

Resources for Utah Special Educators Making Learning Disabilities Qualification Decisions

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Introduction

For more than two decades, the Utah State Office of Education – Special Education Division (USOE-SPED) has provided Utah special educators with the Estimator software program. The program uses Utah’s formula to calculate if there is a severe discrepancy between the aptitude (IQ) and achievement scores of students suspected of having specific learning disabilities (LD). Originally, published in 1990, Estimator was offered as an aid to make calculating aptitude/achievement discrepancy easy. The severe discrepancy formula adopted by Utah was developed by a United States Department of Education, Special Education Programs Work Group On Measurement Issues in the Assessment of Learning Disabilities headed by Cecil Reynolds (Reynolds, 1984-85). The software was deemed necessary because the formula is lengthy and requires knowing the reliabilities of the aptitude and achievement tests administered as well as the correlation between the two tests at age level. Estimator users enter (1) the student’s date of birth, (2) the date of testing and (3) the aptitude and achievement scores attained by the student, into the program. The program then (1) calculates the student’s age at testing, (2) looks up the reliabilities, for that age level, of the tests administered and the correlation between the tests, (3) makes the severe discrepancy calculation, and (4) generates reports describing if the difference in the scores represents a severe discrepancy. The program saves users time and virtually eliminates the possibility of calculation errors.

Utah LD Test Selection Committee

Concurrent with the development of Estimator, the USOE-SPED established the Utah LD Test Selection Committee. This committee includes special educators, school psychologists, and speech-language pathologists as well as representatives from the USOE-SPED. Also, included are representatives of Effective Instructional Materials and Systems (EIMS). EIMS is a Utah company, with roots in Utah State University’s Special Education Department and Center for Persons with Disabilities, that programs and supports the Estimator program. The committee meets monthly to review tests and evaluate their appropriateness for inclusion in the Estimator

program. Based on these evaluations, recommendations are made to USOE-SPED, which makes the final decision on tests to be included in the program.

Email/Telephone Support and Training

The USOE-SPED also provides LEA special educators with email and telephone support for Estimator through EIMS. EIMS staff are available to answer questions and provide training relevant to Estimator and LD assessment. LEA personnel can access this support or request training by emailing Dick Baer at rd_baer@msn.com or calling (435) 757-7372.

A History of Improvements

Between 1990 and 2008 eleven versions of Estimator were published and distributed on disks to Utah special educators. Thus, a new version was published about every two years. Each version added tests recommended by the LD Test Selection Committee and removed tests that were outdated. Further, improvements were also made to the reports generated and other features of the program. Finally, changes were made to keep pace with changing federal regulations. For example, Reading Fluency was added as an LD achievement area when mandated by the reauthorization of the Individuals with Disabilities Education Act.

The cost of reproducing and distributing computer disks prohibited updating and publishing a new version of Estimator more often than about every two years. The biggest drawback here was the lag time, up to two years, to get a newly published test included in the program. This problem was solved in 2009 when Estimator went online.

Online Resources

Estimator can now be accessed over the Internet at <https://estimator.srionline.org/>. A major advantage to having the program online is that when a new test is published and approved it can be added to the program almost immediately, eliminating lengthy waiting periods. Also, additional resources have been added to the Estimator website to assist Utah special educators. Figure 1 presents a copy of the website home page.

Notice in Figure 1 that on the upper left side of the homepage is a series of underlined topics. Clicking on these provide links to helpful website resources.

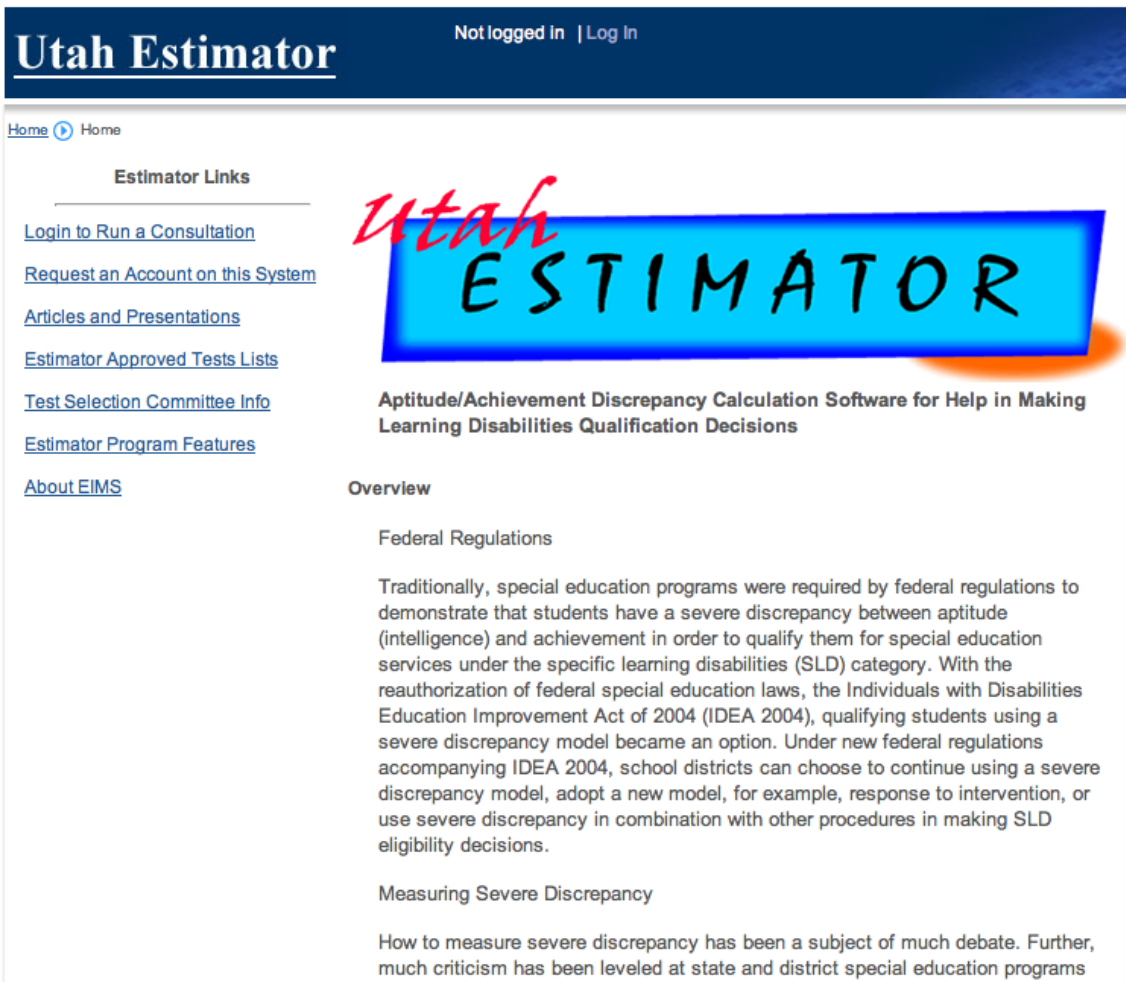


Figure 1. Estimator Utah Homepage

[Request an Account on this System](#)

Clicking on this button allows Utah special educators to set up an account so that they can use the online Estimator program. Once clicked, the program asks for information on the user including their email address. After the information is submitted, an email is generated and sent to the user. Clicking on the link in the email confirms the account and allows the user to access the online Estimator program.

To date more than 1300 people have set up online Estimator accounts. However, anecdotal evidence suggests many Utah special educators are using outdated disk-based programs, most likely, because they are unaware of the new online resources.

Login to Run a Consultation

Clicking on this button allows users who have established an account to access the Estimator program. Consultation reports, generated by the program, document severe discrepancy measurement results. These can be printed or saved as files to the user's computer.

Articles and Presentations

Clicking here presents a list of articles and presentations containing helpful information on the Estimator program and other aspects of LD assessment. Clicking on an article or presentation brings it up so it can be read, printed, or downloaded as a file. A number of articles are white papers on important assessment topics, such as why tests need to be periodically restandardized. USOE-SPED and the LD Test Selection Committee hope to expand this series of white papers and address assessment topics important to Utah special educators. Utah special educators wishing to have specific topics addressed are invited to contact Janet Gibbs at Janet.Gibbs@schools.utah.gov or 801 538-7716 or Dick Baer at rd_baer@msn.com or 435 575-7372.

Estimator Approved Tests Lists

Clicking here presents a list of all tests and scores included in the Estimator program. Users can also drill down by area to find a list of tests and scores for just aptitude tests or a particular LD achievement area, e.g. basic reading skills or listening comprehension.

All the scores from a test on Estimator may not be approved for all ages. This is usually because (1) the score was deemed not to be a good measure of aptitude or one of the specific LD achievement areas or (2) the standardization sample size or reliability of the score at the particular age level was low. Given this, it is wise for users to check in advance if the tests and scores they are considering using are included in the Estimator program. Similarly, LEA personnel ordering tests would be well advised to check the list before placing their orders.

Test Selection Committee Information

Click here to view a list of LD Test Selection Committee members and associates. There are also links to (1) the test rating procedures used by the committee (2) make a request that a test be reviewed, and (3) a list of tests considered by the committee but not approved. Finally, a list of minutes of committee meetings is included. Clicking on these allows the user to view the minutes of the meetings and follow the committee's discussion of the tests it reviews as well as other LD assessment matters.

Estimator Program Features

Clicking here brings up much of the information included in the old offline Estimator manuals. Topics covered include:

- History and Purpose
- Calculating with the Utah Discrepancy Formula (a detailed illustration of the calculations made by the program)
- Info Needed to Run the Program
- Output and Interpretation
- Sample Reports
- Recommended Procedures for Using Estimator.

About EIMS

Click here for a brief description of the EIMS staff and EIMS contact information.

Evaluation of Estimator

A consumer satisfaction survey is planned for the 2010-11 school year. Utah special educators will have the opportunity to recommend improvements they would like to see made to the online Estimator program and its support system. This will be important for continuing improvement of the Estimator products.

Technical Notes

Formula Change

Figure 2 presents the original severe discrepancy formula developed by the United States Department of Education, Special Education Programs Work Group On Measurement Issues in the Assessment of Learning Disabilities adopted by Utah.

$$z_{yx} = (z_x r_{xy}) - \left(\left(1.96 \sqrt{1 - r_{xy}^2} \right) - \left(1.65 \left(\left(\sqrt{1 - r_{xy}^2} \right) \left(\sqrt{1 - \frac{r_{yy} + (r_{xx} r_{xy}^2) - (2r_{xy}^2)}{1 - r_{xy}^2}} \right) \right) \right) \right)$$

Figure 2. Original Utah Severe Discrepancy Formula

In 1999, with the publication of Estimator: Version 7, the severe discrepancy formula was changed (see Figure 3). The original formula used a two-tailed test in calculating the probability that the difference in a student's aptitude and achievement scores was due to chance. Because in LD assessment one is only concerned with the case where achievement is below what would be predicted from

aptitude and not the case where achievement is above what would be predicted, the formula was changed to incorporate a one-tailed test. Also the original incorporated a non-standard correction for unreliability. The new formula incorporated a standard correction for unreliability from the statistical literature. Special educators lacking the background to completely understand these changes should not worry. They simply need to be aware that the new formula is considered to be mathematically more elegant and easier to defend as a method for measuring severe discrepancy.

$$z_{cut} = (z_x r_{xy}) - \left(1.4761 \sqrt{1 - \left(\frac{r_{xy}}{\sqrt{r_{xx}} \sqrt{r_{yy}}} \right)^2} \right)$$

Figure 3. Current Severe Discrepancy Formula

Cutoff Score

Both the original and current formulas use a student's aptitude score to predict what his/her achievement score should be. They then compare the predicted achievement score with the achievement score actually attained by the student and calculate the probability that the difference in scores could be due to chance. The original formula used a 95 percent cut off. That is, if the probability the difference in scores could occur by change was five percent or less, Estimator concluded there is a severe discrepancy. Under this rule, about six percent of Utah's school age population exhibited a severe discrepancy and met that criteria for LD qualification. When the formula change was suggested to USOE-SPED, the LD Test Selection Committee was told it was approved but that USOE-SPED did not want it to identify more or less students as having a severe discrepancy. In light of this, research was undertaken to determine what cutoff, under the new formula, would identify about six percent of the population as having a severe discrepancy. The research determined that 93 is the appropriate cutoff. Thus, the current Estimator program uses that cutoff.

References

Reynolds, C. R. (1984-85). Critical measurement issues in learning disabilities. *The Journal of Special Education*, 18 (4) 451-476.