Competency Assurance Management System: Enhancement of Assessment and Verification Process

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Abstract: **The paper addresses Competency Assurance Management Systems (CAMS): design, developing and implementing of learning programs. Competency Development Framework (DFW) skills profile of a specific job consists of set of components: competencies, levels of proficiency, and Performance Criteria -Behavior Indicators. To implement CAMS DFWs successfully, the learning development programs need to meet the SMART principles. One of which is to be measurable through mapping real work tasks to a specific Key performance Indicator(s) and achievable through mapping them to a specific competence(s). Competencies achievement may be ensured though conducting assessments. The paper explores the quality of assessment and verification (A&V) process that make CAMS DFW implementation more effective and reliable. It focuses on technical coaching as a main stage of the A&V process and how to enhance its quality and the outcome of the CAMS system accordingly.**

Keywords: CAMS, DFW, Learning and Development, and Quality Assessment and Verification.

I. INTRODUCTION: COMPETENCY-BASED EDUCATION SYSTEMS (CABES) AND ASSESSMENTS

A. *Learning and training through Competence*

Nowadays, there is a need for professional competence improvement [1]. This put demands on higher education and training institutions, to bring academia and industry together and establish a closer relationship between them. Competency Based Education (CBE) common model includes two main items: (1) a competency DFW and (2) a competency assessment. The competency DFW which determines the awareness, the knowledge and skills required to perform a specific job task, activity, and assignment. While the assessments of competency are used to describe mastery. The importance of CBES credentials depends on the reliability and quality of those assessments.

Assessment reliability and quality is a very important topic for CBE learning development programs [1]. The major development focus in CBE should lie in the design of appropriate performance assessments besides the availability of the instructional materials. On the top of that, institutions should not commit themselves to CBE programs before having clear methods, tools and means to directly assess students' progress or Entry Point Employees' (EPE) performance [2].

B. *CBES Accreditation Requirements*

For an organization to implement competency-based education/training system, and to be accredited, the following criteria must be considered and reviewed by an accreditation body [3][4][5]:

I) Manual/Document of training statement, policies and procedures.

II) Description of job positions to be considered competent through the program.

III) Process for specifying competencies.

IV) Methods and Learning Resources to support the process of learning and development.

V) Evaluation (Assessment) System – a means to evaluate an EPE's competence.

VI) Documentation System – a means of recording satisfactory accomplishment of learning and evaluation (assessments).

VII) Quality Assurance – a means of ensuring commitment to the approved and documented policies, procedures, documents and manuals, and periodical reports.

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C. Competency Assurance Management System

It is important for implementing EPEs' performance assessment and verification process effectively and for a successful development of CAMS system for various industrial organizations that it is supported by the top management of the organizations/institutions.

The corporate management of an institution must specify a mission and objectives of their competency assurance management system.

Competency assurance management system is used for developing, implementing, and managing the core/business, technical, support, and personal/behavioral competence framework of minimum standards for employees under development (Entry Point Employee -EPE). Such DFW will ensure that all new employees are developed to meet and perform the required critical skills of the target position and other HSE tasks in a competent way.

For this purpose, it is important to establish a corresponding Corporate Standard Policy to ensure its implementation. The Corporate Standard Policy requires the following:

I) Work activities are performed competently by EPE.

II) Job progression is competency-based. It is not time-based progression.

III) Assessment & Verification Standard Processes is developed. EPEs are assessed against agreed competence standards for the given job and a clear verification system is approved.

IV) D. Development of the professional staff is to a high level of competence in their job areas and their standards are continuously updated through continuing training and learning.

V) E. Core critical tasks are performed by EPEs competently to meet the organization's business objectives.

VII) F. Health, Safety, and Environment critical tasks are performed by EPEs effectively to meet HSE organization's Policies.

VIII) All relevant entities are contractually required to be committed to the above principles.

D. What is a competency-based assessment?

Assessment process is making judgments on whether competency has been achieved. The aim of assessment process is to ensure that an EPE can perform the standard expected, as expressed in the relevant endorsed competency standards.

II. CASE STUDY: LEARNING & DEVELOPMENT – ZADCO CAMS AND ASSESSMENT & VERIFICATION PROCESS

A. ZADCO LMS and Unified DFW Structure

Manpower Development Department provides the best learning services and support to meet the learning, training, development of all ZADCO employees' needs, and ensures ZADCO's success as a world class learning and performance driven organization. Figure. 1 illustrates ZADCO DFWs' program types: CAMS, Z CAMS, Z PDP, & CAS
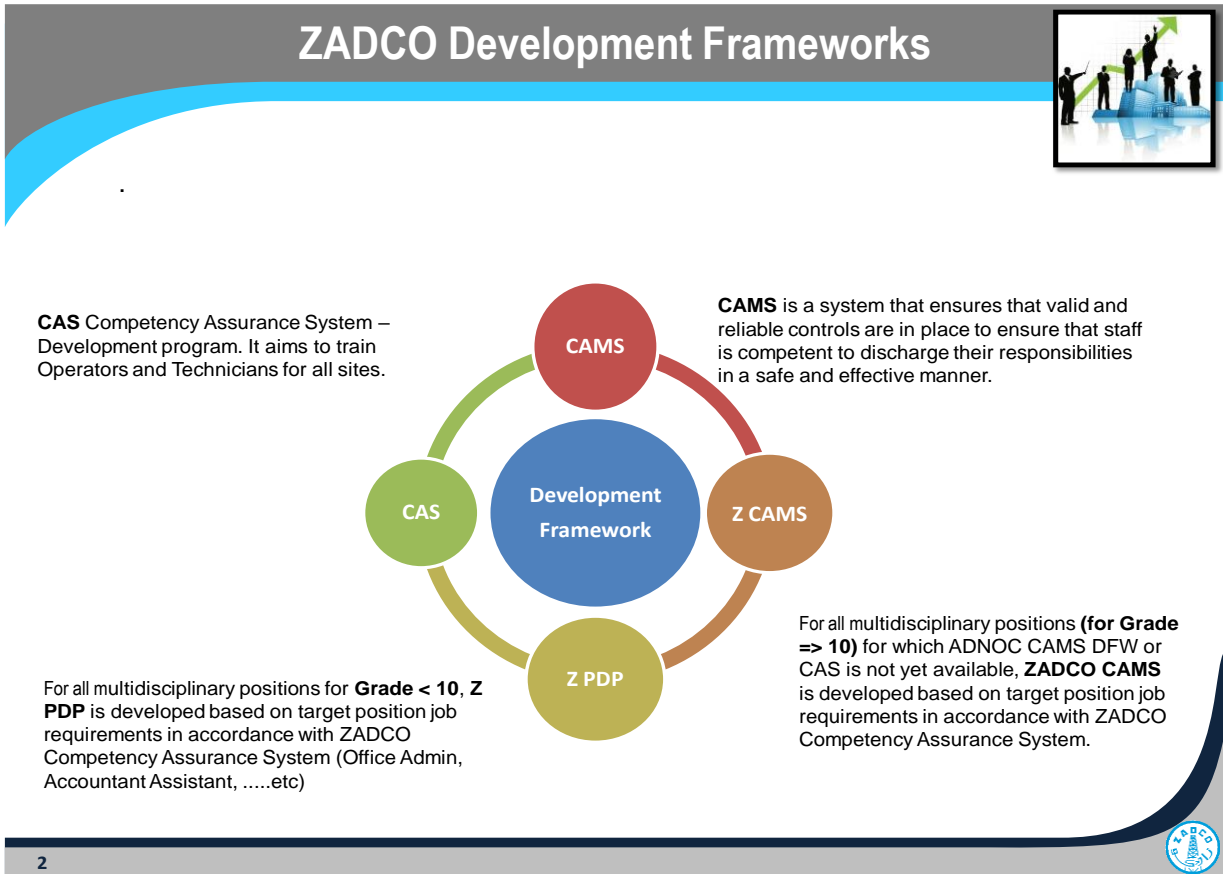
Figure 1. ZADCO Development Framework

B. ZADCO CAMS Supporting Team Roles and Responsibilities

To implement CAMS DFWs successfully, the learning development programs require a support team to guide and help Employee under development performing their competences more effectively. The supporting roles and responsibilities processes are illustrated in Figure. 2.
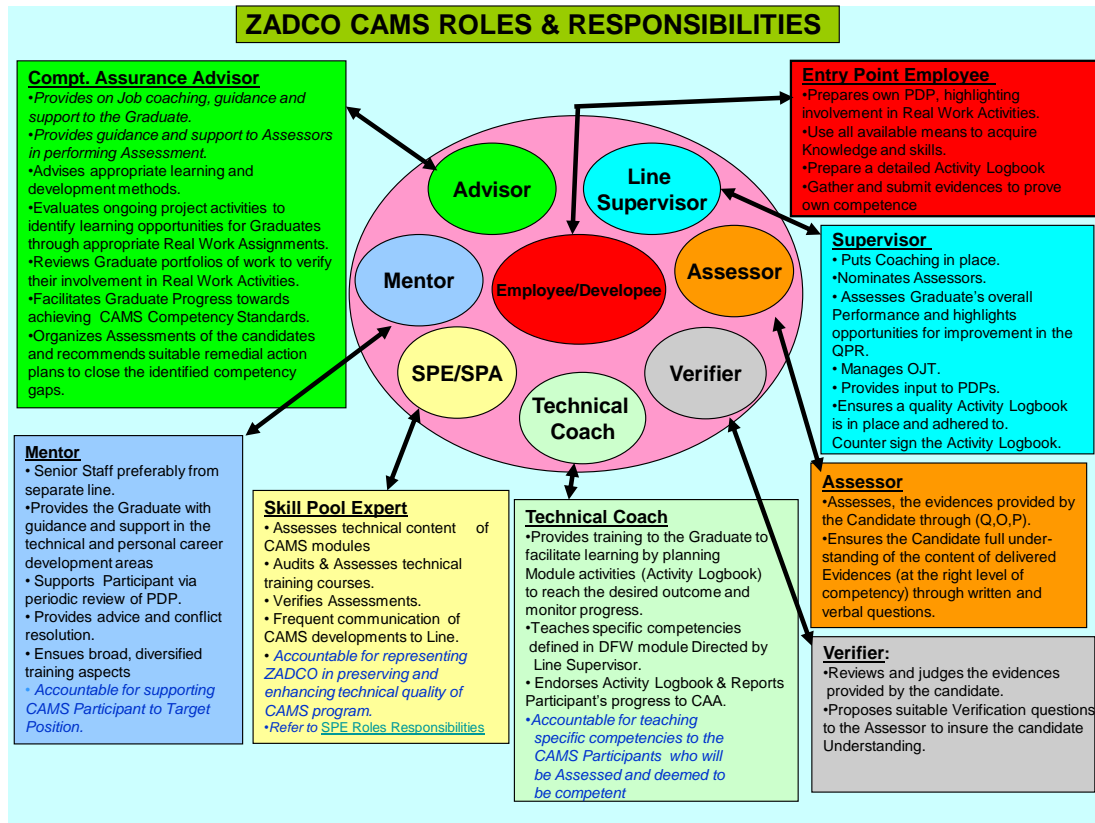
Figure 2. ZADCO CAMS Roles and Responsibilities Process

C. DFW and Evidence Sources

Competency model or framework: describes the component of knowledge, skills and characteristics needed to do the job assignments effectively and it can be used as a tool for employee selection, career development, technical professional development, and talent management.

Competency model consists of Competency Cluster, Performance Criteria (Behavior Indicators: O/P/Q), and Proficiency levels (Awareness, Knowledge, Skill and Mastery).

Usually, an organization specifies their own procedure levels, and assessment and verification process' levels.

The assessment process uses the following four proficiency levels of rating criteria:

I) Awareness (proficiency) level.

II) Knowledge {proficiency) level.

III) Skill (proficiency) level.

IV) Mastery proficiency level.

The DFW is an important reference for competencies against which EPEs a specific business field will be evaluating their competency level. It is used as an Assessment Document for recording ratings, i.e. A (Awareness), K (Knowledge), S (Skill) and M (Mastery), as a conclusion of the given assessment.

Various Evidence from employee own real work activities are provided to support the assessment and verification process. The following three Evidence Sources (O/P/Q):

I) (O) Observations by the immediate line coach or supervisor or manager while the EPE is doing specific job tasks.

II) (P) Products of the EPE's real work output/evidence such as documents, reports, etc.

III) (Q) Questions answered by the EPE.

D. SMART Personal Development Plan (PDP)

Annually, bi-annually, or quarterly Personal Development Plan (PDP), following the SMART principles, must be developed at for EPE in the CAMS learning & development program. Updating the PDP is made after assessing the EPE and reflects his/her current progress his development.

The Competency Assurance Management System PDP is a monitored record/document consists of seven components: Employee Profile, Executive Summary, Planned Real Work Tasks, Actual Real Work Tasks, Training Courses, and Assessment Progress.

E. Learning Development: The Current Competence A & V Processes

The implementation of CAMS requires a framework to support A & V processes. These processes are based on "Minimum A & V Standard Processes".

A & V process generally consists of the following three levels (Figure. 3):

Level 1: Planning for Assessment for one or more competence.

Level 2: Conducting Assessment/Verification for one or more competence.

Level 3: Conducting Verification for Integration and Graduation (Assignment 3 & Assignment 4 Milestone Panel Sessions).

Figure 3. CAMS Assessment and Verification Process

III. ENHANCEMENT OF COMPETENCE ASSESSMENT PORTFOLIO

A. The criteria for judging the quality of assessments

The following principles provide the criteria for judging the quality of assessments:

Principle1: Manageable assessment strategies that promotes learning through interaction between assessor and candidate.

Principle 2**:** Clarity for the candidate and assessor the goals of the learning (tasks or activity).

Principle 3**:** Designing an assessment to help better learning over better marks for the candidate to maximize the output of the candidate.

Principle 4**:** Facilitate the ways for candidates to use feedback from assessment.

Principle 5**:** Helping candidate to take responsibility for their learning.

Principle 6**:** Equality of assessment of all the candidates.

B. Implementation of LMS to enhance the workflow process

It was noticed that a big amount of effort and time are spent in administration verifying the manual documents of the CAMS candidate assessment forms, evidence, and other supporting documents.

It is highly recommended to implement the LMS for more accuracy and correctness of the Learning development processes. This will minimize the administration work and tasks performed by the CAMS supporting team.

C. Competence Assessment Portfolio

The portfolio is an educational resource to provide evidence for, and evaluate the progress made by an EPE/employee during her/his learning development process. It is made up of a set of evidence of learning that the EPE selects, analyses and presents with the aim of demonstrating the achievement levels. In assessment learning based on the e-portfolio, the supervisor suggests a process of constructive reflection about the EPE's performance. This requires innovation in educational practice, moving the center from the supervisor to the EPE and demanding that the latter takes a more active role. This new role for the EPE is an essential component of their success in learning, strengthens the development of new attitudes and practices, and empowers EPEs to successfully meet their leaning challenges.

The assessment and verification process are suggested 6 separate levels including the technical coaching level as follows. These assessment levels are implemented across the system. The corresponding and relevant records are maintained consequently.

Level 1: Technical Coaching

As per current practice, majority of coaches have no enough time for coaching EPE and since they are no recognition award they don't provide proper coaching on one hand. On the other hand, they lack coaching skills, and some EPEs violate the coaching processing others' evidence.

It is highly recommended to add a technical coaching step as a pre-requisite for the EPE's assessment where he gets proper technical coaching. Approve recognition award and consider technical coaching as KPI for coaches.

It is also suggested to deliver a training course "competence-based coaching" that is totally aligned with CAMS and other learning and development programs implemented by ZADCO.

Level 2: Self-Assessment

Where the employee practices his /her self-assessment and that he reviews it with his immediate line supervisor prior to conducting the assessment.

Level 3: Planning for Assessment

Where the employee requests for conducting assessments after reviewing the assessment materials with his line supervisor, then he discusses the assessments requirements and put a plan for conducting the assessment with the assigned assessor.

Level 4: Conducting Assessment with Certified/Trained Assessors and Ensuring Quality Assurance

Assessment Level 4 is the main step and main method of assessment. The two main persons of the assessment process are: the assessor and the EPE/employee. Various types of evidence should be submitted by EPE from his own real work. In addition to verifying the employee's assessment, the verification process, as a part of Level 4, assesses the assessor. The assessment identifies where the EPE is regarding his DFW within CAMS. Level 4 assessment is planned, approved, carried out, and must be followed by Assessor upon conducting the assessment.

The Assessment Form (Document) is used to record and maintain ratings based on the one-on-one assessment process. The current assessment document form should be updated to reflect that EPE has provided with a proper technical coaching. The technical coach name and signature must be clearly mentioned.

The fourth person is the Competency Assurance Advisor (Independent silent Observer) observing a percentage of the assessments to ensure consistency of the overall CAMS assessment process. He is checking the quality of the assessment process, and advising and supporting assessors, and main duties are to:

I) Ensure assessors are qualified, certified and have attended the "Assessor" training course.

II) Ensure assessors are qualified experts in the subject of assessment of competences (elements).

III) Ensure assessors have the appropriate experience in using the recording forms, documents, system, and following the approved assessment procedures.

Level 5 – Conducting One-on-one Verification by a Qualified Technical Verifiers

This verification is used to ensure the quality of assessment results. Conducting the professional a verification interview must be by Technical Verifier. The competency assurance advisor has to ensure that the verifier is qualified to play the verification role, certified, and has attended the "Verifier" technical course. On the other side, assessor (Level 4) has no role in Level 5 verification process.

As for Quality Assurance of the verification process, the competency assurance advisor will provide feedback to the verifier, although he must be a silent observer during the verification process.

Level 6 – Conducting Panel Session Committee Interview Verification for A1-A4

The sixth level of quality assurance in the CAMS A & V process is "Conducting Panel Session Interview". The main purpose is to ensure the quality of assessment results. A verification process involving the EPE/employee and other panel committee members as follows:

I) EPE/Employee under development.

II) Primary technical coach.

III) Line supervisor/team leader/line manager.

IV) Learning development advisor (Independent Observer).

V) Certified/Trained Technical verifier (Skill Pool expert).

VI) Certified/Trained Assessor.

On the top of that, the verification process provides further quality check on assessment for EPE milestone events involving: (Poor Progress and performance, Appeals, Promotions; Transfers; Succession).

Panel members are expected to attend a "Verifier" training course and to be recognized technical experts. They supposed to play an additional level of quality assurance.

IV. CONCLUSION AND RECOMMENDATIONS

The following points are recommended to:

I) Learning Management System LMS must be implemented for more accuracy and correctness of the Learning Development processes. This will maximize the effectiveness of the CAMS supporting team and minimize their administration tasks.

II) Conduct Verification Panel Session upon completion of all assignments (A1-A4)

III) Enhance the assessment and verification process workflow.

IV) Enhance the Assessment and Verification systems to have 6 Levels by adding a technical coaching step as a pre-requisite for the EPE's assessment where he gets proper technical coaching. Approve recognition award and consider technical coaching as KPI for coaches. Assessment form to be revised to reflect coaching role.

V) Develop and deliver a training course "competence-based coaching" that is totally aligned with CAMS and other learning and development programs.

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