

CRITERIA FOR ASSESSING OCCUPATIONS AND QUALIFICATIONS: INTERNATIONAL EXPERIENCE AND THEORETICAL APPROACHES

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Abstract

This thesis systematizes the principal international approaches to developing criteria for assessing occupations and professional qualifications. Using a comparative-institutional analysis of methodological and regulatory documents issued by the International Labour Organization, the International Organization for Standardization, the European institutions, WorldSkills International, the U.S. Department of Labor, and national qualification bodies, six complementary models are identified: the classification-taxonomic model (ISCO-08), the level-framework model (EQF and DQR), the standards-based certification model (ISO/IEC 17024), the content-analytical model (O*NET), the demonstration-based model (WorldSkills), and the sectoral competency model (Skills Framework Singapore). On this basis, a five-dimensional typology is proposed according to the object of measurement, structural reference, assessment method, psychometric quality, and institutional carrier. The findings may support the design and modernization of national systems for assessing occupations and qualifications under rapidly changing labor-market conditions.

Keywords: assessment criteria, professional qualifications, qualification frameworks, personnel certification, competencies, reliability, ISO/IEC 17024, EQF, ISCO-08, WorldSkills.

1. Introduction

Accelerating technological change, digitalization of production, and the emergence of new and prospective occupations have increased the demand for objective, comparable, and institutionally recognized criteria for

assessing professional competence. The absence of common methodological foundations complicates labor mobility, cross-country recognition of qualifications, and workforce-demand forecasting. Therefore, international experience is especially valuable for identifying assessment principles that can be adapted to national qualification systems. The purpose of this study is to compare leading international models and to develop a generalized typology of criteria used to assess occupations and qualifications.

2. Materials and Methods

The study applies comparative-institutional and comparative-descriptive analysis followed by analytical synthesis and typologization. The source base includes ISO/IEC 17024; the International Standard Classification of Occupations (ISCO-08); the European Qualifications Framework (EQF) and German Qualifications Framework (DQR); the O*NET Content Model of the U.S. Department of Labor; WorldSkills Occupational Standards and assessment procedures; the qualification systems of Kazakhstan and the Russian Federation; and Singapore's Skills Framework. The comparison focuses on what is assessed, how the assessment is structured, which methods are used, how reliability and validity are secured, and which institutions perform the assessment.

3. International Approaches to the Assessment of Occupations and Qualifications

ISCO-08: classification-taxonomic approach. ISCO-08 classifies occupations through two core dimensions: skill level and skill specialization. Skill level reflects the complexity and range of tasks, while skill specialization concerns the field of knowledge, tools, materials, and types of products or services involved. This hierarchical structure ensures international comparability of occupational categories.

EQF and DQR: level-framework approach. The EQF uses eight qualification levels described through learning outcomes: knowledge, skills, and responsibility/autonomy. Its methodological significance lies in the shift from input-based criteria, such as duration or type of education, toward outcome-based criteria describing what a person actually knows and can do.

The German DQR follows the same eight-level logic and competency-oriented descriptors.

ISO/IEC 17024: standards-based certification approach. ISO/IEC 17024 focuses primarily on the quality of the assessment system itself. Key requirements include impartiality, independence, validity, reliability, consistency of results, and competence of persons involved in assessment. Thus, it establishes second-order criteria: not only whether a candidate meets professional requirements, but whether the assessment procedure can generate trustworthy decisions.

O*NET: content-analytical approach. The O*NET Content Model evaluates occupations through interconnected domains covering worker characteristics, worker requirements, experience requirements, occupational requirements, occupation-specific information, and workforce characteristics. Knowledge, skills, and abilities are assessed by importance and level, combining information from job incumbents and expert analysts.

WorldSkills: demonstration-based approach. WorldSkills assessment combines objective measurement with expert judgement. Marking schemes distribute points according to the relative importance of occupational standards, while judgement criteria are scored independently by several experts. Test projects approximate real professional tasks, thereby strengthening content validity.

Skills Framework Singapore: sectoral competency approach. Singapore's Skills Framework is developed jointly by government agencies, employers, industry associations, and unions. It defines technical skills and competencies across sectors and assigns proficiency levels, while also linking competencies to career pathways and recognized training programs. The sectoral design enables regular updating in response to technological and labor-market changes.

Independent qualification assessment in Russia and Kazakhstan. Both systems institutionally separate the development of occupational requirements, training, and independent assessment. Accredited assessment centers verify whether candidates meet professional standards through theoretical and practical examinations. Such separation helps reduce conflicts of interest and improves the objectivity of certification decisions.

4. Generalized Typology of Assessment Criteria

Basis of typology	Type of criterion	Examples
Object of measurement	Knowledge, skills, abilities, competencies, responsibility and autonomy	EQF, DQR, O*NET
Structural reference	Occupational classification, qualification level, professional standard	ISCO-08; EQF/DQR; ISO/IEC 17024
Assessment method	Objective measurement and expert judgement	WorldSkills
Psychometric quality	Validity, reliability, inter-rater agreement, internal consistency, impartiality	ISO/IEC 17024; Cohen's kappa; Cronbach's alpha
Institutional carrier	State examination, sectoral framework, independent assessment center, competition-based demonstration	Russia, Kazakhstan, Singapore

A particularly important dimension is the psychometric quality of assessment. Inter-rater agreement may be evaluated using Cohen's kappa, while internal consistency of competency measurement instruments may be assessed using Cronbach's alpha. Including such statistical criteria alongside content and procedural criteria strengthens the scientific validity of national qualification assessment systems.

5. Implications for National Qualification Systems

The comparison demonstrates that no single international model is sufficient on its own. Effective national systems should combine occupational classification, level descriptors, competency standards, independent certification procedures, and statistically verified assessment quality. This



integrated approach is especially relevant for emerging occupations for which stable qualification requirements have not yet been established. In such cases, assessment criteria must evolve simultaneously with the occupation itself and should be regularly updated through cooperation among government, employers, professional associations, education providers, and independent assessment bodies.

6. Conclusion

International practice has produced a set of complementary rather than universal approaches to the assessment of occupations and qualifications. Their differences concern the object of measurement, structural reference, assessment method, psychometric quality, and institutional organization. The proposed five-dimensional typology can serve as a methodological framework for comparing existing national systems and for designing new assessment mechanisms. Future research should empirically test the typology in specific national contexts and examine its applicability to prospective and rapidly transforming occupations.

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