PEARSON

INTELLIGENT ESSAY ASSESSOR™ FREQUENTLY ASKED QUESTIONS

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Q: What is the Intelligent Essay Assessor™?
A: The Intelligent Essay Assessor (IEA) is a powerful internet-based service that has been proven to score written essays as accurately as trained human scorers. IEA scores essays based on content as well as on more mechanical aspects of writing, such as grammar and spelling.

Q: How does IEA work?
A: IEA uses the Knowledge Analysis Technologies™ (KAT) engine, a patented technology based on over twenty years of research and development. The KAT engine is based on Latent Semantic Analysis, a computational technique that provides a sophisticated analysis of text. It assesses the content of an essay by comparing it against a set of essays previously scored by expert human readers. IEA assigns a score to each essay based in part on the similarity of the content of the essay to the training set essays.

Q: What is the KAT™ engine?
A: The KAT engine evaluates the meaning of text by examining whole passages. The KAT engine is based on Pearson's unique implementation of Latent Semantic Analysis (LSA), an approach that infers semantic similarity of words and passages by analyzing large bodies of relevant text. LSA can then understand the meaning of text in much the same way as a human reader. More information on the KAT engine is available at http://www.pearsonkt.com/prodIEA.shtml.

Q: Does IEA use keywords in its evaluation?
A: A common misconception is that IEA scores by recognizing keywords. It does not. If two or more different terms accurately describe a concept, IEA will recognize either or both and score them equally as well. For example, IEA measures

"Understanding is very important when you read something you want to know about"

as very similar in meaning to

"Comprehending's essential"

even though the sentences share no words in common. A keyword based approach to similarity would find nothing in common between these two sentences.

Q: How is the computer trained to score student essays?
A: Partner companies wishing to offer an essay scoring service collect 100 - 200 student papers written in response to a given prompt. These papers are then scored by human graders and sent to Pearson, where the papers and their scores are used to train the computer to score new student essays in response to the prompt. The KAT engine learns to score the different score points based on the human scored papers. The engine can be trained to provide holistic as well as analytic or trait scores.

Q: How does the human scoring work?
A: Human graders assess a paper's overall quality using a specific rubric. For analytic scoring, they examine a paper for important traits. Each essay is scored by two graders for the holistic score and again by two graders for each of the analytic traits. If the two graders diverge by more than one point on any score, a third grader scores the paper to settle that discrepancy.

Q: How does the computer recognize a good essay?
A: The Intelligent Essay Assessor uses the KAT engine to assess the content of an essay, as well as more mechanical aspects of writing. When a student submits an essay for scoring, the system immediately measures the meaning of the essay. It then compares the essay to the training essays, looking for similarities, and assigns a holistic score in part by placing the essay in a category with the most similar training essays. Analytic scoring occurs in much the same way. For each trait, the system assesses that trait in the student essay, compares it to the training essays, and then categorizes the trait in question.

Q: How does IEA scoring compare to the way teachers grade writing?
A: IEA's approach mirrors the method by which teachers grade essays. For example, when teachers evaluate a student's essay, they look for characteristics that identify an essay as an A or C paper. Their expectations are likely based on their previous experience as a grader and on criteria for the assignment in question. In other words, teachers search for a match between the essay and the criteria for a particular grade or score. The Intelligent Essay Assessor is trained to mimic this process.

Q: How does IEA score essays with highly unusual writing styles?
A: An essay with a highly unique writing style or unusual construction may receive an advisory message along with a score. If an essay is off-topic, written in a language other than English, too brief or too repetitive, a written refusal to write, or otherwise incomprehensible, a student will receive an advisory and no score. These advisory messages ask the student to discuss the essay and all feedback with his or her teacher to ensure an appropriate evaluation of the writing.

Q: What research has been conducted on IEA?

A: Pearson has conducted extensive research on the reliability and validity of the Intelligent Essay Assessor. The correlation between IEA and human graders has been shown to be as high or higher than that between two independent human graders in dozens of studies with over 200 prompts of every type. The correlation and agreement rates of the scores produced by IEA are better the more expert and reliable the human scores. IEA's scores have been shown to reflect progress in writing skills and knowledge as a result of instruction much more sensitively than human scores.

For more information, please see the Reliability and Validity of the KAT™ Engine paper available on the Research page at http://www.pearsonkt.com.

Q: How long does it take to score an essay?

A: Most essays are scored within a few seconds. Keep in mind that a slow or busy Internet connection may cause it to take longer to receive the scores.

Q: What feedback do students receive?

A: Through our partners, students can receive a variety of feedback on their essays, such as a holistic score and analytic scores on six traits of writing. Students may also receive feedback on spelling, grammar and redundancy, as well as on the length of their essays. An example of student feedback is available at: http://www.pearsonkt.com/IEAFeedback.shtml.