

Relationship Between the ISAT and PSAE Scale Scores

In 2002 a study was conducted to examine the relationship between ISAT and PSAE. Many 11th-grade students who took PSAE in 2002 had participated in the first administration of ISAT tests of reading, mathematics, and writing in 1999 as eighth-graders. An analysis of the 1999 and 2002 data sets resulted in 72,664 matched records representing students from 793 grade 8 districts and 502 grade 11 districts. This was about half the number of students tested at grade 8 and two-thirds the number of students who took the PSAE. Within this sample the correlations between the two tests were .74 for reading and .84 for mathematics.

The 1999 and 2006 ISAT test blueprints are different. Some content categories for the 2006 blueprints were not represented in the pre-2006 tests and/or had a different relative emphasis in the earlier tests. On the assumption that the overall statistical relationships of the newer ISAT tests with the PSAE are roughly equivalent to the relationships of the older ISAT tests with the PSAE, then it is possible to generate equations and tables from which scores on the PSAE can be estimated from scale scores on the 2006 (and later) ISAT tests. The standard error of estimate is approximately 11 scale score points for reading and 8 points for mathematics.

Cross Validation Study

Data from 2003 (grade 8) and 2006 (grade 11) were used to check the accuracy of these predictions. An analysis of these data sets resulted in 78,713 matched records representing students from 776 grade 8 districts and 520 high school grade 11 districts. First, the grade 8 scores were transformed to the 2006 ISAT vertical scales using equations provided for doing so. Then, the transformed grade 8 scores were used in the equations provided below to predict PSAE reading and mathematics scores. Finally, the predicted and actual PSAE scores were compared.

Within this sample the correlations between the two tests (i.e., the cross-validation coefficients) were .76 for reading and .84 for mathematics. For both subjects about 95% of the actual scores were within \pm two standard errors of the predicted scores, and slightly more than half of the predicted scores were no more than 7 points different.

With respect to performance levels, the predicted classifications exactly matched the actual classifications three years later 62% of the time for reading and 70% for mathematics.

Equations for Estimating PSAE Scale Scores from Grade 8 ISAT Scale Scores

	Reading	Mathematics
<i>b</i>	0.510933	0.444254
<i>a</i>	31.252412	36.701185

Table for Estimating 2006 PSAE Scale Scores from 1999-2005 ISAT Scale Scores

ISAT Grade 8 Scale Score	PSAE Estimated Reading Score	PSAE Estimated Mathematics Score
120-174	120	120
174	120	120
175	121	120
176	121	120
177	122	120
178	122	120
179	123	120
180	123	120
181	124	120
182	124	120
183	125	120
184	125	120
185	126	120
186	126	120
187	127	120
188	127	120
189	128	121
190	128	121
191	129	122
192	129	122
193	130	122
194	130	123
195	131	123
196	131	124
197	132	124
198	132	125
199	133	125
200	133	126
201	134	126
202	134	126
203	135	127
204	135	127
205	136	128
206	137	128
207	137	129
208	138	129
209	138	130
210	139	130
211	139	130
212	140	131
213	140	131

ISAT Grade 8 Scale Score	PSAE Estimated Reading Score	PSAE Estimated Mathematics Score
214	141	132
215	141	132
216	142	133
217	142	133
218	143	134
219	143	134
220	144	134
221	144	135
222	145	135
223	145	136
224	146	136
225	146	137
226	147	137
227	147	138
228	148	138
229	148	138
230	149	139
231	149	139
232	150	140
233	150	140
234	151	141
235	151	141
236	152	142
237	152	142
238	153	142
239	153	143
240	154	143
241	154	144
242	155	144
243	155	145
244	156	145
245	156	146
246	157	146
247	157	146
248	158	147
249	158	147
250	159	148
251	159	148
252	160	149
253	161	149
254	161	150
255	162	150
256	162	150
257	163	151
258	163	151
259	164	152
260	164	152
261	165	153
262	165	153
263	166	154

ISAT Grade 8 Scale Score	PSAE Estimated Reading Score	PSAE Estimated Mathematics Score
264	166	154
265	167	154
266	167	155
267	168	155
268	168	156
269	169	156
270	169	157
271	170	157
272	170	158
273	171	158
274	171	158
275	172	159
276	172	159
277	173	160
278	173	160
279	174	161
280	174	161
281	175	162
282	175	162
283	176	162
284	176	163
285	177	163
286	177	164
287	178	164
288	178	165
289	179	165
290	179	166
291	180	166
292	180	166
293	181	167
294	181	167
295	182	168
296	182	168
297	183	169
298	184	169
299	184	170
300	185	170
301	185	170
302	186	171
303	186	171
304	187	172
305	187	172
306	188	173
307	188	173
308	189	174
309	189	174
310	190	174
311	190	175
312	191	175
313	191	176

ISAT Grade 8 Scale Score	PSAE Estimated Reading Score	PSAE Estimated Mathematics Score
314	192	176
315	192	177
316	193	177
317	193	178
318	194	178
319	194	178
320	195	179
321	195	179
322	196	180
323	196	180
324	197	181
325	197	181
326	198	182
327	198	182
328	199	182
329	199	183
330	200	183
331	200	184
332	200	184
333	200	185
334	200	185
335	200	186
336	200	186
337	200	186
338	200	187
339	200	187
340	200	188
341	200	188
342	200	189
343	200	189
344	200	190
345	200	190
346	200	190
347	200	191
348	200	191
349	200	192
350	200	192
351	200	193
352	200	193
353	200	194
354	200	194
355	200	194
356	200	195
357	200	195
358	200	196
359	200	196
360	200	197
361	200	197
362	200	198
363	200	198

ISAT Grade 8 Scale Score	PSAE Estimated Reading Score	PSAE Estimated Mathematics Score
364	200	198
365	200	199
366	200	199
367+	200	200