



**National Board for Certification of
Orthopaedic Technologist**

Orthopaedic Technologist Certified

Job Analysis Report

Meeting: January 12, 2019

Schroeder Measurement Technologies, Inc.



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Introduction

Job Analysis Overview: The Content Validation Model

The foundation of a valid, reliable, and legally defensible professional licensing/certification program is a well-constructed job task analysis (JA) study. The JA study establishes the link between test scores achieved on licensing exams and the competencies being tested; therefore, pass or fail decisions correlate to competent performance. When evidence of validity based on examination content is presented for a specific professional role, it is critical to consider the importance of the competencies being tested. The Joint Standards for Educational and Psychological Testing (AERA, APA, and NCME, 2014) state:

Standard 11.3

When test content is a primary source of validity evidence in support of the interpretation for the use of a test for employment decisions or credentialing, a close link between test content and the job or professional/occupational requirements should be demonstrated.

Standard 11.13

The content domain to be covered by a credentialing test should be defined clearly and justified in terms of the importance of the content for the credential-worthy performance in an occupation or profession. A rationale and evidence should be provided to support the claim that the knowledge or skills being assessed are required for credential-worthy performance in an occupation and are consistent with the purpose for which the licensing or certification program was instituted.

Purpose of the Job Analysis Study

In order to meet the aforementioned standards, it is essential that examination content be examined periodically to ensure that existing outlines continue to cover the knowledge, skills, and abilities (KSAs) required for competent practice in the occupation or profession of interest. To this end, the National Board for Certification of Orthopaedic Technologists (NBCOT) worked with Schroeder Measurement Technologies, Inc. (SMT) to conduct a job analysis for the Orthopaedic Technologist Certified (OTC) program.

Content Development Process

Job analysis research may be performed in a variety of ways. Professions with very small numbers of practitioners or limited access to the sample population may find it practical to conduct a focus group review of the professional's role and the examination blueprint that supports the exam related to that role. It was decided that this model was feasible for the OTC program and NBCOT agreed to recruit a panel of Subject Matter Experts (SMEs) to serve as the focus group. The job analysis focus group meeting was held January 12, 2019, via webinar. A complete list of SMEs who participated in this project is shown in Appendix A.

Security

Since information shared during a job analysis study is directly related to the content of the examination, it is important that all information remain confidential. All participating focus group SMEs were required to execute affidavits of nondisclosure.

Content Development

Prior to the meeting, SMT conducted a literature research via the Internet. SMT identified training curricula and job duties and responsibilities related to the role of practitioners who perform within the Orthopaedic Technologist profession.

During the webinar, following the discussion of security, the SMT workshop facilitator explained the goals of the meeting and presented information about the job analysis process and the relation of the job analysis study to the overall test development process. Specifically, the SMT staff explained the purpose of content outlines and test specifications and the role of SMEs. SMT staff explained that the objective is to establish a comprehensive list of KSAs that each entry-level practitioner must possess in order to perform their role at a sufficient level of competency.

The SMEs worked together on a common definition for the target candidate who takes this test to include years of experience, typical age, educational level, and any other characteristics that would define the minimally proficient, target candidate for the blueprint development. The target candidate was the focus when developing the KSA list. The focus group was asked to evaluate each KSA list according to the following criteria:

1. Is it important to competency?
2. Is it performed by practitioners regularly?
3. Is it clearly written?
4. Are there errors, omissions, or redundancies?
5. Is it assigned to the appropriate area within the outline?
6. Is it testable?

The focus group was further instructed to make sure all content areas were relevant to the current state of the profession and that the content areas assessed entry-level proficiency; the focus group was also advised to eliminate redundant content areas, reword content areas where appropriate, and/or add KSA elements that were not represented and met the abovementioned criteria.

The role of an OTC was discussed in depth to identify services, procedures, and tasks that must be performed in order for a candidate to demonstrate competency. Further review resulted in the committee removing some elements from the content outline because they were irrelevant to the entry-level practice, while other elements were added that were not covered on the existing outline. The wording of some elements was modified for brevity and clarity. Subsequently, the focus group arrived at a final content outline (Appendix B) that they believed adequately covered the critical competencies required of an entry-level OTC professional.

Test Specification Development

Content Area Weights

After determining the list of KSAs, the focus group was asked to assign content area weights that would define the distribution of items across content areas for the OTC examination. The final content area weight distribution for the theory examination and final content outline is shown in Appendix B.

Conclusion

The efforts of the SMEs resulted in the development and final approval of the content outline for the Orthopaedic Technologist Certified examination. Subsequent meetings will be held to write and review items to meet the test specifications.

Appendix A: Job Analysis Study Participants

JA Participants

<u>First</u>	<u>Last</u>	<u>Location</u>	<u>Years of experience</u>
Michael	Pare	GA	7
Frank	Radja	IL	40
Peter	Solan	CA	40
Roy	Tomasulo	PA	28
Marisa	Vest	VA	16
Jeffery	Virgo	NY	38
Scott	Elde	ND	12
Pett	Allen	MD	33
Ruth	Byers	NC	23

Note: Demographic Worksheets and Affidavits of NBCOT SMEs were not provided in this report due to the confidential and private nature of these materials. This information is on file at Schroeder Measurement Technologies, Inc.

SMT Facilitator:

Claudia Guerere, Ph.D.

Psychometrician

**Appendix B: Final 2019 Orthopaedic
Technologist Certified**

Examination Content Outline and Domain Weights

Final - 2019 Orthopaedic Technologist Certified Examination
Content Outline and Domain Weights

Domain	Weight %	# of Questions
1. Assessment	41	62
2. Casting Splinting and Orthopaedic Appliances	42	63
3. Traction	6	9
4. Surgery	11	16

KSA

1. Assessment
 - a. Interview pt and family in order to obtain complete history of the pts complaint(s) and condition(s) by using effective interviewing techniques
 - b. Conduct physical examination of the pt in order to provide pertinent information to the surgeon physician by using standard examination techniques
 - c. Radiographic interpretation
2. Casting, Splinting, and Orthopaedic Appliances
 - a. Apply upper extremity cast/splint to pt in order to comply with physician's orders by using accepted casting/splinting practices and techniques
 - b. Apply lower extremity cast/splint to pt in order to comply with physician's orders by using accepted casting/splinting practices and techniques
 - c. Apply torso/spica extremity cast splint to pt in order to comply with physician's orders by using accepted casting splinting practices and techniques
 - d. Apply specialty extremity cast/splint to pt in order to comply with physician's orders by using accepted casting/splinting practices and techniques
 - e. Utilize removal/altering of cast/splint to from/on pt in order to comply with physician's orders by using accepted practices and techniques
 - f. Apply orthopaedic devices to pt in order to comply with physician's order by ensuring proper fit and placement
 - g. Apply pre-fabricated orthotics and orthopaedic appliances to pt by ensuring proper fit and placement in order to comply with physician's orders
 - h. Patient education and instruction(s)
3. Traction
 - a. Obtain equipment in order to apply traction therapy to pt by selecting appropriate item(s) for the traction apparatus per physician's orders
 - b. Apply or discontinue traction apparatus to bed in order to prepare for application of skin or skeletal traction by using accepted practices and techniques per physician's orders
 - c. Drape, scrub, and assist in the application of skeletal traction therapy in order to comply with physician's orders by using accepted practices and techniques
 - d. Apply or discontinue skin traction therapy to patient in order to comply with physician's orders by using accepted practices and techniques
 - e. Patient education and instruction(s)
4. Surgery
 - a. Position, prep, and drape patient by using accepted practices and techniques in order to prepare pt for surgery
 - b. Apply and manage post-operative dressing(s) on wound(s) following aseptic techniques
 - c. Assist the surgeon physician during reductions and/or procedures by supplying and applying the appropriate materials and using appropriate techniques
 - d. Assist the surgeon physician by using accepted surgical practices and techniques
 - e. Patient education and instruction(s)