

TOWES Test Specifications

October 2008

By: Dr. Theresa Kline

TOWES is a test that is useful for establishing the Essential Skill level in Reading Text, Document Use, and Numeracy at which an individual is effectively operating. This information can be used in determining training needs, as part of a comprehensive selection process, or for educational purposes.

TOWES is a made up of test items, grouped into problem sets, requiring individuals to complete short-answer questions that are based on information provided in test booklets or online. The test content has been carefully selected to reflect typical scenarios found in the real workplace and test takers are required to respond using constructed responses. A prime benefit of this response approach is that it avoids the problem of guessing. Guessing parameters must be assessed for each item in multiple-choice response formatted tests, while TOWES avoids this problem.

There are several versions of TOWES. Some versions, like the Manufacturing and Administrative tests, have been customized to meet a particular workplace context. The General Series assessments are the most popular versions and the items are geared to test takers who are operating effectively at a given Essential Skill level. TOWES is available in both French and English and the TOWES GEN2 (Level 2/3) test is available online.

Test Booklet	Essential Skill Level	Best used for:
GEN 1	Level 1 - 2	Entry level positions, low literacy
GEN 2	Level 2 - 3	College training, frontline employment, employment training
GEN 3	Level 3 - 4	Apprenticeship and training contexts
ADM	Level 2 -3	Office Administration related contexts
MFG	Level 2 -3	Manufacture related contexts
Custom Test	varies	Varies – based upon company needs

Each TOWES test is made up of a minimum of 60 items, usually takes about 2 – 2 1/2 hours to complete, and is designed to be a formal invigilated assessment. The 60 items are roughly divided into three groups of at least 20 items each, in order to adequately assess Reading Text, Document Use, and Numeracy skills at the required levels.

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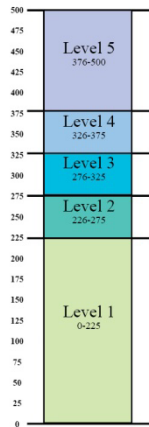
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Scores are reported separately for Reading Text, Document Use and Numeracy and range from 0 – 500. Based on the International Adult Literacy Scale (<http://www.hrsdc.gc.ca/en/hip/lld/nls/Surveys/ialscrbk.shtml>)

cut points, the 0 – 500 scores are converted into a Level (<http://srv108.services.gc.ca/english/general/esrp.shtml>) score of: 1 (0 - 225), 2 (226 - 275), 3 (276 - 325), 4 (326 -375) or 5 (376 – 500). These levels are useful

COMPLEXITY LEVELS



as many occupations have been analyzed and profiled by HRSDC as to the level required to effectively carry out the job. For example, a carpenter (NOC 7271) position requires the employee to carry out tasks with a Level 3 in Reading Text, Level 4 in Document Use and Level 4 in Numeracy.

TOWES tests are professionally marked and the scores are generated using an Item Response Theory (IRT) protocol. The IRT protocol uses the difficulty and discrimination characteristics of the items, as well as which particular items the test-taker get correct, to generate final scores on Reading Text, Document Use and Numeracy for the person. Each TOWES item has its own difficulty and discrimination characteristics. These characteristics are based on the probability that an individual with a given skill level has an 80% chance of getting the item correct (RP80). Using the RP80 information, each TOWES item has been designated to test at a particular Level. For example, an easy item would be a Level 1 item. This means that the item has difficulty and discrimination characteristics such that a person with Level 1 skill has an 80% chance of passing the item. A person with Level 3 skill would have a much higher chance of passing the same item. TOWES uses the RP80 value because workers are typically required to successfully complete tasks at least 80% of the time to be considered competent in their role. If the item Level determinations were made using a pass rate of RP50 this would mean that 50% would be assumed to be sufficient in the working world and this is not the case.

TOWES tests are constructed by selecting items that will best match the capability of the test taker. This is done to increase the accuracy of assessing the skill level of the test taker. The GEN1 is made up primarily (75% or more) of Level 1 items, the GEN2 is made up of primarily Level 2 and 3 items and the GEN3 primarily of Level 3 and 4 items. TOWES scores are most reliable when the difficulty of the items closely matches the skill level of the test taker. Thus, the

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GEN1 is most useful for test-takers operating at Level 1, the GEN2 for those operating at Level 2, and the GEN3 for those operating at Level 3 or higher. When this match is present, it is typical that the standard error around any score is no more than 20. This means that a test taker who gets a score of 250 on Reading Text is likely to have a score between 230 - 270 if that test taker attempted the test multiple times. If there is not a good match between test taker skill level and test level difficulty it is suggested that a more appropriate version of TOWES be used.

Responses to TOWES items have been collected since 1998. There are approximately 850 items in the TOWES test bank and over 45,000 TOWES tests have been written. Bow Valley College is committed to continually improving and expanding the item bank. Items that have been externally verified as to their item characteristics and have at least 500 responses in the test bank are considered to be "Standard" items and are used for scoring test taker skill level. In any TOWES test at least 80% of the items are made up of Standard items, while the other items are in various stages of development within the standardization process.

Dr. Theresa Kline is a professor in the Department of Psychology at the University of Calgary. She teaches and conducts research in the area of psychometrics and is author of Psychological Testing: A Practical Approach to Design and Evaluation (Thousand Oaks, CA: Sage Publications). Dr. Kline has been involved in evaluating TOWES items and tests since 1999. Several of these evaluations have been published in scholarly journals. She continues to provide oversight to the TOWES team on new item and test design.