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GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP



Guidelines for Multi-Skilling & Cross-Sectoral Skilling

National Council for Vocational Education and Training (NCVET)

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GUIDELINES FOR MULTI-SKILLING & CROSS-SECTORAL SKILLING

1. INTRODUCTION

- 1.1. In today's fast changing global environment, job roles require multiple skills and **Cross-Sectors skills** to be successful. "**Multi-Skilling**" is promoting a wide range of competencies and knowledge in the workforce to build capacities for performing **multiple independent tasks**, which may even fall outside the domain of a particular sector or outside respective sub-sectors or defined job roles in a given sector. It can prove to be valuable for both employees & employers, as it will lead to more job opportunities, better cognitive development, increased job security & growth, and better growth prospects for employees as well as more satisfied employers as it improves efficiency, reduces cost, and enhances quality. Multi-disciplinary knowledge will help learners to appreciate underlying principles and processes and apply that knowledge in new areas. Cross-sectoral skilling will enable the learner to apply a skill across diverse/ related sectors thereby enhancing his creativity, innovation, value, credibility and output.
- 1.2. NCVET as the unified skills regulator draws the power from **Para 16, point (f)** of the NCVET Gazette Notification **No. SD-17/113/2017-E&PW dated 5th December 2018**, to frame guidelines for the approval of qualification packages, and approve qualification packages in the manner set out in such guidelines. NCVET has been created after subsuming **erstwhile NSDA and NCVT**, the erstwhile NSDA housed the NSQC for the NSQF alignment of qualifications which is now housed with NCVET. The NSQF Gazette Notification **No. 8/6/2013-Inv Para 8, Point (ii) –b** mentions Breadth of knowledge can range from a single topic to **multi-disciplinary areas** of knowledge. The above provisions provide NCVET the mandate to formulate the guidelines on various aspects of Qualification development including **Multi-skilling and Cross-Sectoral Qualifications**.
- 1.3. The primary purpose of introducing the **Guidelines for Multi-skilling and Cross-Sectoral Qualifications** is to acknowledge that new-age enterprising roles need cross sectoral skills to enable a person to perform efficiently and independently. Usage of Robots in logistics started as a Cross-Sectoral function but after a period of time it has evolved as a line function of logistics.
 - 1.3.1. **Multi-Skill Qualification***
 - i. **Multi-skilling is a Combination of Independent Job roles** which can be performed by an individual. Multi-skilling pertains to those Skill-sets/ Learning Outcomes (LOs) that an individual must possess to execute a comprehensive job role that requires independent knowledge and competencies panning out in multiple sectors or sub sectors within a sector. Each job role in such combination pertains to a single qualification which may exist across different sectors or different sub sectors within a sector. The benefits here include better return for the cost of hiring an individual (MSME sector), and increased scope of work per individual to drive economic operations etc. Example: A multipurpose human resource/ Individual who drives, cooks and is also a caretaker. A foreman who knows welding operations and paint shop operations.
 - ii. **Thus in principle Qualification for Job Role 1 + Qualification for Job Role 2 + Qualification for Job Role 3 - (any duplicate NOSs in these 3 qualifications) = Multi Skill Qualification**
 - iii. For different qualifications deemed important for a Multi-Skilled job role will be taught as separate qualifications, engaging different set of trainers and assessors. If there are any *duplication of common* NOSs, these will be removed while collating the course.

Some of the examples of popular Multi-Skill Qualifications are as under:

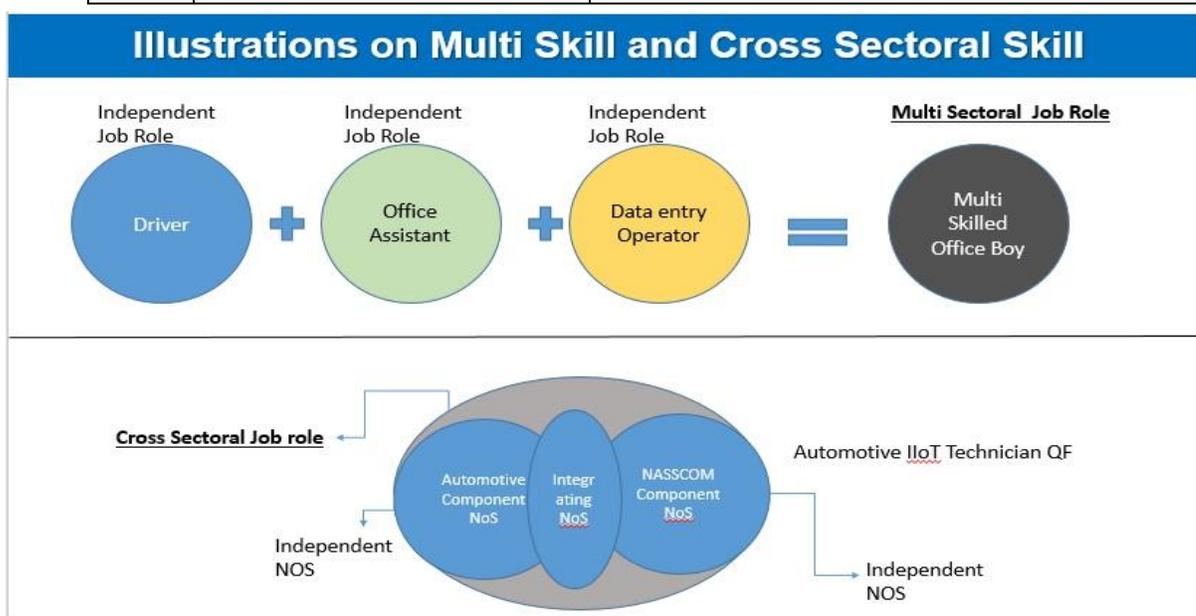
S. No.	Sectors/ Sub Sectors	Job Roles that may be clubbed
1	Management and Automotive	Office Assistant + LMV Driver
2	Plumbing and Construction	Plumber + Masson + Electrician
3	Domestic worker and Eldercare	Geriatric Caretaker + Home management assistant + Driver
4	Logistics	Warehouse clearance agent + Claims coordinator
5	Food Processing	Multi Skill Technician (Food Processing) - making pickle, jam, jelly, ketchup, juice, squash, spice, dairy and baked products
6	Domestic worker and Management	Cook + Office Assistant + Driver
7	Plumbing and Agriculture	Pump Operator + Wheat Cultivator
8	Agriculture and Food Processing	Fruit Grower + Fruit Packaging
9	Capital Goods	Foreman – welding and paint shop operations
10	Agriculture and Logistics	Aquaculture worker and Marine cold chain operator

1.3.2. Cross-Sectoral Skill Qualification

- i. It comprises of **one complete independent job role** or qualification **whose NOSs are spilling over two or more sectors/sub-sectors**. Independently these NOSs may not be useable as a complete independent qualification/Job Role. Each job role is unique and required for a specialized field of Cross Sectoral application. Therefore, the development of such qualification involves close collaboration of 2 or more sectors which will develop NOSs relating to their concerned sectors and integrate the same with an integrating NOS to be developed together by both sectors. The training will also have to be conducted jointly/ in collaboration.
- ii. The Assessment of such Cross-Sectoral job role would require that the **assessment of each NOS be done by the sector concerned. For easy implementation of assessment process, they may choose an Assessment Agency which has competency to assess NOSs of both sectors**. In various production systems such as Toy Manufacturing the knowledge of Electronics, Rubber, Plastic technology is essential and thereby Cross- Sectoral skilling is required.
- iii. **Common NOSs + Core NOSs (sector A) + Core NOSs (sector B) + Elective NOSs + Integrating NOS/s = Cross Sectoral Qualification**, Where:
 - Common NOSs:** which are required for almost all the job roles irrespective of the sector, like **employability skills** including entrepreneurial skills, digital literacy, employability skills, and others.
 - Core NOSs:** which are required for creating the core qualification, for example, Drone Assembly, Drone Maintenance and Drone Operation.
 - Elective NOSs:** These may be electives selected with the core. For example, in case of Core qualification of “Augmented Reality Architect”, IoT in Construction can be elective NOS
 - Integrating NOSs:** Which serve as the joining block of two or more cross sectoral qualifications, these contain elements/ PCs from both the sectors and intersecting areas.

Some of the examples of popular Cross **Sectoral Skill Qualifications** are as under:

S. No.	Sectors/ Sub Sectors	Proposed Job Roles
1	NASSCOM and Automotive	Automotive IIoT Application Engineer
2	Construction and NASSCOM	Augmented Reality Architect.
3	Capital Goods and Apparel	3D-Printed Clothing Designer
4	Electronics and Capital Goods	Predictive Maintenance specialist
5	Rubber and Electronics	Toy Manufacturing technician
6	Construction and NASSCOM	IoT based– Building design/ maintenance engineer
7	Aviation and Agriculture	Drone – Integrated Nutrient Manager
8	Media and Management	Gamification Marketing Specialist



2. OBJECTIVES/PURPOSE

2.1 The guidelines are structured to make **available of industry ready new job roles in modern and emerging areas with close industry linkage while infusing the required flexibility and instilling the best practices in the skill ecosystem**. The guidelines aim to define a mechanism which facilitates use of already available knowledge & NOSs of different qualifications of one or more related sectors by other recognized Awarding Bodies, based on their ability to ensure quality and their capacity. **The broad objectives of these guidelines are as under: -**

- 2.1.2 **To define Multi-Skill & Cross-Sectoral Qualifications** and outline the process of development for these qualifications.
- 2.1.3 **Process for developing multi-skilling and cross sectoral qualifications**, and the commensurate training infrastructure required
- 2.1.4 Awarding certificates, Assessment of Multi-Skill & Cross-Sectoral Qualifications.
- 2.1.5 Establish the **obligations and responsibilities** for Awarding Bodies and Assessment Agencies, for sharing of ownership in case of multi-skilling and cross-sectoral qualifications.

- 2.1.6 To ascertain that training and assessments are conducted in the right manner with the right assessors and trainers capable of undertaking multi sectoral training and assessment.
 - 2.1.7 To incentivize sectors to constructively collaborate to develop such qualifications and such trainings.
 - 2.1.8 To address the miscellaneous challenges that arise in implementation of these Qualifications.
 - 2.1.9 Setup mechanism for the resolution of any issues that arise in the implementation. There exists a requirement of various job roles which have components of multiple sectors for the effective execution of the job role. This in turn requires workforce trained in multiple skills across the sectors. The skill training in these jobs will require qualifications that have NOSs addressing the various aspects of different sectors relevant for the job.
- 2.2 The development of such qualifications, their ownership rights, training to be conducted and assessments for the same are to be streamlined with proper guidelines, to enable the different stakeholders to develop such qualifications, assess the trainees and award certificates for smooth implementation of such multi-skill qualifications. These guidelines thus aim to address the challenges and mitigate the risks that may arise in the development and implementation of these qualifications. Following substantiate the rationale of bringing these guidelines: -
- 2.2.1 **Market Requirements:** As the modern-day workplaces and industry (manufacturing, service and primary sector) requires Multi-Skilling & Cross-Sectoral skills, this will also help in addressing the current and emerging market requirements, making the industry future ready.
 - 2.2.2 **Uniformity /Reusability/ Quality Assurance in development of qualifications, conducting trainings, Assessment and Certification:** Multi-Skill & Cross-Sectoral job roles will enable quality assurance for the NOSs of multiple qualifications/ Cross-Sectoral qualification, without any duplication. It also enables *reusability* of knowledge across sectors, rather than its replication. It will also enable best practices of the sector to be embedded within the NOS over the revision of NOSs also.
 - 2.2.3 **Specialization, Efficiency and new Technology:** The cross-sectoral skills shall improve the overall efficiency of carrying out a particular job and make it more specialized for the area while also absorbing new technology. E.g. usage of Internet of things(IoT) in Construction or Mining or usage of Robots in Logistics
 - 2.2.4 **Focus on newer Industry skills:** Considering the newer changing requirements of the industry, with even “Digital” becoming part of some of the job roles, this concept will help in preparation of industry ready job roles.
 - 2.2.5 **Learner Centrality:** The learner will benefit the most as they will have avenues for the cross mobility after honing multiple skill sets and in the age of multidisciplinary studies this will aid to overall cognitive capabilities to learn and apply the best practices of the different areas of learning.
 - 2.2.6 **Resource Optimization**
 - i. **Better channelization of resources for Employer:** For the smaller businesses/ manufacturing / service units the requirement of an individual that caters to multiple job roles is eminent for optimizing the resources.
 - ii. **Better channelization of resources for Awarding Bodies:** With the option of adopting NOSs of NSQF aligned Qualifications, the effort/ resources spent on developing similar NOSs in qualifications may be

reduced, making the process more efficient and productive. Additionally, the best of knowledge of an area/sector can be made available, without any replication of content.

- iii. **Better channelization of resources by Trainee:** A trainee will not have to undergo multiple trainings to achieve the desired multi-skill/ cross-sectoral skill sets which otherwise would have required additional resources both in terms of time & money

2.3 The Guiding Principles for Multi-Skill & Cross-Sectoral Qualifications: -

The key guiding principles to be followed for development of the cross sectoral and multi-sectoral qualifications along with adoption of cross-sectoral NOSs from NSQF aligned Qualifications across various Awarding Bodies are as mentioned: -

- 2.3.1 **High Quality:** The Awarding Body proposing the qualification will take the complete ownership and responsibility of End-to-End development, training, Assessment and Certification of the qualification. However, the other sector from where the NOSs are picked as part of Multi-Skilling/Cross-Sectoral skilling also has to share responsibility of his area/ NOSs and make training partners, tools & assessment agencies ready to carry out that role.
- 2.3.2 **NOS based adoption, integration & assessments:** An Awarding Body adopting the NOS should take ownership of the “**integrated**” Qualification in its totality like quality of training delivery, fair and reliable assessment process as per the norms laid down by developer of Qualification. Based on where it is Multi-skilling or Cross-sectoral, Singular/Joint responsibility will be defined for execution of training & assessments. The responsibility shall be granted over and above the recognized sector of operation for the AB as per the Awarding Body guidelines to the extent of the application of that specific MS/CS qualification.
- 2.3.3 **Flexibility & Demand based Development:** It is also important to consider that some flexibility in addressing specific “local needs, integration or respective job specific needs” be provided during creation of multi-skilling & cross-sectoral qualifications. Therefore, guidelines provide for adequate flexibility while using a qualification as per prescribed norms. This will further help in identification of newer multi-skilling & cross-sectors opportunities.

3. SCOPE

- 3.1 These guidelines permit all NCVET recognized Awarding Bodies to develop Multi-Skilling& Cross-Sectoral NSQF aligned qualifications in accordance with the prescribed norms listed as under: -
 - 3.1.1 **Sectoral:** Industry validation and establishing the demand of Multi-Skilling & Cross-Sectoral requirement (uniquely for each job role) is a must for creating such qualifications.
 - 3.1.2 **Territorial:** Multi-Skill Qualifications shall be permitted only in the territory for which an Awarding Body has already been recognized by NCVET. (However, in deserving cases NCVET reserves the discretion of expanding the territory of implementation)
 - 3.1.3 **Qualification:** Multi-Skill & Cross-Sectoral NOSs of short term as well long-term nature, which are currently actively NSQF aligned and approved or are being considered for approval in NSQF shall form a part of the scope of these guidelines.

- 3.1.4 **NOSs:** National Occupation Standards (NOS)s developed by Awarding Bodies shall be available for adoption to other recognized Awarding Bodies also. NOS generally vary between 30, 60, 90, 120 to 150 hours and can be categorized as Common/ General NOSs and Technical/ Specific NOSs. Common NOSs are those which are generic in nature and can be used for multiple Qualifications across sectors. **Technical/Specific NOSs** are those NOSs which are necessarily and specifically required either in knowledge or skill domain of a qualification to achieve competencies of a particular job role. NOSs of already approved short term qualifications shall be available for adoption. **The adopting Awarding body may want to add an integrating NOS with the aim to meet the Cross-Sectoral requirement.**

4. OPERATIONAL MECHANISM

4.1 The following operational mechanism shall be followed for Multi-Skilling & Cross-Sectoral Skilling.

- 4.1.1 **NCVET's Standing Committee on MS/CS:** NCVET will **constitute a standing committee on MS/CS** comprising of members of different SSCs/ Awarding Bodies, Assessment Agencies, Industry Foundations/ Implementing bodies to decide on the entry level qualification, cognitive ability required, and level of the qualification. The committee constituted will also vet the training delivery plan about how a single trainer can deliver the entire curriculum. The submitting body would map and segregate the entire curriculum in various sectors.
- 4.1.2 **Capacity:** The developing/ owner awarding body will have to additionally establish its capacity and capability in terms of training, assessment and related aspects of the qualification/s being adopted as prescribed in quality assurance form.
- 4.1.3 **At the stage of adopting a NOS** from same/ different sector for Multi-Skilling/ Cross-Sectoral skilling, the NOS may be adopted without altering the basic structures like eligibility criteria, NSQF level, notional hours, NOS/ Learning outcomes, accreditation, and assessment norms (for the qualification), review date and list of tools & equipment etc. However, keeping in mind '**flexibility**' to the extent of a total of **20%** as one of the guiding principles of *Adoption*, minor modifications to address the local or job specific requirements are permitted as per the specifications listed below: -
- i. There shall be **no deletion/ curtailment of the mandatory component** (NOSs/ Learning Outcomes) of the NOS (exception where multi-skilling is leading to repetition /duplication). **Addition of up to 10% shall be allowed in the mandatory component** of the qualification which would be counted in terms of notional hours. If the qualification does not mention mandatory NOSs/LOs, NCVET in consultation with the Developer Body shall decide the mandatory components of the qualification/s.
 - ii. **An overall modification of 20% in the qualification** shall be permitted in the process of integrating the NOSs in the qualifications.
- 4.1.4 **Awarding Rights, Obligations and Responsibilities:**
- i. The **Rights, Obligations and Responsibilities** of the multi-skilling/cross sectoral skilling Qualification shall rest with the Awarding body where the individual shall be employed after attainment of the qualification.
 - ii. The alternative way of establishing such **Rights, Obligations and Responsibilities** can be value-based, (in terms of products), higher the value

contribution w.r.t a sector, the rights shall be awarded to that sector. Cases where there exists a challenge in terms of deciding the ownership of the Qualification, NCVET shall decide. Approval of Multi-Skill / Cross-Sectoral qualifications shall only be available to NCVET recognized Awarding Bodies in the sector/ sectors for which they have been recognized along with the qualification wise awarding rights for the additional sector in case of multi-skill and cross-sectoral qualifications.

- iii. **Validity & Revision:** Will also be decided by the NCVET's Standing Committee on MS/CS.

4.1.5 **Creation of a Multi-Skill & Cross-Sectoral Qualifications*:** The following may be the guiding principles for developing such qualifications: -

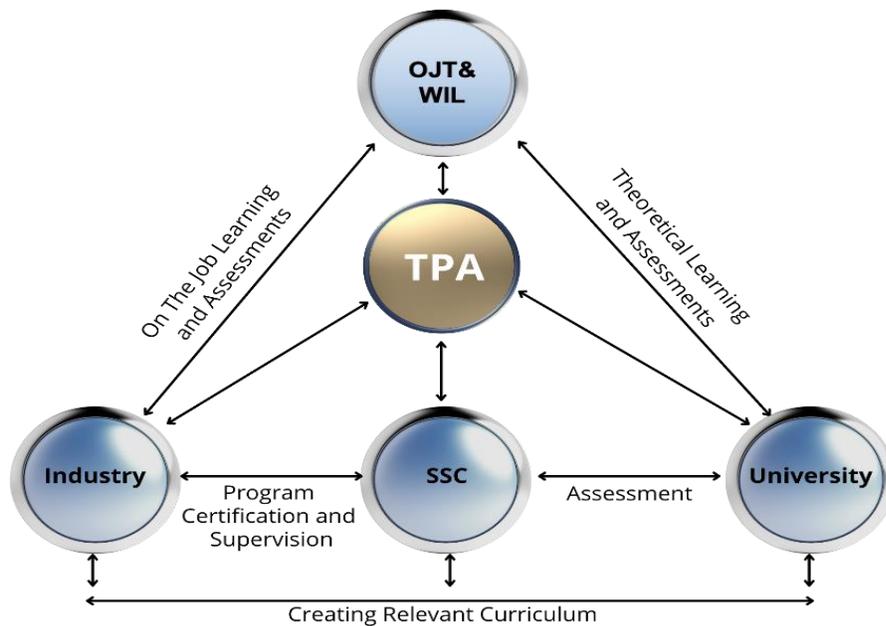
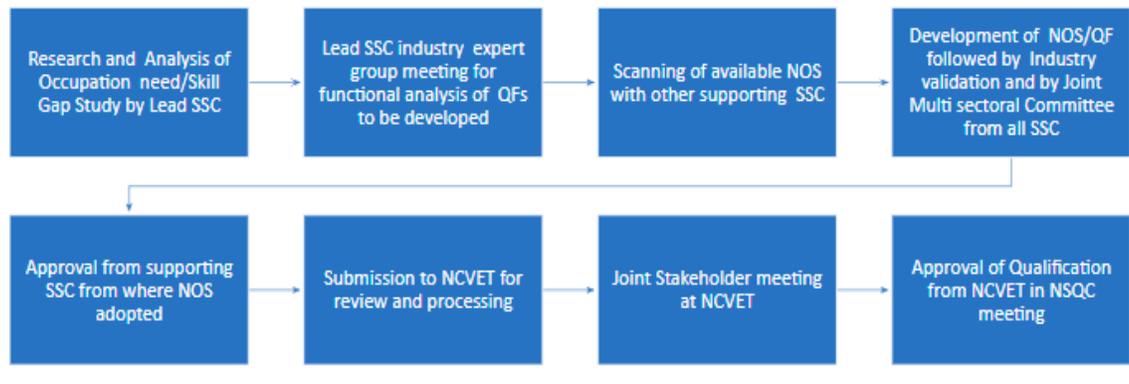
- i. **Strong evidence of need:** Established Industry demand for creation of such job roles with established placements and career progression in such areas.
- ii. **Multi-Skill qualifications shall be developed by clubbing the qualifications existing across sectors/sub-sectors** as recommended by the committee, these shall be at lower levels maximum at level 3 and as an exception at level 4.
- iii. **Cross Sectoral Skills shall be developed after adopting the NOS/QF** by the lead sector Awarding Body and merging these with the existing qualification after **development on one or more integrating NOS/s. NOS** may be used as independent modules to be adopted for creating Cross Sectoral Qualifications. (Ref. NOS based approval and adoption).
- iv. **The Qualification may include the Core NOSs, Non-Core NOSs and the Integrating NOSs** for the different sectors/sub-sectors. There may be more than one integrating NOS in the Cross Sectoral qualification.
- v. **Multi-sectoral Committees (amongst ABs) may be formulated to initiate multi-skilling QF development.** Identifying the need of the qualification and recommending the combination of QF for creation of Multi-skilling qualifications.
- vi. **Weighted average of the levels (with notional hours) with rounding off for combination of NOS** may be done to arrive at the level of the qualification.
- vii. **Notional hours shall be the summation of the NOS notional hours after addressing the commonalities** and catering to the hours of integrating NOSs in the same.
- viii. **In case of higher level Multi-Skilling qualification there may be 'mandatory' NOSs** (generally common to all tasks – within the same segment) **and other NOS included as 'options'**. The candidate can then decide on the number of options (skills) they desire to acquire. It will also be easier to decide on an acceptable nomenclature.
- ix. **Differentiating the foundation level (school level) Multi-Skilling qualifications from that of the ones laid out for acquiring the job in the market** as the former may be easier to implement and develop, while the latter may require calibration and higher evidence of need.
- x. If there are NOSs of different levels, which are combined to develop a multi-skill/cross-sectoral qualification, the procedure to be adopted for:
- xi. **Entry Requirement:** Must be set at the level that makes the person eligible to absorb the highest level of NOS (in the multi-skill QF) during the training.

- xii. **Computation of Credits** to be assigned to new qualification – based on duration and level the credits shall be ascertained.
- xiii. **Computation of Level** of the new qualification: This will be decided based on the **weighted average** of the levels mentioned for various NOSs as per the notional hours.
- xiv. **Computation of total no of hours** which may be a summation of sets of notional hours of NOSs minus the irrelevant/common areas.

(Rationalization is required for reduction in number of hours rather than simple summation – the common NOS such as Employability NOS, including Entrepreneurship NOS, Civic NOS, Health and Safety NOS etc. need not be repeated and the common areas may be reduced).

4.1.6 Illustrations: Development of MS/CSS Qualifications:

Cross Sectoral Development of Qualifications based on Market/Industry demand



4.1.7 **Training Implementation of Qualifications:** The training centers which shall be equipped to run the Multi-Skill and Cross-Sectoral skills shall be jointly identified by the sectors involved in the development of mandatory NOSs/ Elective NOSs as these will require resources and equipment of multiple sectors. For the Training the following are the proposed models: -

- i. There can be multiple trainers for Qualifications of level 4 and above from the participating Awarding Bodies of different sectors involved. The trainer for the integrating NOSs for the Cross Sectoral Qualifications shall be from the Lead AB and may require an additional training for delivering the cross-sectoral application module/ NOS.
- ii. The training cost/ sharing of fee shall be divided as per the notional hours and Common Cost Norms (CCN) as fundamental principles (unless infeasible considering the capital intensity/ cost heavy training required for a particular sector in which case Awarding Bodies must mutually decide. In case they are unable to decide, NCVET to decide for the same).
- iii. The Qualifications which are below level 4 and are of low complexity, a single trainer may be trained in the multiple sectors (to the extent feasible, considering the delivery of quality training) and shall be responsible for the conduct of training. A single trainer may not be expert in all the fields covered under the qualification of "Multi-Skill" qualification, therefore the training is to be supplemented by guest lectures, field visits and cross training, to enhance its efficacy. Single trainer executes the training in the major part of the Qualification and the remaining is completed through technology enabled web feed/ video tutorials.
- iv. For ToT - Trainers will be trained (ToT) in multiple sectors/ sub sectors and inter-linkages between them. In this case one trainer shall be responsible for the training. Trainers execute training in respective sectors/sub-sectors. The trainers shall be trained in respective sectors/sub sectors. This will require multiple trainer deployments for one multi-skilling program.

4.1.8 **Assessment Rights, Obligations and Responsibilities:** The assessments based on multi-skill qualifications requires assessor/s to assess on all the components/NOSs of the qualification and the interlinkages between them. Unlike a single qualification where the assessor needs training (ToA) to execute assessments in one sector and its pedagogy, the approach in Multi-Skilling & Cross-Sectoral skilling would differ. The following processes may be adopted

- i. Assessment Agencies capable of assessing multiple skill and sectors may be utilized for these assessments. A Coordinating Assessment Agency may be made responsible for the multiple parts of the qualification (multiple sectors), and this single coordinating assessment agency provides for multiple assessors (may be sourced from different Assessment Agencies) to cater to the various parts of the qualifications.
- ii. Assessor is trained (ToA) in multiple sectors/sub-sectors so as to successfully conduct assessments. Single assessor assesses through neutral assessing ways (reduced biases) technology in assessment, MCQ type question banks etc.
- iii. **The "Lead Awarding Body (AB)" will be responsible to manage the overall assessment process.** On-site, practical assessment will be conducted by the Assessment Agency having knowledge of both areas. The "Supporting AB" will develop multiple choice-based question banks with model

answers which will be used by the “Lead AB” to conduct online/automated assessment for the curriculum related to the “Supporting AB”.

- iv. **The Assessment Agency will host the question bank prepared by both the “Lead Awarding Body” & “Supporting AB”** on an independent platform. Whereas the “Lead AB” is the awarding agency which has submitted the qualification taking the “lead” to develop the qualification and taken responsibility to maintain and majority of the curriculum content and the “Supporting AB” is the other AB who contributes to the development of the multi-skill/cross-sectoral qualification being developed by the “Lead AB”.

4.1.9 Financials:

- i. To encourage multi-skilling, the assessment charges for the multi-skilling qualification will be same as the common single skill qualifications.
- ii. The assessment charges will be divided between the “Lead AB” and the “Supporting AB” in the ratio of the number of hours needed for transacting the curriculum of each.
- iii. This can be in line with the financial arrangements in the adoption guidelines for qualifications/NOS.

4.1.10 Issue of Certificate:

- i. The MS/CS certificate will be as per the NCVET guidelines on certificates.
- ii. **The “Lead Awarding Body (AB)” will be responsible to manage the overall admission, training delivery, assessment and certification process.**

5. MONITORING

- 5.1 **The NCVET shall perform the annual performance review of the Multi-Skill/ Cross-Sectoral Skill qualification/s** usage in terms of training done, placements done and other related aspects as per the standard process either by itself or through a third party at the cost to be shared by various Recognized bodies. The quality checks will be done for each individual qualification adopted by any entity in the ecosystem.
- 5.2 In case, NCVET so desires, it may opt for site visit as part of review. The council may also ask for any information pertaining to the Multi-Skill/ Cross-Sectoral Skill qualification/s as per the provisions of NCVET notification.
- 5.3 The Qualification rights may be withdrawn by NCVET w.r.t Multi-Skill/ Cross-Sectoral Skill qualification/s which are found to be non-active during the annual review. Any qualification under which zero/ minimum training followed by no assessment and certification has been registered/ recorded over the period of one year shall be considered as non-active qualification.
- 5.4 The Guidelines on monitoring by NCVET shall be followed.