**Motivators and inhibitors to change: Why and how geoscience faculty modify their course content and teaching methods**

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**SUPPLEMENTAL MATERIAL**

In this supplemental material, we provide the numerical summary of responses to each of the analyzed survey questions, as well as the results of contingency tables mentioned in the main text.

Table S1 shows how the proportions of respondents in different subgroups were distributed across the four surveys.

Tables S2-S4 show responses from all four surveys to whether the survey respondents changed their course content or teaching methods within the previous two years of taking the survey.

Tables S5-S6 show responses from 2016 to what the primary motivation and the inhibitors were for respondents who wanted to make substantive changes to their courses.

Tables S7-S8 show responses from 2016 to what types of course content or teaching methods changes respondents made in the previous two years.

Table S9 shows the data used to determine the *P*-values presented in Figure 7 of the main text.

**TABLES**

**Table S1.** Proportion of respondents in different subgroups across the four implementations of the survey

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category** | **Subgroup** | **2004** | **2009** | **2012** | **2016** |
| **Highest degree of respondent** | **Overall** | 1688 | 2191 | 1896 | 2143 |
| **Masters** | 2.7% | 3.7% | 12.9% | 11.7% |
| **PhD or doctorate** | 97.0% | 96.1% | 86.1% | 88.3% |
| **Other** | 0.2% | 0.3% | 1.1% | 0.0% |
| **Current Position Type** | **Overall** | 1677 | 2189 | 1899 | 2161 |
| **Professor** | 51.8% | 45.9% | 41.7% | 42.9% |
| **Assoc. Professor** | 25.4% | 26.4% | 25.8% | 23.1% |
| **Asst. Professor** | 12.9% | 16.4% | 15.6% | 16.0% |
| **Instructor** | 3.6% | 4.2% | 8.7% | 8.8% |
| **Adjunct professor** | 2.3% | 1.0% | 4.4% | 5.6% |
| **Other** | 4.0% | 6.0% | 3.8% | 3.7% |
| **Institution Type** | **Overall** | 1689 | 2182 | 1898 | 2057 |
| **Associate's** | 0.2% | 2.4% | 15.3% | 14.1% |
| **Research and/or Doctoral** | 69.1% | 64.8% | 48.5% | 55.7% |
| **Master's** | 21.4% | 22.1% | 23.2% | 19.5% |
| **Baccalaureate** | 9.2% | 10.2% | 12.4% | 10.4% |
| **Special Focus/Other** | 0.1% | 0.5% | 0.6% | 0.3% |
| **Missing** | 0.0% | 0.0% | 0.0% | 0.0% |
| **Class time spent on student activities, questions, and discussion** | **Overall** | 1566 | 2030 | 1766 | 2090 |
| **≤20%** | 66.1% | 61.8% | 49.4% | 47.5% |
| **>20%** | 33.9% | 38.2% | 50.6% | 52.5% |
| **Class size** | **Overall** | 1611 | 2069 | 1815 | 2107 |
| **Small (≤30)** | 61.1% | 59.6% | 58.5% | 60.6% |
| **Medium (30-80)** | 21.4% | 22.9% | 25.2% | 26.2% |
| **Large (>80)** | 17.5% | 17.4% | 16.4% | 13.1% |
| **Type of class** | **Overall** | 1692 | 2197 | 1908 | 2162 |
| **Intro** | 50.4% | 47.4% | 52.8% | 50.7% |
| **Major** | 49.6% | 52.6% | 47.2% | 49.3% |
| **Faculty Type** | **Overall** | 1577 | 2017 | 1723 | 2010 |
| **Educational researchers** | 20.5% | 14.6% | 21.2% | 18.5% |
| **Research scientists** | 43.1% | 40.3% | 33.7% | 38.5% |
| **Teaching faculty** | 36.4% | 45.1% | 45.0% | 43.0% |
| **Teaching style** | **Overall** | 1568 | 2017 | 1741 | 2022 |
| **Traditional lecture only** | 19.1% | 12.7% | 10.6% | 11.8% |
| **Active lecture** | 39.0% | 40.5% | 32.2% | 28.4% |
| **Active learning** | 41.9% | 46.9% | 57.2% | 59.8% |

**Table S2.** Overall results of whether respondents had changed their course content over the previous two years, and contingency table based on frequency of talking to colleagues about course content

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **2004** | | | **2009** | | | **2012** | | | **2016** | | |
|  |  | **Yes** | **No** | **%Yes** | **Yes** | **No** | **%Yes** | **Yes** | **No** | **%Yes** | **Yes** | **No** | **%Yes** |
|  | **Overall** | 1016 | 562 | 64.4% | 1505 | 537 | 73.7% | 1387 | 325 | 81.0% | 1585 | 432 | 78.6% |
| **Frequency of talking to colleagues** | **Never** | 24 | 39 | 38.1% | 72 | 34 | 67.9% | 64 | 29 | 68.8% | 117 | 37 | 76.0% |
| **Once or twice per term** | 293 | 183 | 61.6% | 513 | 206 | 71.3% | 530 | 149 | 78.1% | 624 | 193 | 76.4% |
| **Several times per term** | 468 | 254 | 64.8% | 618 | 221 | 73.7% | 590 | 115 | 83.7% | 627 | 162 | 79.5% |
| **Weekly** | 166 | 60 | 73.5% | 186 | 46 | 80.2% | 153 | 27 | 85.0% | 171 | 29 | 85.5% |
| **Nearly every day** | 42 | 13 | 76.4% | 57 | 5 | 91.9% | 46 | 5 | 90.2% | 37 | 7 | 84.1% |

**Table S3.** Overall results of whether respondents had changed their teaching methods over the previous two years, and contingency table based on frequency of talking to colleagues about teaching

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **2004** | | | **2009** | | | **2012** | | | **2016** | | |
|  |  | **Yes** | **No** | **%Yes** | **Yes** | **No** | **%Yes** | **Yes** | **No** | **%Yes** | **Yes** | **No** | **%Yes** |
|  | **Overall** | 787 | 786 | 50.0% | 1083 | 606 | 64.1% | 1030 | 672 | 60.5% | 1128 | 885 | 56.0% |
| **Frequency of talking to colleagues** | **Never** | 19 | 57 | 25.0% | 34 | 29 | 54.0% | 73 | 70 | 51.0% | 56 | 108 | 34.1% |
| **Once or twice per term** | 243 | 298 | 44.9% | 361 | 279 | 56.4% | 391 | 333 | 54.0% | 491 | 422 | 53.8% |
| **Several times per term** | 329 | 316 | 51.0% | 448 | 207 | 68.4% | 398 | 207 | 65.8% | 431 | 283 | 60.4% |
| **Weekly** | 131 | 77 | 63.0% | 141 | 54 | 72.3% | 128 | 41 | 75.7% | 109 | 55 | 66.5% |
| **Nearly every day** | 47 | 15 | 75.8% | 46 | 13 | 78.0% | 32 | 16 | 66.7% | 31 | 9 | 77.5% |

**Table S4.** Contingency table of respondents from all four surveys, comparing whether respondents changed course content and/or teaching methods

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Changed content?** | |
|  |  | **Yes** | **No** |
| **Changed methods?** | **Yes** | 3470 | 535 |
| **No** | 1966 | 965 |

**Table S5.** 2016 results indicating the primary motivation for respondents the last time they made a substantive revision to a course

|  |  |  |
| --- | --- | --- |
|  | **Selected** | **% of Total** |
| **I updated my course to better meet the needs of all students** | 557 | 29.3% |
| **I attended a workshop or other professional development opportunity that inspired me to make changes** | 281 | 14.8% |
| **The content needed to be updated** | 276 | 14.5% |
| **The previous time I taught the course, I was not happy with the results** | 254 | 13.4% |
| **I adopted a new philosophy for my teaching** | 130 | 6.8% |
| **I received a great new idea from a colleague, a publication, or the web that I developed for my course** | 117 | 6.2% |
| **I found a data set or software tool that opened up new teaching possibilities** | 92 | 4.8% |
| **New facilities (e.g. computers, analytical equipment, or classroom space provided new opportunities for teaching)** | 72 | 3.8% |
| **None of the above** | 58 | 3.1% |
| **It was part of a department-wide effort to improve our courses** | 57 | 3.0% |
| **I would receive credit toward tenure and promotion** | 6 | 0.3% |

**Table S6.** 2016 results indicating the reasons why respondents did not make a substantive revision to a course the last time they wished to

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Not selected** | **Yes** | **%Yes** |
| **Time constraints** | 664 | 1341 | 66.9% |
| **None of the above** | 1637 | 389 | 19.2% |
| **The physical infrastructure (classroom spaces) would not allow the changes I was interested in making** | 1737 | 289 | 14.3% |
| **I didn’t have the financial resources needed** | 1768 | 258 | 12.7% |
| **My institution wouldn’t value my efforts** | 1798 | 228 | 11.3% |
| **I didn’t have the support I needed from my department chair/dean** | 1920 | 106 | 5.2% |
| **I didn’t have support from my colleagues** | 1961 | 65 | 3.2% |
| **Someone else is in charge of this course; I don’t have the authority to make changes** | 1985 | 41 | 2.0% |
| **I didn’t feel qualified to make the changes** | 1991 | 35 | 1.7% |

**Table S7.** 2016 responses to course content changes made in courses in the past two years

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Not selected** | **Yes** | **%Yes** |
| **Updated content with latest research findings** | 546 | 1042 | 65.6% |
| **Reorganized the topics covered** | 648 | 940 | 59.2% |
| **Included recent geological events covered in the general media** | 656 | 932 | 58.7% |
| **Added new content area** | 868 | 720 | 45.3% |
| **Added content linking geoscience to societal issues** | 964 | 624 | 39.3% |
| **Increased emphasis on environmental issues** | 1030 | 558 | 35.1% |
| **Increased focus on quantitative skills** | 1077 | 511 | 32.2% |
| **Increased focus on communication skills** | 1156 | 432 | 27.2% |
| **Changed textbook** | 1200 | 388 | 24.4% |
| **Added content drawn from another discipline** | 1203 | 385 | 24.2% |
| **Increased emphasis on systems thinking** | 1211 | 377 | 23.7% |
| **None of the above** | 1580 | 8 | 0.5% |

**Table S8.** 2016 responses to teaching methods changes made in courses in the past two years

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Not selected** | **Yes** | **%Yes** |
| **Revised lab activities** | 474 | 668 | 58.5% |
| **Spent less time lecturing** | 531 | 611 | 53.5% |
| **Increased questioning of students during lectures** | 591 | 551 | 48.2% |
| **Increased time students spent working or discussing with one another** | 646 | 496 | 43.4% |
| **Added group work or small group activities** | 670 | 472 | 41.3% |
| **Changed assessment tools or strategies** | 690 | 452 | 39.6% |
| **Spent more time on class discussions or small group discussions** | 721 | 421 | 36.9% |
| **Integrated lab and lecture activities** | 731 | 411 | 36.0% |
| **Employed more demonstrations during lectures** | 791 | 351 | 30.7% |
| **Increased out-of-class work preparing for class** | 805 | 337 | 29.5% |
| **Increased time spent by students reflecting and synthesizing** | 861 | 281 | 24.6% |
| **Increased time spent on field trips** | 953 | 189 | 16.5% |
| **Changed class to hybrid format** | 1042 | 100 | 8.8% |
| **Changed class to entirely online format** | 1101 | 41 | 3.6% |
| **None of the above** | 1141 | 1 | 0.1% |

**Table S9a.** Contingency table showing specific responses for questions by specified subgroups, as shown in Figure 7 of the primary text

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subgroup** | **Members** | **Changed content?** | | | **Updated content with research?** | | | **Changed methods?** | | | **Updated methods through labs?** | | |
|  |  | **Yes** | **No** | **%Yes** | **Yes** | **Not selected** | **%Yes** | **Yes** | **No** | **%Yes** | **Yes** | **Not selected** | **%Yes** |
| **Overall** | **N/A** | 1585 | 432 | 78.6% | 1042 | 546 | 65.6% | 1128 | 885 | 56.0% | 668 | 474 | 58.5% |
| **Faculty Type** | **Education focused faculty** | 301 | 69 | 81.4% | 181 | 121 | 59.9% | 254 | 116 | 68.6% | 155 | 102 | 60.3% |
| **Geoscience research-focused faculty** | 618 | 155 | 79.9% | 453 | 165 | 73.3% | 379 | 393 | 49.1% | 199 | 185 | 51.8% |
| **Teaching faculty** | 659 | 204 | 76.4% | 407 | 253 | 61.7% | 490 | 372 | 56.8% | 313 | 182 | 63.2% |
| **Institution Type** | **Research and/or doctoral** | 832 | 231 | 78.3% | 574 | 258 | 69.0% | 540 | 520 | 50.9% | 264 | 284 | 48.2% |
| **Master's** | 298 | 76 | 79.7% | 189 | 110 | 63.2% | 219 | 156 | 58.4% | 139 | 82 | 62.9% |
| **Baccalaureate** | 161 | 45 | 78.2% | 98 | 64 | 60.5% | 114 | 92 | 55.3% | 86 | 29 | 74.8% |
| **Associates** | 208 | 57 | 78.5% | 122 | 87 | 58.4% | 193 | 70 | 73.4% | 143 | 53 | 73.0% |
| **Special focus/other** | 7 | 0 | 100.0% | 3 | 4 | 42.9% | 3 | 4 | 42.9% | 1 | 2 | 33.3% |
| **Position Type** | **Professor** | 696 | 178 | 79.6% | 491 | 205 | 70.5% | 424 | 449 | 48.6% | 244 | 187 | 56.6% |
| **Associate professor** | 360 | 103 | 77.8% | 238 | 122 | 66.1% | 282 | 179 | 61.2% | 172 | 113 | 60.4% |
| **Assistant professor** | 249 | 78 | 76.1% | 152 | 99 | 60.6% | 207 | 119 | 63.5% | 109 | 100 | 52.2% |
| **Instructor or lecturer** | 141 | 30 | 82.5% | 79 | 63 | 55.6% | 110 | 61 | 64.3% | 77 | 34 | 69.4% |
| **Adjunct faculty** | 82 | 21 | 79.6% | 49 | 33 | 59.8% | 61 | 41 | 59.8% | 39 | 22 | 63.9% |
| **Visiting professor** | 5 | 3 | 62.5% | 2 | 3 | 40.0% | 4 | 4 | 50.0% | 2 | 2 | 50.0% |
| **Other** | 52 | 19 | 73.2% | 31 | 21 | 59.6% | 40 | 32 | 55.6% | 25 | 16 | 61.0% |
| **Talking to Colleagues** | **Never** | 117 | 37 | 76.0% | 81 | 42 | 65.9% | 56 | 108 | 34.1% | 30 | 26 | 53.6% |
| **Once or twice per term** | 624 | 193 | 76.4% | 451 | 259 | 63.5% | 491 | 422 | 53.8% | 300 | 198 | 60.2% |
| **Several times per term** | 627 | 162 | 79.5% | 390 | 187 | 67.6% | 431 | 283 | 60.4% | 240 | 195 | 55.2% |
| **Weekly** | 171 | 29 | 85.5% | 92 | 41 | 69.2% | 109 | 55 | 66.5% | 75 | 36 | 67.6% |
| **Nearly every day** | 37 | 7 | 84.1% | 23 | 6 | 79.3% | 31 | 9 | 77.5% | 21 | 10 | 67.7% |
| **Intro or Major** | **Introductory course** | 789 | 212 | 78.8% | 498 | 292 | 63.0% | 611 | 388 | 61.2% | 327 | 292 | 52.8% |
| **Major course** | 796 | 220 | 78.3% | 544 | 254 | 68.2% | 517 | 497 | 51.0% | 341 | 182 | 65.2% |
| **Class Size** | **Small (30 or less)** | 963 | 262 | 78.6% | 621 | 343 | 64.4% | 680 | 543 | 55.6% | 452 | 234 | 65.9% |
| **Medium (31-80)** | 410 | 117 | 77.8% | 279 | 133 | 67.7% | 292 | 231 | 55.8% | 157 | 141 | 52.7% |
| **Large (greater than 80)** | 208 | 52 | 80.0% | 139 | 69 | 66.8% | 153 | 109 | 58.4% | 58 | 97 | 37.4% |
| **Solo or Team** | **Solo** | 847 | 216 | 79.7% | 553 | 295 | 65.2% | 587 | 472 | 55.4% | 359 | 236 | 60.3% |
| **In a team** | 707 | 205 | 77.5% | 464 | 245 | 65.4% | 515 | 396 | 56.5% | 295 | 226 | 56.6% |
| **Teaching Load** | **Small (<7 hours/week)** | 586 | 172 | 77.3% | 402 | 184 | 68.6% | 371 | 385 | 49.1% | 176 | 204 | 46.3% |
| **Medium (7-12 hours/week)** | 594 | 147 | 80.2% | 375 | 221 | 62.9% | 438 | 301 | 59.3% | 275 | 165 | 62.5% |
| **Large (>12 hours/week)** | 397 | 110 | 78.3% | 259 | 139 | 65.1% | 313 | 194 | 61.7% | 214 | 102 | 67.7% |
| **Teaching Style** | **Traditional lecture only** | 166 | 58 | 74.1% | 101 | 65 | 60.8% | 86 | 136 | 38.7% | 39 | 47 | 45.3% |
| **Active lecture** | 435 | 115 | 79.1% | 284 | 151 | 65.3% | 273 | 275 | 49.8% | 158 | 121 | 56.6% |
| **Active learning** | 922 | 237 | 79.6% | 613 | 312 | 66.3% | 718 | 439 | 62.1% | 439 | 287 | 60.5% |
| **Student-Active Teaching** | **Low amount of class time (<20%)** | 712 | 232 | 75.4% | 498 | 292 | 63.0% | 446 | 496 | 47.3% | 250 | 203 | 55.2% |
| **High amount of class time (>20%)** | 854 | 195 | 81.4% | 544 | 254 | 68.2% | 669 | 378 | 63.9% | 409 | 267 | 60.5% |

**Table S9b.** Contingency table showing specific responses for questions by specified subgroups, as shown in Figure 7 of the primary text

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subgroup** | **Members** | **Updated methods with less lecture?** | | | **Motivated by a workshop?** | | | **Motivated by needs of students?** | | | **Inhibited by time constraints?** | | |
|  |  | **Yes** | **Not selected** | **%Yes** | **Selected** | **Other option selected** | **%Selected** | **Selected** | **Other option selected** | **%Selected** | **Yes** | **Not selected** | **%Selected** |
| **Overall** | **N/A** | 611 | 531 | 53.5% | 281 | 1549 | 15.4% | 557 | 1273 | 30.4% | 1341 | 664 | 66.9% |
| **Faculty Type** | **Education focused faculty** | 165 | 92 | 64.2% | 87 | 265 | 24.7% | 99 | 253 | 28.1% | 264 | 100 | 72.5% |
| **Geoscience research-focused faculty** | 202 | 182 | 52.6% | 79 | 647 | 10.9% | 199 | 527 | 27.4% | 507 | 263 | 65.8% |
| **Teaching faculty** | 242 | 253 | 48.9% | 113 | 703 | 13.8% | 258 | 558 | 31.6% | 567 | 289 | 66.2% |
| **Institution Type** | **Research and/or doctoral** | 291 | 257 | 53.1% | 118 | 885 | 11.8% | 296 | 707 | 29.5% | 685 | 376 | 64.6% |
| **Master's** | 124 | 97 | 56.1% | 65 | 289 | 18.4% | 108 | 246 | 30.5% | 270 | 101 | 72.8% |
| **Baccalaureate** | 67 | 48 | 58.3% | 20 | 173 | 10.4% | 52 | 141 | 26.9% | 143 | 60 | 70.4% |
| **Associates** | 100 | 96 | 51.0% | 64 | 182 | 26.0% | 72 | 174 | 29.3% | 178 | 83 | 68.2% |
| **Special focus/other** | 1 | 2 | 33.3% | 0 | 6 | 0.0% | 1 | 5 | 16.7% | 5 | 2 | 71.4% |
| **Position Type** | **Professor** | 232 | 199 | 53.8% | 109 | 715 | 13.2% | 249 | 575 | 30.2% | 546 | 323 | 62.8% |
| **Associate professor** | 150 | 135 | 52.6% | 65 | 373 | 14.8% | 120 | 318 | 27.4% | 337 | 122 | 73.4% |
| **Assistant professor** | 122 | 87 | 58.4% | 52 | 252 | 17.1% | 82 | 222 | 27.0% | 245 | 82 | 74.9% |
| **Instructor or lecturer** | 53 | 58 | 47.7% | 33 | 132 | 20.0% | 55 | 110 | 33.3% | 119 | 49 | 70.8% |
| **Adjunct faculty** | 30 | 31 | 49.2% | 9 | 87 | 9.4% | 33 | 63 | 34.4% | 48 | 54 | 47.1% |
| **Visiting professor** | 2 | 2 | 50.0% | 2 | 5 | 28.6% | 1 | 6 | 14.3% | 5 | 3 | 62.5% |
| **Other** | 22 | 19 | 53.7% | 11 | 55 | 16.7% | 17 | 49 | 25.8% | 41 | 31 | 56.9% |
| **Talking to Colleagues** | **Never** | 27 | 29 | 48.2% | 13 | 145 | 8.2% | 39 | 119 | 24.7% | 102 | 61 | 62.6% |
| **Once or twice per term** | 247 | 251 | 49.6% | 126 | 736 | 14.6% | 239 | 623 | 27.7% | 592 | 312 | 65.5% |
| **Several times per term** | 250 | 185 | 57.5% | 107 | 569 | 15.8% | 219 | 457 | 32.4% | 499 | 212 | 70.2% |
| **Weekly** | 66 | 45 | 59.5% | 24 | 128 | 15.8% | 44 | 108 | 28.9% | 114 | 49 | 69.9% |
| **Nearly every day** | 17 | 14 | 54.8% | 7 | 31 | 18.4% | 13 | 25 | 34.2% | 26 | 14 | 65.0% |
| **Intro or Major** | **Introductory course** | 309 | 310 | 49.9% | 173 | 771 | 18.3% | 246 | 698 | 26.1% | 666 | 327 | 67.1% |
| **Major course** | 302 | 221 | 57.7% | 108 | 848 | 11.3% | 311 | 645 | 32.5% | 675 | 337 | 66.7% |
| **Class Size** | **Small (30 or less)** | 378 | 308 | 55.1% | 149 | 1004 | 12.9% | 357 | 796 | 31.0% | 823 | 397 | 67.5% |
| **Medium (31-80)** | 162 | 136 | 54.4% | 92 | 407 | 18.4% | 135 | 364 | 27.1% | 339 | 181 | 65.2% |
| **Large (greater than 80)** | 69 | 86 | 44.5% | 39 | 204 | 16.0% | 63 | 180 | 25.9% | 174 | 84 | 67.4% |
| **Solo or Team** | **Solo** | 328 | 267 | 55.1% | 138 | 862 | 13.8% | 315 | 685 | 31.5% | 719 | 334 | 68.3% |
| **In a team** | 271 | 250 | 52.0% | 135 | 723 | 15.7% | 234 | 624 | 27.3% | 596 | 311 | 65.7% |
| **Teaching Load** | **Small (<7 hours/week)** | 194 | 186 | 51.1% | 92 | 619 | 12.9% | 176 | 535 | 24.8% | 487 | 266 | 64.7% |
| **Medium (7-12 hours/week)** | 245 | 195 | 55.7% | 96 | 605 | 13.7% | 225 | 476 | 32.1% | 515 | 220 | 70.1% |
| **Large (>12 hours/week)** | 170 | 146 | 53.8% | 91 | 387 | 19.0% | 153 | 325 | 32.0% | 334 | 172 | 66.0% |
| **Teaching Style** | **Traditional lecture only** | 28 | 58 | 32.6% | 26 | 182 | 12.5% | 54 | 154 | 26.0% | 147 | 77 | 65.6% |
| **Active lecture** | 99 | 180 | 35.5% | 54 | 462 | 10.5% | 140 | 376 | 27.1% | 357 | 187 | 65.6% |
| **Active learning** | 458 | 268 | 63.1% | 185 | 909 | 16.9% | 336 | 758 | 30.7% | 789 | 361 | 68.6% |
| **Student-Active Teaching** | **Low amount of class time (<20%)** | 175 | 278 | 38.6% | 98 | 794 | 11.0% | 245 | 647 | 27.5% | 634 | 307 | 67.4% |
| **High amount of class time (>20%)** | 431 | 245 | 63.8% | 178 | 809 | 18.0% | 306 | 681 | 31.0% | 696 | 343 | 67.0% |