment Activities

Stage	Activity	Ownership			
		Sector Skill Council	Assessment Agency	Assessment Center	Training Center
Pre-Design	Developing QPs/ NOS and PCs	✓			
Design	Creation of Assessment Blueprint	✓			
	Development & Validation of Item Bank	✓	✓		
Plan	Selection & Performance Evaluation of AAs	✓			
	Empaneling Assessors/ Proctors		✓		
	Training & Certification of Assessors	✓			
	Training of Proctors		✓		
Execution	Coordination	✓	✓	✓	✓
	Availability of Domain Infrastructure, Equipment & Tools			✓	
	Providing Assessment Platform		✓		
	Ensuring genuine candidates				✓
	Candidate Verification		✓		
	Candidate Orientation		✓		
	Execution of the Assessment Process		✓	✓	
	Invigilation		✓	✓	
	Documentation and Compliance		✓	✓	
Evidence Collection		✓			
Post-Assessment	Feedback Collection		✓		
	Result Upload		✓		
	Result Approval	✓			
	Certification	✓			
Quality Assurance	Monitoring of the Assessment Process	✓			
	Item Review & Analysis	✓			
	Grievance Redressal	✓	✓		

Table 2: Ownership Matrix of Assessment Activities

ASSESSMENT DESIGN

Assessments are a performance technique used to evaluate knowledge and skills acquired, including competencies exhibited by an applicant, as a measure of the learning and experience imbibed. To exhibit the relationship between knowledge, skills, competencies and performance outcomes, it is essential to articulate a framework using assessment design principles, tools and technological platforms as appropriate, for the conduct of assessments - these are Reliability, Validity and Fairness.

Reliability: The principle of reliability refers to the degree to which there is a consistency of the assessment scores for a given candidate by different scorers in different environments.

Validity: The principle of validity is the degree to which the assessment measures what it purports to measure.

Fairness: The principle of fairness refers to the degree to which the assessment does not differentiate between different socio-political-economic groups, based on race, gender, caste, religion, etc.

Flexibility: The principle of flexibility refers to the extent to which an assessment allows for flexibility in delivery and method, without compromising on the reliability, validity and fairness of the assessment.

The foremost objective of this section is to articulate strengthening the design of skill assessments conducted by Sector Skill Councils in short-term skill eco-system. It is envisaged that for each qualification to be assessed, a systematization is brought forth through an Assessment Blueprint document that covers all modes of assessments, whether digital or non-digital, and across projects such as STT, RPL, fee-based, government-funded, CSR-funded projects, Trainer & Assessor programs, programs in schools and colleges, etc. This section aims to cover the complete gamut of considerations that should go into designing an assessment.

CONTEXT OF THE ASSESSMENTS

Assessments can be administered in different contexts in the ecosystem. Some of the types of assessments often conducted in skill space are:

a. Diagnostic Assessment: Diagnostic assessments, also known as pre-assessments, typically precede the actual learning program. They are used to identify a learner's strengths and weaknesses, prior knowledge and skill levels, profile learner interests and reveal learning style preferences with a view to providing an appropriate learning program. Typically, a diagnostic captures a range of input data points:

- Contextual Information such as current profile of the user, key learning outcomes for the user
- Knowledge, skills and abilities on the subject, level of hands-on experience, and whether the user has the ability to take up a particular learning journey

It is suggested that there should be a profiling assessment included in the process, wherever feasible. The candidates should undergo a psychometric/aptitude/profiling test that helps them identify their suitable career choices based on their aptitude and interest.

b. Formative Assessments: Formal assessments are conducted throughout a unit or course of study to monitor student progress so that teachers can adjust their instructional practices to meet the needs of their students. Going forward, it is recommended that formative assessments be integrated into trainings. The SSC may define the stage at which the assessments should be conducted and assign a defined weightage to the outcome of this assessment.

c. Benchmark Assessments: Evaluations of student learning progress used to determine whether the students are performing as expected at a certain point in time.

d. Summative Assessments: Formal assessments used to measure what students have learned at the end of a defined period of instruction.

e. Learning Agility Assessment: Learning Agility Assessments are those that determine the ability of a candidate to learn new skills and knowledge. All individuals have different learning curves. Two essential aspects of the Learning Agility Assessments are swiftness and accuracy the candidate shows in learning new things, and the behavioral inclination of the candidate towards learning.

ASSESSMENT CRITERIA

All QP/NOS go through a rigorous review and approval process before they are finally ready to be utilized for skill training and assessment. An important part of the creation of the QP is assigning assessment criteria to the various performance outcomes expected from the candidate. It is important that assessment criteria is thoroughly examined and approved by independent industry experts, academic SMEs and regulatory bodies during the QP/NOS creation and approval.

Under the Assessment Criteria in a QP/NOS, PCs are allotted against the following four methodologies:

- a. **Theory:** A theory assessment is a written/digital question paper that aims at assessing the knowledge of the candidate
- b. **Practical:** A practical assessment assesses the practical application/hands-on ability demonstrated by the candidate
- c. **Viva:** A viva voce is an oral questioning method where the assessor and candidate usually sit one-on-one. In addition to evaluating theoretical knowledge, this method also allows for assessment of soft skills, body language, etc
- d. **Project:** A project could include a variety of methods to assess the candidate such as an evaluation of the candidate's portfolio, inclusion of formative assessment marks, evaluations from OJT logs, or any other initiatives undertaken

ASSESSMENT BLUEPRINT

The 'Assessment Blueprint' is a detailed outline of the plan of action of assessment and as a document, aims to enable stakeholders implementing skill assessments, like Sector Skill Councils, Assessment Agencies and other assessment regulation bodies to define the complex relationship between performance outcomes/assessment criteria, theory and practical items, difficulty levels, time and marks allocated to each question, assessment methodology and the evaluation thereof. In the education and skilling ecosystems, blueprints are used to design the assessment to measure the mastery of the standard(s), improve consistency across test forms, set goals and monitoring matrices for test forms, and more. Figure 1 shown below describes four stages for developing an effective test blueprint.

Blueprint Stage

Key Activities and Questions to Answer

Identify major knowledge and skill domains	<p>Scan relevant materials (e.g. QP, Model Curriculum, Courseware etc.) for specific competencies</p> <p>Decide on a framework for organizing test content:</p> <ul style="list-style-type: none"> ■ Is it a traditional content outline? ■ A list of procedural skills? ■ A content-by-process matrix?
Delineate the assessment objectives	<ul style="list-style-type: none"> ■ Assessment objectives can include behavioural objectives, competency or skill domains ■ Document the specific learning outcomes and behaviours (PCs) to be assessed ■ Determine the level of specificity desired in the blueprint (Difficulty Level, time, question types, etc)
Decide on the assessment format	<p>Determine optimal assessment methodology for the knowledge and skills to be assessed</p> <p>Practical considerations include:</p> <ul style="list-style-type: none"> ■ Location of the assessment objective within Bloom's Taxonomy and Miller's Pyramid; ■ Reliability of scores produced by a method; ■ Validity of the score interpretations (e.g. can an MCQ assess communication skills?) ■ Practical constraints (e.g. testing time, budget, logistics)
Specify the category weights	<ul style="list-style-type: none"> ■ Determine how many assessment tasks (e.g. MCQs, Fill in the blanks, case studies etc) candidates can complete in the allotted time. ■ Assign weights to each major category or domain in the test blueprint according to its overall importance.

Figure 1: Summary of Key Activities for developing a Blueprint

A blueprint contains pivotal points on how an assessment should be structured. The table that follows indicates the key elements of a blueprint.

Item Type	Description
QP/NOS Description	Name of QP, QP code, Revised version No. and revision date of QP (the revision of blueprint should be done immediately after the QP is revised)
NSQF Level	As mentioned in the QP
Time	Total duration of assessment, time allocated for each question, time allocated for each candidate to perform the assessment
Number of Items	Total items in a test, No. of items per NOS, No. of items mapped to a Performance Criteria.
Difficulty level	Overall, the difficulty level of the assessment, NOS specific difficulty level, Item specific difficulty level
Scaled/unscaled marks	Marks per item, scaling factor /extrapolation
Type of items	Recommended that SSCs indicate the preference of type of items to be used in an assessment
Language options	Languages in which the question bank can be translated into including default
Passing Criteria	Detailed as per SSC (moderation as defined by the SSC)
Technical/practical environment/tools needed	Specific details to be listed if available
Specific guidelines for the Assessment agencies	Addressed in the Cover Page; analytics for blueprint revision, in an accompanying deck approved by the SSC
Details on Types of question used in the Blueprint	Mentioned in the Blueprint summary page; a section of the Blueprint covers this requirement
Details on Difficulty level description	Mentioned in the Blueprint summary page; a section of the Blueprint covers this requirement

Table 3: Key Elements of a Blueprint

Blueprint Summary Page

It is recommended that the blueprint begin with a summary page that sets the foundation of the assessment requirements for the qualification. A sample summary with a detailed explanation is below.

DETAILED ASSESSMENT CRITERIA FOR SSC/Q0XYZ CYBERSECURITY QP							
Assessment Overview							
Suggested Duration (Minutes)	100min						
Suggested No. of Questions	53						
Difficulty Level (marks)*	Overall: 26-41-33 Domain: 20-32-48 Generic: 34-51-15						
Minimum No. of Questions per Generic NOS	7						
NSQF level	8						
NOS Number	NOS A	NOS B	NOS 1	NOS 2	NOS 3	NOS 4	NOS 5
No. of PCs	30	24	9	8	7	9	8
No. of Questions	8	8	7	7	8	7	8
Difficulty Level* (D1-D2-D3)	20-31-49	21-30-49	30-45-25	30-45-25	40-60-0	30-45-25	40-60-0
Time per NOS (mins)	19	19	12	12	12	12	12
Acceptable level of variance in duration, difficulty split, and no. of questions Per NOS	+10%						
Pass Criteria	70% in each NOS						
Natural Language	English						
Language Options	Hindi, Punjabi, Assamese, Bengali, Tamil, Telugu, Kannada, Oriya, Gujrati, Marathi and Malayalam TPs should request for any of these language options atleast 7 days in advance						
Specific Technical environment	As indicated in the Domain NOSs						
Guidelines for Assessment Agencies							
1. Distribution of Marks for PCs cannot be changed without formal consent of the SSC.							
2. Individual Assessment agencies may decide on the exact number of questions and duration within the acceptable level of variance. Such variance may further increase depending on the type of questions. E.g. multiple questions in MCQ format vs. a single question in a simulated game style. Approval of SSC is required for having questions beyond the acceptable variance.							
3. No assessment can be launched without obtaining prior approval from SSC NASSCOM							
4. Format of questions should include a variety of styles suitable to the Performance Criteria being tested such as multiple choice questions, match options, fill in the blanks, situational judgment test, simulation and programming test.							
Please refer to the sheet "Item Framework" to ensure differentiation of items with varying marks							

Figure 2: Summary of Key Activities for developing a Blueprint

Label	Description
1	Name of the QP and the QP number
2	Suggested Duration—This is sum of duration of each question included in the blueprint. It is recommended that for the purpose of actual exam, the duration be rounded up to nearest 10 min
3	Suggested number of questions—sum of all the questions in the blueprint
4	Difficulty Level: D1:D2:D3 (ratio in which easy, moderate and difficulty questions are given in the assessment). The SSC can decide whether they want to tag the difficulty level based on the number of questions or marks distribution. Both methods are advisable
	Overall—this is an average of difficulty levels across NOS (Combined of Domain and Generic)
	Domain—Average difficulty level across domain NOS. It is recommended that this is standardized across NSQF Levels. (D1:D2:D3)
	Generic—Average difficulty level across generic NOS (D1:D2:D3)
5	Minimum number of questions per NOS
6	NOS Level Details—advantage of mentioning NOS level details is for ease of comparison and ensuring that the standards are met
7	Acceptable level of Variance—this is to provide flexibility to the AA to develop a question-bank. The range can be anywhere between 5-10% depending on the SSC's requirement
8	Pass Criteria—detailed criteria in terms of aggregate to be mentioned here
9	Language Choice—the languages in which the question-bank can be translated, and the time taken by AA to translate the question bank is mentioned here default language if required is also mentioned
10	Details of specific equipment/software tools/technical environment needed for assessment

Table 4: Description of Sample Cover of Assessment Blueprint

Blueprint Detailing

After the summary comes the detailing of the blueprint. The detailed blueprint spreadsheet contains the complete mapping of performance criteria over every NOS against items, difficulty levels, marks allocated, and more. A good blueprint should ensure that each PC in a NOS is adequately covered by item(s). A sample of the detailed Blueprint spreadsheet is below, substantiated with a comprehensive table explaining each aspect.

Table 1: Detailed Blueprint Spreadsheet (Top)

NOS	Performance Criteria	Marks Allocation as Per QP			Suggested Question Allocation			Reference to Core K&S (Other K&S to form a part of the context of questions)	Knowledge/Theory (No of Questions)			Skill/Practical (No of Questions)			Total (No of Questions)		
		Total	Knowledge / Theory	Skill / Practical	Total	Knowledge / Theory	Skill / Practical		D1	D2	D3	D1	D2	D3	D1	D2	D3
NOS 1	PC1.	3	1	2	2	1	1	KA1, KB1, SA3, SB3, KA6, KA9, KA12, KA7, KA9, KA12, KA4, KB2, SA3, SB1, KA8, KA13, SA1, SA3, KA5, KA10, KA11, KB1, KB4, SA3, SB1, KA2, SA1, SA3, SB3, KA3, KB1, KB4, SA2, KA1, KB1, SA3, SB1, KA1, KB1, SA3, SB3, KB1 SA3, SB1, SB2, KB4, SA2, SA3, SA4, KB1, SA3, SB1, SB2, KA7, KA9, KA12, KB2, SA3, SB1, SB2,	1 (6 marks)			1 (11 marks)	1	1	0		
	PC3.	3	1	2													
	PC4.	3	1	2													
	PC5.	2	1	1													
	PC6. scan	3	1	2													
	PC7. have	3	1	2													
	PC8. use a	4	1	3	2	1	1	1 (7 marks)				1 (10 marks)	1	1	0		
	PC9.	4	1	3													
	PC10. shut	3	1	2													
	PC11.	4	1	3													
	PC12.	4	1	3													
	PC13.Impl	4	1	3													
	PC21.	3	1	2	2	1	1										
	PC22.	3	1	2													
	PC23.	3	1	2													
	PC24.	3	1	2													

Table 2: Detailed Blueprint Spreadsheet (Bottom)

NOS	Performance Criteria	Marks Allocation as Per QP			Suggested Question Allocation			Reference to Core K&S (Other K&S to form a part of the context of questions)	Time (In Min)			Total Time (In Min)	Type of questions (Knowledge/Theory)			Type of questions (Skill/Practical)			
		Total	Knowledge / Theory	Skill / Practical	Total	Knowledge / Theory	Skill / Practical		D1 (1 min)	D2 (2 min)	D3 (3/5 min)		D1	D2	D3	D1	D2	D3	
NOS 1	PC1.	3	1	2	2	1	1	KA1, KB1, SA3, SB3, KA6, KA9, KA12, KA7, KA9, KA12, KA4, KB2, SA3, SB1, KA8, KA13, SA1, SA3, KA5, KA10, KA11, KB1, KB4, SA3, SB1, KA2, SA1, SA3, SB3, KA3, KB1, KB4, SA2, KA1, KB1, SA3, SB1, KA1, KB1, SA3, SB3, KB1 SA3, SB1, SB2, KB4, SA2, SA3, SA4, KB1, SA3, SB1, SB2, KA7, KA9, KA12, KB2, SA3, SB1, SB2,	1	2	0	3	DC-1			ScB-1			
	PC3.	3	1	2															
	PC4.	3	1	2															
	PC5.	2	1	1															
	PC6. scan	3	1	2															
	PC7. have	3	1	2															
	PC8. use a	4	1	3	2	1	1	1	2	0	3	DC-1			ScB-1				
	PC9.	4	1	3															
	PC10. shut	3	1	2															
	PC11.	4	1	3															
	PC12.	4	1	3															
	PC13.Impl	4	1	3															
	PC21.	3	1	2	2	1	1												
	PC22.	3	1	2															
	PC23.	3	1	2															
	PC24.	3	1	2															
	PC25.	4	1	3															
	PC26.	4	1	3															
	PC27.	3	1	2															
	PC28.mal	3	1	2															
	PC29.	3	1	2															
	PC30.	3	1	2															

Figure 3: Detailed Blueprint Spreadsheet

Label	Description
1	NOS – the NOS number is mentioned
2	Performance Criteria – PC description, taken directly from the QP and outcomes are qualified and quantified
3	Marks Allocation against each PC – divided into theory, practical or any other methodology in line with the QP
4	Suggested Question Allocation – these columns cover the number of Questions recommended against each assessment criteria/clubbed criteria under different difficult levels. For example, in the illustration, the first 6PCs are clubbed together to form 2 questions (one each for theory and practical)
5	Reference to Core Key Understanding and Generic Skills areas
6	Number of Questions for Theory, Practical, any other and total segregated into respective difficulty levels
7	Time – under this column, the suggested time for answering each question is mentioned. This helps in aggregating the overall time
8	Type of Questions – Each PC can be best mapped with a certain kind of question; however, the question setter must be given flexibility to suggest better questions. (Here, DC, ScB, COM are codes for question types). The selection of type of questions should be the discretion of each SSC. It is recommended that the blueprint allow for flexibility in this regard so that the type of questions best suited to their sector and the related occupation and target group is selected

Table 5: Description of Blueprint Spreadsheet

Blueprint Conclusion

To close a blueprint, a short conclusion is recommended that offers a brief and high-level summary to the document. A sample of such a Blueprint Conclusion is depicted below, substantiated by an explanation on each aspect.

	Domain NOSs			Generic NOS				Count
	N0937	N0938	N9001	N9002	N9003	N9004	N9005	
Theory Items	4	3	2	2	3	2	2	18
Practical	4	5	5	5	5	5	6	35
Type of Questions								
ScB	2	3	4	4	3	4	5	25
COM	2	2	1	1	-	1	-	7
MB	1	-	1	-	2	1	-	5
DC	3	3	1	2	2	1	2	14
CS	-	-	-	-	-	-	1	1
MCo	-	-	-	-	1	-	-	1

Level	Domain NOS			Generic NOS		
	D1	D2	D3	D1	D2	D3
Marks Per	6 to 8	10 to 12	23 to	2	3	5
Total count	18	18	12*	17	17	3*
Total marks	118	191	291	34	51	15
Weight age	20%	32%	48%	34%	51%	15%
Scaled marks	-	-	-	170	255	75
Minutes	1	2	5	1	2	3
Total time (in min)	18	36	60	17	34	9

Figure 4: Blueprint Conclusion

Label	Description
NOS Wise Question Distribution	
1	Number of Theory Questions in each NOS
2	Number of Practical Questions in each NOS
3	Question count of each type in individual NOS
Difficulty Level Wise Distribution	
4	Marks & per Item – Marks for each D1, D2 and D3 question
5	Total number of Questions for each difficulty level
6	Total Marks – Total no. of Questions * Marks for each question
7	Weightage – Percentage marks distribution for each difficulty level
8	Scaled Marks – Marks calculated after multiplying with the scaling factor
9	Minutes – Time per question for each difficulty level
10	Total Time in Mins – Total No. of Questions * Time for each question

Table 6: Description of Blueprint Conclusion

Correlating Assessment Criteria with Bloom’s Taxonomy

Bloom’s Taxonomy is a classification of the different learning objectives and skills that educators set for their students. This taxonomy is hierarchical, which means that learning at the higher levels is dependent on having attained the knowledge and skills at lower levels of the taxonomy. The taxonomy strong correlation to NSQF benchmarking of a QP/ NOS and difficulty matrices in an assessment.

Bloom’s Taxonomy is a critical tool to be used by those developing the assessment blueprint and designing assessment items, and at present, details six levels of learning that can be used to structure the learning objectives, lessons and assessments of the qualification. A diagram depicting this is below, moving from bottom to top in order of complexity of learning outcomes:

- Before **understanding** a concept, one must **remember** it
- To **apply** a concept, one must first **understand** it
- To **analyze** a concept, one must know how to apply it
- To **evaluate** a process, one must have **analyzed** it
- To **create** an accurate conclusion, one must have completed a thorough **evaluation**

It is also advisable to consider the instructional material of the affixed training program for designing the assessment and selecting appropriate assessment methodology.



Figure 5: Bloom’s Taxonomy

MAPPING OF PERFORMANCE CRITERIA WITH ITEMS

The National Occupational Standards (NOS) specify the standard of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet a standard consistently. Each NOS defines one key function in a job role, listed into competencies called **Performance Criteria** (PC). In the context of assessments, PCs are the expression of what is to be measured and why. A good blueprint should ensure that each PC in a NOS is adequately covered by item(s). Below are a few ways in which the mapping of NOS/PC to items can be carried out:

a) **Case 1:** A PC is tested using a single item



b) **Case 2:** Appropriate PCs are clubbed together and assessed using a single item



The grouping of PCs with common elements in to any one question may be carried out because:

- There are many PCs in the NOS that are correlated and can be collectively demonstrated.
- The time duration of the assessment can be appropriately curtailed.
- Distribution of marks with respect to PCs in the NOS/ QP makes it unsuitable for a 1:1 mapping.

Important considerations while grouping PCs:

- Each grouping should have PCs conforming to a common underlying element.
- Clubbed PCs should flow into each other, e.g. in a group of PCs if two pertain to 'use of agricultural instruments' to sow seeds, the third PC should be about 'importance of seeds.' Instead, the third PC could pertain to 'types of seeds' since the type of seed being used can determine the agricultural instrument that must be chosen.
- The PCs should, as much as possible, belong to the same NOS.
- There should be no cross-combination of marks i.e. practical marks should be combined with practical marks of another PC and similarly for theory marks.

c) **Case 3:** More than one question is used to test one PC



This scenario arises when a single PC might have a high marks weightage assigned to it, owing to the fact that it may have a wide scope or be crucial in assessing competence for the job role. Such a PC could also be assessed using multiple sub-question.

For cases wherein NOS have a large number of PCs and it is not possible to tag all the PCs to items, it is recommended that:

- All important and key PCs should be covered. The count of PCs can be decided while preparing the Question Matrix with respect to the Blueprint.
- It is recommended that no more than 3-4 PCs be tagged to an item in the stipulated structure. Sub-items can be created where there is a need to assess a large number of PCs together.

MARKS ALLOCATION

The marks allocation for each PC is present in the Qualification document.

Marks can be further allocated against questions based on PCs or based on difficulty levels. Some samples are below:

Difficulty	No. of Questions	Marks per Question	Max. Marks	Nature of questions
Easy	X	A	X*A	Multiple choice
Medium	Y	B	Y*B	Multiple choice
Difficult	Z	C	Z*C	Constructed Response
Total Marks	X+Y+Z	A+B+C	Sum of marks as per QP	

Table 7: Description of Blueprint Conclusion

NOS	PC details	Allotted Marks
1	PC1. Check for ground compactness and levelling	a
	PC2. Check for all required scaffolding material, hand tools and consumables.	b
2	PC3. Wear and use required safety gadgets following trade safety.	c
	PC4. Place and position sole boards as per marking.	d
	PC5. Erect and dismantle scaffold of 3.6 meter height within tolerance limit.	e
	PC6. Carryout proper housekeeping.	f
	Total Marks	a + b + c + d + e + f

Table 8: Sample Marks Allocation based on PC Distribution

TIME ALLOCATION

The time duration of the assessment should take into account time requirements for various sections (theory/ practical/ viva) and can be calculated in following ways:

- Item wise:** The time required for answering each item is assigned based on its difficulty level. Taking suggested time durations for each difficulty, the time duration for the entire test is extrapolated by summing the count of questions of each difficulty level.

Difficulty level	Time Duration
D1	1 Minute
D2	~2 Minutes
D3	~3-5 Minutes

Table 9: Sample Matrix - Difficulty level and Time Duration

- NSQF level:** The time duration for a complete test can also be pre-determined based on the NSQF level. The recommended test duration for the Theory exam ranges between 60 minutes to 180 minutes across all NSQF levels. The actual durations should be determined by the SSCs depending on sectoral needs.
- Simultaneous vs. Individual Allocation for Candidates:** The time allocation of all assessments in which candidates cannot simultaneously sit for the theory, practical, viva, etc., needs to be taken into consideration while determining the total duration of the assessment. The duration of assessment is a summation of the time wherein the candidates are assessed together (usually theory examination), and the time allocated for assessment of individual candidates (usually practical and viva).

Based on the above, SSCs should identify ideal batch sizes for the job roles under their purview based on the time required for assessment. This shall help indicate whether an additional assessor may be required to be sent, or if the assessment to span multiple days. In general, the average batch size is approximately as follows:

Job role type	Approximate batch size	Remarks
Manufacturing	15 to 20	Additional time or additional assessor required for a batch bigger size than 20
Service	15 to 30	Additional time or additional assessor required for a batch bigger size than 30

Table 10: Approximate Batch Size for Assessment

EXTRAPOLATION OF SCORES

- **Passing Criteria:** The passing criteria for each job role should be considered as per industry standards. It can be based on scheme guidelines or according to NSQF level. Candidates should obtain passing marks in each NOS along with aggregated passing marks in the assessment.
- **Scaling:** Scaling is the extrapolation of scores by multiplying the assigning marks by a factor (scaling factor) to meet the desired score. For example, if an item tagged to an PC has 15 marks, one may choose to:

- Assign 15 marks directly to an item
- Assign 3 marks to the item and use a scaling factor of 5 while calculating the total

In both the cases, if a candidate answers the item correctly, the candidate shall earn 15 marks on correctly answering the item.

- **Partial Marking:** Partial marking is awarded when the answer of an item received from a candidate is incomplete or partially correct. There should be strict guidelines for partial marking on an item. Is partial marking permitted? If yes, then what are the rules for partial marking? In assessor-evaluated assessments, assessors need to be provided rubrics that clearly delineate the rules for marking.

TYPES OF ITEMS

A typical assessment can be divided into three parts:

1. Theory (MCQs, constructed response type questions, etc.)
2. Practical (gamification, simulation, demonstration, coding, etc.)
3. Viva Voce (oral questioning)
4. Project (formative assessment, work logs, etc.)

The following table illustrates a few item types that can be utilized while creating the item bank and Assessment Blueprint. Please note that this list is not comprehensive.

S.No.	Question Type	Code	Description
Section A	Multiple Choice Questions/ Constructed Response	MCQ / CR	In MCQs, Candidates are to choose a correct option from a range of probable options with reference to a stem/question. In CRs, Candidates are to construct responses to address the questions asked
1	Fill in the blanks	FiB	A part of a sentence construct is left blank for the candidates to fit in the most appropriate/correct response.
2	Scenario-based Question	ScB	A situation is provided, and a question based on probable outcome of the scenario/description is provided to the candidate.
3	Media-based (Images/audio clips/ video clips)	MI	Either identification of a graphical situation or options in the forms of images are provided, this makes it for candidates to grasp the question where language may not suffice.
4	Comprehension	COM	A passage is presented to the candidates (much like a scenario but in greater detail). The candidates are then subjected to a series of questions solely based on the passage. This tests their grasping and comprehension ability.
5	Logical reasoning	LR	Logical deduction-based questions that are constructed on logic for measuring mental ability.
6	Chronological sequencing	CS	A sequence of events/outcomes/steps to be stated or arranged in a correct flow/sequence.

7	Matching the columns	MCo	Two columns containing multiple elements related to each other are given in a mixed order. The candidates need to match the elements correctly.
8	Factual Inferential	FI	Factual questions require fact-based answers. For example, a candidate may be asked to look at a passage, then answer a series of factual questions based on what they just read.
9	Direct Concept	DC	Fundamental MCQ questions which assess whether the candidates are aware of a singular concept or fact. It is mostly used to assess the theory knowledge of the candidate. The questions directly picked from the courseware.
Section B	Simulation-Based	SiB	Candidates are provided with real-life situations on a platform and assessed on their ability to solve the problem
1	Practical Performance	PP	Direct evidence collection - Real work/ real time activities at the workplace. Suitable for predictable and routine works especially at operational levels. This is also suitable for works that have a beginning and ending.
2	Role-Play	RP	Indirect evidence collection - Demonstration / Show-n-tell. Suitable for staff dealing with a variety work situations
3	Case Study	CS	Indirect evidence collection – Questioning. Suitable for Suitable for assessing analytical skills & higher order of cognitive
4	Typing Test	TT	Some jobs require the candidates to have knowledge of typing. To test the ability of candidate to type with least mistakes and speed, this kind of question is asked.
5	Verbal Communication Test	VB	Voice based tests assess the listening/speaking abilities of the candidates. Their pronunciation, comprehension abilities, speech rate and other factors related to voice are tested here. This test is useful for job roles where candidate has to interact orally with the client.

Table 11: Question Types

Items need to be constructed well in order to ensure that the question being asked is interpreted correctly and allows a fair chance to candidates to demonstrate their competency. **Annexure 1** contains detailed instructions and tips for the construction of Items.

Apart from existing digital solutions, various new technologies are being explored in the domain of assessments, specifically with the development of augmented reality and virtual reality solutions. A detailed note on these technologies is annexed (Annexure 9)

DIFFICULTY LEVELS

The difficulty level of an item is the level of complexity/hardness of an item for the target group. Bloom's Taxonomy can serve as a structure for identifying the difficulty level of an item. Item difficulty is usually categorized on 3 levels, namely: D1 – Easy, D2 – Moderate, D3 – Difficult, but this can be increased or decreased, as per the requirement. The following table lists the parameters that can be taken into account when creating a difficulty matrix for an assessment.

	D1 (Easy)	D2 (Moderate)	D3 (Difficult)
Expected Correct Responses	70-100%	40%-70%	Less than 40%
Level/ Type of Concept	Basic Knowledge/ Application	Intermediate level theory/ Application	Advanced Theory/ Application/ Decision Making
	Must Know/ Commonly Known/ Routine Task	Moderately Known/ requires some surrounding knowledge	Lesser known, Requires prior experience + knowledge of other concepts

Length of Stem	Up to 2 Sentences (8—10 words each)	Up to 3 Sentences (8—10 words each)	At least 4 Sentences (8—10 words each)
		Up to 2 Sentences (12—15 words each)	At least 3 Sentences (12—15 words each)
Stem Complexity (Language)	Basic Vocabulary	Basic / Intermediate Vocabulary	Intermediate Vocabulary
	(Commonly used words)	(Few moderately used words)	(Few moderately used words)
Number of Concepts	Only 1	Up to 2 for Basic	3 or more for basic
		Only 1 for Intermediate	2 or more for intermediate
			Only 1 for Advanced
Complexity of Distractors	Basic (Vocabulary, Concept, Length)	Basic / Intermediate (Vocabulary, Concept, Length)	Intermediate (Vocabulary, Concept, Length)
Length/ type of concept/ vocabulary	(1—4 words)	(4—6 words)	(>6 words)
Question Type	Basic concept/ fact based E.g. Fill in the blanks	Intermediate theory/ application based Eg: Match Options	Advanced theory/application based E.g. Sequence/Match options
	Basic single correct answer	Complex multiple-choice items	Complex multiple-choice items
	Scenario (Narrative or simulation)	Scenario (Narrative or simulation)	Scenario (Narrative or simulation)
Cognitive Complexity (Bloom's Taxonomy)	Recall of basic routine and direct concepts / facts	Recall of basic (less routine) and intermediate facts	Skills based on Advanced concepts
	Skills based on understanding of direct concepts / facts	Skills based on understanding of intermediate concepts	Critical thinking and Reasoning based on evidence or application of intermediate and advanced concepts
Calculation based	Single Digit Operands	Up to Double digit operands	Calculations involving more than 2 Digits

Other factors to take into account while determining the difficulty level of a test item:

- Difficulty distribution of test questions in an assessment can be decided based on NSQF level of the job role. The ratio can be maintained for all job roles at a particular NSQF level. As NSQF level increases, the difficulty mix of an assessment tends towards higher difficulty levels.
- All difficulty levels are assigned to enable discrimination between candidates based on their performance and the type of test

A sample difficulty matrix is suggested. Each SSC should create their own matrix dependent on sector-specific requirements.

NSQF Level	D1 (Easy)*	D2 (Moderate) *	D3 (Difficult) *
10	0	30	70
9	5	40	55
8	10	40	50
7	20	45	35
6	30	45	25
5	40	45	15
4	50	40	10
3	55	35	10
2	55	40	5
1	65	35	0

Table 12: Sample Difficulty Matrix across NSQF levels

THE ROLE OF ASSESSORS IN ASSESSMENTS

Assessors are stakeholders who are directly involved in evaluating candidates on various parameters defined in a standard rubric for QP/ NOS assessment. Assessors are required to perform the act of evaluation for all assessments that are not scored by system intelligence. They undergo a Training of Assessor (ToA) program that aligns them with the assessment requirements in the short-term skill ecosystem.

For all assessor-based assessments (whether viva or practical skills assessment or responses on a theory paper), a rubrics and scoring structure is to be provided to ensure standardization in scoring. The rubrics and checklists need to be further coupled with training of assessors (ToA) and a comprehensive Assessor Guide that benchmarks how evaluation and scoring need to be conducted, attempting to minimize subjectivity. The tables below are sample rubrics/grading matrices that can be referenced for creating assessments.

Parameter	Description
Excellent	If a candidate can perform a particular step/rubric with perfection and is able to display the skills required for completing that particular task , then he/she must be allotted Excellent i.e. 100% of the assigned marks.
Good	If a candidate can perform a particular step/rubric with perfection but he/she is unable to display the skills required for completing that particular task , then he/she must be allotted Good i.e. 75% of the assigned marks.
Satisfactory	If a candidate performs a step/rubric but is unable to showcase the perfection and skills required for completing that task , then he/she must be allotted Satisfactory i.e. 50% of the assigned marks.
Poor	If a candidate is not able to perform a step/rubric and he/she has no knowledge of skills required for completing that particular task , then he/she must be allotted Poor i.e. 0% of the assigned marks.

Table 13: Sample Grading Matrix for Scenario-based Questions

Parameter	Description
Correct	If a candidate answers all the points as mentioned in the description and can showcase the complete knowledge related to the topic being asked, then he/she must be allotted Correct i.e. 100% of the assigned marks.
Partially Correct	If a candidate answers few points as mentioned in the description and is not able to showcase the complete knowledge related to the topic being asked, then he/she must be allotted Partially Correct i.e. 50% of the assigned marks.
Incorrect	If a candidate is unable to answer any points as mentioned in the description and has no knowledge of the topic being asked, then he/she must be allotted Incorrect i.e. 0% of the assigned marks.

Table 14: Sample Grading Matrix for Viva Voce Questions

ASSESSOR GUIDE

This Assessor Guide is a manual used by an assessor for conducting and evaluating assessments. An Assessor Guide is based on a QP/NOS and gives a clear standard operating procedure on how one must assess a specific qualification. The purpose of the Assessor Guide is as follows:

- It clearly states how the qualification will be assessed and provides details on the assessment events, processes and instruments that will be used. It also details the possible outcomes of the assessment
- It details how the relevant occupational national standards (NOS) and its respective assessment criteria shall be assessed using mapped items in a test form
- It serves as a guide for the trainer in their course delivery as they prepare the candidates for the assessment. It also assists candidates in undertaking preparation for the assessments

- It clarifies for assessors, trainers, candidates, auditors, training providers and employers what a competent person can do and how these criteria have been met

A sample template for the Assessor Guide.

S.No	Key Points in Assessor Guide
Overview	1. QP/NOS details and codes
	2. Purpose of Assessment
	3. Competency Assessment Level
	4. Description of Candidates
	5. Eligibility criteria of Assessor for the domain Job role
Assessment Specifications	1. Domain Infrastructure Equipment, Tools, Consumables
	2. Assessment Criteria
	3. Preferred mode of Assessment
	4. Assessment Methods and Instruments
	5. Assessment Venue
	6. Duration of Assessment
	7. Sequence of Activities in the Assessment
	8. Turnaround times for the Assessment
	9. Evidence Gathering Plan for practical competencies
	10. Evidence Gathering Plan for Knowledge
Conduct of Assessment	1. Instructions for Assessors
	a) Before conduct of assessment
	b) During conduct of assessment
	c) Post conduct of assessment
	2. Instructions for candidates
Records	1. Performance Criteria Assessment Checklist
	2. Knowledge Assessment Checklist
	3. Assessment Results
Code of Conduct and Grievance Mechanism	1. Grievance Redressal mechanism and contact details of AA and SSC
	2. Code of Conduct
Appendices	1. Code of Practice for Assessor
	2. List of Tools, Equipment and Supplies
	3. Marks Allocation/ Marking Scheme
	4. Candidate's Appeal Form for re-evaluation/ re-assessment

Table 15: Sample Template for Assessor Guide

TARGET GROUP & LANGUAGE

Language is an important factor to consider for assessments. Assessments should be translated into local/ regional languages as per the requirements of the target group. Test items must be designed such that they are cross-cultural with on-field terminologies used in the specified regions. Translators are required to be engaged for the purpose of translation. All translated assessments should be cross-checked by local vernacular experts.

ASSESSMENT BLUEPRINT AND ITEM BANK APPROVAL & REVIEW

All Blueprints & Item Banks developed should be approved by at least 2 independent SMEs who may be from the industry or academia, empaneled on the criteria detailed in Table 1.

GENERATING THE TEST FORM

The test form is a question paper that is generated for the assessment, drawing items from the item bank in a combination that complies with the requirement of the Assessment Blueprint for the QP/NOS.

- The assessment platform should be able to generate a test form with a set of questions representing the PCs from all the NOS based on the difficulty level of each item, such that it is in perfect alignment with the Assessment Blueprint. For non-digital assessments, test forms should be created beforehand drawing items from the approved item bank in a similar manner.
- The scoring matrix of the test form should be aligned to the Assessment Blueprint
- The questions should be systematically arranged within the test form
- The answers and distractors should also be systematically arranged within the items



ASSESSMENT PLANNING

Assessment planning involves a host of activities such as aligning and training personnel for management of the assessment process, empaneling assessment agencies, defining appropriate modes of assessment, exploring suitable proctoring solutions, training and certifying assessors, and ordering the entire assessment process. This section elucidates the work that must be done in order to bring systematization and operational efficiency into the assessment process.

ANNUAL ASSESSMENT PLANNING

At the start of financial year, SSCs are expected to prepare an annual assessment plan, based on their visibility on training and assessment targets under various schemes, whether government-funded or non-government funded. SSCs should share an indicative plan with all its empaneled AAs to shift away from ad-hoc assessment assignments through enabling greater preparation.

MANAGEMENT OF ASSESSMENT AGENCIES

Empanelment of Assessment Agencies

Any AA duly empanelled with NCVET shall be permitted to operate with the concerned SSCs, after an operation & financial Service Level Agreement (SLA) has been drawn between the SSC and AA. In the event that there are no relevant AAs (based on sector, job-role, geography coverage) empanelled with NCVET, the SSC may directly work with AAs using the SOP – Criteria for the Empanelment of Assessment Agency by SSCs. The SOP is annexed (Annexure 6).

Grading of Assessment Agencies

It is recommended that SSCs prepare a transparent performance measurement and feedback system for rewarding and recognizing well-performing AAs and thereby driving quality assessment administration. The following could be some of the parameters assessed in a grading matrix:

S. No	Suggested Parameters for Performance Evaluation Matrix
1	Percentage of Assigned Assessments Accepted & Assessed by AA
2	Accuracy in calculation of results in adherence to assessment framework
3	Percentage of batches for which result has been uploaded within the defined TAT requirements
4	Percentages of batches where the Assessment Agency has captured all the evidences as required by the respective awarding body/Sector Skill Council
5	Number of batches, if any, where Assessment Agency has been found involved in malpractice
6	Number of Assessors who have been blacklisted pertaining to Assessment Agency
7	Number of Assessors who have been suspended pertaining to the Assessment Agency
8	Percentage of batches which were delayed because of delay at the end of Assessment Agency
9	Percentage of batches for which reports and analytics were provided by the AA
10	Technological capability of the AA with regard to SSC-specific assessment
11	Reporting and analytics capability of the AA with regard to SSC-specific assessment

Table 16: Suggested Matrix for Performance Evaluation of AAs

While developing a performance evaluation grading matrix, SSCs should note that:

- Each parameter may be designated a weightage out of 100, based on its importance in sector assessments
- The matrix should be made available to all empaneled AAs, listing expectations, reward structure, and consequences, if any. The volume of assessments assigned to an AA may be commensurate with the performance of the AA.

- The review should happen on a quarterly basis during which outcomes are made available to the concerned stakeholders with points of action, if any
- Based on the scores generated, AAs may be bucketed into grades. A sample grading matrix is provided in Table 17:
- A minimum score may be benchmarked which shall serve as the minimum requirement for AAs to remain empaneled with an SSC

Grade	Criterion
Grade 1	AAs scoring > 90%
Grade 2	AAs scoring between 80 – 90%
Grade 3	AAs scoring between 60-80%

Table 17: Suggested Parameters for Performance Evaluation of AAs

Assessment Fee

An assessment has the role of both the SSC and the AA, and the fee for the assessment is shared between the two stakeholders, contingent on the functions performed by them. To advance standardization and ensure transparency in the functioning of assessments, it is recommended that a uniform revenue sharing matrix based on responsibility undertaken be introduced as follows:

Actor	Responsibility	Recommended Share
AA	<ul style="list-style-type: none"> ■ Assessment design support to SSC ■ Provision of assessment interface with desired functionalities ■ Assessment execution ■ Assessor (if any) ■ Proctor (if any) ■ Online proctoring (if applicable) ■ Evidence Collection and Documentation ■ Uploading scores 	60%
SSC	<ul style="list-style-type: none"> ■ Development of Blueprint ■ Development of Item Bank ■ Monitoring and Audits ■ Quality Assurance <ul style="list-style-type: none"> ■ Grievance Redressal ■ Item and Blueprint Review ■ Performance Management of AAs and Assessors ■ Reports & Analytics ■ Certification 	40%

Table 18: Recommended Revenue Sharing between SSC and AA

Further, it is recommended that:

- 1 A defined fee should be levied on TPs for postponement or cancellation of an assessment less than 24 hours from the designated time of the assessment.
- 2 A defined fee should be levied on AAs for cancellation of an assessment less than 24 hours from the designated time of the assessment.
- 3 The revenue sharing for the AA may be increased for less accessible geographies, such as North Eastern regions, Jammu & Kashmir, Left-Wing Extremist locations, Andaman & Nicobar Islands, etc.
- 4 The payment of the assessment fee should be made monthly to SSCs for all Government-aided projects and schemes. AAs should also receive payments for all assessments conducted on a monthly basis.

MODE OF ASSESSMENT DELIVERY

Depending on the differentiated needs across sectors and job roles, coupled with technological advancements in the field of assessments, a range of assessment delivery modes have emerged. The delivery modes are derived taking into consideration factors such as:

- Requirement of an Assessor (physically present, remotely present, or not present)
- Requirement of a Proctor (physically present, remotely present, or not present)
- Internet availability at assessment location
- Requirement of domain infrastructure, equipment & tools for practical skills assessment
- Digital literacy level of candidates to be assessed
- Availability of technological solution (infrastructure or software) for administration of assessment

Depending on a combination of the above factors, the prevalent modes of administering assessments fall broadly within the following three categories:

- I. Remote online assessments
- II. Center-based digital assessments
- III. Center-based non-digital assessments

The summary table below details these broad categorizations into various modes of assessments. SSCs must examine the above-mentioned factors influencing assessments and determine the most appropriate mode of assessment delivery for every assessment.

Mode	No.	Description	Assessor	Proctor	Internet
Remote Assessment (online)	1	Applicable for Job roles for which competency can be assessed online and auto-scored (preferred for cases where there is no requirement of domain infrastructure for assessment)	No	Yes (remote)	Online
	2	Applicable for Job roles for which competency can be assessed online and scored remotely by an assessor	Yes (remote)	Yes (remote)	Online
Center Based Digital Assessment (Online or offline)	3	Applicable for Job roles for which domain infrastructure may be required for assessment – to be assessed by an Assessor on-ground supported by Proctor	Yes (on-ground)	Optional	Online or Offline
	4	Applicable for Job roles for which competency can be assessed online and auto-scored	No	Yes (on-ground)	Online or Offline
	5	Applicable for Job roles where competency can be assessed remotely, through video recordings captured by Proctor (on-ground).	Yes (remote)	Yes (on-ground)	Online or Offline
Center based non-digital Assessment	6	Cases wherein theoretical knowledge is tested using pen-and-paper and practical skills are assessed by the Assessor	Yes (on ground)	Optional	Offline

Note:

- Mode 6 or Center Based Non-Digital Assessments are not considered a favorable mode of assessment. The theory section of all assessments is expected to be administered digitally and should only be relaxed in extreme

circumstances wherein digital administration is a challenge.

- All digital assessments must have a minimum proctoring requirement of a secure-browser. Wherever there is no proctor on-ground, AI-enabled auto-proctoring should be used.
- An internet connectivity of minimum 2MBPS is required to support digital online assessments.
- Internet usage during assessment enables real-time upload of information. In case of non-availability of internet – information and data logs are recorded and synced with the server when internet is available.
- Wherever no internet is available for conduct of a digital assessment, a proctor must necessarily be present on-ground.
- All modes of assessments where there is no requirement of an assessor (Mode 1 and Mode 4) refer to those assessments that are auto-scored by system intelligence.

The categorizations and their use-cases are detailed below:

- I. **Remote Assessment (Online)** are those assessments that can be undertaken from any location (home, TC location, assessment center) and be assessed effectively on a technology device, using proctoring solutions like AI-enabled tools and invigilation through a live video-stream by a remotely situated proctor. Depending on the evaluation requirements, remote assessments (online) may or may not have the involvement of a remote assessor. This delivery method is preferred when:
 - The assessment does not require domain infrastructure, equipment or tools for assessing competency
 - The assessment can be administered on a technology device that is available with the candidates to be assessed
 - The technology device specifications should be provided well in advance
 - Uninterrupted internet is available at the assessment location at the speed and bandwidth requirement of assessment platform
 - AI-enabled auto-proctoring tools are available for assessment
 - Candidates are comfortable with technology
 - The scheme under which the assessment falls permits the conduct of remote online assessment
- II. **Center-based Digital Assessment (Online or offline)** are those assessments that are undertaken at a Center (TC or assessment center), with at least one person (Assessor and/or Proctor) on-ground to invigilate and administer the assessment. There are various modes of assessment within this category, which are largely characterized based on the involvement of the personnel on-ground. Proctors are recommended for this type of assessment. Such assessments can be conducted online (using internet) or offline (using LAN or pre-loaded software), depending on the availability of internet. In case of non-availability of internet hindering real-time upload of information – the assessment data logs are recorded and synced with the server at a later period. AI-based auto-proctoring is recommended for all cases wherein internet is available. This delivery method is preferred when:
 - The assessment requires domain infrastructure, equipment or tools for assessing competency
 - The IT infrastructure is to be provided to the candidate by the Center/Assessment Agency
 - Internet is available at the Assessment location at the required bandwidth and speed of the technology platform (online) and when internet is not available (offline)
 - An assessor is required to evaluate the assessment
 - There is a mandatory requirement to conduct center-based assessment
- III. **Center-based non-digital Assessment** are administered completely without the usage of technology, using pen-paper mode for theory assessment. The assessments are administered by the Assessor on-ground at the assessment location and may be supported by a proctor. The assessor manually processes the assessment score and shares it with the Assessment Agency.

This delivery method is not preferred and should only be implemented in extreme circumstances wherein digital administration is not possible due to limitations at the candidate's end. When utilized, it should be ensured that:

- The question paper complies with the requirements of the Assessment Blueprint
- Hard copies of the question paper are generated in advance by the AA and sealed in an envelope for the Assessor to carry on the day of the assessment. The envelope should only be opened on the day of assessment in front of candidates and proctor

DIGITAL ASSESSMENT INTERFACE

Based on infrastructure and equipment availability, as well as availability of internet at the assessment location, the following interfaces can be leveraged for digital assessments:

- I. Browser-based:** Browser-based assessments can be administered on any device (Computers, Tablets or Smartphones) leveraging available browsers such as Google Chrome, Safari, Firefox Mozilla, Internet Explorer, Opera, etc. These assessments are conducted online using candidate-specific log-in credentials and do not require an additional application to be downloaded or installed.
- II. Secure Browser-based:** Secure browsers are specific to the Assessment Agency and have the advantage of incorporating features such as control over browser minimizations and switches, limiting background applications, single log-ins and more. The following list of features should be present as part of a secure browser for assessments:
 - Locked-down browser
 - Disables screen recording
 - Disables screen-sharing
 - Disables screen projection
 - Disables access to any other tool
 - Disables access to google or any other site
 - Disables Cut/Copy-Paste
 - IP Whitelisting (recommended)
 - Internet Scanning (recommended)
- III. Application-based:** Application-based assessments are administered through an Assessment Agency application installed on a device such as a tablet or smartphone. These assessments have the advantage of including checks such as disabling copy-paste functionality, sharing, flagging violations, etc.

Sample instructions for candidates appearing for digital assessments are annexed (Annexure 2).

TYPES OF PROCTORING SOLUTIONS

Assessments can be delivered to candidates in various formats of proctoring. Proctoring is used to troubleshoot technical concerns and prevent any malpractice that may serve to manipulate scores during the assessment. Apart from placing a proctor physically on-ground at the assessment location, technology can also be leveraged for proctoring of assessments, whether remotely conducted or conducted on-ground. The three main types of proctoring modes are:

1. Manual Offline Proctoring
2. Live Remote Proctoring
3. AI-Enabled Auto-Proctoring

These are detailed in the section below:

Manual Offline Proctoring

Manual Offline Proctoring is a traditional form of proctoring wherein proctors are physically present on-ground at the assessment center as technical experts and invigilators. The proctors are the eye-on-the-ground and responsible for monitoring the assessment, completing documentation, and raising complaints in case there are any anomalies.

Live Remote Proctoring

Live Proctoring refers to the proctoring of an assessment by a remotely situated qualified human proctor through real-time image/video streaming and screen-sharing feeds. The salient features of Live Proctoring include:

- The tool allows a proctor to remotely invigilate candidates sitting for online remote assessments
- The proctoring software (auto-proctoring) provides a list of red flags whenever it detects suspicious behavior, which can be reviewed in real-time or post the assessment to assess the integrity of the exam and take appropriate action
- The proctor can pause the test when they notice anything unusual and chat with the test-taker or terminate the exam, if needed
- The proctor can provide instructions or troubleshoot basic technical issues during the assessment, in case any arise

AI-enabled Auto-proctoring

Auto-proctoring tools use system-driven logics and artificial intelligence to restrict undesirable behaviour during the assessment process and raise flags wherever anomalies are detected by monitoring the web-camera feed. The AI-based solutions are trained over a large amount of data to accurately raise flags. Some of the key flags that the system should raise are:

- **Window switch count:** In the absence of a secure browser for conducting assessments, the window switch count can be logged if the candidate moves from one assessment window to another. This tool can notify invigilators and assessors immediately, and the system can terminate the assessment after x (e.g.: 5) number of browser switches.
- **Face detection:** AI-enabled technology can be utilized to identify the number of faces in front of the screen during the assessment. For example, it can detect multiple faces or identify if the candidate moves away from the test window. Such detections can be recorded and highlighted for review by a proctor. The proctor can also send warnings in case of a detected violation.
- **Object detection:** AI-enabled technology can detect the presence of suspicious objects like headset, mobile phone, etc, in front of the screen during the assessment.
- **Simultaneous login attempts:** The system can also detect, and in some cases inhibit, multiple log-ins for a single candidate. Candidate should be automatically logged out and assessment should be terminated after x (e.g.: 3) attempts at a multiple log-in.
- **Turning away from test window:** The AI also analyses the candidate's facial features, including their ears, enabling the system to detect if the candidate turns away from the test window.

It is mandated that AAs use the data generated through flags for providing a Credibility Index to the Assessment. The Candidate Credibility Index helps in flagging cases where anomalies are spotted during the assessment and enables the proctor and AA to identify cases of malpractice and cheating. The Credibility Index tool should be customizable with respect to the framework for flagging and weightages assigned to each flag.

ASSESSMENT PERSONNEL WITHIN THE SSC

An assessment team at the SSC/ AA works closely with affiliated SMEs to create and validate the test items. The benefit of having an assessment team within the organization is the reduction in cost and time saved in assessment development, as well as a tighter hand on assessment. The assessment team manages the on-going production and maintenance of assessment, awarding, results release, and standard setting. The figure below is an example of what

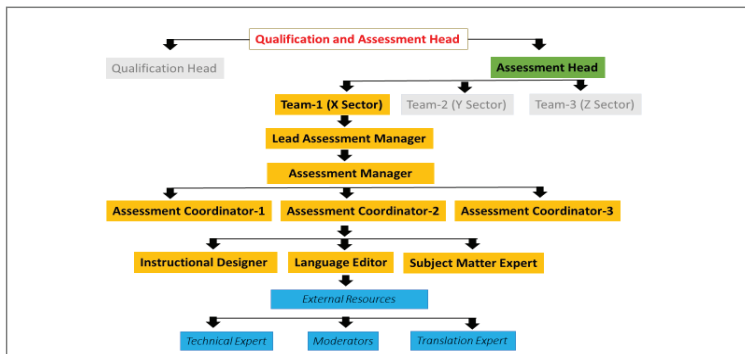


Figure 6: Example of Assessment Team Structure at SSC/AA

an assessment team at the SSC/ AA could look like:

Assessment teams within each SSC play a crucial role in ensuring the quality control and adherence to relevant assessment standards. These teams can further the SSC's efforts to:

- Enhance the efficacy of assessment methodology, leading to adequate recognition of current skills, knowledge and experience of trainees
- Increase quality assurance of the assessment design, development and delivery and instill standardization in processes
- Enhance industry relevance of assessments to augment the value of the certification
- Ensure continuous improvement in quality of operations through performance assessment of AAs
- Instill a system of competition amongst training providers, trainers and assessment agencies by setting a quality standard
- Assessment development is better integrated to training program and curriculum

SSCs can achieve the aforementioned objectives by having a team comprising members of varied backgrounds, including statistical analysis, assessment design, pedagogy experts, researchers, and SMEs.

ORIENTATION REQUIRED BY PERSONNEL FOR CONDUCTING ASSESSMENTS

The assessment process involves various actors that have different roles to play during the assessment. To ensure that each stakeholder is aligned to the requirements of assessments in the skill ecosystem, each stakeholder has to be familiarized with key resources to ensure that they perform their role effectively. The section below details a non-exhaustive list of subjects that personnel must be oriented with before partaking in the assessment process. Orientations may be conducted that are over and above the stated:

A. Assessment Designers must have a grasp on:

- i. The QP and its corresponding Assessment Blueprint
- ii. The different modes of assessment available (digital & non-digital) and their suitability for the QP
- iii. The assessment platform and its functionalities for configuring the assessment

B. Assessors must be apprised on:

- i. The appropriate means to score candidates on competencies demonstrated
- ii. The conduct of assessments in alignment with the Assessor Guide
- iii. The assessment platform/technology on which the assessment is administered
- iv. The questions and environments created for the assessment

- v. Specific requirements depending on the type of assessment (using technology such as AR/VR, conducting assessments remotely, etc)
- vi. Scheme-specific documentation and compliance requirements
- vii. The standard operating procedure to raise complaints or malpractices

C. Proctors must be oriented with:

- i. Technological know-how, understanding of software and hardware to troubleshoot technical issues that arise during assessments, including regulating issues with the internet, LAN, and browser
- ii. AA's platform and application for conduct of the assessment
- iii. Evidence capturing requirements
- iv. Compliance requirements with respect to candidate attendance & verification, geo-tagging
- v. Raising flags and invigilation responsibility
- vi. Scheme-specific documentation and compliance requirements
- vii. The standard operating procedure to raise complaints or malpractices

D. Assessment Agencies must be oriented with:

- i. The different modes of assessment available (digital & non-digital) and their suitability for the QP
- ii. The QPs and their corresponding Assessment Blueprints
- iii. Requirements for processing results
- iv. Compliance requirements with respect to candidate attendance & verification, geotagging, and Skill India Portal
- v. Application of technology to assess competencies
- vi. Data analysis, storing and verification requirements
- vii. Review and analysis process for items in question papers and performance in assessment batches, and escalate cases for review
- viii. Available proctoring solutions and interpretation of flags raised
- ix. Evidence capturing requirements
- x. Scheme-specific documentation and compliance requirements
- xi. The standard operating procedure to raise complaints or malpractices

E. Sector Skill Council staff must be oriented with:

- i. The different modes of assessment available (digital & non-digital) and their suitability for the QP
- ii. Application of technology to assess competencies
- iii. Result processing and approval process
- iv. Data analysis for ensuring quality in assessments
- v. Monitoring requirements for ensuring quality in assessments
- vi. AA's platform and application for conduct of the assessment, and types of proctoring flags raised during the course of assessment

F. Subject Matter Experts must be oriented with:

- i. NSQF level and a general understanding of the skill ecosystem

- ii. QPs/ NOS, and their components, including the Assessment Criteria
- iii. Guidelines on Assessment and requirements for a blueprint
- iv. The different modes of assessment available (digital & non-digital) and their suitability for the QP
- v. Application of technology to assess competencies

CERTIFICATION OF ASSESSORS

SSCs schedule and conduct Training of Assessor (ToA) programs to orient and certify assessors on the requirement of assessing on QPs/NOS aligned to the NSQF framework. Assessors undergo a program that has the following components:

- Domain Orientation; during which the assessor is familiarized with the domain QP, its components, and an understanding of the Indian Skill system
- Assessment Skills; during which the assessor is briefed on the principles of assessment and apprised on processes and protocols that must be ensured while conducting assessments

The ToA program is closed with a rigorous assessment to evaluate both the Domain and the Assessment Skills of the assessor. All those who successfully clear both assessments are deemed as qualified assessors and receive a certificate on the Skill India Portal. The ToA program is conducted in accordance with the Guidelines for Training of Trainers and Assessors, publicly accessible on the NSDC and MSDE websites. Assessors who may appear for this program must meet a minimum eligibility criterion for the specific job role. Details on the Guidelines and Eligibility Criteria for Assessors are annexed (Annexure 8).

AAs are encouraged to take independent performance evaluations of all their empanelled AAs through a defined performance evaluation matrix. The key anticipated outcomes of this evaluation is three pronged:

- Comprehensive rating mechanism depicting strengths and highlighting areas of improvements
- Improving quality by recognizing and rewarding good behaviour
- Improving the professional and career aspirations of assessors

The approaches adopted could include self-rating of an assessor, rating by the AA, and evaluation by an independent third party. The parameters that could be taken into account could be feedback collected from stakeholders during assessments, quality outcomes during assessments and adherence to requirements, academic qualification and work experience of the assessor, cognitive and leadership skills, TOA scores, adherence to TATs, or any other.

RECOGNITION OF PROCTORS

Proctors are individuals who support the assessment by ensuring readiness and assistance on technology and infrastructure requirements, fulfilling documentation requirements, invigilating the assessment, and alerting authorities in case of any anomalies.

The eligibility criteria for a proctor is:

- Minimum education qualification: Class X Pass
- Skill set: Technical knowledge for troubleshooting fixes in technology systems, internet, hardware, software, etc

Detailed instructions for proctors are available in the Proctor's Handbook (Annexure 5).

ASSESSMENT ADMINISTRATION

This section details the process of administering an assessment in a comprehensive chronological manner starting from pre-assessment, moving on to the assessment process on the day of assessment, and finally closing with post assessment activities.

ASSESSMENT ACTIVITIES

The section below details the various tasks that must be undertaken for administering an assessment and the stakeholder primarily responsible for the task.

Pre-Assessment

S. No.	Tasks	Responsibility
1	Initiate Request for Assessment to SSC on Skill India Portal specifying the following: <ol style="list-style-type: none"> Batch details Language preference Any special assistance requests (reader/ writer/ time consideration) Preferred mode of assessment (indicating internet & power availability) 	Training Center/ Employer
2	Review request and allocate the following actors for assessment: <ol style="list-style-type: none"> Assessment Center Assessment Agency 	Sector Skill Council
3	Accept the assessment request on Skill India Portal and ensure the following: <ol style="list-style-type: none"> Allocation and acceptance of batch by Assessor and Proctor Necessary travel arrangements for Assessors/Proctor, wherever applicable Readiness of assessment interface Readiness of devices, if any Readiness of test form, in the language of choice Coordination with stakeholders to enable smooth administration of assessment. Communication of Assessor/ Proctor with Assessment Center 24 hours before the start of the assessment Arrival of the Assessor/ Proctor at the stipulated time (if applicable) 	Assessment Agency
4	Ensure the following are in place as per the requirements of the SSC and AA: <ol style="list-style-type: none"> IT infrastructure including network connectivity Domain and general Infrastructure Domain tools and equipment in adequate quantity Consumables in adequate quantity IP camera equipment to record the assessment 	Assessment Center
5	In case of remote online assessment, ensure the following is available for the end user: <ol style="list-style-type: none"> Availability of hardware compliant with the specifications required for the online remote assessment Internet connection with minimum 2MBPS speed Internet and hardware that can support live streaming through a front-facing camera Adequate power backup Basic tools and consumables, if any 	Training Center
6	Ensure all candidates are apprised on all the conditions underpinning the assessment and all expectations from their end	Assessment Agency with Training Center

During Assessment

S. No.	Tasks	Responsibility
1	Candidate registration and post registration support	AA/ Assessment Center
2	Candidate level compliances: i. Travel logistics (if applicable) ii. Reporting of candidates at the reporting time iii. Availability of genuine candidates	TC
3	Ensure Assessor/ Proctor arrive 30 minutes prior to scheduled time	AA
4	Presence of center personnel on the day of assessment	Assessment Center
5	Verify identity of the assessor/ proctor by scrutinizing Government proof and company ID	Assessment Center
6	Ensure the following: i. Candidate verification ii. Candidate briefing for assessment	Assessor/ Proctor
7	Ensure the assessment is video-recorded and stored, preferably through an IP-based camera	AA/ Assessment Center
8	Evaluation of candidate's competencies (practical, viva, theory, any other)	Assessor
9	Ensure all assessment data and evidence is collected and stored as per the requirements	AA/ Assessment Center
10	Managing observers on the day of assessment (representatives from District Skill Committee, State Skill Development Mission, NSDC, SSC, etc.)	Assessment Center
11	Ensure a conducive environment for the assessment including availability of drinking water, clean toilets and adherence to health and safety guidelines	Assessment Center
12	Ensure conduct of assessment in a compliant manner and report any flags to SSC immediately	AA and Assessment Center
13	Documentation requirements and feedback collection	AA/ Assessment Center
14	Surprise audits and monitoring activities	SSC
15	Observation visits and surprise checks	NSDC/SSDM/DSM
16	Report to the concerned stakeholder for any non-compliance	All

Post Assessment

S. No.	Tasks	Responsibility
1	Review documentation from the day of assessment (Feedback for, Code of Conduct, etc.)	SSC
2	Uploading scores	AA
3	Result Validation	SSC
4	Results sharing with TC/TP and candidates and certificate generation	SSC
5	Provide assessment reports and analysis to SSC after each assessment	AA
6	Monitoring and analysis of assessment data, TAT compliance of AA	SSC
7	Distribution of results and certificates to candidates	Training Center
8	Report any non-compliance within the stipulated timeframe	All
9	Address grievances and/ or queries	All

A sample schedule for the day of assessment is annexed (Annexure 7).

ASSESSMENT TIMELINES

All assessments should be scheduled using the centralized technology platform (Skill India Portal). The scheduling process involve multiple stakeholders such as the SSC, Assessment Center, AA, Assessors and Proctors. The recommended timelines for each stakeholder for taking requisite actions on the portal are covered in the table below:

S. No.	Stage of Assessment	Actor	Recommended Timeline
1	Initiate Assessment request on SIP	TP/TC	At least 30 days before the assessment date
2	Assignment of Assessment Center	SSC	At least 25 days before the assessment date
3	Acceptance / Rejection of Batch for assessment	Assessment Center	At least 22 days before the assessment date
4	Assignment of Assessment Agency	SSC	At least 20 days before the assessment date
5	Accept/Reject batch for assessment allocated by SSC	AA	At least 15 days before the assessment date
6	Assignment of batch to Assessor	AA	At least 10 days before the assessment date
7	Accept/Reject batch allocated by AA on SIP	Assessor	At least 7 days before the assessment date
8	Arrival of assessor/ proctor to assessment center	Assessor/ Proctor	At least 30 minutes before the scheduled time of assessment
9	Result upload by Assessment Agency	Assessment Agency	Within 3 days of Conduct of Assessment
10	Result Approval and Certificate Generation	SSC	Within 6 days of result upload by Assessment Agency

DROPOUTS AND ABSENTEES

Candidates who do not appear for assessments despite their names in the batch list could be marked as either absentees or dropout cases. To bring in distinction in the two cases, the two cases are defined below:

- i. **Dropout:** Candidates are considered to be dropout if they have not completed the training and hence not appearing for the assessment. TCs are aware which candidates are dropouts and should indicate all such candidates at least 7 days prior to the assessment date on Skill India Portal. A candidate who has been marked as a dropout shall not be considered as part of the list of candidates to be assessed.
- ii. **Absent:** Any candidate listed in the batch who does not appear for assessment on the assessment date due to any reason is marked as 'Absent'. Any candidate arriving late for assessment by more than one hour from the scheduled time shall not be permitted to sit for the assessment and shall be marked as absent.

CODE OF CONDUCT

Assessment Agencies

It is the duty of the AA to ensure that:

- Potential forms of conflict of interest in the assessment process and/or outcomes are identified, and appropriate referrals are made, wherever necessary
- Assessments are conducted within the boundaries of the assessment system policies and procedures
- Candidates are informed of all known potential consequences of assessment decisions, prior to the assessment
- All forms of harassment are avoided throughout the assessment process and in the review and reporting of

assessment outcomes

- Personal or interpersonal factors that are irrelevant to the assessment of competence do not influence the assessment outcomes
- Evidence is verified against the rules of evidence
- Assessment decisions are based on available evidence that can be produced and verified
- Confidentiality is maintained regarding assessment decisions/outcomes and records of individual assessment outcomes are only released on the explicit instructions of the SSC

Proctors

The following is the code of conduct for a proctor:

- Dress in a suitable attire, present and behave in a professional manner with all the stakeholders
- Smoking, arriving drunk at work, chewing tobacco, gutka, chewing gums, betel nuts on the premises of the assessment center is strictly prohibited
- Any information that is confidential must not be disclosed to unauthorized personnel
- Any offers made to extend unauthorized favors in the benefit of TP/candidates must be rejected and reported to authorities immediately
- Any proctors found breaching contracts of ethics and non-bribery shall entail strict action against the proctors as per the defined penalty matrix, which may lead to suspension/blacklisting
- Proctor to not share passwords or assign their work to any other unauthorized personnel
- There must be no bias against anyone on the basis of color, caste, language, religion, social status, gender, disability, political and other affiliations, etc
- Official materials including test resources, results, equipment, etc, should be safeguarded from loss by theft, spoilage and misplacement

Assessors

The following is the code of conduct for an assessor:

- Be fair and unbiased to all candidates at all the times, regardless of treatment, regardless of race, religion, gender, background, cultural beliefs or age
- Be respectful to all candidates. Do not belittle or degrade candidates. Be culturally sensitive and adapt to the context of the assessment
- Display trust and integrity. Integrity means to carry out duties as an Assessor in a morally correct manner
- The assessment should be conducted only on pre-defined criteria; measuring only aspects defined in qualification and as per the understanding with the SSC and AA
- It is recommended that any competency or dimension may be measured more than once if required to clearly establish its presence or absence in the participants
- Seek consent from candidates before undertaking any recordings. The need for any such evidence must be explained to the candidates
- The reliability and validity and fairness of the assessment tools have to be established prior to use in an assessment
- Potential forms of conflict of interest in the assessment process and/or outcomes should be identified, and appropriate referrals should be made, if necessary
- All forms of harassment should be prohibited throughout the assessment process and in the review and assessment outcome
- Candidates should be made aware of their rights including processes for grievance redressal and re-evaluation
- Assessments should be assessed objectively on defined rubrics and scoring matrices. Personal or interpersonal

factors that are irrelevant to the assessment of competence must not influence the assessment outcomes. Assessment decisions should be based on available evidence that can be produced and verified by another assessor if required

- Assessments should be conducted within the boundaries of the assessment system policies and procedures
- Assessment systems and tools should be consistent with equal opportunity rights, indicating the assessment process should be uniform across environments
- Confidentiality should be maintained regarding assessment decisions/outcomes and records of individual assessment outcomes
- The assessor shall not indulge in malpractice in any form. The assessor shall not accept gifts, bribes or hospitality for any reason or purpose; nor show favour or disfavour to anyone. The assessor shall not use his/her official position to secure unwarranted privileges for him/herself, family, business associates, or any other person wherein said member benefits directly or indirectly
- In case any malpractice is observed, the assessor should report this to the concerned authorities
- Smoking, arriving drunk at work, chewing tobacco, gutka, chewing gums, betel nuts on the premises of the assessment center is strictly prohibited



EVIDENCE GATHERING

Evidence gathering is a means to monitor an assessment whether for improving quality, or meeting standard guidelines or for retrieval at a later date. Many schemes list out specific evidences needed to meet compliances requirements. Evidence in an assessment can be captured in number of ways including means such as devices, tablets, external cameras, etc. Evidence is generally collected by proctors, assessors, digital systems, auto-proctoring functionalities etc. Evidence in an assessment should be gathered on the following fronts:

S. No.	Evidence Type	Details
1	Candidate Validation	<ul style="list-style-type: none"> Photograph of valid government photo ID proof held by candidate. Both the candidate's face and the ID proof to be present in frame. A proctor or AI-enabled tools may verify that it is the same candidate.
2	Theory Assessment	<ul style="list-style-type: none"> 3 Photographs and a video preferably from various angles of the classroom with clear and visible image/footage of all trainees giving the assessment, time-stamped and geo-tagged Photograph of assessor conducting the assessment Digital assessments to capture intermittent images of the candidate and highlight system flags are raised Response transcript of the candidates Answer logs of the candidates
3	Viva voce	<ul style="list-style-type: none"> Video/ audio snippets of at least 5 minutes for each candidate
4	Practical	<ul style="list-style-type: none"> Photograph of outcome/final product of practical for each candidate Video recording (min. 5 minutes) of candidate performing the practical using IP based camera/ handheld camera/ front camera Practical evaluation checklist
5	Group Photograph	<ul style="list-style-type: none"> A group photograph with the assessor, assessment center personnel, proctor, and candidates with faces clearly visible
6	Infrastructure validation	<ul style="list-style-type: none"> A photograph of a classroom to accommodate 30 candidates as per requirement Photographs of tools, equipment and consumables available as per the requirements
7	Attendance sheet	<ul style="list-style-type: none"> Copy of the attendance sheet, with date and location, clearly marking absent and dropout candidates, duly signed by authorized signatory of TP or TC Head or Trainer assigned to the batch
8	Assessor Feedback form	<ul style="list-style-type: none"> Detailed form filled by assessor capturing feedback on candidates, experience of assessments, availability of infrastructure, tools, equipment, and consumables, etc. Standard feedback templates shall be made publicly available
9	TP feedback form	<ul style="list-style-type: none"> Detailed form filled by the Assessment Center capturing feedback on assessor and the assessment process. Standard feedback templates shall be made publicly available
10	Candidate feedback form	<ul style="list-style-type: none"> Detailed feedback filled by candidates on the experience of assessment and training (wherever applicable). Standard feedback templates shall be made publicly available.
11	Code of Conduct	<ul style="list-style-type: none"> Code of conduct document signed by assessor, signed and stamped by Assessment Center

It is recommended that all evidence be stored digitally for at least 5 years, segmented clearly and easily retrievable. Further, as we move towards digital assessments, certain checks, earlier performed manually must now be transitioned digitally. It is recommended that the following be adopted for all assessments:

- Assessment attendance:** Candidate attendance should be captured through the bio-authentication device already put in practice for PMKVY STT batches, or through a geo-tagged and time-stamped image of the candidate along with an image of the ID card.
- Assessment logs:** For all digital assessments, assessment logs should be stored. A sample assessment log is annexed (Annexure 3).

3. **Image/video logs:** It is suggested that image and video logs be captured wherever feasible.
4. **Web-based or app-based monitoring of assessment:** It is recommended that AAs should facilitate the monitoring of the assessments through web-based or app-based access, to view the following key activities on ongoing assessments:
 - List of candidates taking assessment with their details and images
 - Live assessment logs for ongoing assessments

RESULTS

Uploading Scores

After the assessment is completed, the scores for each batch are uploaded on the portal by AA. With the use of digital tools for assessments, uploading of scores should be system driven with minimal human intervention in the process. Assessments with automated scoring should be marked by the system based on pre-fed inputs. Assessments where assessors input marks should be systematized in such a manner that marks that have been fed are allocated against ACs through the mapping defined in the blueprint. With respect to result generation protocols, it is recommended that AAs should:

- Build capability to generate results centrally
- Ensure result generation team has no contact with the TP/Assessor/Proctor
- Keep the assessment data encrypted till the time of result generation
- Ensure any access to this data should be logged
- Ensure that any attempt to modify this data raises a flag or leaves a trail

Furthermore, it is the AA's responsibility to ensure security of results through encryption or other techniques. AAs should also have a robust mechanism of saving the result sheets in an efficient manner, for future reference. Ad-hoc changes and moderation of results should be discouraged.

Scores for all batches across schemes are uploaded on the Skill India Portal in the formats desired as per the scheme and portal requirement. The Skill India Portal acts as a central MIS for all training and assessment data across all SSCs and projects. It is recommended that manual upload of marks should be avoided to the highest extent possible, and preferably be picked up through APIs. The cycle of result generation and upload is time-sensitive and crucial since it indicates certification of candidates and may even be linked to payouts under certain schemes. Hence, it is recommended that all AAs and SSCs stick to the defined timelines for score upload and declaration. The following timelines are recommended to be followed:

- AAs should be given minimum 3 working days to accept the batch assigned by SSCs
- AAs should upload the scores and send it to the SSC within 6 working days from the date of completion of assessment
- SSCs should validate and approve the result within 4 working days

Scores shared should be accompanied by documents such as, which may be organized systematically and easily retrievable:

- Time and date-stamped videos and photos
- Practical & theory marks evidences
- Documentation & compliance requirements
- Feedback forms
- Proctoring data logs, credibility index score for online assessments Signed and stamped Attendance sheet

Grace Marks

The passing criteria is indicated in the QP/NOS or is determined by the scheme under which the QP/NOS is being

assessed. The SSC and AA must follow the prescribed passing criteria for all assessments. The scoring should be defined within the assessment blueprint for the QP/NOS and therefore grace marks should not be allocated. As much as possible, the scoring should be free from manual intervention.

No grace marks to be allocated during QP/NOS-based assessments. To avoid arbitrary moderation of marks, clear guidelines on the extent of rounding off should be detailed in the Assessment Blueprint and calculated by the system. It is recommended that marks be rounded to the nearest absolute number (For example, rounding 69.5 to 70.0).

Publishing Formats

It is recommended that a standard marksheet design be followed for all schemes on Skill India Portal, specifying the scheme name under which it is published. Scores should preferably be published in an easy-to-understand format and detail out the NOS-wise, and wherever possible, PC-wise performance. This will enable candidates and TP to review their test performance, identify areas of strength and development, and be better prepared for the next attempt. Reports should be automated. The following information should be published on a scorecard, which should be downloadable by the candidates:

- Candidate details – Name, Email ID, registration ID, etc
- Test time and duration details
- Marks/percentage/percentile scored – across various sections of the test
- Candidate response for all questions in the assessment

A sample scorecard is annexed (Annexure 4).

RE-EVALUATION

A re-evaluation request is an appeal made by a candidate for a review of the scores obtained on an assessment.

The assessment is re-evaluated by a subject matter expert on the evidence collected (including theory, practical, viva or any other component) and the summary of scores obtained. The outcome of a re-evaluation may lead to no change in scores reported, an increase in scores or a deduction in scores.

Timeline:

Deadline for Application	10 working days after the release of results
Acknowledgement	3 working days after the receipt of completed application
Written Outcome	30 working days from the date of acknowledgement

How to Apply: A candidate may apply directly for re-evaluation. A re-evaluation request can be lodged a maximum of 1 time.

Fees: As prescribed by the SSC, suggested to be 50% of the assessment fee.

RE-ASSESSMENT

A re-assessment, or repeated assessment, is available for all those candidates who may have been absent or may have failed the initial assessment. The re-assessment occurs at a date after the assessment and is conducted by an AA who did not conduct the initial assessment.

Timeline:

Deadline for Application	15 working days after the release of results
Acknowledgement	3 working days after the receipt of completed application
Re-assessment	Within 90 working days from the date of acknowledgement

How to Apply: A candidate may apply directly for re-assessment. Centers may apply on behalf of the

candidate only with the consent of the candidate in question.

Fees: Complete Assessment fee

QUALITY ASSURANCE

An assessment undergoes an entire cycle and must be brought back to the starting point through an evaluation or review. The complete assessment process is reviewed by running data analytics, checking the quality output, collecting feedback. The cycle may move forward once the feedback loop is complete and corrective action is undertaken.

This series of processes aims at confirming whether the outcomes of an assessment of an individual's learning meet predetermined criteria (standards) and that a valid assessment procedure was followed. This means that the outcomes have been quality assured and can be trusted.

REVISION OF BLUEPRINT

With continuous advancement in technology and skills within and across sectors and occupations, there is a need to regularly review and update Assessment Blueprint along with their respective QP/NOS and Assessment Criteria. The Blueprint for a particular job role might undergo revision due to any of the following reasons:

- Modifications in the QP/NOS – updates in the NOS/ PCs
- Modifications in the Assessment Criteria – Change in marks distribution of the overall QP/NOS/PC or even between the theory and skill sections of a NOS
- Learner performance analytics generating suggestions for alteration of the blueprint w.r.t. question type / language / relevance /Difficulty level

ITEM BANK REVIEW

SSC/Awarding body shall be responsible for the development and periodic review of the question bank developed for a specific job role. SSC/Awarding body shall be required to publish a sample question paper on their website for all stakeholders.

The quality of the item bank created by the assessment designer needs to be validated by a minimum of 2 reviewers on the following parameters:

Parameter	Description
Check the appropriateness of the question and its options	<ul style="list-style-type: none"> ■ Context should be clear ■ Construct of the question ■ Facts, Data, information must be clear and correct ■ Answer options should be clear and correct ■ The item bank must be regularly reviewed for fairness
Language check	<ul style="list-style-type: none"> ■ Check for grammatical errors ■ Spelling check – both using 'Spell Check' and manual checking ■ Capitalization, punctuation marks ■ Language should be simple avoiding any irrelevant information. ■ Sentence structure should not be complex
Ambiguity	<ul style="list-style-type: none"> ■ The question should have the complete information required to arrive at the requisite answer ■ The information provided should be specific enough to remove any ambiguity in answers/solutions to the question
Relevance – Assessing the topic well w.r.t. the job role	<ul style="list-style-type: none"> ■ Is the test item related to the QP/Job role being assessed? ■ Does the item correspond to the PC and the difficulty level?
Scripting/ Formatting Error	<ul style="list-style-type: none"> ■ Consistency in font type and font size ■ Subscript and superscript markings and brackets used if any

Difficulty Level	<ul style="list-style-type: none"> ■ Check if the difficulty level of each question is as per the matrix ■ The overall difficulty level mix is as defined in the blueprint ■ Check the difficulty level assigned to items based on data analyses
Images/Media used	<ul style="list-style-type: none"> ■ Check if the images used in the question are clear and relevant ■ Check if the candidate will be aware of the item/message conveyed in the image check for clarity of audio-video questions.
Declaration	<ul style="list-style-type: none"> ■ All Variables, Symbols and Abbreviations used must be declared ■ Variables should be declared/explained even if obvious unless this knowledge is being assessed as a part of the item ■ Abbreviations/Technical terminology should be elaborated clearly
Duplicity of Answer options	<ul style="list-style-type: none"> ■ The correct answer option should be unique. ■ Options should not be overlapping

Table 19: Parameters for Reviewing an Item Bank

One method of validating whether scores from the assessment are as expected is through **desk reviews of the Question Bank by industry experts**. Industry experts review the assessment, verify and certify that the test correctly assesses what it purports to assess. A desk review is performed on all items in the bank by SMEs. Each SME rates each item as PASS (1)/ FAIL (0) based on the parameters mentioned in table 13. In addition to the above-mentioned parameters, the SMEs also indicate the suitability of the item types selected for optimally measuring the linked PCs, thereby indicating construct validity. All feedback is consolidated and corrective action on the items is undertaken.

The benchmarking of items and subsequent improvements/revision to question banks is driven by post- assessment analytics.

ITEM HEALTH MONITORING

It is recommended that statistical information on an item's performance is maintained over time. The analysis of item statistics will enable the assessing body to assure quality of the item bank, identifying poorly performing items. In terms of item performance, attention should be given to both the item **difficulty index, discrimination index** and **exposure level**. In order to conduct item health monitoring, information on item's usage over a time period including the current time period is required.

The statistics that constitute item analysis is computed from candidates' responses to items on the assessment. Particular attention should be paid to the:

- The number of candidates who have attempted each item
- The number of candidates who have answered the item correctly
- The number of candidates who have selected each distractor
- The number of candidates who have been included in the high scoring (upper) group and low scoring (lower) group
- The discrimination index (also known as the point biserial correlation)

A sample item analysis sheet is annexed (Annexure 10).

Difficulty Index

The facility value is measured either on a scale of 0 to 1 or as a percentage. Thus, if all candidates answer an item correctly its facility value will be 1.00 (or 100%) while if none of the candidates made the correct response the facility value will be 0.00 (or 0%). **The nearer the facility value is to 1.00 the easier the item is for candidates.**

The ideal value of an item should be between 0.2 to 0.8. It is recommended that items with a facility value below 0.40 (40%) or above 0.90 (90%) should be reviewed. A relaxation of ± 0.05 relaxation can be given to the above range.

Difficulty Index	Difficulty Level of the Item / Assessment
Less than 0.2	Very difficult
0.2 – 0.4	Difficult
0.4 – 0.6	Medium
0.6 – 0.8	Easy
More than 0.8	Very easy

Table 20: Difficulty Index and Correlation with Items

If an item performs outside the parameters, it may be due to a host of factors, for example:

- The item may have been poorly constructed/edited
- The item has become over exposed
- The cohort has changed
- The examiner's evaluation is not aligned to the expectation

Such a scenario involves a detailed question level analysis to replace unsuitable items.

Discrimination Index

The discrimination index shows how well the item discriminates between candidates of different ability. It is a measurement of the relationship between a candidate's score on an item and their scores on the test as a whole. The upper group (also known as the high-scoring group) is defined as the 27% of test takers with the highest test scores. The low-scoring group (also known as the lower group) is defined as the 27% of test takers with the lowest test scores.

Ideally, an item should be answered correctly by candidates in the upper group and incorrectly by candidates in the lower group. By drawing the correlation between the item performance versus the performance on the test, a discrimination index for each item is calculated. The discrimination index varies between -1 and +1.

- A positive index (a value between 0 and +1) shows that candidates who made the correct response to the item tended to score well on the test. A positive discrimination index implies that the question is performing well.
- A negative index (a value between - 1 and 0) is unusual and shows that candidates who made the correct response to the item tended to score poorly on the test. **Particular attention should be paid to items with indices between -1.0 and 0.2 during the review.**

Reliability Index

The reliability of a test is the consistency, or dependability, with which an assessment measures what it is supposed to measure. It can be thought of as the extent to which the scores achieved in the test can be relied on as being equivalent to the scores achieved in another version of the test. There are various levels of reliability that can be measured in an assessment. The Kuder-Richardson (KR-20) formula is a measurement of reliability based on inter-item consistency. This coefficient can vary between 0 and +1. The nearer it is to +1, the more likely it is that candidates would obtain the same score if they took another version of the same test. Ideally, coefficients should be above 0.80. It is recommended that tests with coefficients below 0.75 should not be re-used without replacing weak items.

Exposure Index

Monitoring how many times the item has been used in a test and the last time the item was used will help reduce the risk of excessive item exposure. Item exposure refers to the number of times that test items are displayed to candidates. Exposure index should be used in sync with all other indices like discrimination index, reliability index and difficulty index. All items being used for assessments should be in the acceptable zone for all indices so that the exposure rate can be counted as legitimate for the results. If all other indices are in acceptable limit for an item, then the recommendation for the item exposure is:

- The exposure of item in a single working day should not be over 250
- The exposure of an item should not exceed 3000 in a single calendar month
- If these limits are reached, the items should be provided a cool-off period, of about 15 days, before being used

again for active assessments

- Provide a cool-off period of 1-2 months once the exposure exceeds 10,000

This limit can be defined in the selection algorithm and should also be taken into consideration while deciding the item pool required for conducting assessments for a selected audience.

Question Retiring Policy

All the above-mentioned indices should be monitored for every QP/NOS assessment every quarter or after a certain number of sets. Based on the reports and the item's health, questions are revamped or discarded. It is advisable that these questions are revised first and only after they reach a threshold of 300 exposures and still not performing as desired, they should be retired.

Trend Monitoring for Control Groups

Since the assessment batches are a discrete population set (assessment from different TPs and at different places), the following control groups must be monitored:

- Same TP (irrespective of the location): If seven consecutive pass rates of the same TP irrespective of the location is above 85%, then the AA must change the set combination for the next assessment or revamp the existing questions or add the question set(s), and ensure items are not overexposed. The AA may also change the proctor and/or assessor for these locations and perform real-time monitoring.
- All TPs: If 10 consecutive pass rates for any job role is above 85%, then the AA must change the set combination for the next assessment or revamp the existing questions or add the question set(s), ensure the items are not overexposed and perform the real-time monitoring.

Randomization Norms

Randomization refers to the interchanging of questions and question sets for an assessment. The randomization of Assessments is done in the following ways:

- Introduction of new sets
- Mixing of new sets with older sets
- Revamping of older sets

Criterion Validity

Criterion validity measures how well the assessment predicts the on-the-job performance of the candidates. The process of measuring criterion-validity is as follows:

1. The process of validation starts with the identification of a sample pool i.e. a group of existing professionals of the job role, that will serve as the reference group for validation.
2. This sample pool is assessed using a standard assessment set and their scores are recorded.
3. Performance data of the sample pool is gathered from their respective organizations, either on their overall performance level or on the competency level (which are related to the NOS of the QP).
4. An analysis is performed on the performance and assessment scores. The correlation is mapped, and recommendations are then suggested for the assessments.
5. Finally, the assessments are updated based on these recommendations.

MALPRACTICE & GRIEVANCE REDRESSAL

Malpractice can be defined as an act of improper practice, including maladministration. It is an activity, practice or omission, which is either willfully negligent or contravenes regulations and requirements. Some examples of malpractice happening at the Assessment location by staff, candidates, assessors, etc, could be:

Training Center Staff

1. Influencing the assessment or certification process, including:
 - The unauthorized obtaining, disseminating or the facilitating of access to secure examination/assessment materials
 - Amending learners' answers for any examination
 - Assisting or prompting learners in the productions of answers during examination
 - Any action or deliberate inaction that allows to have learners an unfair advantage
 - Falsification of learner's marks, signature, assessment evidence, results documentation
 - Offering bribe of any kind to invigilator, assessor, or any staff from assessment body
 - Submission of misleading reports, which may lead to incorrect conclusion
2. Failure to meet the requirements for the conduct of examinations, including:
 - Unauthorized changes to examination timetable
 - Non-adherence to invigilation requirements
 - Amendment of examination materials without permission
 - Failure to supervise examinations effectively and continuously (especially where formative assessments are concerned)

Candidates

1. Breach of examination or assessment rules, regulations, and requirements, including:
 - Plagiarism of any nature
 - False declaration of authenticity in relation to the contents of a portfolio or course work
 - Deliberate destruction or tampering with a learner's work or assessment records
 - Obtaining or attempting to obtain secure exam materials from examination room
 - Forging another learner or staff signatures
2. Inappropriate conduct during an examination or assessment session, including:
 - Introduction of unauthorized material or devices into examination room
 - Misuse or attempted misuse of examination/assessment material
 - Disruptive, violent, and offensive behavior
 - Any form (verbal, written, gesture, pointing, etc.) of communication with other learners
 - Failure to abide by the instructions of invigilator or assessors

Assessor/ Proctor/Invigilator

Any assessor/proctor/invigilator is suspected to be involved in the malpractice in below instances and can be reported by candidate or by the center:

1. Assessor not adhering to the examination guidelines and rules.
2. Assessor demanding a bribe from the learner or center to favour an outcome.

3. Assessor showing indifference or bias in his center activities.

Assessment Agency

The instances below are considered malpractice by AA:

1. Allocating untrained, inexperienced, or uncertified assessor/proctor/invigilator for the assessment work.
2. Allocating assessor/proctor/invigilator for practical work whose contract expired.
3. The scores shared by assessor/proctor/invigilator are modified by assessment agency.
4. Allegation on Assessment body of Involving in bribery or corruption.

Grievance Redressal

The AA, SSC and NSDC shall be responsible for setting up independent cells to address grievances and cases of malpractice. Each AA is expected to host an **AA Investigation and Compliance Team** within the body, that is separate from the teams conducting operations. All SSCs are expected to set up a **Grievance Redressal Cell**. Contact information and all details relevant to the process of grievance redressal should be made publicly available on the AA’s and SSC’s websites. A stakeholder may report grievances or any suspect case of misconduct or malpractice at these cells within 2 working days from the day of completion of assessment.

Assessment Agency	Sector Skill Council	NSDC
<p>The following stakeholders may report cases to the AA Investigation & Compliance teams:</p> <ul style="list-style-type: none"> ■ Proctor or any other AA staff ■ Assessor 	<p>The following stakeholders may report cases directly to the SSC grievance cell:</p> <ul style="list-style-type: none"> ■ Assessment Center ■ Training Center ■ Candidate ■ Any stakeholder not satisfied with the resolution offered by the AA Investigation & Compliance team 	<p>The following stakeholders may report cases directly to the NSDC grievance redressal and monitoring team:</p> <ul style="list-style-type: none"> ■ Members of the public ■ Any stakeholder not satisfied by the resolution offered by the SSC Grievance Cell
<p>Note:</p> <ul style="list-style-type: none"> ■ The AA Investigation & Compliance cell must document all reported cases through a monthly report to the SSC. Cases of severe magnitude should be reported to the SSC within 3 days working days. ■ The AA Investigation & Compliance Cell may escalate cases to the SSC if required 	<p>Note:</p> <ul style="list-style-type: none"> ■ The SSC Grievance Cell must document all reported cases reported directly to SSC or to AA through a quarterly report to NSDC. ■ The SSC must respond to the grievant within 15 working days of receiving the complaint 	<p>Note:</p> <ul style="list-style-type: none"> ■ NSDC Grievance Cell may choose to forward the complaint received to SSC or AA for redressal

The following table reflects the penalties that may be imposed when malpractice is established, and the applicability with different stakeholders. A range of penalties is listed that may be imposed dependent on the extent of the wrongdoing. The penalty must be imposed on the approval of the SSC.

Offender	Penalty
Learner	<ul style="list-style-type: none"> - Written warning - Results cancelled - Disqualification from the qualification for set period - Barred from entering examinations for a set period
Assessment Center	<ul style="list-style-type: none"> - Written warning - Withdrawal of approval for specific qualification(s) - Suspension - Blacklisting (removal of A&A approval)
Proctor/ Assessor/ AA Staff	<ul style="list-style-type: none"> - Termination of contract with AA - Suspension - Blacklisting
Assessment Agency	<ul style="list-style-type: none"> - Written warning - Financial penalty - Termination of contract with SSC - Suspension - Blacklisting

ACCESSIBILITY IN DIGITAL ASSESSMENTS

Accessibility must be considered from the outset when designing assessments, otherwise differently-abled candidates could be disadvantaged in assessments.

Accessibility in digital assessments refers to making **Web content** more accessible to differently-abled people. Disability ranges across visual, auditory, physical, speech, cognitive, language, learning and neurological disabilities and for each candidate digital needs could be different. It is recommended that assessments align with the Web Content **Accessibility Guidelines** (WCAG), which are a set of requirements recognized internationally for accessibility. A WCAG compliance ensures that your website is accessible by everyone, irrespective of disabilities and age. AAs and SSCs are recommended to work towards reaching level A in WCAG compliance.

The digital assessment should allow learners to use their own assistive technologies to access questions and evidence their answers. The basic principles of accessibility state that web content must be:

1. **Perceivable:** Information and user interface components must be presentable to users in ways they can perceive. This means that users must be able to perceive the information being presented, i.e., it should not be invisible to all of their senses.
2. **Operable:** User interface components and navigation must be operable. This means that users must be able to operate the interface, and not necessitate actions that the user cannot perform.
3. **Understandable:** Information and the operation of user interface must be understandable and operable by the user.
4. **Robust:** Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies. This means that users must be able to access the content as technologies advance.

DATA SECURITY

AA may provide a declaration to clearly indicate the adherence to data governance policies and encryption guidelines for maintaining the information security and data privacy as defined under global standards like **ISO27001** (data security, privacy, and audit requirements) and **ISO9001** (quality data managements systems).

It is the AA's responsibility to ensure that there is confidentiality with respect to the item bank, results, candidate's details and other sensitive information. In this regard, SSCs should carefully examine and validate data security and privacy practices at empaneled AAs in the following key areas:

- i. **Database Management:** Security and robustness of the database used by an organization as a method of storing, managing, and retrieving information, automatized and with minimal manual intervention.
- ii. **Data Access Controls:** Details of access and authentication with the following classifications:
 - Restricted – to be shared with pre-defined stakeholders only
 - Confidential – can be shared with designated stakeholders but not for circulation
 - Internal – to be shared with stakeholders within the skill ecosystem
 - Public – can be made available in the public domain
- iii. **Database Credential Management:** Control over flow of data including approval, monitoring and access.
- iv. **Data Encryption:** A robust mechanism to ensure enhanced security of sensitive data through encryption mechanisms.
- v. **Threat Detection:** Procedure for raising flags, categorization of threat level and determining mitigative techniques
- vi. **Database Backup & Recovery:** Protocols for ensuring data back-up and recovery in case of data loss.
- vii. **Data Portability:** Mobility of data between different application programs, computing environments or cloud services.
- viii. **AAs IT Assets Policy:** IT management and security policies on IT equipment provided to employees, such as misplaced devices, limits on access, etc.
- ix. **Audit Process:** Protocols on quality and utility audit of assessment data for Quality Assurance.
- x. **Digitization of Data:** Collection, storage and retention in soft formats.

REPORTS AND ANALYTICS

The assessment analytics should be used as the final link to complete the feedback loop. The following reports should be made available:

1. **Batch-wise Analysis:** Each assessed batch should be provided a report outlining AC-wise and NOS-wise performance of the complete batch and individual candidates. The report should highlight weak and strong performing PCs as per the results of the candidates in the batch. This report may serve as feedback for trainers to identify points of intervention and points of strength for upcoming batches and show failed candidates, which areas to focus on in a possible re-assessment.
2. **Overall TP Analysis Annual Report:** Each TP should be provided a report for all QP that they are conducting trainings for. This report should highlight PCs in which most candidates of the TP performed below par from the passing criteria and those where candidates performed well. There should also be a TC-specific analysis. Those candidates who have reappeared for a QP assessment during a year should be highlighted, and a comparison could be drawn between subsequent attempts to indicate any improvements. The report should be published each quarter to enable improvements in training with every batch.
3. **Item Analysis Report:** For a specific item bank of a QP, the AA must submit a report to the SSC on item wise responses in the attempts on a quarterly basis. This report will highlight the overall performance of the item bank and pinpoint items which need revision. A sample item analysis report is depicted.

SI No	Proposed DL	Question	Option A	Option B	Option C	Option D	Correct	A%	B%	C%	D%	Actual DL	Deviation	Comments
1	D1	While typing the feedback forms collected from the customers of a retail shop into the computer, a data entry operator found some of the fields to be missing in few of the customers' feedback forms. What should the data entry operator do in this situation?	Should not type until all the data is filled by the customers	Should ignore the fields which are missing and type the other available fields	Should inform the shop owner and obtain guidance	Should fill in an approximate data for the missing fields	C	17%	20%	44%	19%	D2	26%	Change the distractors or add a line in the question mentioning the guidelines
2	D1	In a post office, after separating the couriers received from different parts of the city, a data entry operator has to update the receipt of couriers in the system. For some of the couriers, the address is given without the PIN codes. What should the data entry operator NOT do in this situation?	Continue to work till he gets the missed PIN codes	Report the issue to the concerned department and act as per their advice	Update based on the area mentioned in the address field of the couriers	Reject the couriers which do not have the PIN codes	D	19%	30%	27%	24%	D3	46%	Retire the question
3	D1	You have received a handwritten sheet of the medicines supplied to your medical store and you were unable to understand the handwriting for some of the medicine names while you were entering the details in the system. What should you do in this situation?	Reject the data entry task	Enter the data which you were able to understand and ignore the others	Seek your store manager's help for the data which is not clear to you	Complete the data entry activity as per your understanding	C	19%	9%	55%	17%	D2	15%	Change the distractors or add a line in the question mentioning the guidelines
4	D1	The existing customers of a bank have applied for internet banking facility by filling a form in the bank's branch. While updating those forms in the system, a data entry operator found some data mismatch in the names of few of the customers.	Reject those forms	Enter whatever data is given in the form	Consult the supervisor and take advice	Visit each customer and collect the correct data	C	19%	9%	45%	27%	D2	25%	Change the distractors or add a line in the question mentioning the

Figure 7: Sample Item Analysis Report

Label in figure	Description
1	Proposed Difficulty level of question as mentioned in blueprint
2	Actual Question
3	The Answer Options given in the test
4	Correct Answer Option
5	Percent of responses for each answer option
6	Actual Difficulty level as per the responses received for the Question
7	Deviation – what percent the responses have deviated from intended difficulty level
8	Comments – actions to be taken basis the performance of the question

Table 21: Description of Sample Item Analysis Report

Reports should be automated and sent to the relevant stakeholders, such as TPs, SSCs, NSDC, etc, depending on the type of report. The SSC may request for custom reports and analytics concerning for quality assurance or to manage escalations. Such reports should be made retrievable to the SSC.

General assessment analytics reports should typically contain the following details:

1. Details of every NOS/PC/module/topic in the assessment
2. All questions appearing in the assessment
3. Difficulty level against each question
4. Number of times question appeared in assessment
5. Number of times question attempted by candidate

6. Number of times question correctly attempted by candidate
7. Number of times each option been chosen
8. Percentage of correct attempts
9. Average time spent by candidates on a question – for correct and in correct attempts

Descriptive Analysis for the Batch							
Batch Summary							
Batch Id	0						
Scheme of Assessment	Non-PMKVY			Pass Criteria		70% Overall	
Assessment Date	Oct 16 2019						
QP / Job role	SSC/QXXXX	XXXX Level 4					
QP Result		Total	Gender Wise Analysis	Male	Female		
	Enrolled	30		23	7		
	Appeared	30		23	7		
	Passed	29		23	6		
NOS SUMMARY							
	% Students Passed (On Appeared)	Mean (%)	Minimum Obtained (%)	Maximum Obtained (%)	Median (%)	SD (%)	Mode
SSC/NXXXX	97%	79%	62%	90%	79%	5%	
SSC/NXXXX	100%	91%	74%	100%	81%	7%	
SSC/NXXXX	93%	82%	63%	100%	81%	8%	
QP Code-							
SSC/QXXXX	97%	82%	65%	88%	83%	5%	
POOR PERFORMANCE IN PCs (<50% of CANDIDATES ANSWERED THE PCs CORRECTLY)							
NOS 1 (Code)	PC7	PC16	...	...	
NOS 2 (Code)	PC17	PC2	...	...	
NOS 3 (Code)	...	...	...	...
MODERATE PERFORMANCE IN PCs (ONLY 50% TO <70% OF CANDIDATES ANSWERED THE PC CORRECTLY)							
NOS 1 (Code)	PC12	PC18	...	...	
NOS 2 (Code)	PC8	...	...	...
NOS 3 (Code)	PC5	...	...	...
STRONG PERFORMANCE IN PCs (MORE THAN > 70% OF CANDIDATES ANSWERED THE PC CORRECTLY)							
NOS 1 (Code)	PC1	PC2	PC3	PC4	PC5	PC6	...
NOS 2 (Code)	PC1	PC2	PC3	PC4	PC5	PC6	...
NOS 3 (Code)	PC1	PC3	PC4	PC6	PC7	...	...

Figure 8: Sample Analytics Report

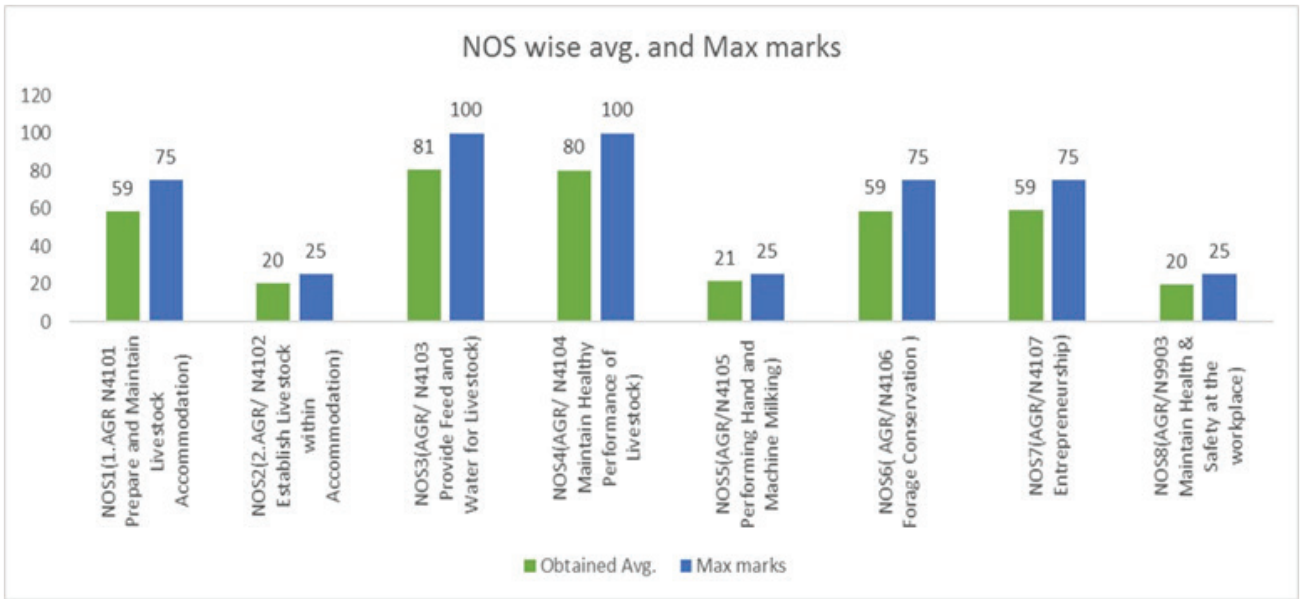


Figure 9: Sample NOS-wise Analytics

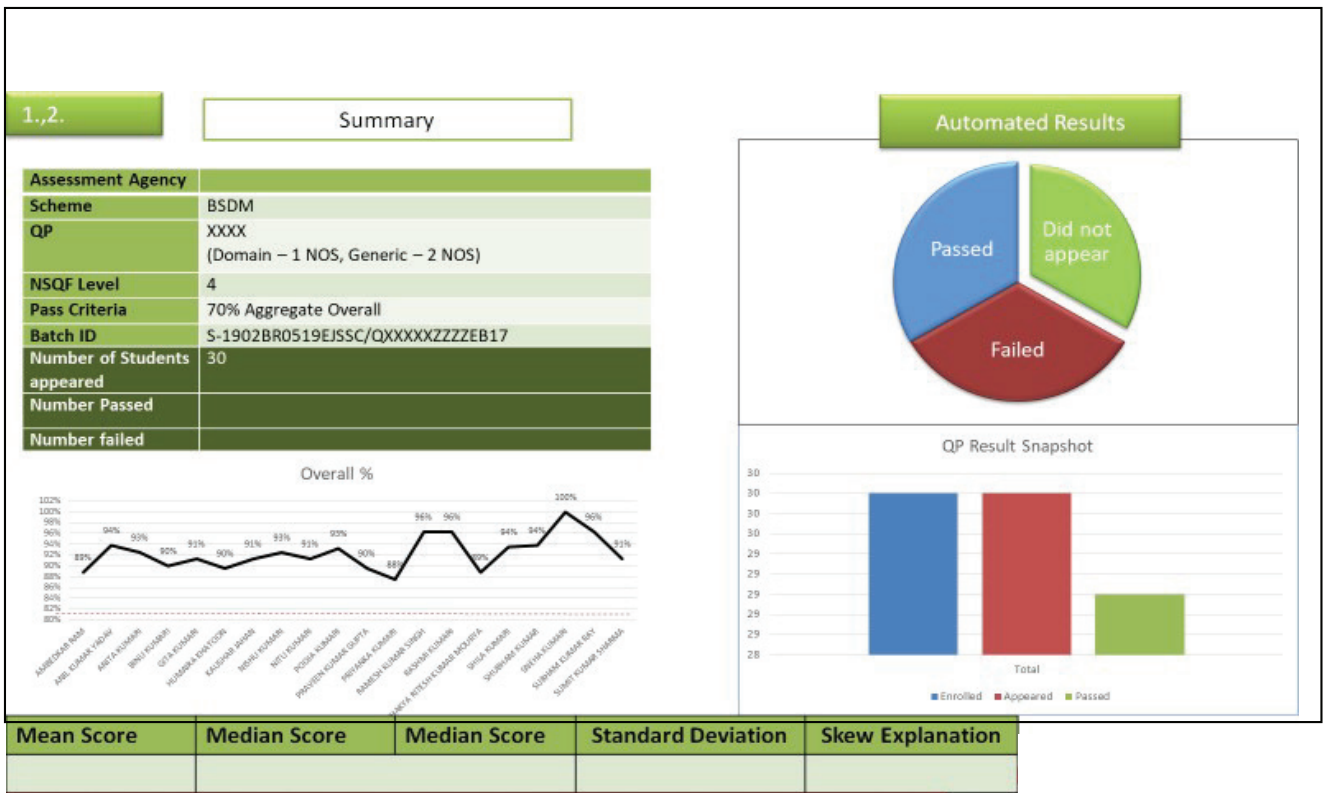


Figure 10: Sample Analytics Dashboard

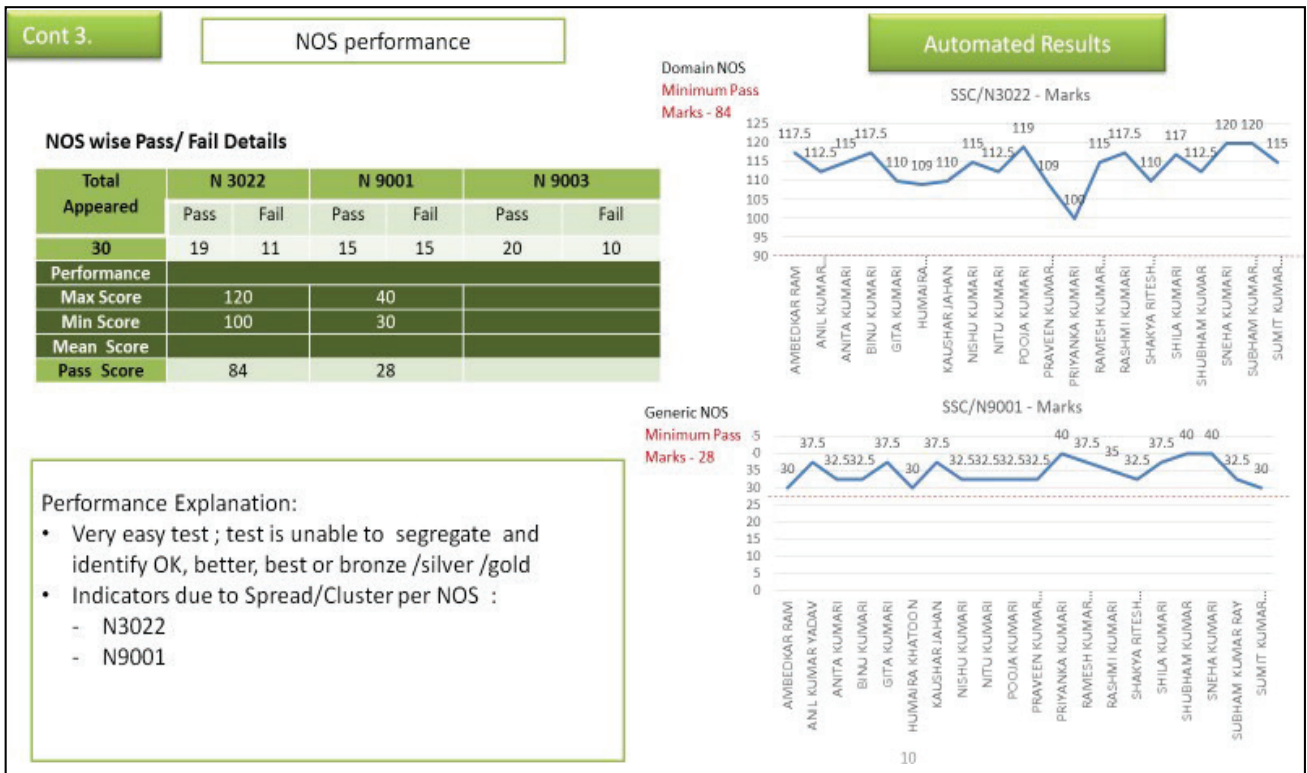


Figure 11: Sample Analytics Dashboard 2

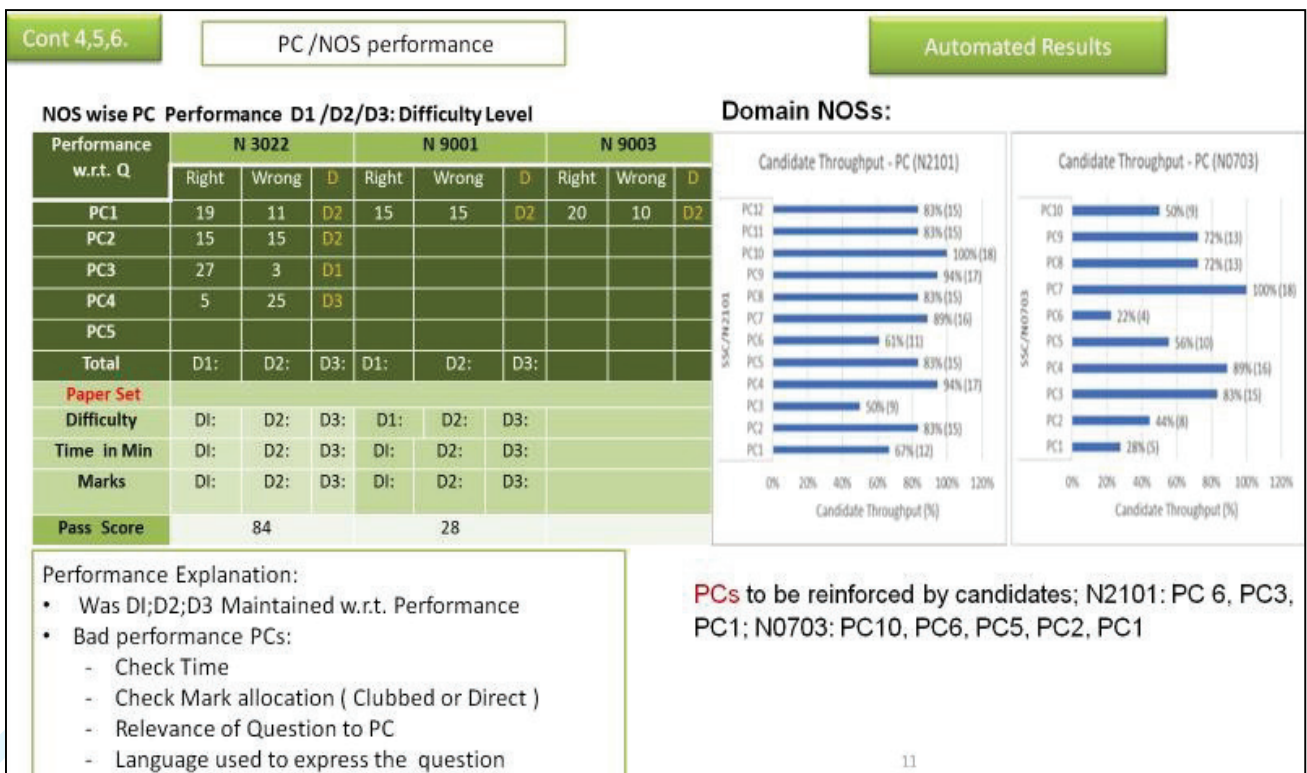


Figure 12: Sample Analytics Dashboard 3

CONCLUSION

This Guide attempts to lay the base for setting processes and protocols in place for skill assessments in the short-term skill system, regardless of the scheme under which they are administered, whether Government funded, fee-based, CSR-funded, or any other. It is envisaged that the frameworks in this Guide shall bring uniformity and standardization in how assessment design, planning, administration and quality assurance is approached, all the while leaving enough flexibility for variations across domains, sectors, geographies, target groups, and other factors.

With this initial step towards strengthening skill assessments in India, the Guide concludes with the conviction that the design and delivery of skill assessments shall continue to evolve and improve with the committed efforts of Regulators, Sector Skill Councils, Awarding Bodies, Assessment Agencies, Assessors and Experts.



ANNEXURES

ANNEXURE 1: TIPS FOR CONSTRUCTING EFFECTIVE ITEMS

- 1. Stem:** A question stem is a sentence, phrase, or word that asks for information and requests a response to test someone's knowledge. The following should be kept in mind while constructing effective stems:
 - **The stem should be meaningful by itself and should present a definite problem.** A stem that presents a definite problem allows a focus on the learning outcome.
 - **The stem should not contain irrelevant material,** which can decrease the reliability and the validity of the test scores.
 - **The stem should be negatively stated only when significant learning outcomes require it.** Students often have difficulty understanding items with negative phrasing. If a significant learning outcome requires negative phrasing, such as identification of dangerous laboratory or clinical practices, the negative element should be emphasized with italics or capitalization.
 - **The stem should be a question or a partial sentence.** A question stem is preferable because it allows the student to focus on answering the question rather than holding the partial sentence in working memory and sequentially completing it with each alternative. The cognitive load is increased when the stem is constructed with an initial or interior blank, so this construction should be avoided.
- 2. Options:** In multiple choice questions, the stem needs to be answered by selecting an option, which could be the correct answer or a distractor. A distractor is a plausible option but an incorrect answer.
 - **All options should be plausible.** The function of the incorrect options is to serve as distractors, which should be selected by students who did not achieve the learning outcome but ignored by students who did achieve the learning outcome. Options that are implausible don't serve as functional distractors and thus should not be used. Common student errors provide the best source of distractors.
 - **Options should be stated clearly and concisely.** Items that are excessively wordy assess students' reading ability rather than their attainment of the learning objective.
 - **Options should be mutually exclusive.** Options with overlapping content may be considered "trick" items by test-takers, excessive use of which can cause unnecessary confusion.
 - **Options should be homogenous in content.** Options that are heterogeneous (varied and dissimilar) in content can provide cues to a student about the correct answer.
 - **Options should be free from clues about which response is correct.** Sophisticated test-takers are alert to inadvertent clues to the correct answer, such differences in grammar, length, formatting, and language choice in the options. It is therefore important that options
 - have grammar consistent with the stem
 - are parallel in form
 - are similar in length
 - use similar language
 - **The number of options can vary among items if all options are plausible.** Plausible options serve as functional distractors, which are those chosen by students that have not achieved the objective but ignored by students that have achieved the objective. There is little difference in difficulty, discrimination, and test score reliability among items containing two, three, and four distractors.
 - **Avoid including an alternative that is significantly longer or shorter than the rest.** In line with keeping options homogenous, it is also advisable that the response options are similar in length to ensure that they are effective.
 - **Avoid complex multiple-choice items,** in which some or all the alternatives consist of different combinations of options. As with 'all of the above' answers, a sophisticated test-taker can use partial knowledge to achieve a correct answer.

- 3. MCQs to Assess Higher Order Thinking:** When drafting multiple choice items to test higher-order thinking, it is essential to ask questions aligned to Bloom's Taxonomy. A stem that presents a problem that requires application of course principles, analysis of a problem, or evaluation of alternatives is better suited to assess higher order thinking. It can also be helpful to design problems that require multi logical thinking, where multi logical thinking is defined as "thinking that requires knowledge of more than one fact to logically and systematically apply concepts to a ...problem". Finally, designing alternatives that require a high level of discrimination can also contribute to multiple choice items that test higher-order thinking.
- 4. Viva voce:** A viva voce item is an oral questioning method used to assess certain parameters, based on which an Assessor evaluates a candidate. Some such parameters are indicated below
- Knowledge: Conceptual grasp on the knowledge of the subject
 - Correctness: The accuracy of the responses
 - Communication skills: The ability to convey thoughts and ideas effectively
 - Presentation skills: The ability of a candidate to deliver the ideas effectively
- A viva item will have a question stem and a correct answer(s). The complexity of the viva questions varies based on the job role and the NSQF level.
- 5. Practicals:** A practical is usually evaluated using two assessment methods: Demonstration and Role Play. The candidate must clearly follow certain steps to earn marks in an assessment. The assessor can evaluate the candidate, taking into account the following:
- Accuracy: The quality of being precise
 - Ability to perform: The competency of a candidate to display their skills
 - Knowledge: Conceptual grasp on the knowledge of the subject
 - Decision-making: The candidate's ability to take decisions
 - Problem-solving: The candidate's ability to find an effective solution to complex problems
 - Presentation skills: The candidate's ability to deliver the ideas effectively
 - Time management skills: The candidate's ability to manage the time efficiently and productively
 - Process adherence: The candidate's ability to follow the process and abide by the structure
 - Safety measures: The precautions undertaken to ensure safety throughout the assessment

ANNEXURE 2: INSTRUCTIONS FOR CANDIDATES TAKING DIGITAL ASSESSMENTS

Before the Test

1. The assessments can be conducted on a computer/tablet/mobile phone. The candidate should review the system (hardware and software) compatibility requirements for the assessment before starting the test.
2. The candidate should ensure their device is fully charged and/ or connected to power supply for the duration of the test.
3. The candidate must also close all other programs, chat windows, screen savers etc. on their computer/laptop before starting the exam.
4. The candidate must keep handy the 'Aadhar Card' or any other ID proof issued by Government to enable personal verification by the System/Proctor. The candidate may not be allowed to take the assessment with out personal verification.
5. The candidate will not be allowed to use any other electronic device during the test.
6. If taking the test from a location other than a test center, the candidate should determine a comfortable location from where to attempt the test. They should select a location that is airy and has ample light, and one where they are likely to not be disturbed during the duration of the test.

7. Sample tests/ walk throughs will be provided to the candidate by the AA for helping them understand the test platform and check the system compatibility with the test platform.

During the Test

8. Candidate must access the assessment link at the stipulated time (as mentioned in the invitation email).
9. Candidate must enter correct details like Name, ID etc. in correct fields. Any mismatch in the same might lead to cancellation of their attempt.
10. Candidate must read the instructions carefully, take note of the time of exam, navigation through the questions, important tabs to use while submitting, reviewing the questions etc.
11. The assessment is timed and will automatically shut down after the time is over. Candidate should keep an eye on the clock and keep working through the questions.
12. The candidate will be provided the opportunity to review your submissions/responses before finishing the assessment. It is advised that candidates avail this opportunity before completing their test.
13. In case of a power failure while attempting the test, candidate would be able to log back in and resume the test from the point where they got disconnected. All the previous answers would automatically get saved. The candidate will not be penalized for the time lost.
14. During the exam, a sophisticated proctoring software will monitor the candidate's activities throughout the test. The candidate must ensure their webcam/mobile camera is switched on throughout the duration of the test.
15. This software will record the feed for any red flags that indicate malpractice using advanced audio & video analytics. Multiple red-flags or warnings during the test might lead to candidate being logged out of the test.

Key Don'ts that candidates must avoid

16. Non-adherence to these instructions, rules and regulations, might lead to the candidature being cancelled. As such, candidates are strongly advised to not resort to any unfair practices during the exam.
17. In case of any issue during the exam, the candidate can connect with the Proctor as well as the phone, email helpline details provided in test invitation.

X Search solution to the question(s) on Internet	X Use of any device, apart from device on which assessment is being administered
X Seek help from others available around the room	X Plug another monitor/ keyboard/mouse to the existing system
X Copy the questions/ take screenshot/take pictures from the mobile	X Look away from the test screen
X Browse other websites	X Not be present in front of the screen
X Use of documents/tool/tutorials/e-books available on the computer	X Change IP by logging in from another system during the test
X Copy-paste text	
X Usescreen-share, any desk type tools to provide remote access	

ANNEXURE 3: SAMPLE ASSESSMENT LOGS FOR ONLINE ASSESSMENTS

Sample log file: Please note that these logs are indicative and should not be considered comprehensive representations of assessment logs.

Raw format

S. No.	Person-identifier	Timestamp	Event name	Question	Answer	Time difference (in seconds)	State before	State after
1	000001	09:20:06	ITEM_START	–	–	–	Starting	Stem_Q02
2	000001	09:20:47	ANSWER_SELECTION	Q02	0	41	Stem_Q02	Q03
3	000001	09:20:51	ANSWER_SELECTION	Q03	1	4	Q03	Q01
4	000001	09:20:56	ANSWER_SELECTION	Q01	3	5	Q01	Q02
5	000001	09:21:02	ANSWER_SELECTION	Q02	2	6	Q02	Q04

Readable format

S. No.	Candidate ID	Timestamp	Event name	Question	Answer	Time difference (in seconds)
1	000001	09:20:06	Assessment started	–	–	–
2	000001	09:20:47	Question attempted	Q02	0	41
3	000001	09:20:51	Question attempted	Q03	1	4
4	000001	09:20:56	Question attempted	Q01	3	5
5	000001	09:21:02	Question attempted	Q02	2	6

ANNEXURE 4: SAMPLE SCORECARD



NSDC
National Skill Development Corporation
Transforming the Skill Landscape



Skill India
skilled youth - empowered youth



MINISTRY OF SKILL DEVELOPMENT
AND ENTREPRENEURSHIP
GOVERNMENT OF INDIA



PMKVY
PRIME MINISTER'S KANGAROO YOUTH SKILLS ACADEMY

MARK SHEET

Ms. Jui Das (Aadhaar No - XXXXXXXXX8353)
Has successfully cleared the assessment for the Job role of
CRM Domestic Voice (QP No: SSC/Q2210)
 Conforming to National Skills Qualification Framework Level - 4
 December 31, 2019
 System Identification Number : WB04859-00005B2

NOS CODE	NOS NAME	NOS TYPE	MAXIMUM MARKS	MARKS OBTAINED
SSC/N9001	Manage your work to meet requirements	Non-Core NOS	40.00	22.50
SSC/N9003	Maintain a healthy, safe and secure working environment	Non-Core NOS	40.00	37.50
SSC/N3020	Make outbound calls to customers	Core NOS	120.00	87.22

CORE NOS
TOTAL MARKS = 87.22

NON CORE NOS
TOTAL MARKS = 80.00

OVERALL SCORE = 147.22

GRADE B

(59.24 % of Core + 40.76 % of Non Core)



531308A5776424E8847A/RSC/20453F
<https://verify.marksheet.nsdcindia.org>



IT - ITeS SSC
NASSCOM



Pravin Rao
Chairman
IT-ITeS Sector Skills Council
NASSCOM

ANNEXURE 5: PROCTOR'S HANDBOOK

Code of Conduct

The following is the code of conduct for a proctor:

- Dress in a suitable attire, present and behave in a professional manner with all the stakeholders
- Smoking, arriving drunk at work, chewing tobacco, gutka, chewing gums, betel nuts on the premises of the assessment center is strictly prohibited
- Any information that is confidential must not be disclosed to unauthorized personnel
- Any offers made to extend unauthorized favors in the benefit of TP /candidates must be rejected and reported to authorities immediately
- Any proctors found breaching contracts of ethics and non-bribery shall entail strict action against the proctors as per the defined penalty matrix, which may lead to suspension/ blacklisting
- Proctor may not share passwords or assign their work to any other unauthorized personnel
- There must be no bias against anyone on the basis of color, caste, language, religion, social status, gender, disability, political and other affiliations, etc
- Official materials including test resources, results, equipment, etc. should be safeguarded from loss by theft, spoilage and misplacement

Standard Operating Procedures for Proctors for On-Ground Assessments

1. Procedures & communication

- Be aware of all the requirements of the proctor
- Ensure that all assessment materials are as per the checklist provided by the AA
- Communicate assessment instructions and information of proctor's arrival/ remote proctoring to the assessment center
- Escalate any unanswered queries to the AA and seek clarifications to communicate them to the Assessment Center, TC or the candidates
- Inform the AA immediately in case you are unable to proctor the assessment
- Do not handover proctoring assignments to any person without authorization of the AA
- Schedule the initiation and closure of the assessment as per the instructions of the AA and communicate the same to the Assessment Center
- Ensure arrival/ readiness a minimum of 30 minutes before the scheduled time of assessment or as per the specifications provided by the respective SSC / AA

2. Documentation and pre-requisite checks

- Set-up the application and/or device wherever required for conduct of assessment. Diagnose and troubleshoot issues wherever necessary. Ensure compatibility of assessment software on devices
- Verify if the assessment location/candidate's device has all the facilities as per the checklist provided by the AA
- Carry out the pre-assessment documentation activities as per the instructions of the AA
- Ensure that the candidates are ready at least 20 minutes before the commencement of the assessment as per the instructions provided by the AA
- Instruct candidates to keep their belongings outside immediate vicinity except the equipment/things that may be essential during the assessment
- Provide appropriate IT equipment such as tablets/smartphones/computers/laptops, etc, to candidates, wherever applicable

- Provide instructions to candidates to register/sign in into the assessment software
- Keep assessment materials and/or access password secure until candidate is present and ready to begin the assessment
- Before the commencement of assessment, verify student identity using one of the following forms of official photo identification:
 - Original Aadhar card
 - Any other photo identity card authorized by the scheme guidelines/SSC/AA
 - The attendance of the candidates has to be marked on the assessor app/Pro forma and or electronic pro forma provided by AA
- Review guidelines for the assessment provided by the AA and communicate these guidelines to the student prior to the start of the assessment
- Examine if the TC/other location/home location is conducive for assessments with few distractions. Administer the assessment in an area that is conducive to test taking (few distractions) and has appropriate testing equipment if needed (i.e., computer and high speed Internet access)
- Examine if the CC/IP cameras are installed at the key locations and functioning as required such that the candidates and the exam hall/TC/home location can be monitored. In case if the CC/IP-based cameras do not exist in the exam hall/TC/home location communicate the in-ability to monitor the assessment hall through CC/IP cameras. Obtain communication with the AA on the way forward
- In assessor-led assessments, assist assessor in verifying and calibrating the domain tools & equipment
- In assessor-led assessments, assist assessor in setting up the tools/instruments/equipment as per the specifications provided by the assessor
- In assessor-led assessments, commence the assessment only after obtaining an approval from the assessor

3. Monitoring procedures

- In case of physically proctored assessments, collect any unauthorized objects from the candidate and store them in a secure location for the duration of the assessment
- In case of physically proctored assessments, remain in the room with the students throughout the completion of the assessment
- Ensure video and audio recording of the assessment/practical task/activity is carried out in alignment with the specifications provided by the AA. Candidate should be made aware of the recordings that shall be undertaken
- Do not provide any assistance on the subject matter to the student in completing the assessment

4. Recording/collection of evidences

- Record the AV of the evidences as per the guidelines prescribed by the AA and ensure that the evidences are stored uniquely for every candidate
- Ensure that the AV/Physical evidence is the candidate's own work, else report any concerns to the AA
- Collect physical evidences, if any as and when they are completed and mark them with the candidate's identification. The marking done on the evidences must be permanent and not susceptible to tampering
- In assessor-led assessments, proctors may assist the assessor in recording and documenting observations during the course of practical assessments

5. Handling situations of indiscretions

- Make note of any indiscretions of the student with respect to the assessments and halt the assessment for such a candidate. Report the incident to the AA. Be sure to include as many detail as possible, including, but not limited to the time of the indiscretion, screenshots of web pages visited if any, description of behavior, etc. Examples of concerns include:

- a. Noting down the questions/attempting to copy the screen
- b. Using unauthorized materials during the assessment
- c. Seeking assistance from another person during the assessment without approval
- d. Leaving the testing area without approval during the assessment
- e. Providing false identification or substituting for another person to take the assessment
- f. Referencing notes or books not authorized during the assessment
- g. Using an unauthorized electronic device
- h. Visiting unauthorized websites or using unauthorized computer programs

6. Documentation

- Ensure that candidates have completed the feedback form provided
- Collect and return any equipment belonging to Center, wherever required
- Complete the post assessment documentation with the Center SPOC as per the scheme guidelines or instructions of AA, if any
- If the assessment or documentation task involves use of paper, collect the same and any allowed materials (such as scratch paper or formula sheets, ready reckoners, forms etc.) immediately at the end of the testing time frame
- Make copies of physical papers (preferably digitally) and return the originals to the AA when possible. Retain copies of such documents/papers until receipt confirmation is received from the AA. After confirmation is received, shred any physical copies

7. Submission of digital/online assessments

- Ensure that candidates log out of the assessment immediately after the completion of the assessment time
- Collect any electronic assessment device such as tabs/smartphones that belong to AA, if applicable
- Make sure that the work of the candidates is saved on the server of the AA
- In case of any discrepancy in the data transfer, report immediately to the authorities of the AA

8. Evidence handling

- Check the correctness of the AV evidences and ensure the evidences are named appropriately with the candidate identification
- Upload the AV evidences on the server of the AA wherever applicable
- Handover any physical evidences to the AA as per the guidelines provided by them

ANNEXURE 6: REVISED AA EMPANELMENT MATRIX

1. SOP: Criteria for the Empanelment of Assessment Agencies by SSCs

Revised: August 2020

Objective: The objective of this SOP is to define a standard criterion to assess the Assessing Agency for accreditation, having the capabilities and experience to assess the trainees trained in outcome- oriented training in the job roles in line with QPs/ NOs and having potential to undertake assessment as per the structured procedures.

I. Essential Requirements

- a) Affiliation procedure for AAs must be **transparent, demonstrative** (with evidence) and in line with international best practices
- b) As a pre-qualifier, all AAs must possess capabilities to **conduct online and digital assessments**
- c) SSCs will select AAs from the pool of AAs empaneled with NCVET. SSCs should duly communicate/ publicize when they undertake affiliation with AAs, clearly defining timelines for submission of applications and when the process is expected to be completed. As much as possible, the application should be collected and evaluated digitally.
- d) This process will apply to the potential as well as all existing AAs

II. Conflict of Interest

- a) **Training Provider** cannot ordinarily be appointed as an Assessment Agency
- b) Not allow **monopoly** or cartelization in assessment
- c) No sub-contracting or franchising would be permissible for AAs

III. Minimum Number of AAs and Cap on Target Allocation

- a) Minimum number of affiliated AAs with each SSC must not fall under 05 at any given time.
- b) Target Allocation under government-funded schemes to a single AA must not exceed more than 25% of total assessments undertaken through that SSC in any FY. Target allocation of assessments to individual AAs should be communicated to AAs quarterly.

IV. Periodic Audit

- a) It is mandatory for all SSCs to carry out minimum one operations audit of the AA in every financial year. Cost of conduct of audit will be borne by the respective SSCs.
- b) In case shortcomings are found during the audit, AA will be intimated to take corrective actions within 3 months, failure to which would lead to temporary or permanent de-affiliation of the AA.
- c) In the event of complaints/reports about poor performance/unfair practices against an AA, the respective SSC reserves the rights to conduct a special audit. Cost of such an audit will be borne by the AA at actuals not exceeding Rs 20,000 per audit.

2. Prerequisites for Selection of AAs

I. Legal Existence: AA should be a legal entity (company or society but not firms, proprietorship or individuals; limited liability partnerships (LLPs) can be allowed)

II. Assessors Quality:

- a) AA should have a roll/panel of assessors for the domain sector, approximately 2 assessors for every 1000 assessment numbers
- b) Details of assessors should also be available on its website with state-wise details (assessors' name, qualifications, experience and photograph along with the details of assessor affiliations with multiple SSCs)

III. Assessment Process:

- a) AA should have an expertise to carry out **online assessments** with state-of-the-art **technology deployment**
- b) The AAs should have the ability to develop the **assessment process and tools** for different training courses with **ability for continuous improvement**
- c) AA should have the ability to **maintain assessment process records** and **details pertaining to candidates registered, tested, passed, centres, assessors**, etc, and shall preserve all the records for **at least 5 years or till the validity of any scheme** (whichever is later) at any point in time and make its online access to SSCs

IV. Geographic Reach:

- a) The agency applying for **Pan India or for Specific State** operations must empanel assessors relevant to the concerned job roles who should be able to reach the assessment venue within **24 hours of travel time**
- b) The agency applying for Pan India or Specific State operations must empanel assessors who have **the ability to conduct assessment in regional languages**

V. Organization Structure:

- a) AA should have a structured mechanism for Governance including a well-defined process for affiliation of assessors either on its payroll or on long-term contracts
- b) AA should have assessment coordination team on its payroll with required capacity and experience to mentor, supervise, plan the assessment strategy and to guide the team of assessors

VI. Conflict of Interest: It should declare its linkages with other stakeholders in skill ecosystem to ensure independence and to avoid any conflict of interest

VII. Assessment Design: AA should have the capability of designing assessments and creating items. AA should have at least one assessment designer on the payroll

VIII. Data Security: AA should provide a declaration to clearly indicate the adherence to data governance policies and encryption guidelines for maintaining the information security and data privacy as defined under global standards like **ISO27001** (data security, privacy, and audit requirements) and **ISO9001** (quality data managements systems). SSCs should validate the data retention, security and privacy practices by carefully examining documentary proofs at empaneled AAs in the following key areas:

- a) **Database Management:** Security and robustness of the database used by an organization as a method of storing, managing, and retrieving information, automatized and with minimal manual intervention
- b) **Data Access Controls:** Details of access and authentication with the following classifications:
 - c) **Restricted:** to be shared with pre-defined stakeholders only
 - d) **Confidential:** can be shared with designated stakeholders but not for circulation
 - e) **Internal:** to be shared with stakeholders within the skill ecosystem
 - f) **Public:** can be made available in the public domain
- g) **Database Credential Management:** Control over flow of data including approval, monitoring and access.
- h) **Data Encryption:** A robust mechanism to ensure enhanced security of sensitive data through encryption mechanisms
- i) **Threat Detection:** Procedure for raising flags, categorization of threat level and determining mitigative techniques
- j) **Database Backup & Recovery:** Protocols for ensuring data back-up and recovery in case of data loss.
- k) **Data Portability:** Mobility of data between different application programs, computing environments or cloud services

- l) **AAs IT Assets Policy:** IT management and security policies on IT equipment provided to employees, such as misplaced devices, limits on access, etc
- m) **Audit Process:** Protocols on quality and utility audit of assessment data for Quality Assurance
- n) **Digitization of data:** Collection, storage and retention in soft formats

IX. Training of Proctors: AA must hold training programs for proctors (both on role and contractual) who are going for on-field assessments or are proctoring remote assessments. Proctors must be made aware of the key processes and compliance before conducting an assessment. They should also be familiarized with the platform functionalities to oversee the assessment and be aware of possible areas of malpractice and steps to be taken in case of observing any malpractice happening during the assessment.

3. Prerequisites for Selection of Assessors

I. Qualifications & Experience:

- a) Assessor should possess relevant academic, occupational qualifications and work experience as defined in the QP
- b) Knowledge of assessment process and tools with ability to capture the assessment observations correctly on the prescribed electronic or paper forms
- c) **Understanding of the Occupational Standards** for the relevant QP is a must. Assessor must have the ability to **plan each task and allocate necessary resources**
- d) Understanding of competencies required in the job **role for which assessment is being done with a high level of integrity, reliability and fairness**
- e) Good **observation skills** with ability to **communicate** in writing and orally in the local language in addition to English
- f) **Ability to use technology** viz, computers, tablets, spreadsheets, video communication tools.

II. Certified Assessor: Assessor must undergo necessary induction / orientation and certification under the TOA programme through respective SSCs

III. Assessors in Multiple Sector: Assessors undertaking multiple sector assessments must meet the qualifications for the relevant job roles and would need to furnish a self-declaration duly acknowledged by the AA

4. Affiliation Process for AAs – Stage 1

I. Application & Desktop Evaluation

- a) Prospective AA will submit the application in prescribed formats along with the payable application fee.
- b) SSC will carry out Desktop Evaluation of the prospective AA. It may invite them for deliberation and clarity, if necessary.
- c) SSC reserves the right to select/reject the AA on merit. However, in case of rejection same must be communicated to the applicant in writing.
- d) Decision of SSC in this regard would be final and grievances should be addressed to the Affiliation Committee (team constituted by Board/Governing Council of SSC)

5. Affiliation Process for AAs – Stage 2

I. Field Visit and Final Evaluation Stage

- a) The SSC team will visit the prospective AA, meet their key staff and carry out verification of records and processes. The SSC team must visit at least two of the existing top 3 customers of the prospective AA and get their feedback in writing
- b) The composition of the team will be two members from SSC and one Board/GC member or industry expert
- c) Team will submit its Assessment Report for consideration to Affiliation Committee
- d) The valuation of the AAs would be carried out under the Evaluation Framework suggested by NSDC
- e) Minimum 60% score would be mandatory for affiliation. Those scoring between 40 to 59% could be given an opportunity for further improvement of score within 3 months based on which affiliation or rejection would happen.

II. Evaluation Matrix for AAs

S. No.	Parameter	Max Points	Criteria	Weightage Points (these may be modified based on the specific requirement of the SSC)		
1	Overall Experience	15	Number of Years in assessment	More than 10 Years	5 to 10 Years	Upto 5 Years
				15	10	7
2	Experience in sector	10	Number of Years in sector	More than 5 Years	3 to 5 Years	Upto 3 Years
				10	8	06
3	Experience in Job Roles	10	Number of job roles 0020 assessed	20 or more job roles	10 or more job roles	1-9 job roles
				10	8	6
4	Count of Candidates Assessed	10	In last 3 years	More than 25,000	10,000 to 25,000	Upto 10,000
				10	7	5
5	Assessment Methodology	10	Will be determined by evaluation committee	Subjective score based on rigour and innovation of approach and methodology		
6	Affiliation with Govt. Organization (Gol or State Skill Missions)	10	Affiliated with minimum 1 organization	More than 5 Organisations	3 to 5 Organisations	1-2 Organisation (s)
				10	7	5
7	Geographic and Vernacular Reach	10	Minimum presence in 3 States/UT	More than 10 States	4 to 10 States	3States
				10	7	5
8	Affiliated with other SSC	05	Minimum affiliation with 3 SSCs	More than 5 SSCs	4 or 5 SSCs	3 SSCs
				5	3	2
9	Mode of assessment – Tablets/Pen and Paper	20	Assessment Modes	Remote Online	Center-based Digital (Online/Offline)	Non-Digital
				20	20	5
10	Monitoring Mechanism of assessments	10	Continuous Monitoring of the Assessment	Real time Online Video-Audio Monitoring & Recording	Standalone Video-Audio Records	Visits by Proctors
				10	5	3
11	Number of Subject Matter Experts (designers and reviewers) on company's payroll	20	Based on evaluation of CVs	More than 5 Experts	3 to 5 Experts	Upto 2 Experts
				20	12	8
12	Number of Assessors on payroll	10	No. of Assessors	More than 25 Assessors	10 to 25 Assessors	Upto 9 Assessors
				10	7	5
13	Number of full time employee	10	No. of full time employee	More than 25 Employees	11 to 25 Employees	Upto 10 Employees
				10	7	3

14	Valid ISO Certification	10	Continuous Years in service with ISO Certification	More than 5 Years	3 to 5 Years	Upto 3 Years
				10	7	5
15	Platform Capability – Language Support	10	Multiple language support is required for delivering assessments	Over 7 languages	3-6 languages	1-2 languages
				10	7	3
16	Platform Capability – compatibility across devices	10	Flexibility to conduct assessments across different devices	Matrix to be created by SSC		
17	Platform Capability – features and functionalities offered	20	Features such as IP tagging, navigation control, geo tagging, image-based monitoring, test resume facilities, LAN-based assessments	Matrix to be created by SSC		
18	Design capability – blueprint design (if required)	10	Expertise to create appropriate blueprint	Matrix to be created by SSC		
19	Design capability – types of items	10	Range of items types including simulations, MCQs, scenario-based	Matrix to be created by SSC		
20	Design capability – creation of item bank with review, pilot testing, discarding or retiring items	15	Expertise to create and maintain item bank	Matrix to be created by SSC		
21	Data analysis and Reporting – reporting parameters	15	Reporting and analyses prowess of the AA, including real time dash board	Real-time dashboard	Complex post assessment report and monthly/quarterly analyses	Basic post assessment report
				15	10	5
Grand Total		250				

Note: The above matrix would be evaluated by a committee nominated by the SSC GC and it would be authenticated & counter signed by the SSC CEO for record.

III. Evaluation Scorecard for Assessing Agencies

Grade	Score	Action to be Taken for Prospective AA	Action to be Taken for Existing AA
A	60% to 100%	To affiliate	To continue in business for 1 year
B	40% to 59%	To reject but could be given an opportunity for further improvement of score within 3 months to Grade 'A' based on which affiliation could happen	To be suspended with a 3 month notice to improve further to Grade 'A', else face termination with eligibility to apply in the next selection process for AA affiliation
C	Less than 40%	To reject with eligibility to apply in the next selection process for AA affiliation after 1 year	To terminate from business for 1 year with eligibility to apply in the next selection process for AA affiliation (post completion of 1-year termination period)

6. Affiliation Process for AAs Stage 3

1. Affiliation & Orientation

- All eligible AAs will be formally intimated by SSC after receiving the prescribed Affiliation Fee
- The Affiliation will be valid for one year, after which the AA will apply for renewal based on fresh evaluation against Evaluation Matrix

7. Due diligence - Forms and Documentation

Some of the essential forms for documentation of AAs are given at annexure. SSCs are free to develop additional forms if required.

8. Conclusion

The underlying responsibility of the assessment Agency would be to operationalize the process of onsite assessment of the trainees taking overall care of the process of evaluation. The evaluation will be focused on evaluating if the candidate knows how to perform the required tasks as part of his job role. This SOP does not restrict the SSC from adopting additional methodology to strengthen the overall assessment process within the laid down parameters. In addition, the SSCs would be free to evolve the required parameters for capturing the domain knowledge among the assessors.

The Annexure forms to this document including self-declaration of the AA, details of candidates assessed, etc can be accessed in public domain.

ANNEXURE 7: SAMPLE ASSESSMENT SCHEDULE

Task	Duration	Time period	Activity
Training Centre Validation	9:00 AM to 9:30 AM	30 Min	Verification of Tools & Infrastructure
			Verification of Training Attendance Sheet
Candidate Orientation	9:30 AM to 10:00 AM	30 Min	Briefing of Assessment Process
			Candidate ID Validation
			Mark Attendance (Biometric/Manual)
Knowledge Assessment (Theory)*	10:00 AM to 11:00 AM	60 Mins	Digital / Non- Digital (Knowledge/ Outcome-based Questions)
Skill Assessment & Viva (Hands on Skill) **	11:15 AM to 12:45 PM	90 Mins	Demonstration of practical skills (outcome-based questions)
Group Picture	12:45 PM to 01:00 PM	15 Mins	Group Picture
Lunch Break	1:00 PM to 1:30 PM	30 Mins	
Skill Assessment & Viva (Hand on Skill)	1:30 PM to 4:30 PM	180 Mins	Role Play, Demonstration
Documentation	4:30 PM to 5:00 PM	30 Min	Various evidences
			VTP Feedback/Code of Conduct/ Additional Documents SSC wise
			Training Attendance Sheet
			Centre Picture/Infra Picture/Tools
			Candidate Feedback Form

*Minimum time for theory is 60 minutes per candidate

** Minimum time for skill assessment and viva is 20 minutes per candidate (can be conducted in small sub-groups)

ANNEXURE 8: TRAINING OF ASSESSOR PROGRAM AND ELIGIBILITY CRITERIA

1. TOT-TOA Guidelines for short-term skill development programmes – Version 2.0 (issued in August 2019): https://nsdcindia.org/sites/default/files/files/Revised%20TOT-TOA%20Guidelines_V2_Aug%202019_with_cover.pdf
2. TOT-TOA Standard Operating Procedure for short-term skill development programmes – Version 1.0 (September 2019): https://nsdcindia.org/sites/default/files/files/SOP_V1_Sept%202019_with_cover.pdf
3. Job-role specific Trainer and Assessor Eligibility Criteria: <https://nsdcindia.org/guidelines-0>

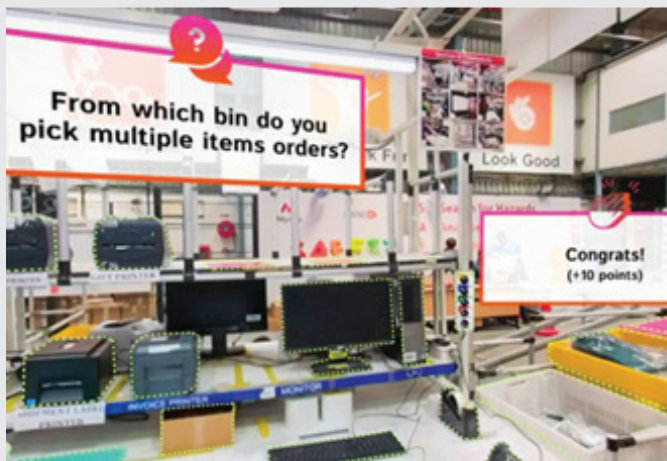
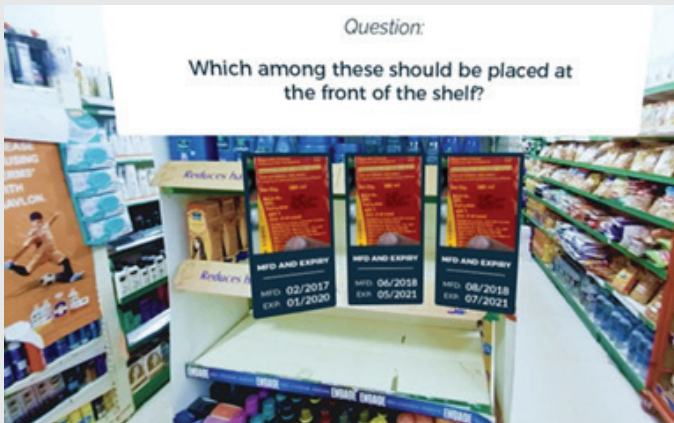
ANNEXURE 9: AUGMENTED REALITY & VIRTUAL REALITY IN ASSESSMENTS

Artificial Intelligence (AI): AI refers to system intelligence that enables machines to learn from experience, adjust to the environment, and thereby perform human-like activities. Using deep learning algorithms, machines can be trained to accomplish specific tasks by processing large amounts of data and recognizing patterns. Some benefits of using AI in assessments are flagging of anomalies, reduction in cheating, reduced human intervention, precision in testing and auditability.

Virtual Reality (VR): VR is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience. Instead of viewing a screen in front of them, users are immersed and able to interact with three-dimensional worlds in a seemingly real or physical way using special electronic equipment, such as a helmet with a screen inside or gloves fitted with sensors.

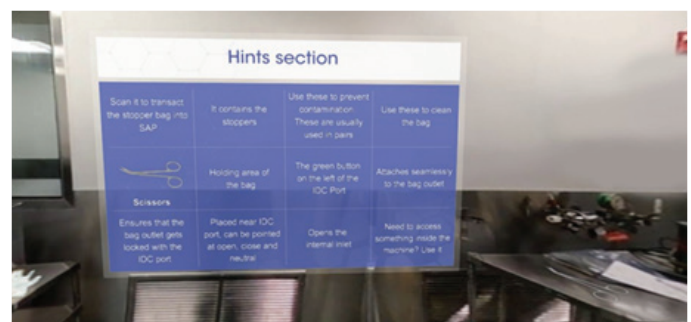
In context with vocational assessments, both VR as well as AR can be explored to conduct assessments of different types. AR and VR can be explored for conducting vocational skill assessments that are assessor-less (with certain limitations), without lab, tool or equipment set-up – framing questions around processes, tools or techniques for hands on skills. Scenarios can be virtualized through simulations using VR technology. This can also be delivered to a candidate through a URL accessible over web browsers, regardless of OS powering the device. This experience is enhanced with a VR based headset. This technology has the best application for scenarios where it is very difficult to simulate or replicate the physical setup of workplace to conduct practicals such as job role like furnace operator in case of Iron & Steel SSC or similar job role(s) involving hazardous material at the workplace. It can also easily for service-oriented job roles. Lastly, it can even be explored for assessments involving persons with special abilities or assessments targeted at assessing soft skills. The limitation of this technology remains that it involves a high capex investment for developing AR/VR experience for different modules/concepts in a job role. Some sample assessment questions are illustrated below;

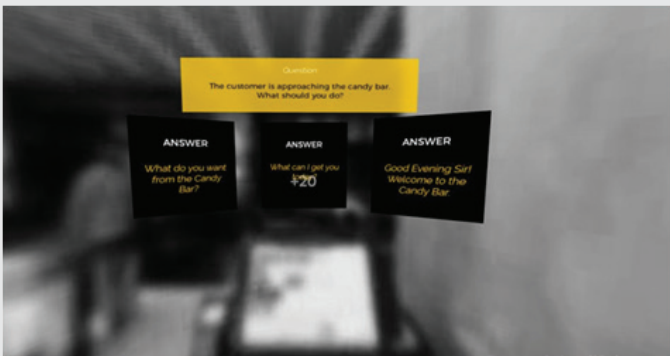
Examples of Assessment Questions with Explanations



In the Retail space, we can assess employees based on their understanding of the SOPs by giving them questions where they need to choose the correct answers. Please find some of the assessment techniques used in this case.

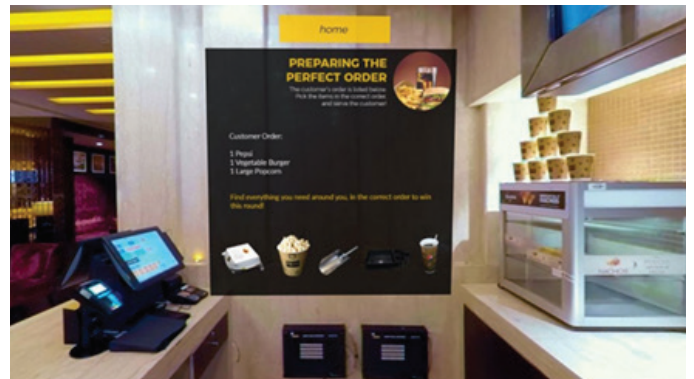
Learning by doing - We can create assessments based on procedures that need to be performed by the learner. These are step by step tasks that need to be completed by the user to complete a process.





Customer Interaction Assessment - These types of assessments judge an user's understanding of how to speak to a customer when they approach him/her. The user can either directly interact through voice recognition which should match the actual pre-defined responses or by choosing from the correct responses in text format.

Process Assessment - These kinds of assessments involve doing a task as per SOPs listed down. Here an employee is asked to prepare an order by choosing the items in the correct chronology. Points are awarded based on the user's correct flow of work.



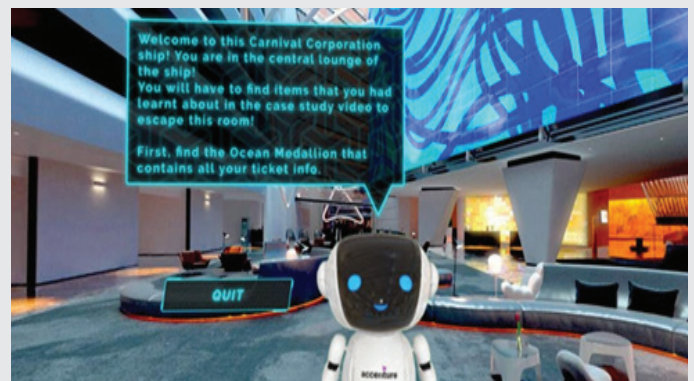


Personality and Cognitive ability Test - We can develop questions that can assess the employees' personality and then they can be categorized into different personality groups. Here there is no wrong answer but every answer categorizes a person into a different personality.

Scoring based on Quiz and Questionnaire - We can develop quizzes, questionnaires and trivia at every stage of the learning journey which enables an organization to track the understanding and knowledge retention of users. Based on their answers, there are points and badges earned and also we can create leaderboards to make the assessment exciting and competitive.



Gamified Assessment - We can also create gamification around case studies or any training modules and based on the understanding of the same, the user needs to play a game. Below is an example of an escape room game where a user is put inside a room and has to find the correct items which were a part of the training module to get out of the escape room and earn a badge for completion.



Economics

The development of VR content for different job roles requires higher investments compared to conventional types of digital/ non-digital assessments. Various cost components involved in development of a VR experience are as mentioned below. VR content is developed and customized as per the QP/NOS.

Cost line items:

- One-time development fee of an app–unit rate is generally governed by the duration of the experience –cost ranges between Rs 20,000 to Rs 50,000 per minute of VR experience
- Recurring cost of VR experience player–this is a nominal amount ranging between Rs 5 to Rs 25 per user per month
- VR headset–event headsets come in different forms and quality level, where in cost ranges between Rs 250 to Rs 15,000 and above

Key benefits

1. Immersive experience for a candidate during assessment
2. Longevity of the VR experience unlike traditional question bank
3. No involvement of assessor or proctor at all, completely self-administered
4. No physical setup or premise is required to conduct the assessment in case of VR content-based assessments

Gamification (Simulation) Type Questions - Detail

Gamification of assessments are the new era in simulated assessments. There have been some successful trials and use cases of them in the industry. The use of gamification is an emerging phenomenon, which derives its popularity from its intrinsic capacity to motivate action, solve problems and enhance learning in the most diverse areas of knowledge.

Gamification plays an important role in formative evaluations and can be evaluated by the controlled function, being performed throughout the course by the student/learner in order to check whether students/learners are able to achieve the objectives laid down pertaining to training outcomes. It is through this process of evaluation that one can evaluate learner competency related to the job role concerned.

Gamification has the potential to improve learner performance and retention as it is very interactive and immersive.

Simulation Based Assessment-Detail

Simulations are technology driven manifestation of real-life scenarios or situations on a digital device. These tools are used globally to train and evaluate people on their capabilities and competencies. Simulations based assessments are used to assess how one would react to situations s/he can encounter while working and how s/he would solve problems reflecting real time situations. In these tests/assessments, one can also be assessed on his/her critical thinking and problem-solving ability, attention to detail and learning ability w.r.t. the domain function regarding the job role concerned.

Key Benefits:

- Better evaluation of candidate's capabilities
- Easier for candidate to learn/use – wider acceptance
- Objective & standardized evaluation
- Strong validation with real-life skills
- Cost-effective (at scale)
- Auto evaluated for better turn around time

Some of these tools are being currently used in the skills ecosystems for auto evaluation of candidates' typing skills, programming skills etc.

ANNEXURE 10: SAMPLE ITEM ANALYSIS REPORTS

RAW DATA

The responses inputted by 5 students in an assessment of 5 items

Item No	1	2	3	4	5
Key	C	B	D	C	A
Student01	A	C	D	C	A
Student02	C	B	D	C	A
Student03	C	B	D	C	C
Student04	C	B	B	C	A
Student05	B	B	B	C	A

SUMMARY OF RESPONSES SELECTED

The summary of responses received on 5 items from a batch of 48 students

Item No	1	2	3	4	5
Key	C	B	D	C	A
A	1	3	2	2	41
B	2	29	7	8	2
C	44	13	5	35	3
D	1	3	34	3	2
Total	48	48	48	48	48

CORRECT ANSWER KEY

The summary of responses received on 5 items from a batch of 48 students with correct answer key

Item No	1	2	3	4	5
A	1	3	2	2	41
B	2	29	7	8	2
C	44	13	5	35	3
D	1	3	34	3	2
Key	C	B	D	C	A

CONVERTED TO NUMERICAL VALUE

The responses inputted by 5 students in an assessment of 5 items, receiving 1 mark for a correct response and 0 marks for an incorrect

Item No	1	2	3	4	5
Key	C	B	D	C	A
Student01	0	0	1	1	1
Student02	1	1	1	1	1
Student03	1	1	1	1	0
Student04	1	1	0	1	1
Student05	0	1	0	1	1

CALCULATED DISCRIMINATION INDEX

Discrimination Index calculated for 5 items on an assessment as per the responses inputted by candidates

Item No	1	2	3	4	5
Total	44	29	34	35	41
p total	0.92	0.60	0.71	0.73	0.85
Upper	15	13	13	12	15
p upper	1.07	0.93	0.93	0.86	1.07
Lower	13	5	7	7	10
p lower	0.93	0.36	0.50	0.50	0.71
Discrimination Index	0.14	0.57	0.43	0.36	0.36



Transforming the skill landscape

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About National Skill Development Corporation (NSDC): National Skill Development Corporation, working under the aegis of Ministry of Skill Development & Entrepreneurship, is a unique public-private-partnership which aims to catalyze creation of quality vocational training ecosystem in India. The organisation provides funding to build scalable and profitable vocational training initiatives. Its mandate is also to enable support system which focuses on quality assurance, information systems and train-the-trainer academies either directly or through partnerships. Since establishment in 2009, NSDC has trained more than 2 crore people through its partnership with 600+ training partners, wide a robust network of 11,000+ training centers spread over 600 districts across the country. NSDC has institutionalized 37 Sector Skill Councils and is also implementing Government's flagship skill development schemes such as Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Pradhan Mantri Kaushal Kendra (PMKK), National Apprenticeship Promotion Scheme (NAPS), among others.

CONTACT US: NSDC's Skills Intelligence Platform at: skillsip@nsdcindia.org

