

**Descriptive Statistics From Selected EMC Project Data**

**December 2014**

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**Descriptive Statistics From Selected EMC Project Data**

**Brandie Ward**

**December 2014**

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For questions about this report, please contact the Examining Mathematics Coaching Project

at *emc@math.montana.edu.*

**Descriptive Statistics From Selected EMC Project Data**

In July 2014, descriptive analyses were conducted on the five years of data collected from the CRI, TRI, ITC-COP, and Teacher Survey. (See “Construct Reliability and Validity of Selected EMC Instrumentation,” 2010, by Yopp, Burroughs, Sutton, Swackhamer, & Greenwood, for a description of EMC Project instruments.) The analyses were based on those conducted in January/February 2014 and were updated to reflect the fifth administration of instruments. The CKS analyses remains unchanged since all CKS data had been collected at that time.

**Analysis of the CRI and TRI**

**What does the frequency of holding pre-conferences, lesson observations, and post-conferences look like over time, and after completing coaching PD?** Teacher level responses from the coaches on the CRI (variables CRI\_Interact\_4, CRI\_Interact\_5, CRI\_Interact\_6) were aggregated for each coach and computed in a way to allow for comparing coaches who have different numbers of teachers (ranging from 1-3). Ratings of Never, Less than half the time, Half the time, More than half the time, and Always were coded as 1, 2, 3, 4, and 5, respectively, and were summed across each coach’s teachers and divided by the number of teachers to create the aggregate rating for each coach. Analysis was restricted to coaches who completed all five administrations of the CRI, but includes all of their teachers each year. The series of histograms presented below, disaggregated by PD Group 1 and PD Group 2, display the frequency with which coaches held each component of the coaching session before and after completing the coaching PD.

Exhibit 1 shows that the number of coaches in PD Group 1 reporting holding a pre-lesson conference between more than half the time and always decreased slightly each year. The number of teachers reporting never holding a pre-lesson conference was greatest in Years 4 and 5, after coaches received coaching PD.

**Exhibit 1. PD Group 1: When coaching the teacher, how often do you hold a pre-lesson conference?** (CRI\_Interact\_4)

|  |  |
| --- | --- |
| **Year 1 – Before PD** | **Year 2 – Before PD** |
|  |  |
| **Year 3 – Before PD** | **Year 4 – After PD** |
|  |  |
| **Year 5 – After PD** | |
|  | |
| *Note*. Unit of analysis is at the coach level. Responses were rated on a 5-point scale where 1 = Never; 2 = Less than half the time, but sometimes;  3 = Half the time; 4 = More than half the time, but not always; 5 = Always. | |

PD Group 2 showed a similar trend in their frequency of holding a pre-conference. As Exhibit 2 shows, the number of coaches reporting holding pre-conferences most of the time to always slightly decreased over time.

**Exhibit 2. PD Group 2: When coaching the teacher, how often do you hold a pre-conference?** (CRI\_Interact\_4)

|  |  |
| --- | --- |
| **Year 1 – Before PD** | **Year 2 – Before PD** |
|  |  |
| **Year 3 – After PD** | **Year 4 – After PD** |
|  |  |
| **Year 5 – After PD** | |
|  | |
| *Note*. Unit of analysis is at the coach level. Responses were rated on a 5-point scale where 1 = Never; 2 = Less than half the time, but sometimes;  3 = Half the time; 4 = More than half the time, but not always; 5 = Always. | |

Exhibit 3 shows that fewer PD Group 1 coaches reported always observing a lesson in Years 4 and 5 after receiving coaching PD, and the number of coaches never observing a lesson increased in Year 5.

**Exhibit 3. PD Group 1: When coaching the teacher, how often do you observe a lesson?** (CRI\_Interact\_5)

|  |  |
| --- | --- |
| **Year 1 – Before PD** | **Year 2 – Before PD** |
|  |  |
| **Year 3 – Before PD** | **Year 4 – After PD** |
|  |  |
| **Year 5 – After PD** | |
|  | |
| *Note*. Unit of analysis is at the coach level. Responses were rated on a 5-point scale where 1 = Never; 2 = Less than half the time, but sometimes;  3 = Half the time; 4 = More than half the time, but not always; 5 = Always. | |

PD Group 2, however, showed a spike after coaching PD in the number of coaches reporting they always observe a lesson, as shown in Exhibit 4. However, this increase was not sustained into Year 5.

**Exhibit 4.** **PD Group 2: When coaching the teacher, how often do you observe a lesson?** (CRI\_Interact\_5)

|  |  |
| --- | --- |
| **Year 1 – Before PD** | **Year 2 – Before PD** |
|  |  |
| **Year 3 – After PD** | **Year 4 – After PD** |
|  |  |
| **Year 5 – After PD** | |
|  | |
| *Note*. Unit of analysis is at the coach level. Responses were rated on a 5-point scale where 1 = Never; 2 = Less than half the time, but sometimes;  3 = Half the time; 4 = More than half the time, but not always; 5 = Always. | |

As with the other components of a coaching session, Exhibit 5 shows that PD Group 1 decreased slightly over time in the number of coaches indicating they hold a post-lesson conference most of the time or always. After receiving coaching PD, five coaches said they never held a post-lesson conference in Year 4 and seven reported never in Year 5.

**Exhibit 5. PD Group 1: When coaching the teacher, how often do you hold a post-lesson conference?**

(CRI\_Interact\_6)

|  |  |
| --- | --- |
| **Year 1 – Before PD** | **Year 2 – Before PD** |
|  |  |
| **Year 3 – Before PD** | **Year 4 – After PD** |
|  |  |
| **Year 5 – After PD** | |
|  | |
| *Note*. Unit of analysis is at the coach level. Responses were rated on a 5-point scale where 1 = Never; 2 = Less than half the time, but sometimes;  3 = Half the time; 4 = More than half the time, but not always; 5 = Always. | |

Exhibit 6 shows that PD Group 2 also had a decrease in the frequency of coaches holding a post-lesson conference most of the time or always.

**Exhibit 6. PD Group 2: When coaching the teacher, how often do you hold a post-lesson conference?** (CRI\_Interact\_6)

|  |  |
| --- | --- |
| **Year 1 – Before PD** | **Year 2 – Before PD** |
|  |  |
| **Year 3 – After PD** | **Year 4 – After PD** |
|  |  |
| **Year 5 – After PD** | |
|  | |
| *Note*. Unit of analysis is at the coach level. Responses were rated on a 5-point scale where 1 = Never; 2 = Less than half the time, but sometimes;  3 = Half the time; 4 = More than half the time, but not always; 5 = Always. | |

**How well do teacher and coach reports of coaching sessions match?** The following contingency tables (Exhibits 7 through 46) compare the agreement of teacher and coach reports of their coaching sessions, and display the results by year for each of the eight questions asked about the overall coaching sessions that year.

**Year 1**

**Exhibit 7. Year 1: How Many Times Coached in Mathematics? (*N* = 173 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **7** | **8** | **9** | **10** | **11** | **12** | **15** | **18** | **30** | **Total** |
| **0** | 6 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **12** |
| **1** | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| **2** | 2 | 10 | 13 | 8 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **36** |
| **3** | 2 | 5 | 9 | 11 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **36** |
| **4** | 2 | 3 | 4 | 26 | 28 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | **70** |
| **5** | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **4** |
| **6** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **7** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **8** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **3** |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **10** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | **2** |
| **20** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **Total** | **13** | **25** | **29** | **50** | **37** | **7** | **2** | **1** | **2** | **2** | **1** | **1** | **1** | **1** | **1** | **173** |

**Exhibit 8. Year 1: How Many Sessions Followed the EMC Model? (*N* = 173 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **9** | **11** | **20** | **Total** |
| **0** | 14 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **17** |
| **1** | 1 | 4 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | **11** |
| **2** | 5 | 11 | 15 | 9 | 1 | 0 | 1 | 0 | 0 | 0 | **42** |
| **3** | 1 | 2 | 10 | 12 | 7 | 0 | 0 | 0 | 0 | 0 | **32** |
| **4** | 4 | 5 | 4 | 22 | 27 | 4 | 0 | 0 | 0 | 1 | **67** |
| **5** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **1** |
| **11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | **2** |
| **Total** | **25** | **25** | **32** | **46** | **36** | **4** | **1** | **2** | **1** | **1** | **173** |

**Exhibit 9. Year 1: How Many Sessions Involved Lessons in Number Sense and Operations? (*N* = 173 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **18** | **Total** |
| **0** | 18 | 5 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **28** |
| **1** | 2 | 6 | 3 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | **20** |
| **2** | 10 | 14 | 15 | 9 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | **53** |
| **3** | 3 | 7 | 7 | 10 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | **36** |
| **4** | 5 | 3 | 3 | 11 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | **28** |
| **5** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **2** |
| **6** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **7** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **8** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **2** |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **1** |
| **10** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **Total** | **38** | **36** | **31** | **41** | **16** | **5** | **1** | **1** | **2** | **1** | **1** | **173** |

**Exhibit 10. Year 1: How Many Times Were You Coached/**

**Coach in a Subject Outside of Mathematics? (*N* = 173 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **8** | **10** | **Total** |
| **0** | 102 | 8 | 4 | 3 | 1 | 2 | 1 | 0 | **121** |
| **1** | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| **2** | 10 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | **16** |
| **3** | 3 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | **9** |
| **4** | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | **7** |
| **5** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **3** |
| **6** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **2** |
| **7** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **8** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **1** |
| **10** | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | **4** |
| **20** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **Total** | **131** | **16** | **12** | **6** | **2** | **3** | **2** | **1** | **173** |

**Exhibit 11. Year 1: How Often Did Your Coaching Sessions Include a Pre-Conference? (*N* = 173 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 10 | 0 | 1 | 0 | 1 | **12** |
| **Less than Half the Time, but Sometimes** | 6 | 4 | 1 | 0 | 4 | **15** |
| **Half the Time** | 0 | 1 | 0 | 2 | 5 | **8** |
| **More than Half the Time, But Not Always** | 1 | 10 | 4 | 3 | 22 | **40** |
| **Always** | 6 | 3 | 6 | 9 | 74 | **98** |
| **Total** | **23** | **18** | **12** | **14** | **106** | **173** |

**Exhibit 12. Year 1: How Often Did Your Coaching Sessions Include a Lesson Observation? (*N* = 173 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 6 | 1 | 1 | 0 | 0 | **8** |
| **Less than Half the Time, but Sometimes** | 5 | 1 | 3 | 2 | 5 | **16** |
| **Half the Time** | 5 | 0 | 2 | 1 | 8 | **16** |
| **More than Half the Time, But Not Always** | 2 | 5 | 2 | 2 | 15 | **26** |
| **Always** | 2 | 0 | 5 | 2 | 98 | **107** |
| **Total** | **20** | **7** | **13** | **7** | **126** | **173** |

**Exhibit 13. Year 1: How Often Did Your Coaching Sessions Include a Post-Conference? (*N* = 173 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 7 | 1 | 3 | 0 | 0 | **11** |
| **Less than Half the Time, but Sometimes** | 7 | 0 | 1 | 0 | 4 | **12** |
| **Half the Time** | 1 | 0 | 0 | 1 | 2 | **4** |
| **More than Half the Time, But Not Always** | 3 | 4 | 2 | 4 | 24 | **37** |
| **Always** | 5 | 2 | 8 | 8 | 86 | **109** |
| **Total** | **23** | **7** | **14** | **13** | **116** | **173** |

**Exhibit 14. Year 1: How Many Times Coach Modeled a Lesson/Taught a Lesson? (*N* = 173 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Once** | **Twice** | **Three Times** | **More than Three** | **Total** |
| **Never** | 86 | 14 | 5 | 2 | 2 | **109** |
| **Once** | 13 | 11 | 4 | 1 | 2 | **31** |
| **Twice** | 1 | 6 | 8 | 2 | 2 | **19** |
| **Three Times** | 3 | 2 | 0 | 1 | 1 | **7** |
| **More than Three** | 1 | 1 | 1 | 1 | 3 | **7** |
| **Total** | **104** | **34** | **18** | **7** | **10** | **173** |

**Year 2**

**Exhibit 15. Year 2: How Many Times Coached in Mathematics? (*N* = 162 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **12** | **15** | **20** | **25** | **40** | **Total** |
| **0** | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **8** |
| **1** | 0 | 2 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| **2** | 4 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |
| **3** | 0 | 3 | 3 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **14** |
| **4** | 0 | 1 | 0 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **10** |
| **5** | 0 | 2 | 0 | 3 | 1 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **13** |
| **6** | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **10** |
| **7** | 0 | 2 | 1 | 3 | 3 | 0 | 7 | 1 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | **26** |
| **8** | 0 | 2 | 0 | 1 | 4 | 1 | 5 | 2 | 16 | 8 | 1 | 0 | 0 | 0 | 1 | 0 | **41** |
| **9** | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | **9** |
| **10** | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | **6** |
| **11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **2** |
| **12** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **17** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **60** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** |
| **240** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **Total** | **10** | **18** | **11** | **16** | **15** | **12** | **20** | **5** | **29** | **13** | **7** | **1** | **1** | **1** | **2** | **1** | **162** |

**Exhibit 16. Year 1: How Many Sessions Followed the EMC Model? (*N* = 162 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **15** | **20** | **25** | **Total** |
| **0** | 7 | 5 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **17** |
| **1** | 5 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |
| **2** | 3 | 1 | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **13** |
| **3** | 0 | 1 | 4 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **12** |
| **4** | 0 | 1 | 1 | 4 | 4 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | **14** |
| **5** | 0 | 0 | 1 | 3 | 3 | 4 | 4 | 2 | 3 | 2 | 0 | 0 | 0 | 0 | **22** |
| **6** | 3 | 0 | 1 | 1 | 4 | 1 | 4 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | **20** |
| **7** | 0 | 2 | 1 | 3 | 2 | 2 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | **16** |
| **8** | 3 | 0 | 0 | 1 | 2 | 1 | 3 | 0 | 14 | 6 | 2 | 1 | 0 | 1 | **34** |
| **9** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **2** |
| **10** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **13** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **1** |
| **40** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **1** |
| **Total** | **21** | **13** | **14** | **21** | **17** | **13** | **17** | **6** | **23** | **12** | **2** | **1** | **1** | **1** | **162** |

**Exhibit 17. Year 2: How Many Sessions Involved Lessons in Number Sense and Operations? (*N* = 162 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **15** | **16** | **40** | **Total** |
| **0** | 5 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **13** |
| **1** | 6 | 3 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **14** |
| **2** | 2 | 1 | 1 | 3 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **12** |
| **3** | 2 | 5 | 4 | 1 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **18** |
| **4** | 2 | 3 | 4 | 3 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | **17** |
| **5** | 0 | 1 | 5 | 3 | 3 | 5 | 5 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | **25** |
| **6** | 2 | 0 | 1 | 0 | 4 | 3 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | **19** |
| **7** | 0 | 1 | 4 | 2 | 2 | 4 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | **19** |
| **8** | 1 | 1 | 3 | 1 | 3 | 3 | 2 | 4 | 0 | 0 | 1 | 0 | 1 | 0 | **20** |
| **9** | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **3** |
| **20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** |
| **21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **1** |
| **Total** | **20** | **21** | **27** | **13** | **22** | **18** | **19** | **9** | **5** | **3** | **2** | **1** | **1** | **1** | **162** |

**Exhibit 18. Year 2: How Many Times Were You Coached/**

**Coach in a Subject Outside of Mathematics? (*N* = 162 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **8** | **10** | **20** | **Total** |
| **0** | 76 | 10 | 4 | 5 | 2 | 1 | 0 | 0 | 1 | **99** |
| **1** | 3 | 0 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | **10** |
| **2** | 7 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **11** |
| **3** | 3 | 1 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | **10** |
| **4** | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **5** |
| **5** | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | **7** |
| **6** | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| **7** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **8** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **9** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **10** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **12** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **15** | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | **2** |
| **18** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **20** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **2** |
| **24** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **25** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **30** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **1** |
| **50** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **Total** | **106** | **15** | **17** | **10** | **4** | **6** | **1** | **2** | **1** | **162** |

**Exhibit 19. Year 2: How Often Did Your Coaching Sessions Include a Pre-Conference? (*N* = 162 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 4 | 2 | 0 | 0 | 5 | **11** |
| **Less than Half the Time, but Sometimes** | 8 | 3 | 1 | 6 | 1 | **19** |
| **Half the Time** | 3 | 3 | 1 | 5 | 3 | **15** |
| **More than Half the Time, But Not Always** | 2 | 6 | 5 | 13 | 27 | **53** |
| **Always** | 2 | 6 | 3 | 9 | 44 | **64** |
| **Total** | **19** | **20** | **10** | **33** | **80** | **162** |

**Exhibit 20. Year 2: How Often Did Your Coaching Sessions Include a Lesson Observation? (*N* = 162 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 8 | 0 | 0 | 0 | 3 | **11** |
| **Less than Half the Time, but Sometimes** | 6 | 2 | 2 | 1 | 5 | **16** |
| **Half the Time** | 0 | 4 | 0 | 3 | 1 | **8** |
| **More than Half the Time, But Not Always** | 0 | 2 | 2 | 5 | 14 | **23** |
| **Always** | 1 | 5 | 9 | 6 | 83 | **104** |
| **Total** | **15** | **13** | **13** | **15** | **106** | **162** |

**Exhibit 21. Year 2: How Often Did Your Coaching Sessions Include a Post-Conference? (*N* = 162 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 5 | 1 | 0 | 0 | 3 | **9** |
| **Less than Half the Time, but Sometimes** | 6 | 2 | 0 | 2 | 4 | **14** |
| **Half the Time** | 1 | 2 | 0 | 5 | 2 | **10** |
| **More than Half the Time, But Not Always** | 5 | 4 | 4 | 17 | 25 | **55** |
| **Always** | 4 | 3 | 5 | 8 | 54 | **74** |
| **Total** | **21** | **12** | **9** | **32** | **88** | **162** |

**Exhibit 22. Year 2: How Many Times Coach Modeled a Lesson/Taught a Lesson? (*N* = 162 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Once** | **Twice** | **Three Times** | **More than Three** | **Total** |
| **Never** | 56 | 13 | 7 | 5 | 1 | **82** |
| **Once** | 13 | 12 | 8 | 2 | 1 | **36** |
| **Twice** | 5 | 2 | 7 | 2 | 2 | **18** |
| **Three Times** | 1 | 3 | 1 | 1 | 1 | **7** |
| **More than Three** | 3 | 3 | 3 | 1 | 9 | **19** |
| **Total** | **78** | **33** | **26** | **11** | **14** | **162** |

**Year 3**

**Exhibit 23. Year 3: How Many Times Coached in Mathematics? (*N* = 152 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **12** | **15** | **16** | **20** | **30** | **Total** |
| **0** | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **13** |
| **1** | 5 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **14** |
| **2** | 1 | 1 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| **3** | 1 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **10** |
| **4** | 0 | 0 | 1 | 4 | 2 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | **12** |
| **5** | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| **6** | 1 | 0 | 0 | 5 | 2 | 3 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **16** |
| **7** | 0 | 0 | 2 | 1 | 4 | 1 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **14** |
| **8** | 0 | 0 | 1 | 1 | 2 | 6 | 3 | 4 | 15 | 5 | 4 | 1 | 0 | 0 | 0 | 0 | **42** |
| **9** | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | **8** |
| **10** | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **3** |
| **12** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **15** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **1** |
| **16** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **1** |
| **24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **1** |
| **25** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **30** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** |
| **35** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **Total** | 20 | **9** | **11** | **22** | **12** | **16** | **8** | **5** | **29** | **7** | **6** | **3** | **1** | **1** | **1** | **1** | **152** |

**Exhibit 24. Year 3: How Many Sessions Followed the EMC Model? (*N* = 152 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **12** | **15** | **25** | **Total** |
| **0** | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **17** |
| **1** | 8 | 4 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **16** |
| **2** | 2 | 3 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **15** |
| **3** | 2 | 0 | 3 | 4 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **12** |
| **4** | 1 | 1 | 0 | 3 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | **14** |
| **5** | 1 | 1 | 1 | 0 | 3 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **9** |
| **6** | 0 | 2 | 1 | 1 | 4 | 0 | 2 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | **16** |
| **7** | 0 | 0 | 1 | 2 | 2 | 2 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | **13** |
| **8** | 0 | 0 | 3 | 2 | 1 | 5 | 0 | 4 | 11 | 5 | 1 | 0 | 1 | 0 | **33** |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | **3** |
| **10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **12** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **16** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **25** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** |
| **Total** | 29 | **11** | **16** | **19** | **14** | **10** | **7** | **7** | **22** | **7** | **6** | **1** | **2** | **1** | **152** |

**Exhibit 25. Year 3: How Many Sessions Involved Lessons in Number Sense and Operations? (*N* = 152 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **12** | **14** | **16** | **Total** |
| **0** | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **16** |
| **1** | 7 | 6 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **19** |
| **2** | 1 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| **3** | 1 | 3 | 1 | 4 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **15** |
| **4** | 3 | 0 | 4 | 3 | 1 | 2 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | **16** |
| **5** | 0 | 0 | 4 | 5 | 3 | 5 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | **22** |
| **6** | 1 | 1 | 1 | 4 | 4 | 5 | 4 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | **27** |
| **7** | 0 | 0 | 1 | 1 | 4 | 0 | 1 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | **13** |
| **8** | 0 | 0 | 2 | 1 | 0 | 3 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | **11** |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | **2** |
| **10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **16** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** |
| **20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **1** |
| **Total** | 28 | **12** | **21** | **21** | **14** | **17** | **9** | **9** | **10** | **3** | **4** | **2** | **1** | **1** | **152** |

**Exhibit 26. Year 3: How Many Times Were You Coached/**

**Coach in a Subject Outside of Mathematics? (*N* = 152 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **9** | **10** | **12** | **Total** |
| **0** | 75 | 7 | 1 | 5 | 1 | 1 | 0 | 0 | 1 | 0 | **91** |
| **1** | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **11** |
| **2** | 6 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | **11** |
| **3** | 4 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | **6** |
| **4** | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | **4** |
| **5** | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| **6** | 2 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | **6** |
| **7** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **2** |
| **8** | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **3** |
| **10** | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | **5** |
| **11** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **20** | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **4** |
| **Total** | **111** | **13** | **3** | **9** | **4** | **7** | **1** | **1** | **2** | **1** | **152** |

**Exhibit 27. Year 3: How Often Did Your Coaching Sessions Include a Pre-Conference? (*N* = 152 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 14 | 1 | 0 | 0 | 0 | **15** |
| **Less than Half the Time, but Sometimes** | 6 | 3 | 6 | 4 | 4 | **23** |
| **Half the Time** | 1 | 1 | 3 | 1 | 2 | **8** |
| **More than Half the Time, But Not Always** | 3 | 4 | 3 | 3 | 19 | **32** |
| **Always** | 5 | 6 | 7 | 12 | 44 | **74** |
| **Total** | **29** | **15** | **19** | **20** | **69** | **152** |

**Exhibit 28. Year 3: How Often Did Your Coaching Sessions Include a Lesson Observation? (*N* = 152 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 11 | 0 | 1 | 0 | 0 | **12** |
| **Less than Half the Time, but Sometimes** | 5 | 4 | 7 | 2 | 2 | **20** |
| **Half the Time** | 0 | 2 | 1 | 1 | 1 | **5** |
| **More than Half the Time, But Not Always** | 1 | 1 | 1 | 3 | 9 | **15** |
| **Always** | 5 | 3 | 4 | 9 | 79 | **100** |
| **Total** | **22** | **10** | **14** | **15** | **91** | **152** |

**Exhibit 29. Year 3: How Often Did Your Coaching Sessions Include a Post-Conference? (*N* = 152 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 12 | 0 | 0 | 0 | 1 | **13** |
| **Less than Half the Time, but Sometimes** | 6 | 5 | 2 | 3 | 4 | **20** |
| **Half the Time** | 1 | 0 | 0 | 1 | 3 | **5** |
| **More than Half the Time, But Not Always** | 4 | 2 | 2 | 5 | 22 | **35** |
| **Always** | 6 | 5 | 3 | 13 | 52 | **79** |
| **Total** | **29** | **12** | **7** | **22** | **82** | **152** |

**Exhibit 30. Year 3: How Many Times Coach Modeled a Lesson/Taught a Lesson? (*N* = 152 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Once** | **Twice** | **Three Times** | **More than Three** | **Total** |
| **Never** | 69 | 12 | 7 | 4 | 3 | **95** |
| **Once** | 8 | 6 | 5 | 0 | 1 | **20** |
| **Twice** | 3 | 5 | 6 | 3 | 3 | **20** |
| **Three Times** | 0 | 1 | 7 | 0 | 3 | **11** |
| **More than Three** | 0 | 0 | 0 | 1 | 5 | **6** |
| **Total** | **80** | **24** | **25** | **8** | **15** | **152** |

**Year 4**

**Exhibit 31. Year 4: How Many Times Coached in Mathematics? (*N* = 147 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **12** | **14** | **18** | **20** | **25** | **Total** |
| **0** | 23 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **30** |
| **1** | 2 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| **2** | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| **3** | 0 | 2 | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |
| **4** | 1 | 1 | 2 | 7 | 3 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **19** |
| **5** | 2 | 1 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| **6** | 0 | 1 | 0 | 1 | 0 | 2 | 4 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **12** |
| **7** | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 5 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | **12** |
| **8** | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 4 | 16 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | **27** |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | **5** |
| **10** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **5** |
| **11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | **2** |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | **3** |
| **30** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **Total** | **30** | **14** | **7** | **11** | **11** | **7** | **11** | **7** | **29** | **7** | **6** | **2** | **2** | **1** | **1** | **1** | **147** |

**Exhibit 32. Year 4: How Many Sessions Followed the EMC Model? (*N* = 147 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **18** | **20** | **25** | **Total** |
| **0** | 25 | 5 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **36** |
| **1** | 2 | 3 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **12** |
| **2** | 4 | 1 | 1 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **13** |
| **3** | 3 | 1 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **10** |
| **4** | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **11** |
| **5** | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **8** |
| **6** | 1 | 1 | 0 | 1 | 2 | 2 | 3 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | **16** |
| **7** | 1 | 1 | 0 | 1 | 0 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **10** |
| **8** | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 2 | 14 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | **24** |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **11** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **2** |
| **12** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **17** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **1** |
| **18** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **Total** | 41 | **16** | **6** | **18** | **10** | **11** | **7** | **7** | **18** | **4** | **4** | **1** | **1** | **1** | **1** | **1** | **147** |

**Exhibit 33. Year 4: How Many Sessions Involved Lessons in Number Sense and Operations? (*N* = 147 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **14** | **25** | **Total** |
| **0** | 25 | 4 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **33** |
| **1** | 1 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |
| **2** | 3 | 1 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **11** |
| **3** | 1 | 3 | 3 | 2 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **13** |
| **4** | 2 | 3 | 4 | 2 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | **17** |
| **5** | 1 | 0 | 3 | 1 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **10** |
| **6** | 1 | 0 | 0 | 3 | 2 | 4 | 5 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | **20** |
| **7** | 1 | 0 | 1 | 1 | 2 | 4 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | **17** |
| **8** | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | **10** |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **11** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | **3** |
| **13** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **17** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **Total** | **35** | **15** | **19** | **13** | **13** | **15** | **8** | **6** | **14** | **3** | **3** | **1** | **1** | **1** | **147** |

**Exhibit 34. Year 4: How Many Times Were You Coached/**

**Coach in a Subject Outside of Mathematics? (*N* = 147 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **9** | **10** | **100** | **Total** |
| **0** | 78 | 7 | 2 | 1 | 0 | 3 | 1 | 0 | 1 | 1 | **94** |
| **1** | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | **6** |
| **2** | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **9** |
| **3** | 10 | 0 | 3 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | **18** |
| **4** | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **3** |
| **5** | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | **7** |
| **6** | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | **4** |
| **7** | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | **2** |
| **10** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **3** |
| **20** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **Total** | **107** | **10** | **6** | **5** | **2** | **9** | **1** | **1** | **5** | **1** | **147** |

**Exhibit 35. Year 4: How Often Did Your Coaching Sessions Include a Pre-Conference? (*N* = 147 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 24 | 3 | 1 | 0 | 4 | **32** |
| **Less than Half the Time, but Sometimes** | 6 | 4 | 5 | 4 | 2 | **21** |
| **Half the Time** | 3 | 1 | 2 | 4 | 4 | **14** |
| **More than Half the Time, But Not Always** | 3 | 9 | 6 | 5 | 11 | **34** |
| **Always** | 5 | 2 | 2 | 9 | 28 | **46** |
| **Total** | **41** | **19** | **16** | **22** | **49** | **147** |

**Exhibit 36. Year 4: How Often Did Your Coaching Sessions Include a Lesson Observation? (*N* = 147 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 25 | 1 | 1 | 0 | 4 | **31** |
| **Less than Half the Time, but Sometimes** | 3 | 3 | 6 | 0 | 3 | **15** |
| **Half the Time** | 1 | 2 | 0 | 0 | 5 | **8** |
| **More than Half the Time, But Not Always** | 0 | 1 | 1 | 4 | 15 | **21** |
| **Always** | 2 | 3 | 1 | 11 | 55 | **72** |
| **Total** | **31** | **10** | **9** | **15** | **82** | **147** |

**Exhibit 37. Year 4: How Often Did Your Coaching Sessions Include a Post-Conference? (*N* = 147 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 25 | 2 | 1 | 0 | 4 | **32** |
| **Less than Half the Time, but Sometimes** | 2 | 2 | 0 | 2 | 1 | **7** |
| **Half the Time** | 4 | 0 | 5 | 6 | 4 | **19** |
| **More than Half the Time, But Not Always** | 3 | 6 | 2 | 6 | 14 | **31** |
| **Always** | 3 | 3 | 1 | 15 | 36 | **58** |
| **Total** | **37** | **13** | **9** | **29** | **59** | **147** |

**Exhibit 38. Year 4: How Many Times Coach Modeled a Lesson/Taught a Lesson? (*N* = 147 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Once** | **Twice** | **Three Times** | **More than Three** | **Total** |
| **Never** | 78 | 12 | 8 | 0 | 2 | **100** |
| **Once** | 3 | 6 | 4 | 2 | 3 | **18** |
| **Twice** | 3 | 3 | 6 | 2 | 0 | **14** |
| **Three Times** | 2 | 1 | 1 | 1 | 3 | **8** |
| **More than Three** | 0 | 0 | 1 | 2 | 4 | **7** |
| **Total** | **86** | **22** | **20** | **7** | **12** | **147** |

**Year 5**

**Exhibit 39. Year 5: How Many Times Coached in Mathematics? (*N* = 134 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **15** | **17** | **20** | **30** | **40** | **Total** |
| **0** | 37 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **43** |
| **1** | 2 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| **2** | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **6** |
| **3** | 1 | 2 | 1 | 3 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **10** |
| **4** | 0 | 0 | 0 | 4 | 3 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **12** |
| **5** | 1 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| **6** | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| **7** | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **4** |
| **8** | 0 | 1 | 2 | 4 | 1 | 0 | 3 | 4 | 4 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | **22** |
| **9** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| **12** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **13** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **2** |
| **16** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | **2** |
| **30** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **2** |
| **31** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **Total** | **43** | **10** | **9** | **14** | **10** | **6** | **8** | **9** | **12** | **3** | **3** | **1** | **1** | **1** | **2** | **1** | **1** | **134** |

**Exhibit 40. Year 5: How Many Sessions Followed the EMC Model? (*N* = 134 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **15** | **20** | **30** | **Total** |
| **0** | 42 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **49** |
| **1** | 3 | 4 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **12** |
| **2** | 3 | 2 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **11** |
| **3** | 1 | 3 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | **9** |
| **4** | 3 | 2 | 1 | 0 | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **13** |
| **5** | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| **6** | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | **10** |
| **7** | 1 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | **8** |
| **8** | 1 | 0 | 0 | 2 | 1 | 2 | 1 | 1 | 5 | 0 | 0 | 1 | 1 | 0 | **15** |
| **12** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** |
| **Total** | **55** | **15** | **10** | **13** | **7** | **7** | **6** | **6** | **9** | **1** | **2** | **1** | **1** | **1** | **134** |

**Exhibit 41. Year 5: How Many Sessions Involved Lessons in Number Sense and Operations? (*N* = 134 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **Total** |
| **0** | 39 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **44** |
| **1** | 4 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | **10** |
| **2** | 1 | 1 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | **8** |
| **3** | 2 | 3 | 1 | 2 | 3 | 0 | 0 | 1 | 0 | 0 | **12** |
| **4** | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 0 | 1 | 0 | **15** |
| **5** | 3 | 2 | 2 | 1 | 1 | 1 | 3 | 1 | 0 | 1 | **15** |
| **6** | 1 | 2 | 0 | 2 | 2 | 1 | 0 | 2 | 1 | 0 | **11** |
| **7** | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **4** |
| **8** | 1 | 1 | 0 | 3 | 1 | 0 | 2 | 1 | 3 | 0 | **12** |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **1** |
| **10** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **1** |
| **11** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **Total** | **53** | **19** | **8** | **15** | **12** | **5** | **9** | **6** | **6** | **1** | **134** |

**Exhibit 42. Year 5: How Many Times Were You Coached/**

**Coach in a Subject Outside of Mathematics? (*N* = 134 pairs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **9** | **10** | **12** | **Total** |
| **0** | 86 | 7 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | **100** |
| **1** | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **5** |
| **2** | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| **3** | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **7** |
| **4** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **3** |
| **5** | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | **5** |
| **6** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **1** |
| **8** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | **1** |
| **10** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **12** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **15** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| **18** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **1** |
| **20** | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **1** |
| **25** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | **1** |
| **35** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** |
| **Total** | **105** | **8** | **3** | **3** | **2** | **5** | **2** | **2** | **2** | **2** | **134** |

**Exhibit 43. Year 5: How Often Did Your Coaching Sessions Include a Pre-Conference? (*N* = 134 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 37 | 2 | 2 | 0 | 4 | **45** |
| **Less than Half the Time, but Sometimes** | 4 | 3 | 2 | 3 | 4 | **16** |
| **Half the Time** | 2 | 3 | 1 | 3 | 2 | **11** |
| **More than Half the Time, But Not Always** | 4 | 2 | 4 | 5 | 8 | **23** |
| **Always** | 4 | 2 | 6 | 7 | 20 | **39** |
| **Total** | **51** | **12** | **15** | **18** | **38** | **134** |

**Exhibit 44. Year 5: How Often Did Your Coaching Sessions Include a Lesson Observation? (*N* = 134 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 38 | 3 | 1 | 0 | 5 | **47** |
| **Less than Half the Time, but Sometimes** | 2 | 3 | 0 | 3 | 2 | **10** |
| **Half the Time** | 2 | 1 | 0 | 3 | 2 | **8** |
| **More than Half the Time, But Not Always** | 2 | 0 | 1 | 1 | 6 | **10** |
| **Always** | 4 | 0 | 1 | 9 | 45 | **59** |
| **Total** | **48** | **7** | **3** | **16** | **60** | **134** |

**Exhibit 45. Year 5: How Often Did Your Coaching Sessions Include a Post-Conference? (*N* = 134 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Less than Half the Time but Sometimes** | **Half the Time** | **More than Half the Time, But Not Always** | **Always** | **Total** |
| **Never** | 35 | 2 | 1 | 1 | 4 | **43** |
| **Less than Half the Time, but Sometimes** | 4 | 4 | 0 | 3 | 4 | **15** |
| **Half the Time** | 2 | 6 | 0 | 3 | 0 | **11** |
| **More than Half the Time, But Not Always** | 1 | 3 | 3 | 3 | 8 | **18** |
| **Always** | 4 | 0 | 3 | 9 | 31 | **47** |
| **Total** | **46** | **15** | **7** | **19** | **47** | **134** |

**Exhibit 46. Year 5: How Many Times Coach Modeled a Lesson/Taught a Lesson? (*N* = 134 pairs)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Coach Count** |  | **Teacher Count** | | | | | |
| **Never** | **Once** | **Twice** | **Three Times** | **More than Three** | **Total** |
| **Never** | 80 | 14 | 6 | 1 | 3 | **104** |
| **Once** | 4 | 6 | 5 | 0 | 2 | **17** |
| **Twice** | 3 | 1 | 0 | 2 | 1 | **7** |
| **Three Times** | 1 | 0 | 1 | 0 | 0 | **2** |
| **More than Three** | 0 | 1 | 1 | 0 | 2 | **4** |
| **Total** | **88** | **22** | **13** | **3** | **8** | **134** |

Exhibits 47 through 54 show the percentage of matched teacher and coach responses for each of the questions presented above. Matches between coach and teacher pairs were identified if there was an exact match between their responses (i.e., the coach and teacher both selected the same response), and if the teachers and coaches responded with a response one level below or above each other (e.g., if a coach chose twice and the teacher chose three times the pair was counted as a match). The Exhibits reveal that the percentages of matched responses were lower when coaches and teachers were asked to recall the number of times for doing something, and the percentages of matched responses were higher when they were asked to recall how often they engaged in a particular activity, on a scale with five response categories to choose from.

**Exhibit 47. How Many Times Coached in Math?**

**Exhibit 48. How Many Sessions Followed the EMC Model?**

**Exhibit 49. How Many Sessions Involved Lessons in Number Sense and Operations?**

**Exhibit 50. How Many Times Were You Coached/Did You Coach in a Subject Outside of Mathematics?**

**Exhibit 51. How Often Did Your Coaching Sessions Include a Pre-Conference?**

**Exhibit 52. How Often Did Your Coaching Sessions Include a Lesson Observation?**

**Exhibit 53. How Often Did Your Coaching Sessions Include a Post-Conference?**

**Exhibit 54. How Many Times Coach Modeled a Lesson/Taught a Lesson?**

The number of mathematics coaching sessions held with teachers, per coach reports on the CRI is displayed in Exhibit 55 by year. There was a large spike in the percentage of coaches reporting holding 8 or more sessions with their teachers from 2010 to 2011. In 2012, there was a dip in the number of sessions held, however this steadily increased over time.

**Exhibit 55. Coach Reports on Number of Coaching Sessions Held with Teachers**

To examine how similar or different the coach and teacher ratings were regarding their coaching relationship, a series of independent group *t* tests was conducted using the average ratings on the coach scale (CRIcr) and on the teacher scale (TRIcr). A series of analyses was also conducted to examine coach and teacher ratings regarding the effectiveness or impact of the coaching. The coach impact scale (CRIis) was used, and the teacher scale (TRIis) was reduced from 13 items to 8 items so that it contains a parallel set of items as the coach scale (items b,c,d,f,g,h,l,m only). Exhibit 56 presents the average teacher and coach ratings for each administration period, along with the independent samples *t* test findings. At each administration period there was a statistically significant difference between teacher and coach ratings of the Coaching Relationship, with teachers having statistically significantly higher ratings than coaches. Statistically significant differences in ratings of the Coaching Impact(or effectiveness) were found only in Years 1 and 2, with teachers having higher ratings than coaches.

**Exhibit 56. Comparison of Coach and Teacher Ratings on the Coaching Relationship and**

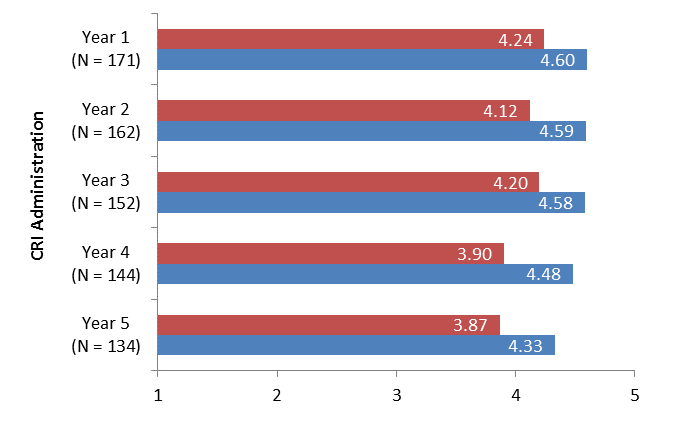
**Coaching Impact or Effectiveness**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Coaching Relationship** a | | | | |  | **Coaching Impact (Effectiveness)** b | | | | |
| **Mean** | ***SD*** | **Difference** | ***t*** | ***d*** |  | **Mean** | ***SD*** | **Difference** | ***t*** | ***d*** |
| **Year 1 (*N* = 171)** |  |  | **0.36** | **4.085\*\*\*** | **0.44** |  |  |  | **0.37** | **2.524\*** | **0.27** |
| Teacher | 4.60 | 0.77 |  |  |  |  | 2.86 | 1.40 |  |  |  |
| Coach | 4.24 | 0.85 |  |  |  |  | 2.49 | 1.25 |  |  |  |
| **Year 2 (*N* = 162)** |  |  | **0.47** | **4.365\*\*\*** | **0.48** |  |  |  | **0.43** | **2.783\*\*** | **0.31** |
| Teacher | 4.59 | 0.87 |  |  |  |  | 3.10 | 1.41 |  |  |  |
| Coach | 4.12 | 1.06 |  |  |  |  | 2.67 | 1.34 |  |  |  |
| **Year 3 (*N* = 152)** |  |  | **0.38** | **3.478\*\*\*** | **0.40** |  |  |  | **0.27** | **1.613** | **---** |
| Teacher | 4.58 | 0.89 |  |  |  |  | 3.08 | 1.58 |  |  |  |
| Coach | 4.20 | 1.01 |  |  |  |  | 2.81 | 1.36 |  |  |  |
| **Year 4 (*N* = 144)** |  |  | **0.58** | **4.262\*\*\*** | **0.51** |  |  |  | **0.24** | **1.229** | **---** |
| Teacher | 4.48 | 0.98 |  |  |  |  | 2.76 | 1.69 |  |  |  |
| Coach | 3.90 | 1.29 |  |  |  |  | 2.52 | 1.55 |  |  |  |
| **Year 5 (*N* = 134)** |  |  | **0.46** | **2.744\*\*** | **0.34** |  |  |  | **0.22** | **1.051** | **---** |
| Teacher | 4.33 | 1.26 |  |  |  |  | 2.54 | 1.82 |  |  |  |
| Coach | 3.87 | 1.44 |  |  |  |  | 2.32 | 2.32 |  |  |  |

*Note*. \**p* < .05; \*\* *p* < .01; \*\*\* *p* < .001. a Coaching relationship was rated on a 5-point scale where 1 = not at all and 5 = to a great extent. b Coaching Impact was rated on a 6-point scale where 1 = didn’t discuss, 2 = discussed, but no impact, 3 = moderate impact, and 5 = very large impact.

Exhibit 57 graphically displays the average coach and teacher ratings of the Coaching Relationship across the five administrations of the CRI and TRI. Teacher ratings were typically higher than coach ratings each year.

**Exhibit 57. Average Ratings of the Coaching Relationship** (CRIcr and TRIcr)



**Coach**

**Teacher**

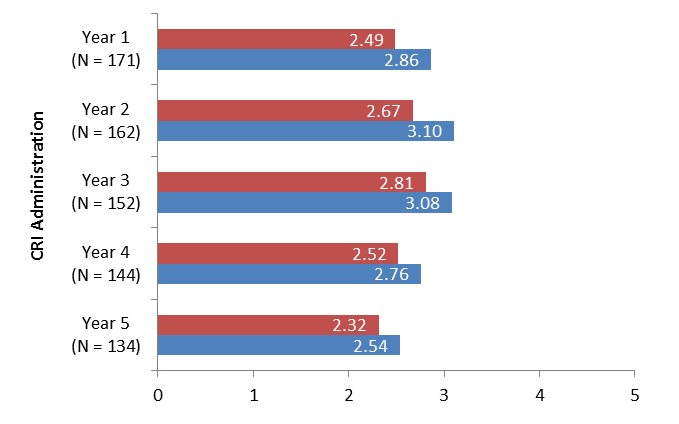
Not at All

To a great extent

**Average Rating**

Exhibit 58 graphically displays the average coach and teacher ratings of the Coaching Impact (or effectiveness) across the five administrations of the CRI and TRI. Teacher ratings were slightly higher than coach ratings and Years 2 and 3 had the highest ratings, while Year 5 had the lowest ratings.

**Exhibit 58. Coaching Impact (Effectiveness)** (CRIis and subscale of TRIis, using items b,c,d,f,g,h,l,m only)



**Teacher**

**Coach**

Didn’t Discuss

**Average Rating**

Discussed, but No Impact

Moderate Impact

Very Large Impact

**ITC-COP Capsule Descriptives**

The frequency counts for ITC-COP capsule ratings are presented in the following two exhibits to provide a visual of movement in the ratings. All teachers across waves and administrations were included in each year’s analysis. As Exhibits 59 and 60 show, there was a decrease in the frequency of Level 1, 2, and 3 Low ratings and an increase of Level 3 Solid, Level 3 High, Level 4, and Level 5 ratings over time.

**Exhibit 59. Frequency of Teacher ITC-COP Capsule Ratings by Year** (ITCCap7pt)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Capsule Rating** | **Number of Teachers** | | | | |
| **Year 1**  (*N* = 196) | **Year 2**  (*N* = 189) | **Year 3**  (*N* = 169) | **Year 4**  (*N* = 153) | **Year 5**  (*N* = 135) |
| Level 1 | 12 | 4 | 1 | 2 | 0 |
| Level 2 | 56 | 41 | 30 | 18 | 13 |
| Level 3 – Low | 50 | 37 | 38 | 27 | 23 |
| Level 3 – Solid | 30 | 28 | 28 | 24 | 22 |
| Level 3 – High | 15 | 28 | 18 | 23 | 22 |
| Level 4 | 28 | 42 | 44 | 41 | 34 |
| Level 5 | 5 | 9 | 10 | 18 | 21 |

*Note*. Teachers are the unit of analysis.

**Exhibit 60. Percentage of Teachers by ITC-COP Capsule Ratings Each Year** (ITCCap7pt)

**CKS Descriptives**

**To what extent are coaches’ responses on the CKS conforming to the literature?** A descriptive analysis was conducted on the CKS items and scale score to show the amount of agreement among coaches over time. The analysis utilized the coach only data set, rather than the teacher plus coach data set as in other analyses, and was restricted to include only coaches who completed all five administrations of the CKS.

**Item Level**

The frequency of coaches with conforming responses is presented in the following exhibits, both in the aggregate and by PD group. Exhibit 61 contains item level findings for items within question 1 that contribute to the CKS scale. In the aggregate, the number of coaches decreased from Year 1 to Year 5 on four of the five items and increased for one of the items.

**Exhibit 61. The Number of Coaches with Conforming Responses Over Time**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CKS Items** | **Number of Coaches with**  **Conforming Responses** | | | | | **Trend** |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| **1a. An effective mathematics coach coaches only on teacher-state needs.** | | | | | |  |
| Aggregate (*N* = 47) | 38 | 38 | 34 | 33 | 32 | **-** |
| PD Group 1 (*N* = 24) | 17 | 18 | 13 | 14 | 11 | **-** |
| PD Group 2 (*N* = 23) | 21 | 20 | 21 | 19 | 21 | **\*** |
| **1c. When a teacher stays that he or she doesn’t want any coaching, an effective mathematics coach respectfully does not try to persuade the teacher to accept coaching.** | | | | | |  |
| Aggregate (*N* = 47) | 24 | 25 | 26 | 22 | 21 | **-** |
| PD Group 1 (*N* = 24) | 10 | 10 | 10 | 12 | 10 | **\*** |
| PD Group 2 (*N* = 23) | 14 | 15 | 16 | 10 | 11 | **-** |
| **1d. Sometimes an effective mathematics coach has to oppose school or teacher actions that are not good for students’ mathematics learning.** | | | | | |  |
| Aggregate (*N* = 47) | 37 | 38 | 41 | 39 | 36 | **-** |
| PD Group 1 (*N* = 24) | 16 | 18 | 20 | 20 | 18 | **+** |
| PD Group 2 (*N* = 23) | 21 | 20 | 21 | 19 | 18 | **-** |
| **1f. An effective mathematics coach gets input from a school’s principal on which teachers need to improve their mathematics instruction.** | | | | | |  |
| Aggregate (*N* = 47) | 31 | 27 | 25 | 20 | 17 | **-** |
| PD Group 1 (*N* = 24) | 14 | 14 | 13 | 10 | 9 | **-** |
| PD Group 2 (*N* = 23) | 17 | 13 | 12 | 10 | 8 | **-** |
| **1h. A coach should put no pressure on teachers to improve their practices.** | | |  |  |  |  |
| Aggregate (*N* = 47) | 35 | 40 | 39 | 42 | 40 | **+** |
| PD Group 1 (*N* = 24) | 18 | 18 | 19 | 21 | 21 | **+** |
| PD Group 2 (*N* = 23) | 17 | 22 | 20 | 21 | 19 | **+** |

*Note*. PD Group 1 received coaching professional development in summer 2012 and PD Group 2 received coaching professional development in summer 2011. A + indicates an increase from year 1 to year 5, a \* indicates no change, and a – indicates a decrease from year 1 to year 5.

Exhibit 62 contains item level findings for items within question 2 that contribute to the CKS scale score. In the aggregate, the number of coaches with conforming responses increased from Year 1 to Year 5 on two of the four items, stayed the same for one item, and decreased for one item.

**Exhibit 62. The Number of Coaches with Conforming Responses Over Time**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CKS Items** | **Number of Coaches with**  **Conforming Responses** | | | | | **Trend** |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| **2a. Once a teacher knows about a research-based strategy for improving student learning, the teacher will begin using the strategy.** | | | | | |  |
| Aggregate (*N* = 47) | 34 | 34 | 30 | 33 | 34 | **\*** |
| PD Group 1 (*N* = 24) | 16 | 17 | 15 | 17 | 17 | **+** |
| PD Group 2 (*N* = 23) | 18 | 17 | 15 | 16 | 17 | **-** |
| **2c. An effective mathematics coach uses state mathematics assessment data when developing coaching plan with teachers.** | | | | | |  |
| Aggregate (*N* = 47) | 39 | 35 | 39 | 37 | 38 | **-** |
| PD Group 1 (*N* = 24) | 17 | 17 | 19 | 19 | 19 | **+** |
| PD Group 2 (*N* = 23) | 22 | 18 | 20 | 18 | 19 | **-** |
| **2h. An effective coach sticks to the coaching objectives established with a teacher at the beginning of the school year.** | | | | | |  |
| Aggregate (*N* = 47) | 18 | 23 | 18 | 17 | 20 | **+** |
| PD Group 1 (*N* = 24) | 12 | 10 | 11 | 6 | 12 | **\*** |
| PD Group 2 (*N* = 23) | 6 | 13 | 7 | 11 | 8 | **+** |
| **2j. An effective mathematics coach gives feedback to the principal about teachers who are struggling in the classroom.** | | | | | |  |
| Aggregate (*N* = 47) | 28 | 34 | 36 | 33 | 32 | **+** |
| PD Group 1 (*N* = 24) | 15 | 18 | 18 | 18 | 18 | **+** |
| PD Group 2 (*N* = 23) | 13 | 16 | 18 | 15 | 14 | **+** |

*Note*. PD Group 1 received coaching professional development in summer 2012 and PD Group 2 received coaching professional development in summer 2011. A + indicates an increase from year 1 to year 5, a \* indicates no change, and a – indicates a decrease from year 1 to year 5.

Exhibit 63 contains item level findings for items within question 3 that contribute to the CKS scale score. From Year 1 to Year 5, the number of coaches with conforming responses increased for eight of the nine items and decreased for one item.

**Exhibit 63. The Number of Coaches with Conforming Responses Over Time**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CKS Items** | **Number of Coaches with**  **Conforming Responses** | | | | | **Trend** |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| **3b. I collect students’ mathematics work from a teacher’s classroom to guide our coaching conversations.** | | | | | |  |
| Aggregate (*N* = 47) | 24 | 29 | 32 | 33 | 38 | **+** |
| PD Group 1 (*N* = 24) | 11 | 15 | 15 | 17 | 18 | **+** |
| PD Group 2 (*N* = 23) | 13 | 14 | 17 | 16 | 20 | **+** |
| **3c. When decisions about mathematics instruction are being made, I ensure that the decision-makers interpret research literature accurately.** | | | | | |  |
| Aggregate (*N* = 47) | 26 | 33 | 32 | 36 | 38 | **+** |
| PD Group 1 (*N* = 24) | 12 | 17 | 17 | 19 | 19 | **+** |
| PD Group 2 (*N* = 23) | 14 | 16 | 15 | 17 | 19 | **+** |
| **3d. I coach teachers on needs that I observe in the teacher, even when the teacher in unaware of these needs.** | | | | | |  |
| Aggregate (*N* = 47) | 28 | 31 | 34 | 36 | 32 | **+** |
| PD Group 1 (*N* = 24) | 11 | 14 | 13 | 17 | 12 | **+** |
| PD Group 2 (*N* = 23) | 17 | 17 | 21 | 19 | 20 | **+** |
| **3e. As a mathematics coach, I support mathematics teachers by tutoring their struggling students.** | | | | | |  |
| Aggregate (*N* = 47) | 39 | 38 | 42 | 41 | 43 | **+** |
| PD Group 1 (*N* = 24) | 19 | 20 | 20 | 21 | 22 | **+** |
| PD Group 2 (*N* = 23) | 20 | 18 | 22 | 20 | 21 | **+** |
| **3f. I have difficult conversations with teachers, when necessary, about mathematics misconceptions they hold.** | | | | | |  |
| Aggregate (*N* = 47) | 26 | 34 | 30 | 35 | 39 | **+** |
| PD Group 1 (*N* = 24) | 13 | 18 | 14 | 17 | 20 | **+** |
| PD Group 2 (*N* = 23) | 13 | 16 | 16 | 18 | 19 | **+** |
| **3g. I always make sure that coaching conversations with mathematics teachers are grounded in the mathematics content.** | | | | | |  |
| Aggregate (*N* = 47) | 26 | 34 | 36 | 38 | 33 | **+** |
| PD Group 1 (*N* = 24) | 13 | 18 | 18 | 20 | 16 | **+** |
| PD Group 2 (*N* = 23) | 13 | 16 | 18 | 18 | 17 | **+** |
| **3h. I meet with the principal to discuss the school’s vision for mathematics instruction.** | | | | | |  |
| Aggregate (*N* = 47) | 31 | 38 | 34 | 33 | 35 | **+** |
| PD Group 1 (*N* = 24) | 17 | 20 | 18 | 16 | 18 | **+** |
| PD Group 2 (*N* = 23) | 14 | 18 | 16 | 17 | 17 | **+** |
| **3i. I encourage teachers to include, in each lesson they teach, summaries of what students learned or discovered.** | | | | | |  |
| Aggregate (*N* = 47) | 26 | 28 | 27 | 25 | 24 | **-** |
| PD Group 1 (*N* = 24) | 11 | 15 | 12 | 11 | 9 | **-** |
| PD Group 2 (*N* = 23) | 15 | 13 | 15 | 14 | 15 | **\*** |
| **3j. I provide feedback to teachers about whether or not the school is meeting its vision for mathematics instruction.** | | | | | |  |
| Aggregate (*N* = 47) | 16 | 17 | 21 | 17 | 23 | **+** |
| PD Group 1 (*N* = 24) | 6 | 9 | 9 | 7 | 10 | **+** |
| PD Group 2 (*N* = 23) | 10 | 8 | 12 | 10 | 13 | **+** |

*Note*. PD Group 1 received coaching professional development in summer 2012 and PD Group 2 received coaching professional development in summer 2011. A + indicates an increase from year 1 to year 5, a \* indicates no change, and a – indicates a decrease from year 1 to year 5.

Exhibit 64 contains item level findings for items within question 4 that contribute to the CKS scale score. In the aggregate, the frequency of coaches with conforming responses increased from Year 1 to Year 5 on eight of the nine items, and decreased on one item.

**Exhibit 64. The Number of Coaches with Conforming Responses Over Time**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CKS Items** | **Number of Coaches with**  **Conforming Responses** | | | | | **Trend** |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| **4a. I try to provide the teachers I coach with an understanding of how the mathematics they teach supports learning beyond the grade level they teach.** | | | | | |  |
| Aggregate (*N* = 47) | 38 | 43 | 42 | 43 | 44 | **+** |
| PD Group 1 (*N* = 24) | 17 | 22 | 22 | 21 | 23 | **+** |
| PD Group 2 (*N* = 23) | 21 | 21 | 20 | 22 | 21 | **\*** |
| **4b. I ask the principal what he or she believes the mathematics teachers’ needs are.** | | | | | |  |
| Aggregate (*N* = 47) | 18 | 19 | 19 | 14 | 21 | **+** |
| PD Group 1 (*N* = 24) | 7 | 12 | 10 | 6 | 12 | **+** |
| PD Group 2 (*N* = 23) | 11 | 7 | 9 | 8 | 9 | **-** |
| **4c. I encourage the teachers I coach to reflect on similarities and differences among mathematics topics in the curriculum.** | | | | | |  |
| Aggregate (*N* = 47) | 30 | 32 | 31 | 33 | 35 | **+** |
| PD Group 1 (*N* = 24) | 15 | 16 | 13 | 15 | 17 | **+** |
| PD Group 2 (*N* = 23) | 15 | 16 | 18 | 18 | 18 | **+** |
| **4d. I help teachers plan their lessons.** | | | | | |  |
| Aggregate (*N* = 47) | 24 | 31 | 31 | 35 | 32 | **+** |
| PD Group 1 (*N* = 24) | 10 | 14 | 13 | 16 | 15 | **+** |
| PD Group 2 (*N* = 23) | 14 | 17 | 18 | 19 | 17 | **+** |
| **4e. I ask the teachers I coach what aspects of mathematics teaching they need help with.** | | | | | |  |
| Aggregate (*N* = 47) | 45 | 44 | 42 | 45 | 43 | **-** |
| PD Group 1 (*N* = 24) | 23 | 22 | 21 | 23 | 22 | **-** |
| PD Group 2 (*N* = 23) | 22 | 22 | 21 | 22 | 21 | **-** |
| **4f. I try to help teachers understand my role as mathematics coach.** | | | | | |  |
| Aggregate (*N* = 47) | 38 | 42 | 40 | 44 | 41 | **+** |
| PD Group 1 (*N* = 24) | 19 | 22 | 18 | 21 | 22 | **+** |
| PD Group 2 (*N* = 23) | 19 | 20 | 22 | 23 | 19 | **\*** |
| **4h. I do not alter the coaching plan developed with the teacher at the beginning of the year.** | | | | | |  |
| Aggregate (*N* = 47) | 35 | 35 | 35 | 35 | 36 | **+** |
| PD Group 1 (*N* = 24) | 17 | 18 | 19 | 16 | 18 | **+** |
| PD Group 2 (*N* = 23) | 18 | 17 | 16 | 19 | 18 | **\*** |
| **4i. I help teachers identify consistencies and inconsistencies between their own practices and the practices recommended by the National Council of Teachers and Mathematics.** | | | | | |  |
| Aggregate (*N* = 47) | 20 | 27 | 20 | 26 | 31 | **+** |
| PD Group 1 (*N* = 24) | 9 | 14 | 6 | 12 | 14 | **+** |
| PD Group 2 (*N* = 23) | 11 | 13 | 14 | 14 | 17 | **+** |
| **4j. I work with principals or other administrators to form a clear message to teachers about effective mathematics instruction.** | | | | | |  |
| Aggregate (*N* = 47) | 30 | 33 | 33 | 34 | 32 | **+** |
| PD Group 1 (*N* = 24) | 14 | 15 | 14 | 16 | 15 | **+** |
| PD Group 2 (*N* = 23) | 16 | 18 | 19 | 18 | 17 | **+** |

*Note*. PD Group 1 received coaching professional development in summer 2012 and PD Group 2 received coaching professional development in summer 2011. A + indicates an increase from year 1 to year 5, a \* indicates no change, and a – indicates a decrease from year 1 to year 5.

Items within question 5 that contribute to the CKS scale score are shown in Exhibit 65. The frequency of coaches in the aggregate increased over time for five items, stayed the same on one item, and decreased on one item.

**Exhibit 65. The Number of Coaches with Conforming Responses Over Time**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CKS Items** | **Number of Coaches with**  **Conforming Responses** | | | | | **Trend** |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| **5b. I help teachers reflect on discrepancies between espoused beliefs and actual practices.** | | | | | |  |
| Aggregate (*N* = 47) | 31 | 32 | 29 | 34 | 35 | **+** |
| PD Group 1 (*N* = 24) | 15 | 18 | 12 | 16 | 16 | **+** |
| PD Group 2 (*N* = 23) | 16 | 14 | 17 | 18 | 19 | **+** |
| **5c. I take precautions to ensure that my demonstration lessons do not inadvertently send a message that I am the expert and the teacher is not.** | | | | | |  |
| Aggregate (*N* = 47) | 42 | 41 | 43 | 43 | 42 | **\*** |
| PD Group 1 (*N* = 24) | 22 | 22 | 23 | 22 | 22 | **\*** |
| PD Group 2 (*N* = 23) | 20 | 19 | 20 | 21 | 20 | **\*** |
| **5d. I reflect on state assessment data to identify curriculum areas that need to be strengthened.** | | | | | |  |
| Aggregate (*N* = 47) | 36 | 32 | 43 | 41 | 34 | **-** |
| PD Group 1 (*N* = 24) | 18 | 16 | 21 | 21 | 15 | **-** |
| PD Group 2 (*N* = 23) | 18 | 16 | 22 | 20 | 19 | **+** |
| **5e. I use student work when coaching mathematics teachers.** | | | | | |  |
| Aggregate (*N* = 47) | 31 | 35 | 37 | 40 | 40 | **+** |
| PD Group 1 (*N* = 24) | 16 | 18 | 17 | 20 | 19 | **+** |
| PD Group 2 (*N* = 23) | 15 | 17 | 20 | 20 | 21 | **+** |
| **5f. I provide feedback to the principal about whether or not the school is meeting its vision for mathematics instruction.** | | | | | |  |
| Aggregate (*N* = 47) | 19 | 24 | 24 | 26 | 22 | **+** |
| PD Group 1 (*N* = 24) | 11 | 12 | 11 | 12 | 10 | **-** |
| PD Group 2 (*N* = 23) | 8 | 12 | 13 | 14 | 12 | **+** |
| **5g. I encourage teachers to set personal improvement goals for mathematics instruction.** | | | | | |  |
| Aggregate (*N* = 47) | 33 | 34 | 28 | 37 | 37 | **+** |
| PD Group 1 (*N* = 24) | 16 | 17 | 16 | 19 | 18 | **+** |
| PD Group 2 (*N* = 23) | 17 | 17 | 12 | 18 | 19 | **+** |
| **5h. When a teacher complains about the school’s vision for mathematics, I ask the teacher about her or his vision for mathematics.** | | | | | |  |
| Aggregate (*N* = 47) | 21 | 24 | 24 | 25 | 25 | **+** |
| PD Group 1 (*N* = 24) | 11 | 11 | 11 | 13 | 13 | **+** |
| PD Group 2 (*N* = 23) | 10 | 13 | 13 | 12 | 12 | **+** |

*Note*. PD Group 1 received coaching professional development in summer 2012 and PD Group 2 received coaching professional development in summer 2011. A + indicates an increase from year 1 to year 5, a \* indicates no change, and a – indicates a decrease from year 1 to year 5.

Exhibit 66 contains item level findings for questions 6, 7, 9, 10 and 12. The number of coaches in the aggregate with conforming responses decreased over time for four of the questions, and increased only for question 12.

**Exhibit 66. The Number of Coaches with Conforming Responses Over Time**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CKS Items** | **Number of Coaches with**  **Conforming Responses** | | | | | **Trend** |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| **6. Scenario with a coach working with a teacher using base-10 pieces for subtraction and regrouping.** | | | | | |  |
| Aggregate (*N* = 47) | 21 | 19 | 16 | 26 | 18 | **-** |
| PD Group 1 (*N* = 24) | 11 | 9 | 8 | 14 | 8 | **-** |
| PD Group 2 (*N* = 23) | 10 | 10 | 8 | 12 | 10 | **\*** |
| **7. Scenario with a coach having watched a teacher teach a lesson on ordering fractions.** | | | | | |  |
| Aggregate (*N* = 47) | 21 | 18 | 20 | 18 | 19 | **-** |
| PD Group 1 (*N* = 24) | 11 | 8 | 13 | 11 | 9 | **-** |
| PD Group 2 (*N* = 23) | 10 | 10 | 7 | 7 | 10 | **\*** |
| **9. Scenario where a coach and teacher mutually agreed that the coach can come to the teacher’s classroom to observe a subtraction lesson.** | | | | | |  |
| Aggregate (*N* = 47) | 30 | 29 | 31 | 28 | 28 | **-** |
| PD Group 1 (*N* = 24) | 16 | 14 | 14 | 17 | 13 | **-** |
| PD Group 2 (*N* = 23) | 14 | 15 | 17 | 11 | 15 | **+** |
| **10. Scenario where coach and teacher have discussed a teaching strategy in detail.** | | | | | |  |
| Aggregate (*N* = 47) | 24 | 27 | 18 | 24 | 20 | **-** |
| PD Group 1 (*N* = 24) | 13 | 14 | 7 | 13 | 11 | **-** |
| PD Group 2 (*N* = 23) | 11 | 13 | 11 | 11 | 9 | **-** |
| **12. Which of the following is true about teachers and professional development without a coaching component?** | | | | | |  |
| Aggregate (*N* = 47) | 40 | 42 | 41 | 41 | 44 | **+** |
| PD Group 1 (*N* = 24) | 20 | 20 | 19 | 19 | 21 | **+** |
| PD Group 2 (*N* = 23) | 20 | 22 | 22 | 22 | 23 | **+** |

*Note*. PD Group 1 received coaching professional development in summer 2012 and PD Group 2 received coaching professional development in summer 2011. A + indicates an increase from year 1 to year 5, a \* indicates no change, and a – indicates a decrease from year 1 to year 5.

The percentage of coaches in the aggregate, with conforming responses for each item across each year is presented in Exhibits 67 through 71. Items for which there were 80% or more of coaches with conforming responses in Year 1 included items 1a, 2c, 3e, 4a, 4e, 4f, 5c, and 12. Items which had the lowest frequency of coaches with conforming responses included items 2h, 3j, 4b, 4i, 5f, 5h, 6, and 7.

**Exhibit 67. Percentage of Coaches with Conforming Responses in Year 1 by Item**

Items for which there were 80% or more of coaches with conforming responses in Year 2 included items 1a, 1d, 1h, 3e, 3h, 4a, 4e, 4f, 5c, and 12. Items which had the lowest frequency of coaches with conforming responses included items 3j, 4b, 6, and 7.

**Exhibit 68. Percentage of Coaches with Conforming Responses in Year 2 by Item**

In Year 3, the following items had 80% or more of coaches with conforming responses: items 1d, 1h, 2c, 3e, 4a, 4e, 4f, 5c, 5d, and 12. Items which had the lowest frequency of coaches with conforming responses included items 2h, 3j, 4b, 4i, 6, 7, and 10.

**Exhibit 69. Percentage of Coaches with Conforming Responses in Year 3 by Item**

Items for which there were 80% or more of coaches with conforming responses in Year 4 included items 1d, 1h, 3e, 3g, 4a, 4e, 4f, 5c, 5d, 5e, and 12. Items which had the lowest frequency of coaches with conforming responses included items 1c, 1f, 2h, 3j, 4b, and 7.

**Exhibit 70. Percentage of Coaches with Conforming Responses in Year 4 by Item**

Items for which there were 80% or more of coaches with conforming responses in Year 5 included items 1h, 2c, 3b, 3c, 3e, 3f, 3g, 4a, 4e, 4f, 5c, 5d, 5e, and 12. Items which had the lowest frequency of coaches with conforming responses included items 1c, 1f, 2h, 3i, 3j, 4b, 5f, 6, 7, and 10.

**Exhibit 71. Percentage of Coaches with Conforming Responses in Year 5 by Item**

Exhibits 72 through 76 present similar information as above, but with the percentage of coaches with conforming response, disaggregated by PD Group, rather than in the aggregate. Exhibit 71 shows that coaches in either PD Group scored similarly on a handful of items such as 1h or 4c. PD Group 1 had a higher percentage of coaches conforming to a few items including 2h, 3h, and 5f and PD Group 2 had a higher percentage of coaches with conforming responses on several items including 1a, 1c, 1d, 2a, 2c, 3d, 3i, 4a, 4b.

**Exhibit 72. Percentage of Coaches with Conforming Responses in Year 1 by Item**

Exhibit 73 shows that when large differences were found between the percentages of coaches with conforming responses, the percentage of PD Group 2 coaches was usually higher than PD Group 1 coaches.

**Exhibit 73. Percentage of Coaches with Conforming Responses in Year 2 by Item**

In Year 3, PD Group 2 continued to have a higher percentage of coaches with conforming responses on several items such as 1a, 3d, 4i, 4j, 5b, 5e, and 12.

**Exhibit 74. Percentage of Coaches with Conforming Responses in Year 3 by Item**

PD Group 1 had a higher percentage of coaches with conforming responses in Year 4 to items 7 and 9, while PD Group 2 had a higher percentage of coaches with conforming responses to several items such as 1a, 4h, and 12.

**Exhibit 75. Percentage of Coaches with Conforming Responses in Year 4 by Item**

As with other years, coaches in PD Group 2 continued to outperform coaches PD Group 1, as shown by the large differences found in items such as 1a, 3d, and 3i.

**Exhibit 76. Percentage of Coaches with Conforming Responses in Year 5 by Item**

**CKS Scale/Factor Level**

The CKS scale scores presented below in Exhibit 77 summarize the average number of items (out of 39) coaches conformed to over time, and the average percentage of responses that were conforming over time. As with the item level analysis, only coaches who completed all five administrations were included in this analysis. As the exhibits show, there was a slight fluctuation for PD Group 1 while PD Group 2 coaches had continuous increases.

**Exhibit 77. Average CKS Factor Scores Over Time**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***N*** | **Frequency of Conforming Responses** | | | | | | | | | | |
| **Mean Number of Items**  (CKS\_TotalCorrect) | | | | |  | **Mean % of Items**  (CKS\_PctCorrect) | | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| Aggregate | 47 | 24.5 | 26.4 | 26.0 | 26.9 | 26.8 | 63% | 68% | 67% | 69% | 69% |
| PD Group 1 | 24 | 23.3 | 25.8 | 24.3 | 26.0 | 25.8 | 60% | 66% | 62% | 67% | 66% |
| PD Group 2 | 23 | 25.8 | 26.9 | 27.9 | 27.7 | 27.9 | 66% | 69% | 71% | 71% | 72% |

*Note*. There are 39 items included in the CKS factor.

Exhibit 78 graphically displays the average percentage of conforming responses over time for coaches in the aggregate and by PD Group.

**Exhibit 78. Average Percentage of Conforming Responses by Coaches on the CKS**

*Note*. There are 39 items included in the CKS factor.

**Teacher Survey Descriptives**

Means for the six teacher survey subscales and the overall Teacher Survey Total scale are presented in Exhibit 79. All teachers who completed a teacher survey at any of the administrations of the instrument were included in the analysis. Ratings increased over time for each survey scale.

**Exhibit 79. Mean and Standard Deviations of Teacher Survey Scales by Year**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Teacher Survey Scale** | **Year 1 (A1)**  (*N* = 177) | | **Year 1 (A2)**  (*N* = 196) | | **Year 2**  (*N* = 189) | | **Year 3**  (*N* = 171) | | **Year 4**  (*N* = 161) | | **Year 5**  (*N* = 151) | |
| **Mean** | ***SD*** | **Mean** | ***SD*** | **Mean** | ***SD*** | **Mean** | ***SD*** | **Mean** | ***SD*** | **Mean** | ***SD*** |
| Preparedness to Teach Mathematicsa  (variable *TSptm)* | 5.04 | 1.12 | 5.47 | 1.19 | 5.78 | 0.94 | 5.81 | 0.96 | 5.95 | 0.83 | 6.07 | 0.96 |
| Anxiety for Teaching Mathematicsb  (variable *TSanxtm)* | 5.31 | 1.18 | 5.44 | 1.26 | 5.85 | 1.22 | 5.86 | 1.18 | 6.04 | 1.27 | 6.10 | 1.22 |
| Support for Teaching Mathematicsc  (variable *TSstm)* | 4.82 | 1.19 | 5.11 | 0.95 | 5.27 | 1.18 | 5.24 | 1.36 | 5.49 | 1.28 | 5.54 | 1.30 |
| Ability for Teaching Mathematicsc  (variable *TSabtm)* | 4.63 | 1.03 | 5.02 | 1.21 | 5.26 | 1.02 | 5.32 | 1.00 | 5.46 | 0.95 | 5.60 | 1.10 |
| Confidence for Teaching Mathematicsc  (variable *TSctm)* | 4.55 | 1.32 | 4.79 | 1.42 | 5.06 | 1.14 | 5.16 | 1.10 | 5.21 | 1.10 | 5.29 | 1.18 |
| Engagement in Mathematics Activitiesd  (variable *TSema)* | 4.16 | 1.29 | 4.15 | 0.94 | 4.52 | 1.38 | 4.46 | 1.50 | 4.53 | 1.69 | 4.62 | 1.74 |
| Teacher Survey Totale  (variable *TSTotal)* | 4.75 | 0.89 | 5.00 | 0.84 | 5.29 | 0.84 | 5.31 | 0.90 | 5.45 | 0.86 | 5.54 | 0.98 |

*Notes*. a Responses were rated on an 8-point scale where 1 = Unsatisfactory, 3 = Developing, 6 = Proficient, and 8 = Exceptional.

b Responses were rated on an 8-point scale and were reverse coded so that 1 = Extremely High, 3 = Above Average, 6 = Below Average, and 8 = Extremely Low. c Responses were rated on an 8-point scale where 1 = Extremely Low, 3 = Below Average, 6 = Above Average, and 8 = Extremely High. d Response were rated on a 9-point scale where 0 = None, 1 = Extremely Low, 3 = Below Average, 6 = Above Average, and 8 = Extremely High. e The Teacher Survey Total is the average of all subscales.

Exhibit 80 graphically presents the average teacher ratings across time for the Preparedness to Teach Mathematics subscale.

Unsatisfactory

Developing

Proficient

Exceptional

**Average Teacher Rating**

Exhibit 81 graphically presents the average teacher ratings across time for the Anxiety for Teaching Mathematics subscale.

Extremely Low

Below Average

Above Average

Extremely High

**Average Teacher Rating**

Average teacher ratings across time relating to Mathematics Teacher Efficacy subscales of Support for Teaching Mathematics, Ability for Teaching Mathematics, and Confidence for Teaching Mathematics are contained in Exhibit 82.

**Exhibit 82. Mathematics Teacher Efficacy**

Extremely Low

Below Average

Above Average

Extremely High

**Average Teacher Rating**

Exhibit 83 displays average teacher ratings across time for the Engagement in Mathematics Activities subscale.

Extremely

Low

Below

Average

Above

Average

Extremely

High

**Average Teacher Rating**

None

(NA)

Lastly, Exhibit 84 presents average teacher ratings across time for the Teacher Survey Total scale.

Average Teacher Rating