Introduction to the Critical Thinking Assessment

Critical thinking skills are important in every field and industry to effectively solve problems, develop solutions, and innovate. Employers today want job candidates who can independently evaluate a situation using logical thought, offer the best solution, and make decisions. As such, institutions of higher education must respond by turning out graduates with these valuable critical thinking skills.

The Critical Thinking Assessment is designed to support teaching and learning through assessment. The assessment effectively measures critical thinking by evaluating all levels of the cognitive domain according to Bloom's Taxonomy.

The assessment utilizes a standardized rubric (see the full rubric below) that covers six sub-criterions of critical thinking including:

- Explanation of situation/issue/concepts/opinions.
- Selection and use of information to analyze situations/issues/concept/opinions.
- Incorporates understanding of context, assumptions, and alternate perspectives.
- Effectively communicates own views/perspective/hypothesis.
- Draws conclusions and understands related implications and consequences.
- Communicates effectively.

Customization/Configuration

Schools can choose a variety of options to customize the content delivery and configurations of the exam including the exam topics, the tiers of Bloom's taxonomy assessed, whether the exam is an open or forward-only exam, and time allotted to complete the exam.

Exam Topics

Although critical thinking is a skill necessary across all schools of thought, this assessment focuses on business topics. Because the exam focuses on specific content areas, learners are more likely to be engaged as they can clearly see the relevancy to their program/course material. The topics are chosen by the institution and include:

- Business Communications
- Business Ethics
- Leadership
- Business Integration & Strategic Management
- Global Dimensions of Business

Assessment Items & Tiers (Bloom's Taxonomy)

Schools may choose how many assessment items are offered on the exam and which levels of Bloom's Taxonomy are assessed.

Each assessment item is comprised of a short case scenario (between 150 and 300 words) that are in alignment with the chosen exam topic and 10 default questions - six multiple choice and four open-ended questions. Each question is mapped to a level of Bloom's taxonomy.

It may be that for an undergraduate program, a school decides to only assess levels one through four (remembering, understanding, applying, and analyzing). However, a graduate program may only be interested in assessing the top two levels (creating and evaluating). Within the Critical Thinking Assessment, the various levels of Bloom's Taxonomy are organized into tiers, each of which includes two levels. Schools determine which of the tiers will be present on their exam.

School officials will be able to see learner performance broken out by each tier. The number of questions served per assessment item will be reduced. See below for a breakdown of the number of questions offered per tier.

- Tier 1 relates to Bloom's levels 1 & 2 (2 multiple choice and 1 short answer)
    - *Does the student understand the key points described in the scenario?*
- Tier 2 relates to Bloom's level 3 & 4 (2 multiple choice and 1 short answer)
    - *Can the student analyze the situation and apply what they have learned?*
- Tier 3 relates to Bloom's level 5 & 6 (2 multiple choice and 2 short answer)
    - *Can the student assimilate concepts, evaluate, use them in new circumstances, and make judgements?*

Open vs Forward-Only

The exam can be either forward-only or open.

Within a forward-only exam, learners are not able to back track and assessment items are timed. Once the assessment item expires, the exam moves onto the next assessment item. Students are only able to take a break once they answer all ten questions in an assessment item. Text on screen will blur when the examinee navigates away from the testing window. Time given and number of breaks on a forward-only exam are configurable.

An open exam allows learners to move back and forth within the exam. Also, learners may leave the exam and return within the designated exam window. The exam window is configurable.

The Test Bank

The test bank for the critical thinking assessment includes 15 scenarios per topic. Learners receive scenarios randomly from the test bank. The system grades the multiple-choice questions automatically. A designated school official manually grades the open-ended items using a rubric. The grader is provided with a recommended response and will compare that response to the learner's response.

Test bank questions are written and proofed by terminally degreed, subject matter experts from accredited institutions who have teaching experience with the specific discipline. The criteria for a test bank scenario include:

Scenarios can be actual cases / real events/ common fictional situations found in the workplace/ problems in the discipline.

Scenarios are accompanied by multiple choice and short answer questions broken down into tiers. The following pages include a sample scenario, questions, response distractors, rubric, and key terms.

Sample Scenario

Topic: Business Integration and Strategic Management

Eight years ago, the "Geovanni's Pizza House" franchise was doing poorly. Many of the franchise operations had recently closed and no new franchises had been opened in the last 24 months. In part this is related to a general softening of the economy. However, their major competitors were still experiencing modest growth.

A comprehensive business review identified 3 primary factors and a range of secondary factors that were tied directly to their poor business situation. The primary factors were pizza choices not keeping up with consumers' changing preferences, uncompetitive pricing, and dated appearance and poor maintenance of stores. The secondary factors included poor in-store service, choice of franchise locations, capabilities of cooking staff, and limited choice of interesting and healthy side dishes.
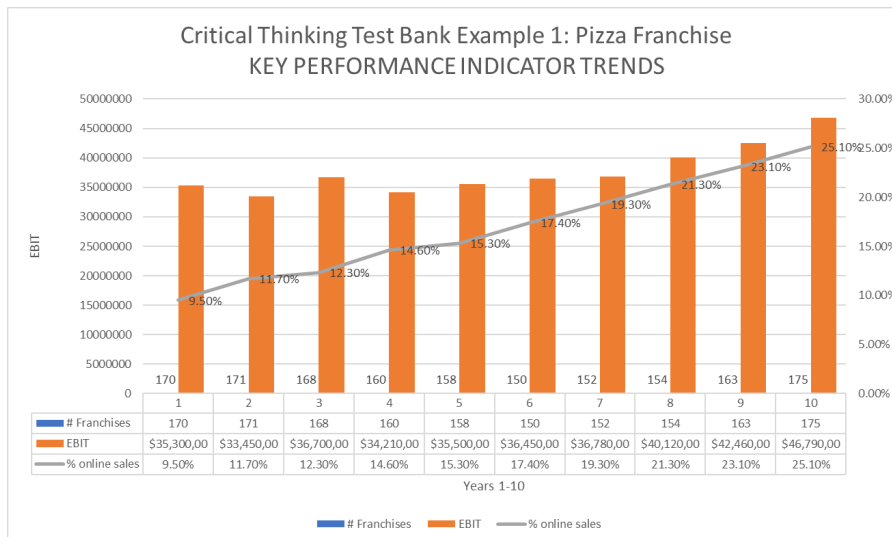
A bold recovery strategy was developed and implemented 6 years ago. The result was a steady improvement in individual franchise profitability and no further franchise closures over the first 2 years of implementation. Over

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the last 4 years healthy profits have been realized in 80% of franchise operations, 5 new franchises have been opened in the New England States, 4 in California and 1 in Seattle: the first franchise outside of the United States.

The key elements of the recovery strategy were:

- Standardizing 90% of the menu choices and including a few choices aligned with local preferences.
- Considerably improved variety and healthy menu choices.
- Substantially improved online or phone ordering and delivery services.
- Implementing a fresh marketing strategy which included a high-profile Hollywood actor to endorse the brand.
- Modifying restaurants to be a smaller size and refurbishing many of them.
- Take greater advantage of local tax incentive schemes.
- Overhaul employee hiring and training practices.
- A revised financial scorecard system.

Over the last 2-3 years most regions of the U.S. have experienced moderate economic growth with some areas experiencing strong growth.

Critical Thinking Test Bank Example 1: Pizza Franchise
KEY PERFORMANCE INDICATOR TRENDS

	1	2	3	4	5	6	7	8	9	10
# Franchises	170	171	168	160	158	150	152	154	163	175
EBIT	$35,300,00	$33,450,00	$36,700,00	$34,210,00	$35,500,00	$36,450,00	$36,780,00	$40,120,00	$42,460,00	$46,790,00
% online sales	9.50%	11.70%	12.30%	14.60%	15.30%	17.40%	19.30%	21.30%	23.10%	25.10%

Years 1-10

Franchises   EBIT   % online sales

The chart shows the period from 10 years ago until the present day in one-year increments. On the y-axis there are three sets of data.

The solid green line shows the total number of franchise operations. The trend is downwards until 6 years ago, then a flattening of the curve for 2 years and then incremental increases over the past 4 years. The current total number of franchises is 175.

The dotted brown line shows the average Earnings Before Interest and Taxes (EBIT) across all franchises. The line has been flat over the first 5 years and has increasingly slopped upwards over the past 4 years.

The dashed black line plots the percentage of sales from online or phone orders. The plot shows less than 10% of sales for the first 7 years and then a steady increase up to 25% currently.

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Sample Multiple-Choice Questions

1. What were the main factors identified as contributing to poor performance? **(Blooms I/II)**
   a. Appearance of stores, pizzas too expensive and softening of the economy
   b. Appearance of stores, location of franchises and pizzas too expensive
   c. Choice of pizzas, appearance of staff and location of franchises
   d. Choice of pizzas, appearance of stores and pizzas too expensive.
2. What best summarizes the features of the recovery strategy? **(Blooms III/IV)**
   a. Comprehensive and multi-dimensional.
   b. Each aspect directly aligned with one or more of the 3 primary causes of poor performance.
   c. Highly focused and innovative.
   d. Multi-dimensional, straight out of the textbook and each aspect directly aligned with one or more of the 3 primary causes of poor performance.
3. Of the various elements of the recovery strategy _____ and _____ are the most likely to provide synergistic benefits. **(Blooms V/VI)**
   a. Standardizing menu choices; improved variety and healthy menu choices
   b. taking greater advantage of local tax incentive schemes; a revised financial scorecard system
   c. considerably improved healthy menu choices; improving online or phone ordering and delivery
   d. modifying restaurants to be a smaller size and refurbishing many of them; taking greater advantage of local tax incentive schemes

Sample Short-Answer Questions

1. How did the leadership of Geovanni's Pizza House go about addressing poor performance? **(Blooms I/II)**
   - Model Response: The leadership conducted a comprehensive business review which identified primary and secondary reasons for poor performance. They then implemented a bold recovery strategy.
   - Key Concepts: business review; identified primary and secondary causes; recovery strategy
2. How successful was the recovery plan? **(Blooms III/IV)**
   - Model Response: The leadership of Geovanni's Pizza House would be pleased with the level of success. Indicators of success include improved profits in most franchises, the opening of new franchises including the first outside of the United States, no more franchise closures and return to "healthy" profitability for 80% of franchises. It is not possible to judge more specifically as targets are not provided for the key performance indicators.
   - Key Concepts: improved profits in most franchises; new franchises; first franchise outside of the United States; no more franchise closures; steady improvement; no performance targets
3. Why would leadership want to increase the % of sales from online or phone orders?
   - Model Response: Ordering online or by phone with and without delivery is now so common that many consumers expect this service. Because of this trend there is ready availability of low-cost delivery providers. In addition, improving this service enables cost effective entry to new markets.
   - Key Concepts: consumer trend/preferences; reduce cost operational costs; ability to cost effectively enter new markets; read availability of low-cost delivery providers

Response Distractors

Each of the multiple-choice questions has 4 possible responses and only one correct response. All responses must be plausible and not misleading. "All of the Above" (or similar) or "None of the Above" or "A & C" responses are not used.

All incorrect responses are assigned Response Distractors, which indicates why the learner may have selected the incorrect response. Response distractors include the following.

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- Fact-based error: Learner did not know the fact(s).
- Concept-based error: Learner misunderstood the concept.
- Conclusion-based error: Learner reached an incorrect conclusion.
- Interpretation-based error: Learner incorrectly interpreted the question.
- Calculation-based error: Learner made an error with a math-related calculation.

School officials will be able to see data related to response distractors after their learners have completed the

The Critical Thinking Assessment Rubric

Critical Thinking Sub-Criterion	Not Attempt	Unmet	Partially Met	Fully Met
Explanation of situation/issue/concepts/opinions. Clearly identifies the challenge and subsidiary, embedded, or implicit aspects of the situation/issue/concepts. Identifies important interrelationships.				
Selection and use of information to analyze situations/issues/concept/opinions. Demonstrates source evaluation skills. Examines evidence and questions accuracy and relevance of information and data. Recognizes bias. Incorporates supporting and/or related information and data from own experience and other sources.				
Incorporates understanding of context, assumptions and alternate perspectives. Analyzes the issue with a clear sense of scope, context, and diverse perspectives. Identifies influence of context. Questions assumptions, addressing any underlying ethical considerations.				
Effectively communicates own views/perspective/hypothesis. Appropriately identifies own position, drawing support from variety of experience and information. Clearly justifies own views while respecting alternate and/or integrating contrary interpretations. Qualifies own assertions. Hypothesis demonstrates sophisticated thought and evidence of reflection and self-assessment.				
Draws conclusions and understands related implications and consequences. Identifies and discusses conclusions, implications, and consequences. Considers context, assumptions, and evidence. Uncertainties and ambiguities are identified.				
Communicates effectively. Language clearly and effectively communicates ideas. May at times be nuanced and eloquent. Errors are minimal. Style is appropriate for the audience. Sequence of presentation reflects clear organization of ideas and smooth transitions between ideas. Demonstrates awareness of any ethical, legal or social issues/sensitivities related to communicating about the topics under discussion. Excellent grammar, punctuation and spelling.				

The Critical Thinking Assessment Key Terms

- Topic: An area of study. e.g., Accounting.
- Scenario: A 150 - 300-word narrative describing a plausible and relevant business situation that forms the basis for a set of questions asked of the students.
- Assessment Item: Refers to scenario and its corresponding set of questions.
- Response Distractor: A classification of common types of errors a student may make when answering multiple choice questions.
- Question Type: Two types of questions are used; Multiple Choice and Short Answer.
- Question Cognitive Level: The Bloom's cognitive thinking level that the question is designed to evaluate.

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