Members

Rep. Robert Behning, Co-Chairperson
Rep. Rhonda Rhoads
Rep. Lloyd Arnold
Rep. Woody Burton
Rep. Edward Clere
Rep. Dale DeVon
Rep. Todd Huston
Rep. James Lucas
Rep. Jeffrey Thompson
Rep. Vernon Smith
Rep. Kreg Battles
Rep. Sue Errington
Rep. Shelli VanDenburgh
Sen. Dennis Kruse, Co-Chairperson
Sen. Carlin Yoder
Sen. James Banks
Sen. James Buck
Sen. Luke Kenley
Sen. Jean Leising
Sen. Pete Miller
Sen. Scott Schneider
Sen. Earline Rogers
Sen. John Broden
Sen. Frank Mrvan
Sen. Greg Taylor

LSA Staff:

Irma Reinumagi, Attorney for the Commission
Allen Morford, Attorney for the Commission
Chuck Mayfield, Fiscal Analyst for the Commission
David Lusan, Fiscal Analyst for the Commission

Authority: IC 2-5-38.1-2

COMMISSION ON EDUCATION

Legislative Services Agency
200 West Washington Street, Suite 301
Indianapolis, Indiana 46204-2789
Tel: (317) 233-0696 Fax: (317) 232-2554

MEETING MINUTES[1]

Meeting Date:	**July 29, 2013**
Meeting Time:	**1:00 P.M.**
Meeting Place:	**State House, 200 W. Washington St., Senate Chamber**
Meeting City:	**Indianapolis, Indiana**
Meeting Number:	**2**

Members Present: **Rep. Robert Behning, Co-Chairperson; Rep. Rhonda Rhoads; Rep. Lloyd Arnold; Rep. Woody Burton; Rep. Edward Clere; Rep. Todd Huston; Rep. James Lucas; Rep. Jeffrey Thompson; Rep. Vernon Smith; Rep. Kreg Battles; Rep. Sue Errington; Sen. Dennis Kruse, Co-Chairperson; Sen. James Banks; Sen. James Buck; Sen. Luke Kenley; Sen. Jean Leising; Sen. Earline Rogers; Sen. Frank Mrvan.**

Members Absent: **Rep. Dale DeVon; Rep. Shelli VanDenburgh; Sen. Carlin Yoder; Sen. Pete Miller; Sen. Scott Schneider; Sen. John Broden; Sen. Greg Taylor.**

---

[1] These minutes, exhibits, and other materials referenced in the minutes can be viewed electronically at http://www.in.gov/legislative Hard copies can be obtained in the Legislative Information Center in Room 230 of the State House in Indianapolis, Indiana. Requests for hard copies may be mailed to the Legislative Information Center, Legislative Services Agency, West Washington Street, Indianapolis, IN 46204-2789. A fee of $0.15 per page and mailing costs will be charged for hard copies.

Co-Chairperson Kruse called the meeting to order at 1:05 p.m., and called upon the members of the Commission to introduce themselves. He then read a letter from Ellen Haley of CTB/ McGraw Hill (CTB), in which she stated that the company has no new data to submit to the Commission, as their study results concerning the ISTEP interruptions are not yet complete. She expects the study results will be finalized by the August 7 State Board of Education meeting. (The letter is attached as Exhibit A.)

State Superintendent of Public Instruction Glenda Ritz presented a timeline of the ISTEP interruptions in April and the response to the interruptions taken by the Indiana Department of Education (IDoE) (Exhibit B). IDoE contracted with Dr. Richard Hill of the National Center for the Improvement of Educational Assessment to conduct an independent analysis of the results of the interruptions.

Mr. Hill presented an overview of his analysis of ISTEP data (Exhibit C). (His full report is included as Exhibit D.) His analysis is that the net impact of the interruptions on student scores was negligible; however, individual student scores may have been adversely impacted. Further studies are being conducted to see whether students who have been adversely impacted can be identified. On the whole, school personnel and students coped successfully with the interruptions, which minimized the impact of the interruptions on scores.

Dr. Hill's report showed that over 90% of schools in Indiana had at least one student interrupted. Most interruptions occurred in the first two days of testing; since mathematics tests are administered first, more students were interrupted in the math tests. CTB was able to provide specific data concerning the interruptions, which allowed the study of the issue in great detail. Most mean scores have shown small but steady growth over the past several years, a trend that has not changed in the 2013 tests, except in grade 3 language arts (2013 was the first test administered after students who did not pass the IREAD assessment were retained in grade 3; thus, the testing pool was different from previous years). Dr. Hill continues to analyze data, and will review CTB's report.

Superintendent Ritz lauded the response of educators and school technology personnel to the interruptions, which minimized the impact on the students and the students' scores. She also stated that all student data will be reported for students completing the test; however, if any invalid scores are identified, the invalid scores will not count against a school for accountability participation, and local school corporations have been given the flexibility to minimize the effect of testing on teacher evaluations this year. Student reports are projected to be released by the end of August, and IDoE will be developing A - F scores for schools. In addition, negotiations continue with CTB regarding contract settlements for losses due to the interruptions.

No members of the public testified. The next meeting of the Commission will be held on August 16 at 1:00 p.m. The meeting was adjourned at 3:25 p.m.

Begin forwarded message:

From: "Haley, Ellen" <Ellen_Haley@ctb.com>
Date: July 26, 2013, 2:15:56 PM EDT
To: Robert Behning <robertbehning@gmail.com>, "S14@in.gov" <S14@in.gov>
Cc: "Carolyn Elliott (ctelliott@bosepublicaffairs.com)" <ctelliott@bosepublicaffairs.com>
Subject: July 29 Legislative Hearing

Senator Kruse and Representative Behning,

Thank you for inviting me to attend the next legislative hearing, scheduled for Monday, July 29. I very much appreciated the opportunity to attend the June 21 hearing – to describe the events of April 29 and April 30, to convey CTB's commitment to avoid a recurrence, to describe the actions we are taking as a result of the system interruptions, and to answer questions. I'd be happy to appear before the Committee again in the future, but I respectfully suggest that it would not be beneficial for me to attend the hearing on Monday since I don't have any new information to share yet.

My understanding is that on Monday, you primarily wanted to hear the results of our interruption data analyses. CTB's analyses are nearly complete; we've sent our first draft report to the IDOE, but we haven't had a chance to discuss it with them or the third party yet, who is reviewing our findings. As a result, our study isn't officially final yet – I expect that it will be complete by August 2, or early the following week, but it would be premature for me to share CTB's study results on Monday. If the third party's independent study is complete, perhaps that could be presented to the Committee, or in any case, you could get an update from the Superintendent on the status of all the studies.

COMMISSION ON EDUCATION
29 JULY 2013
EXHIBIT A

In terms of our contract, we are in discussions with the IDOE, but these discussions are ongoing and not yet finalized, so I am not in a position to share any information yet.

The Superintendent has asked me to attend the August 7 State Board meeting. I expect by that time the studies will have been finalized, reports delivery dates will likely be confirmed, and our contract discussions will have continued to make progress, such that if needed, I could update you that week or later in August about these items as well as the actions we are taking to ensure smooth online testing going forward. The top priority now, though, is getting reports from 2013 ISTEP+ testing to students, parents, teachers, and schools. I think it best for the IDOE to provide updates on this work in progress.

Thank you.

Sincerely,

Ellen

Ellen Haley
President
CTB/McGraw-Hill

The information contained in this message is intended only for the recipient, and may be a confidential attorney-client communication or may otherwise be privileged and confidential and protected from disclosure. If the reader of this message is not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, please be aware that any dissemination or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify us by replying to the message and deleting it from your computer. McGraw-Hill Education reserves the right, subject to applicable local law, to monitor, review and process the content of any electronic message or information sent to or from McGraw-Hill Education e-mail addresses without informing the sender or recipient of the message. By sending electronic message or information to McGraw-Hill Education e-mail addresses you, as the sender, are consenting to McGraw-Hill Education processing any of your personal data therein.

IMAGINING the possibilities. MAKING THEM HAPPEN.

Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

2012-2013 ISTEP+

Commission on Education
July 29, 2013

IMAGINING the possibilities. MAKING THEM HAPPEN.

Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

Timeline

April: 29th and 30th, testing interruptions occur. Supt. Ritz extends the testing window & asks schools to test at 50% of their normal testing load.

May: 3rd, Supt. Ritz conducts 3 conference calls with superintendents across the state to answer questions. On the 17th, testing concludes. On the 24th, the DOE provides schools with a list from CTB of 78,269 students CTB indicated had interruptions. The DOE also issues a request for qualifications to 3 national companies experienced in validating test results.

June: 6th, Supt. Ritz meets with NCIEA's founder, Dr. Hill, about reviewing the validity of ISTEP+ testing. On the 7th, schools throughout Indiana provide a list to the DOE of additional students who experienced testing interruptions.

For more detailed information, visit http://www.doe.in.gov/news/indiana-department-education-hires-third-party-validate-high-stakes-istep-data

IMAGINING the possibilities. MAKING THEM HAPPEN.

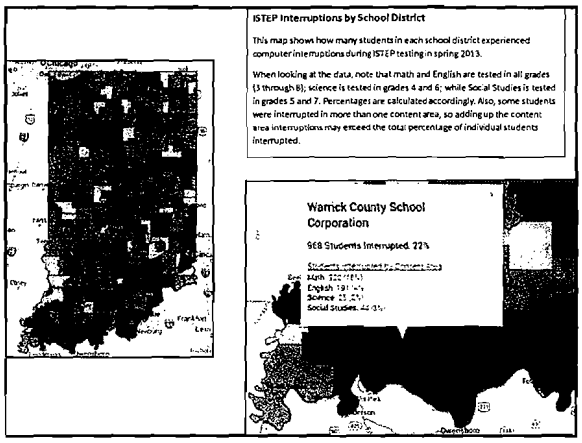
Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

The 2012-13 administration of the high stakes ISTEP+ assessment did not go as planned. The unacceptable widespread test interruptions caused variances in the administration of the test sessions for students (altered schedules, time on test, heightened levels of test anxiety,...).

482,000 students were administered the test online. Approximately 80,000 students were directly interrupted and an undetermined number of students were indirectly affected by the interruptions.

COMMISSION ON EDUCATION
29 JULY 2013
EXHIBIT AB



IMAGINING the possibilities. MAKING THEM HAPPEN.

Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

Dr. Richard Hill

National Center for the Improvement of Educational Assessment (NCIEA), Founder

IMAGINING the possibilities. MAKING THEM HAPPEN.

Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

Tribute to school educators and tech support & IDOE staff

The aggregate positive results of this year's ISTEP+ test indicates that educators were able to minimize the impact of the interruptions as they worked with students during this very stressful administration of the test.

IMAGINING the possibilities. MAKING THEM HAPPEN.

Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

We cannot know definitively how students would have scored this spring if the interruptions had not happened.

IMAGINING the possibilities. MAKING THEM HAPPEN.

Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

IDOE Policy & Guidance

- All student data will be reported for students completing the test
- If the DOE identifies any invalid student scores due to interruptions, these invalid scores will not count against a school for accountability participation
- Local school systems have been given flexibility to minimize the effect of testing this year on teacher evaluation

IMAGINING the possibilities. MAKING THEM HAPPEN.

Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

Next Steps

- Release of student reports (projected by the end of August)
- Compile and analyze data to calculate A-F accountability (Release 9-12 high school accountability grades first since ISTEP information is not needed)

IMAGINING the possibilities. MAKING THEM HAPPEN.

Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

Next Steps

- Continue negotiations with CTB McGraw-Hill regarding contract settlement
- Continue CTB McGraw-Hill's contract to administer 2013-14 ISTEP+ test with safeguards and assurances for proper administration of the test

IMAGINING the possibilities. MAKING THEM HAPPEN.

Indiana Department of Education

Glenda Ritz, NBCT
Indiana Superintendent of Public Instruction

Thank You

- Dr. Hill for his in-depth independent review
- Governor, State Board of Education, and members of the General Assembly for supporting the IDOE's efforts during this very difficult process
- School and IDOE staff for their dedication to Indiana's students
- Parents for supporting their children
- Students for persevering during a very stressful time of academic evaluation

Impact of Interruptions on 2013 ISTEP+ Test Scores

Dr. Richard Hill
Center for Assessment
July 29, 2013

Overall Statement

- There is no way to determine definitively how students would have scored without interruptions, either individually or in aggregate
- However, every analysis done suggests that the impact of the interruptions was negligible on test scores for the vast majority of students, and had no discernible effect on aggregated data

- That is not to say that the interruptions had no effect
  - May have had an effect on individual students and further studies are being done to see whether those students can be identified
  - The interruptions unquestionably had a marked effect on both students and school personnel, and took valuable time to overcome
- However, it appears as though the efforts of students and school personnel to cope with the interruptions were highly successful

COMMISSION ON EDUCATION
29 JULY 2013
EXHIBIT C

Description of the Interruptions

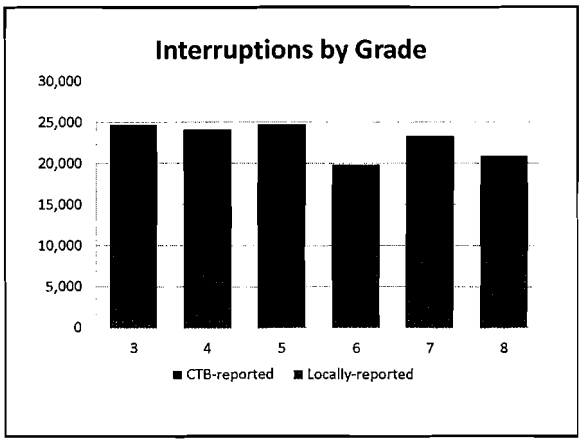
- About one-sixth of the population directly affected
- Widely distributed—90% of schools had at least one interrupted student
- Unknown number of indirectly affected students
  - Students who were not interrupted but in a class where other students were interrupted
  - Students who were interrupted in one test but still had other tests to take

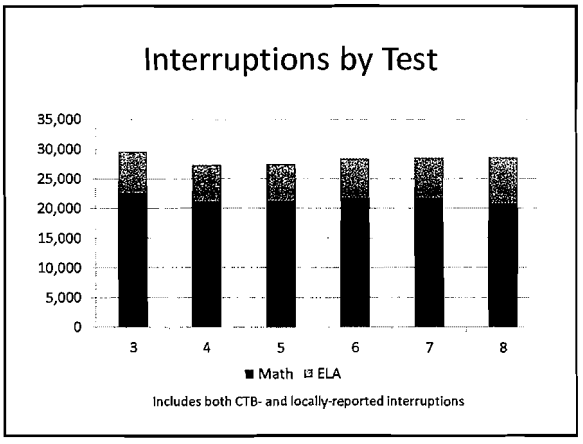
Background

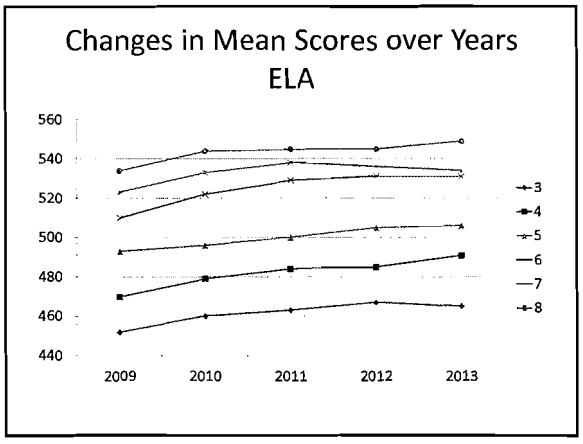
- Online testing for 95% of students
- Increase from 71% in 2012
- Servers overloaded
- Students interrupted mostly in first two days
- Since math is the first test taken, more students interrupted in math than other tests

Reported of Interruptions

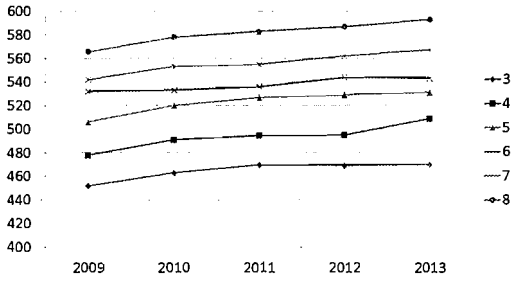
- Two sources
  - CTB has produced a detailed data base of the interruptions
  - A list of all CTB-identified students sent to districts so that they could append additional students not identified by CTB


Interruptions by Grade
30,000
25,000
20,000
15,000
10,000
5,000
0
3
4
5
6
7
8
CTB-reported
Locally-reported


Interruptions by Test
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
3
4
5
6
7
8
Math
ELA
Includes both CTB- and locally-reported interruptions


Changes in Mean Scores over Years
ELA
560
540
520
500
480
460
440
2009
2010
2011
2012
2013
3
4
5
6
7
8

Changes in Mean Scores over Years Mathematics



Additional Analyses

- School-by-school improvement at same grade between 2012 and 2013
- School-by-school gain, following same cohort of students across grades
- Student-level gain by students matched from 2012 to 2013

Results

- All analyses yield the same result—no consistent, discernible effect of interruptions

Conclusions

- Quality of CTB interruptions data allowed study of this issue in great detail
- The impact of interruptions on student scores was negligible for the vast majority of students
- Credit goes to students and school personnel for minimizing the impact of the interruptions on scores

An Analysis of the Impact of Interruptions on the 2013 Administration of the Indiana Statewide Testing for Educational Progress—Plus (ISTEP+)

Richard Hill
The National Center for the Improvement of Educational Assessment, Inc.
July 27, 2013

Background

The Indiana Statewide Testing for Educational Progress—Plus (ISTEP+) is Indiana's statewide testing program. Students in public and nonpublic schools in grades 3 through 8 take this test. There are substantial consequences for test results at all levels in the public schools, including teachers.

Indiana has been transitioning the administration of the test from paper-and-pencil to on-line testing since 2009. This past spring, approximately 95 percent of the students took the test on-line, an increase from 71 percent the previous year.

Testing began this year on Monday, April 29. Starting at about 10:30 that morning, students throughout Indiana experienced interruptions during their testing. It was quickly discovered that the interruptions were caused by a memory issue on the CTB/McGraw-Hill (CTB) servers. Because CTB's immediate efforts to resolve the situation were unsuccessful, their technology engineers worked to isolate the source of the issues and made necessary adjustments to return to normal status as soon as possible. Based on these interruptions, Indiana's Superintendent of Public Instruction Glenda Ritz extended the testing window by two days to May 14, 2013.

On the second day of testing, at around 11:15, a different memory issue on CTB/McGraw-Hill's servers caused additional widespread interruptions for Indiana students. Students again experienced the issues seen on April 29, but in greater volume. In response, CTB determined that the ISTEP+ Online system had to be "cut over" to the disaster recovery site. While the system remained accessible, this "cut over" caused interruptions for almost all students who were active in the system. Also, as the system was moved from the regular to the disaster recovery servers, not all of the student responses were immediately accessible to students when they logged back into that test session. All of the student responses had been saved, but they were not immediately available due to the system issues. Based on the severity of the interruptions and a recommendation from CTB, the State Superintendent requested that students should complete their current test session and then schools should suspend online testing for the rest of the day. Superintendent Ritz asked that schools reduce their online testing to 50 percent of their planned testing load for the following day. Also, Superintendent Ritz extended the online testing window three additional days, through May 17, 2013.

On May 1, online testing resumed at 50% of planned capacity. Students using CTB's system experienced no further widespread interruptions. As a precautionary measure, Superintendent Ritz asked schools to continue to reduce online testing to 50% of their planned testing load for the following day. On May 2, Superintendent Ritz once again asked schools to reduce online testing to 50% of their planned testing load for one more day as a precautionary measure. On May 3, Superintendent Ritz conducted three conference calls with Indiana superintendents. On May 6, she directed schools to resume online testing at 100% of their capacity. Online testing was completed on May 17.

COMMISSION ON EDUCATION
29 JULY 2013
EXHIBIT D

On May 24, the Department of Education provided schools with a list of students that CTB indicated had interrupted testing sessions. The Department gave that list to local schools so that they could check the list against their records and add any students they determined were impacted by the interruptions but missed by CTB.

On that same day, the Department also issued a request for qualifications to three national companies experienced in validating test results. From that process, the National Center for the Improvement of Educational Assessment was awarded a contract to investigate the impact the interruptions had on ISTEP+ test scores. This report is the outcome of that investigation.

Description of the Interruptions

There are two sources of data available about the interruptions. The first comes from the records of CTB. As students completed the test, data were captured about the timing of all events. As a result, the CTB data can, for example, tell how much time a student spent on the test before an interruption occurred, how many items were presented to the student before the interruption, and how long it was before the student answered another question. In addition to the CTB data, local school systems were provided with the opportunity to identify additional students who were interrupted—or affected by interruptions, in the judgment of the local person completing the form. These data were collected by providing local school systems a list of the students identified by CTB as having been interrupted and allowing them to append additional students to the file. In contrast to the detail of the CTB data, the local appends identified only the test (Mathematics, English/language arts {ELA}, science, social studies) for which a student had been affected.

Table 1 provides the number of interruptions, reported by grade, session and type of school, as identified by CTB. As can be seen from the data, there were significant numbers of interruptions at all grades, but grades 3-6 had a higher proportion of interruptions than grades 7 and 8. This may be simply a function of the time of day that testing started—it is reasonable to presume that students in grades 7 and 8 started testing earlier in the day than students at the lower grades, and therefore more students at those grades were finished before the interruptions started. It is also clear that the substantial majority of interruptions occurred during Sessions 1 and 2 (when students were taking the mathematics test) than during the later sessions. Of course, it is possible that a student who was interrupted during Session 1 was affected for the remainder of the testing—that is, we cannot assume because far fewer interruptions occurred during Sessions 3 and 4 (when students were taking the ELA test) that ELA scores were unaffected by the interruptions. Non-public school students had approximately the same proportion of interruptions as public school students, although this trend varied from grade to grade. Non-public school students make up about 7.5 percent of the tested population, and had slightly less than 8 percent of the interruptions, totaled across the grades. Their percentage ranged from a high of 12 percent at grade 7 down to 6 percent at grade 3.

Table 1

CTB-Reported Interruptions,
By Grade, Session and School Type

Grade	Type of School	Session						Total
		1	2	3	4	5	6	
3	Public	10,745	5,429	784	929	0	0	17,887
	Non-Public	522	421	131	46	0	0	1,120
4	Public	10,821	5,588	1,046	590	543	598	19,186
	Non-Public	510	607	102	67	16	37	1,339
5	Public	12,006	5,684	947	864	862	481	20,844
	Non-Public	1,019	321	49	110	17	15	1,531
6	Public	9,474	7,145	1,332	1,132	595	659	20,337
	Non-Public	735	738	169	59	55	43	1,799
7	Public	8,729	4,321	813	986	594	518	15,961
	Non-Public	1,315	711	111	86	26	16	2,265
8	Public	7,255	4,399	1,104	1,054	0	0	13,812
	Non-Public	571	474	90	163	0	0	1,298
Total	Public	59,030	32,566	6,026	5,555	2,594	2,256	108,027
	Non-Public	4,672	3,272	652	531	114	111	9,352
	Total	63,702	35,838	6,678	6,086	2,708	2,367	117,379

Once students were interrupted, there was a range of time before they restarted the test. Sometimes, the length of that delay was a function of the responsiveness of the system; at other times, it was due to a school decision to stop the administration for students for a period of time and have them restart the test at a later time. When students restarted, they sometimes had to redo the last item they had been working on before the interruption occurred, but for the vast majority of students, this was the extent of lost data. However, there were 600 students (440 in math and 160 in ELA) whose data was not "restored" when they logged back in. These students ended up with two sets of responses to their interrupted session and if any of their answers were different (and either one was correct), they were given credit for the correct answer.

In order to summarize the length of the interruptions, they have been categorized as follows:

1. Less than 2 minutes
2. 2 minutes or more, but less than 5 minutes
3. 5 minutes or more, but less than 15 minutes
4. 15 minutes or more, but less than one hour
5. One hour or more, but less than a day
6. One day or more

Table 2 provides the information about the length of delays using the above categorization scheme. For public school students, the most common delay was for a day or more, although that was less than a majority of the interruptions. For students delayed less than a day, the most common delay was for 5 minutes or more, but less than 15. Students in non-public schools had more of a tendency to restart the test the same day they were interrupted, with the most common delay being 5-15

minutes for them, too. A total of 734 observations (less than 1 percent) could not have their delay coded because their end-of-interruption time was not recorded on the interruptions file.

Table 2

CTB-Reported Interruptions,
By Length of Interruption

Grade	Type of School	Interruption Length Code						Total
		1	2	3	4	5	6	
3	Public	452	1,721	5,395	1,619	1,196	7,433	17,816
	Non-Public	53	129	437	62	76	343	1,100
4	Public	806	2,429	4,756	2,039	1,620	7,417	19,067
	Non-Public	123	251	369	101	88	399	1,331
5	Public	1,202	2,629	5,347	1,868	1,456	8,217	20,719
	Non-Public	113	261	522	117	134	367	1,514
6	Public	1,285	2,716	5,396	1,832	981	8,003	20,213
	Non-Public	224	272	600	147	111	436	1,790
7	Public	1,324	2,516	4,791	1,442	592	5,195	15,860
	Non-Public	273	303	727	328	67	549	2,247
8	Public	1,098	1,904	3,656	1,243	651	5,164	13,716
	Non-Public	106	227	388	151	114	286	1,272
Total	Public	6,167	13,915	29,341	10,043	6,496	41,429	107,391
	Non-Public	892	1,443	3,043	906	590	2,320	9,254
	Total	7,059	15,358	32,384	10,949	7,086	43,809	116,645

There were a total of 117,379 interruptions. Some students were interrupted more than once, and the data in Tables 1 and 2 are a duplicated count—that is, if students were interrupted more than once, they show up in those tables as many times as they had interruptions. Table 3 provides information about the numbers of times students were interrupted, and these are unduplicated counts. A total of 79,442 students were interrupted, which is about one-sixth of the total population. Earlier, we provided a caution that just because a student was interrupted while taking the mathematics test, one cannot assume that the interruption did not affect the student's performance on later sections of the test. Similarly, we caution here that just because a student was not reported as interrupted, that does not mean the student was unaffected by the interruptions. The interruption of one student in a room could conceivably have an effect on other students in that same room. Table 3 is a count of the numbers of students *directly* affected by the interruptions.

Table 3

CTB-Reported Interruptions,
By Numbers of Interruptions for Students

Grade	Type of School	Number of Interruptions						Total
		1	2	3	4	5	6 or more	
3	Public	9,132	2,844	665	156	46	32	12,875
	Non-Public	497	177	49	18	10	0	751
4	Public	9,155	2,543	1,056	260	80	51	13,145
	Non-Public	507	212	75	32	11	0	837
5	Public	9,179	2,985	1,164	366	85	47	13,826
	Non-Public	688	223	91	26	4	0	1,032
6	Public	8,607	2,845	998	467	153	66	13,136
	Non-Public	707	211	85	40	34	14	1,091
7	Public	7,913	2,133	751	223	86	32	11,138
	Non-Public	634	246	142	102	27	26	1,177
8	Public	6,904	1,802	617	214	72	36	9,645
	Non-Public	517	136	75	38	9	14	789
Total	Public	50,890	15,152	5,251	1,686	522	264	73,765
	Non-Public	3,550	1,205	517	256	95	54	5,677
	Total	54,440	16,357	5,768	1,942	617	318	79,442

The data in Table 4 includes both CTB- and locally-reported interruptions, and therefore is reported at a somewhat coarser level. For example, rather than specifying the session during which a student was interrupted, this table is limited to the test. (The mathematics test was administered in Sessions 1 and 2 and the ELA was administered in Sessions 3 and 4. For students in grades 4-7, there were two additional sessions, during which they took either social studies or science, depending on their grade.) Also, rather than reporting the number of interruptions, these data provide the number of tests for which students were interrupted (some students were interrupted more than once during a testing session, which would have been reflected in the previous tables, but is a level of detail that cannot be reported in Table 4).

Table 4

Numbers of Tests for Which Students Were Interrupted,
Combining CTB- and Locally-Reported Data

Grade	Type of School	Number of Interrupted Tests					Total
		0	1	2	3	4	
3	Public	54,001	18,887	4,204	296	269	77,657
	Non-Public	5,421	949	147	8	72	6,597
4	Public	50,059	18,240	1,825	2,588	223	72,935
	Non-Public	5,030	1,018	138	103	53	6,342
5	Public	51,520	18,454	1,951	2,919	186	75,030
	Non-Public	5,072	887	288	103	47	6,397
6	Public	55,737	17,069	2,333	3,169	279	73,687
	Non-Public	4,387	1,430	266	150	77	6,310
7	Public	56,054	16,907	1,582	2,800	286	77,629
	Non-Public	4,087	1,384	302	69	23	5,865
8	Public	57,086	14,946	4,050	253	198	76,533
	Non-Public	4,012	1,227	286	6	21	5,552
Total	Public	324,457	104,503	15,945	12,025	1,441	458,371
	Non-Public	28,009	6,895	1,427	439	293	37,063
	Total	352,466	111,398	17,372	12,464	1,734	495,434

From Table 3, we know that CTB identified interruptions for just short of 80,000 students. From Table 4, we see that that of the 495,434 students tested statewide across all grades, 352,466 had no tests interrupted—meaning 142,968 were reported as having at least one test interrupted when the locally-reported interruptions are added into the CTB-reported interruptions. Thus, we know that the locally-reported interruptions added about 60,000 students to the list. Combined across both data sets, approximately 29 percent of the students were identified as being directly affected by the interruptions. The number that were indirectly affected—that is, did not have an interruption in their own test, but had a disruption in their classroom that affected them—is unknown.

Some inconsistencies in Table 4 should be noted. For example, no student in grade 3 or grade 8 took more than two tests (those students are tested in mathematics and ELA only), and no student in any grade took more than 3 tests, so some locally-reported interruptions do not reflect the reality of the testing system. But those discrepancies are small compared to the general information, so it appears as though the vast majority of local school personnel completing the form did so accurately to the best of their ability.

Table 5 provides the counts from the CTB- and locally-reported data set on the number of students interrupted for each test.

Table 5

Numbers of Students Interrupted by Test,
Combining CTB- and Locally-Reported Data

Grade	Type of School	Test			
		Math	ELA	Science	Social Studies
3	Public	21,717	6,577	N/A	N/A
	Non-Public	1,029	368	N/A	N/A
4	Public	20,194	5,810	4,067	N/A
	Non-Public	1,138	392	220	N/A
5	Public	20,703	6,180	N/A	4,331
	Non-Public	1,159	529	N/A	219
6	Public	19,719	7,202	4,815	N/A
	Non-Public	1,695	609	323	N/A
7	Public	18,932	6,144	N/A	4,023
	Non-Public	1,635	450	N/A	173
8	Public	17,220	6612	N/A	N/A
	Non-Public	1,331	518	N/A	N/A

Table 5 provides some interesting information. For example, CTB had identified slightly over 12,000 students interrupted in math for grade 3; after adding in the locally-reported interruptions, the number is almost twice that. In addition, about 85 percent of the interruptions in the CTB file were during the math test, but that percentage is much lower in Table 5. While a strong majority of the interruptions are in math, the interruptions during the ELA test total about one-fourth of all the interruptions. A reasonable assumption is that school personnel did indeed frequently code students as being interrupted in ELA not because they were directly interrupted during that test, but because they felt interruptions occurring during the math test carried over to later tests.

While some of the data to be presented in this paper deals with student-level analyses, another portion will be looking at results aggregated to the school level. For the CTB-reported interruptions, 169 schools (out of 1,831—over 9 percent) had no interruptions for any students at any grade within the school. Half the schools had interruptions for 12 percent or fewer of their students, and only 10 percent of the schools had more than 37 percent of their students interrupted. The average percentage of interruptions for public schools was 16.5; for non-publics, the average was 14.3 percent. At first, it seemed as though it might be worthwhile looking at the schools with no interrupted students separately (as a baseline, since they had no interruptions). However, since these schools were disproportionately non-public (93 out of 169, or almost three-fourths) and tended to be considerably smaller than average (about half the number of students as an average school), they cannot be presumed to be representative of the state as a whole, and therefore that area of investigation was abandoned.

The correlations of percentage of students interrupted across grades within a school were modest. For public schools, the highest correlation was the percentage interrupted at grade 6 with the percentage interrupted at grade 7—0.25. Almost all of the remaining correlations were less than 0.20. This means that schools that had many interrupted students at one grade tended to not have as

high a percentage at other grades. The consequence of this is that whatever impact the interruptions might have had on student achievement would be somewhat diminished when results are aggregated across all grades in a school.

The Impact of Interruptions on Test Scores

It has been important to note the range and number of interruptions that occurred during ISTEP+ testing this past spring. The interruptions created a significant burden for students, teachers and administrators who had to deal with the issue and make their best efforts to get students' responses to reflect their real achievement levels. In this section, we will look at the extent to which their efforts were successful—did the interruptions have a negative impact on student achievement, or were schools able to get valid scores from students despite the obstacle that the interruptions provided?

We cannot know definitively how students would have scored this spring if the interruptions had not happened. However, we can look at historical information and determine whether the scores attained this spring were consistent with predictions we would have made from an historical perspective. We will look at four sources of data to inform these predictions:

1. The overall statewide results—that is, the change in statewide mean scaled scores between 2012 and 2013. If the interruptions this spring had a negative effect on student scores, we might expect statewide mean scaled scores this year to have declined from last year.
2. The improvement in school scores from 2012 to 2013, especially in comparison to the improvements shown by those schools from 2011 to 2012. Some school had no students with interruptions; others had a substantial majority. If the interruptions had a negative effect on student scores, we would expect the improvements to be better sustained in schools with lower percentages of interrupted students. This analysis holds grade within school constant, but looks at different cohorts of students (e.g., comparing grade 3 in 2012 to grade 3 in 2013).
3. The gain in school mean scores, following a cohort of students across grades within a school (e.g., looking at grade 3 in 2012 and grade 4 in 2013). Again, one would expect the gains to be higher in the schools with fewer interruptions.
4. Student-level data matched across years. Again, one would expect the students without interruptions to have the largest gains from year to year, and those with the most troublesome interruptions (early in the testing session, multiple times within session, longer delays during a session) to have smaller gains than all other students.

For the last two analyses, we will compare the changes from 2012 to 2013 with comparable data from 2011 to 2012. Since there were no interruptions in 2012, looking at the data from 2011 to 2012 in the same way as 2012 to 2013 provides a baseline of expectations. So, for example, we will be looking at the gains from 2011 to 2012 for the schools that had larger percentages of interruptions in 2013 to see how much they changed *the year before they were interrupted* and then comparing that to the change the year they were interrupted.

Overall Statewide Results

Table 6 provides an overview of the statewide results since the inception of ISTEP+ test in 2009. As can be seen from the table, the state enjoyed substantial gains from the first year to the second year of the program, which is not unusual—scores often change the most in the first years of a testing program as the schools adjust their curriculum to the new material being assessed.

The purpose of providing Table 6 is to set an historical context for the 2013 results. If the interruptions had a serious impact on student test scores, we could expect the 2013 scores, and in particular the gains from 2012 to 2013, to be out of line with changes from previous years. That did not happen. Averaged across the grades, the state increased by 4 scaled score points a year in mathematics between 2010 and 2012, and 3 scaled score points in English language arts. Between 2012 and 2013, the state increased by an average of 4 scaled score points in mathematics and 1 scaled score point in ELA.

Table 6

Mean ISTEP+ Scaled Scores for Public School Students, 2009 through 2013

Grade	Mathematics					English Language Arts				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
3	452	463	470	469	470	452	460	463	467	465
4	478	491	495	495	509	470	479	484	485	491
5	506	520	527	529	531	493	496	500	505	506
6	532	533	536	544	543	510	522	529	531	531
7	542	553	555	562	567	523	533	538	536	534
8	566	578	583	587	593	534	544	545	545	549

Scores increased from 2012 to 2013 in five grades in mathematics (the exception being a decrease of 1 point in grade 6) and in three grades in ELA. Scores increased more in mathematics than in ELA in five grades, which is an interesting result, given that the substantial majority of the interruptions occurred while students were taking the mathematics test. However, it is possible that the effect of the interruptions was cumulative—that is, once interruptions started happening, their impact grew as disruptions caused, for example, alterations in testing schedules. Combined with the fact that students completed some portion of the mathematics test before the interruptions started (and thus can be presumed to have some portion of the mathematics test reflect their full level of achievement), it is possible that some effect of the interruptions can be seen in this table. However, Indiana has seen greater gains in mathematics scores than ELA scores over the years, and therefore observing greater gains in mathematics is consistent with historical patterns.

Table 7 looks at the 2012 and 2013 results in a bit more detail. The substantial increase in scaled scores in both mathematics and ELA in grade 4, combined with the lack of improvement at grade 3 (indeed, a loss of 2 scaled score points in ELA) warranted a more careful look at what might have been the cause of those changes.

Table 7

Numbers of Students Tested and Mean Scaled Scores
On the ISTEP+ Test for 2012 and 2013

Grade	Mathematics					English Language Arts				
	2012		2013		Change	2012		2013		Change
	N	Mean	N	Mean		N	Mean	N	Mean	
3	74,283	469	76,410	470	+1	73,771	467	75,928	465	-2
4	74,133	495	71,755	509	+14	73,717	485	71,359	491	+6
5	77,150	529	73,719	531	+2	76,770	505	73,363	506	+1
6	75,587	544	77,012	543	-1	75,130	531	76,581	531	0
7	74,873	562	75,768	567	+5	74,396	536	75,372	534	-2
8	74,534	587	74,675	593	+6	74,099	545	74,307	549	+4

A clue as to what happened comes from looking at the changes in the numbers of students tested across years, following the same cohort. At every grade, the 2013 numbers are consistent with those of the previous year, except going from grade 3 in 2012 to grade 4 in 2013, where the number of students tested declined by over 2,000. An inquiry revealed that a new policy was put into place in 2013, whereby third-grade students who did not pass a reading test the previous spring or summer would continue to receive Grade 3 reading and literacy instruction, would receive additional interventions based on individual student learning needs, and would be officially reported as a third-grader the following school year (in this case, 2012-13). As a result of this policy, approximately 2,500 students who would have been tested in the fourth grade in previous years took the third grade test instead.

The following is a more detailed description of the policy, the implementation process, and the number of affected students.

> To implement IC 20-32-8.5 (Reading Deficiency Remediation Plan), the Indiana State Board of Education and the Indiana Department of Education enacted a new policy during the 2011-12 school year, whereby third-grade students that 1) did not achieve a passing score on the IREAD-3 assessment in either Spring 2012 or Summer 2012, and 2) were not eligible for good cause exemptions, were retained as third graders for the 2012-13 school year as a last resort.
>
> It is important to note that some of the retained students were actually placed in grade 4 classrooms for instruction, as it is the responsibility of the local school to design a program that meets the learning needs of students and to determine classroom assignments.
>
> In February 2013, Superintendent Ritz communicated to schools and corporations the flexibility that would exist during the spring of 2013 to provide the Grade 4 ISTEP+ test to any third grade student who met these criteria:
>
> 1) The student did not pass IREAD-3 in Spring or Summer 2012 or receive a Good Cause Exemption (and was thus reported as a third grader during the 2012-13 school year),

2) The student received fourth grade instruction in all content areas (including literacy) during the 2012-13 school year, ***and***

3) The student's parents understood that their child would be assessed using the Grade 4 ISTEP+ test.

Superintendent Ritz's memo to superintendents and principals outlining this flexibility emphasized that all students participating in the Grade 4 ISTEP+ test (including those students who met the above criteria) would factor into a school or corporation's accountability calculations for Grade 4. In total, schools and corporations exercised the option to administer the Grade 4 ISTEP+ test to nearly 250 Indiana third grade students in the spring of 2013.

Thus, there were approximately 2,500 students who are included in the grade 3 results for 2013 whose counterparts are missing from the 2012 results—and are *not* included in the grade 4 results for 2013. Since these are students who did not pass a grade 3 reading test in 2012, it is reasonable to presume that they would have been among the lowest scoring students in reading, and below average in mathematics. Removing those students from the fourth grade results and adding them into the third grade certainly raised the grade 4 2013 average, and may very well have lowered the grade 3 average as well.

To further investigate the issue, we looked at the numbers of students passing the ISTEP+ test in both years. If the increase in grade 4 scores was mostly due to the change in policy, we should see the numbers of students passing the test approximately equal across the years, but a sharp decline in the number of failing students. That is indeed what happened. The number of students passing the grade 4 ELA test remained almost identical across the years, but the number of "Did Not Pass" students declined by over 2,000. In mathematics, about 1,500 more students passed, but the number of "Did Not Pass" students declined by over 3,700. So it is reasonable to presume that if the new policy had not been in place, and those 2,500 students affected by it had been tested in the fourth grade rather than the third, the change in mean scaled scores would be modestly positive for ELA for both grade 3 and grade 4, and mathematics mean scaled scores would have increased by several points at both grades.

Another policy change that complicates the interpretation of the changes of scores from one year to the next is the change from paper-and-pencil to on-line administration of the test. Beginning with the 2009 administration of the ISTEP+ test, Indiana has been transitioning to online administration. The percentage of students taking the test online was quite small in 2009 and 2010, but it was 36 percent in 2011, 71 percent in 2012, and 95 percent in 2013. That rate of transition has not been constant across the grades, however. In 2012, 92 percent of the grade 8 students took the test online, while only 34 percent of the third graders did. The most typical pattern has been to transition one grade per year, and for the highest grades to start the transition first. As a result, grade 3 in the elementary grades had the largest percentage of students transitioning this year, and grade 6 in the middle school grades.

While studies done in previous years have shown that the impact of the transition on test scores has been minimal, those studies have been done on schools and grades that have been earlier adopters. The improvement in scores for the middle school grades was highest for grade 8, followed by grade 7 and grade 6 in that order—and that is the same order of percentage of online administration in 2012 (grade 8 was 92 percent, grade 7 was 86 percent, and grade 6 was 66 percent). As a result,

interpretation of the changes from 2012 to 2013 should not only take into account the interruptions but the change in mode of administration for many students.

The changes in scores from 2012 to 2013, once the changes in populations in grades 3 and 4 due to the new retention policy implemented this year are taken into account, are generally positive, and consistent with changes that Indiana has seen in the past. Thus, while it is possible that some small portion of students may have had the interruptions affect their scores, it appears that on average across the vast majority of students, student performance was as high as it would have been if the interruptions had not occurred.

The Improvement in School Scores

A second investigation into the impact of the interruptions on student scores is the look at the changes in test scores at the school level across years, holding grade constant—that is, for example, comparing how grade 3 in a school scored in 2013 to how the third graders in that same school scored in 2012. This statistic of cross-cohort change is generally referred to as "improvement" (in contrast to "growth," which refers to following the same cohort across grades).

For these analyses, we computed the percentage of students interrupted in each grade in each school in the state twice—once for the CTB-reported interruptions, and then again for the interruptions added by local school personnel. Table 8 provides the average percentages of students interrupted.

Table 8

School Mean Percentages of Students Interrupted

Grade	CTB-Reported Interruptions				All Reported Interruptions	
	Public		Non-Public		Public	Non-Public
	N	Mean %	N	Mean %	Mean %	Mean %
3	1,063	16	263	10	29	16
4	1,057	18	267	14	31	21
5	975	19	266	15	31	20
6	692	17	260	16	29	26
7	511	13	247	18	24	27
8	501	13	243	11	24	23

For the next analysis, also done grade by grade, public schools are grouped into three categories. The first group had no students interrupted at that grade; the second had some interrupted students, but less than 20 percent; and the third group had 20 percent or more students interrupted. Table 9 provides the changes in test scores from 2012 to 2013, holding grade constant, for the three groups of schools.

Table 9

Average Change in ISTEP+ Test School Mean Scaled Scores between 2012 and 2013, Reported by Percentage of Students Interrupted—Public Schools Only

Grade	Percentage of Interruptions	CTB-Reported Interruptions			All Reported Interruptions		
		Number of Schools	Average Change in Math	Average Change in ELA	Number of Schools	Average Change in Math	Average Change in ELA
3	None	265	3	-1	133	4	0
	0^+ - 20^-	489	1	-3	439	1	-2
	20% or more	290	2	-2	472	1	-2
4	None	238	13	5	138	10	3
	0^+ - 20^-	485	13	5	407	13	6
	20% or more	314	13	4	492	14	5
5	None	191	0	0	119	2	1
	0^+ - 20^-	448	0	1	375	-1	1
	20% or more	304	3	2	449	2	2
6	None	138	1	2	75	1	1
	0^+ - 20^-	332	-1	0	293	-1	1
	20% or more	192	-3	-1	294	-2	-1
7	None	74	6	0	50	9	3
	0^+ - 20^-	299	5	-2	248	5	-2
	20% or more	104	5	-2	179	5	-2
8	None	82	9	7	45	7	4
	0^+ - 20^-	281	6	3	252	6	4
	20% or more	113	7	4	179	8	5

If the interruptions had an impact on student test scores, the expectation for Table 9 would be that schools with no interruptions would show the most positive changes between 2012 and 2013, and that schools with greater rates of interruption would show less positive (or more negative) gains. An example of this expected pattern occurs in grade 6 mathematics, where the schools with no CTB-reported interruptions had a mean gain of 1 scaled score point, while those with up to 20 percent of their students interrupted had a mean loss of 1 point, and those with 20 percent or more of their students interrupted had a mean loss of 3 points. If that pattern had held up over the grades, it might be reasonable to presume that the interruptions had a small but measurable impact on test scores. However, the pattern varies from grade to grade and from content area to content area. The lack of a discernible pattern is true whether one looks at the CTB-reported interruptions only, or those combined with the school-reported interruptions. On average across the grades, the gap between the non-interrupted schools and those with interruptions is about 1 point—on a test where the student-level standard deviation is between 50 and 75 points, depending on the grade and subject.

The Gain in School Scores

In contrast to the previous analysis, this one looks at the gains in scaled scores of cohorts of students across grades. For this analysis, we need a baseline of growth expectations—that is, simply knowing

that students gained from one year to the next would be insufficient information, since most students grow from year to year. Therefore, we looked at the gains from 2011 to 2012 to use as a basis for comparing the growth from 2012 to 2013.

Schools are included in this analysis at a particular grade only if they also enrolled students the previous year at the lower grade. Thus, for example, if a middle school enrolls students in grades 6-8, that school would be included in this analysis at grades 7 and 8, but not grade 6. This is an issue that will be dealt with differently in the next analysis, where students will be matched from year to year regardless of their school in either year.

Tables 10a and 10b are identical to each other, except that Table 10a reports the results for schools broken down on the basis of the percentage of students interrupted as per the CTB-reported interruptions, whereas Table 10b includes all reported interruptions. The same scores for each school are used in both tables—the only difference between them is the categorization of the schools. Since the school-appended interruption files contain more records than the CTB interruption files, more schools are categorized in the third level of interruption, and fewer in the first level.

One interesting aspect to this analysis is that the schools are categorized by the percentage of students interrupted at the grade in 2013, but includes information on change from 2011 to 2012—*the year before the interruptions took place*. Given that the interruptions were broadly distributed across schools, we would expect no differences among the three groups within a grade. So, for example, all three groups of schools had approximately the same amount of gain from grade 3 in 2011 to grade 4 in 2012—about 25 points. However, there are differences in those baseline scores as large as 5 points among the groups (grade 6-7 math and grade 5-6 ELA) in Table 10a, and one as high as 9 points in Table 10b (grade 6-7 math), and these likely reflect the normal variation one might expect to find across scores from year to year with this limited number of schools in each group. Therefore, if we were to see a difference of this magnitude in the 2012 to 2013 gains, that difference might very well have been simply a reflection of this normal variation for that particular group.

But in fact, the differences between the groups tend to be smaller in 2013—when the interruptions happened—than they were in 2012—the year before the interruptions. Also, when one aggregates the data across grade levels and compares the average changes from 2011 to 2012 with the changes from 2012 to 2013, the results for all three categories of schools are almost identical, whether one uses the CTB-only data or the CTB data aggregated with the school-reported interruptions. The gains schools made in 2013 are not related to the amount of interruption their students endured. The schools with no interruptions did not have larger gains than schools that were interrupted, and schools with more moderate amounts of interruption did not have larger gains than schools with larger percentages of interrupted students.

Table 10a

Average Growth in ISTEP+ Test School Mean Scaled Scores between 2012 and 2013, Reported by Percentage of Students Interrupted—Public Schools Only
CTB-Reported Interruptions Only

		Number of Schools	Average Change in Math		Average Change in ELA	
			2011 to 2012	2012 to 2013	2011 to 2012	2012 to 2013
3-4	None	232	25	40	22	25
	0^+ - 20^-	470	26	40	22	23
	20% or more	300	26	39	23	22
4-5	None	177	36	34	22	19
	0^+ - 20^-	402	33	35	20	21
	20% or more	289	34	38	21	22
5-6	None	101	24	20	34	32
	0^+ - 20^-	213	23	20	29	28
	20% or more	132	20	18	28	25
6-7	None	47	22	22	7	10
	0^+ - 20^-	182	27	24	8	4
	20% or more	64	23	21	9	4
7-8	None	74	31	32	3	12
	0^+ - 20^-	270	32	32	7	13
	20% or more	109	31	32	6	12

interrupted multiple times during one session of the test and the specific session of the test when they were first interrupted.

Table 12 provides data from the interruption data provided by both CTB and local school personnel. Students were categorized as "None" if they were not interrupted in either the mathematics or the ELA test, "Math" if they were interrupted during the mathematics test, and "ELA" if they were not interrupted during the mathematics test but were first interrupted during the ELA test. If student test scores were impacted by the interruptions, we would expect the "ELA" and the "None" students to have the same gains on the mathematics test (since the "ELA" students weren't interrupted until after they had completed the mathematics test), but lower gains on the ELA test. In contrast, we would expect "Math" students to have lower gains than the other two groups on the mathematics test for sure, and possibly on the ELA test as well if we thought interruptions on one test would carry over to a later one.

Table 12

Average Growth in 2013 ISTEP+ Test Scaled Scores for Students Matched across Years, Reported by First Test during Which They Were Interrupted

Matched Grades	Test of First Interruption	Public			Non-public		
		N	Gain in Math	Gain in ELA	N	Gain in Math	Gain in ELA
3-4	None	47,862	36	21	4,710	28	14
	Math	19,049	35	20	1,088	37	19
	ELA	1,418	36	21	93	33	16
4-5	None	49,254	34	19	4,689	33	14
	Math	19,555	36	21	1,099	33	16
	ELA	1,576	35	21	139	29	6
5-6	None	52,860	14	27	4,051	13	27
	Math	18,702	14	26	1,638	15	28
	ELA	1,834	14	21	168	15	30
6-7	None	52,482	23	2	3,711	21	0
	Math	17,791	23	2	1,587	20	-3
	ELA	1,636	20	5	115	27	2
7-8	None	52,696	31	13	3,628	28	18
	Math	16,214	32	13	1,285	28	18
	ELA	1,966	30	12	204	23	11

The data do not support that interpretation. The public school students first interrupted during the math test had math and ELA gains that were not much different from the students who were never interrupted at all. Public school students who were first interrupted during the ELA test had ELA gains within one point of the students who were never interrupted, with the exceptions of grades 6 (where they had significantly lower gains) and grade 7 (where their gains were actually somewhat higher than the students who were never interrupted).

The results in Table 13 are calculated using the CTB-interrupted data for public school students only. The reports of interruptions by CTB have provided similar results to the total interruption reports for

all the other analyses in this report (with the exception of the number of students identified), but also provide a level of detail not available from the all-interruptions file. This table uses information about the specific session during which students were first interrupted (Sessions 1 and 2 were the mathematics sessions, Sessions 3 and 4 were the ELA sessions). In addition, we identified students who had been interrupted more than once during a session, anticipating that students who had encountered multiple interruptions might have lower gains than students who were just interrupted once (or were not interrupted at all).

Table 13

Gain Scores for Matched Students,
Reported by Type of Interruption
CTB-Reported Interruptions Only
Public School Students Only

Content Area	Grade	Not Interrupted	Any Interruption	First Session Interrupted				Multiple Interruptions within One Session
				1	2	3	4	
Math	3-4	36	36	37	35	30	36	37
	4-5	34	37	38	35	31	37	37
	5-6	14	15	16	14	14	11	16
	6-7	22	23	24	21	21	18	24
	7-8	31	32	33	31	32	27	32
ELA	3-4	21	20	20	20	19	21	20
	4-5	20	21	21	23	23	22	21
	5-6	27	25	27	24	18	24	27
	6-7	2	3	3	1	7	3	2
	7-8	13	13	14	12	11	12	14

Consistent with the findings reported earlier, Table 13 shows that students who were interrupted scored at about the same level, and often slightly higher, than the students who were not interrupted at all. And contrary to expectations, students who were interrupted multiple times within a session gained as many points as students who were not interrupted at all. But perhaps the most interesting finding from Table 13 is that the group with the lowest gains for mathematics was always one that was interrupted first in Session 3 or Session 4—sessions that were taken after they had completed the mathematics test.

Summary

There is considerable evidence that the interruptions had no negative impact on student scores for the vast majority of students; indeed, students who were interrupted had somewhat larger gains across years than those who were not interrupted. Given the volume and the nature of the interruptions, this finding certainly will come as a surprise to many. One possible explanation that might be offered is that the interruptions affected students who were not identified as interrupted—that is, students in a class for which some, but not all, were interrupted might have all been affected by the interruptions. However, that explanation does not seem plausible, since the state as a whole performed better in 2013 than it had in 2012. If large numbers of students—numbers beyond the 20-25 percent who

were identified as having been interrupted—had been affected, it does not seem possible that the state could have experienced these increases.

Although no data were collected that would confirm this hypothesis, it seems most plausible that the response to the interruptions, by both students and school personnel, was enough to overcome the potential problems created by the interruptions. Students apparently worked as diligently on the tests as they would have if they hadn't been interrupted, and school personnel apparently minimized the impact of the interruptions on students' testing experiences. Thus, while it certainly took significantly more effort to complete the testing this year because of the interruptions, that effort apparently was successful at negating the impact of the interruptions for the vast majority of students.

There were three major events that could have potentially impacted test scores this year:

1. The new policy to retain students in grade 3 because of unsatisfactory scores on the IREAD test.
2. The switch from paper-and-pencil to online administration for many schools.
3. The interruptions affecting the online administration

Clearly, the policy to retain students in grade 3 had an impact on changes to the grade 3 and grade 4 scores between 2012 and 2013. The switch from paper-and-pencil to online administration has not had much of an impact on scores in previous years, but the impact might have been more this year as the last grades within school made that transition.

It is important to note that this paper addresses only the larger issue of the impact of the interruptions when aggregated over large numbers of students. When viewed from a high level, no consistent impact on test scores from the interruptions could be seen. However, this is not the same as saying no student in the state was affected. It certainly is possible that some students were affected; if so, those occurrences were overshadowed by the lack of impact on the vast majority of students. The interruptions data from CTB would permit a study of specific interruption patterns that might indeed permit one to identify students who likely were impacted by the interruptions. Indeed, CTB has proposed some patterns in the data that will be pursued during the next phase of this study, and it is possible that some students will then be identified as having been affected by the interruptions. If so, that will be important information to take into account during reporting.

As noted earlier in this report, we cannot know definitively how students would have scored this spring if the interruptions had not happened. In addition, the interruptions were not the only element that changed in the test administration this year, thereby adding a level of uncertainty as to the root cause of changes when they occurred. However, the data strongly suggest, that the vast majority of students scored as well as they would have had the interruptions never happened.