#### Table 1 Compilation background data of primary trainee teachers taken from the data on the ESEU evaluation forms 2009-2015.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **totals** | **% of total** |
| **Total number of trainees in workshops in year** | 424 | 452 | 688 | 1252 | 1196 | 1144 | 424 | 5580 |  |
| **No. of evaluation forms used in study** | 106 | 113 | 172 | 313 | 299 | 286 | 106 | 1395 | 25% |
| **No. of females in study** | 84 | 101 | 129 | 253 | 217 | 233 | 78 | 1095 | 78% |
| **no. of males in study** | 22 | 12 | 43 | 60 | 82 | 53 | 28 | 300 | 22% |
| **Earth Science studied to 16** | 62 | 73 | 108 | 163 | 149 | 207 | 61 | 823 | 59% |
| **Earth Science studied to 16+** | 13 | 9 | 15 | 29 | 21 | 26 | 8 | 121 | 8.70% |
| **Earth science as minor part of degree** | 17 | 8 | 15 | 39 | 26 | 26 | 3 | 134 | 9.70% |
| **Earth Science as major part of degree** | 9 | 5 | 5 | 4 | 13 | 2 | 1 | 39 | 2.80% |

**Table 2 Number of trainee teachers with science degrees attending workshops**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **Totals** | **% of total** |
| **Number of trainees participating:** | 106 | 113 | 172 | 313 | 299 | 286 | 106 | 1395 |  |
| **Degree in biology** | 7 | 3 | 1 | 2 | 10 | 2 | 0 | 25 | 1.8% |
| **Degree in chemistry** | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 5 | 0.40% |
| **Degree in physics** | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 6 | 0.43% |
| **Degree in earth science** | 1 | 1 | 3 | 4 | 1 | 0 | 0 | 10 | 0.72% |
| **Degree in geology** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |

#### Table 3 Actual numbers of primary trainee teachers who felt confident in teaching primary science

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **Totals** | **% of total** |
| **Number of trainees participating:** | 106 | 113 | 172 | 313 | 299 | 286 | 106 | 1395 |  |
| **Teaching confidence in biology** | 63 | 72 | 114 | 210 | 186 | 233 | 57 | 935 | 67% |
| **Teaching confidence in chemistry** | 16 | 16 | 20 | 25 | 32 | 36 | 30 | 175 | 13% |
| **Teaching confidence in physics** | 21 | 18 | 27 | 46 | 40 | 33 | 22 | 207 | 15% |
| **Teaching confidence in earth science** | 3 | 2 | 10 | 17 | 18 | 12 | 6 | 68 | 4.9% |
| **Teaching confidence in geology** | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 5 | 0.40% |
| **Teaching confidence in all** | 1 | 0 | 3 | 3 | 3 | 1 | 2 | 13 | 0.93% |
| **No confidence** | 0 | 2 | 3 | 8 | 18 | 10 | 27 | 68 | 4.9% |

**Table 4 Percentage of trainee teachers who felt confident at teaching particular science subjects**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **Average %** |
| **Number of trainees participating:** | 106 | 113 | 172 | 313 | 299 | 286 | 106 |  |
| **Teaching confidence in biology** | 59 | 64 | 66 | 67 | 62 | 81 | 54 | 65% |
| **Teaching confidence in chemistry** | 15 | 14 | 12 | 8 | 11 | 13 | 28 | 14% |
| **Teaching confidence in physics** | 20 | 16 | 16 | 15 | 13 | 12 | 21 | 16% |
| **Teaching confidence in earth science** | 3 | 2 | 6 | 5 | 6 | 4 | 6 | 4.6% |
| **Teaching confidence in geology** | 2 | 0 | 0 | 0 | 0 | 3 | 1 | 0.85% |
| **Teaching confidence in all** | 1 | 0 | 2 | 1 | 1 | 1 | 2 | 1.1% |
| **No confidence** | 0 | 2 | 2 | 3 | 6 | 3 | 25 | 5.9% |

**Figure 2 Bar graph showing overall trainee teacher confidence in teaching primary science from 2009-2015**

**Figure 3 Percentage of teacher trainee participants at ESEU workshops stating they had no confidence in teaching primary science prior to participating in the workshop**.

#### Table 5 Composite table of comments and themes from participants about ESEU CPD workshops 2009-2015

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Comments from evaluation forms** | **Theme** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **Total** |
| **Practical / Hands-on** | 1 | 46 | 38 | 67 | 81 | 77 | 87 | 24 | 420 |
| **Models** | 1 | 0 | 4 | 0 | 0 | 1 | 1 | 0 | 6 |
| **Good experiments** | 1 | 2 | 4 | 4 | 20 | 19 | 14 | 20 | 83 |
| **Interactive/investigative** | 1 | 2 | 1 | 9 | 17 | 15 | 10 | 2 | 57 |
| **Useful/valuable/effective** | 1 | 10 | 0 | 18 | 40 | 20 | 50 | 1 | 139 |
| **Interesting/good background** | 2 | 15 | 4 | 12 | 40 | 16 | 0 | 18 | 105 |
| **Engaging/enjoyable/fun** | 2 | 23 | 12 | 36 | 39 | 42 | 27 | 9 | 188 |
| **Fantastic/brilliant/excellent** | 2 | 13 | 17 | 9 | 11 | 23 | 0 | 18 | 91 |
| **Creative/inspiring/** | 2 | 0 | 6 | 0 | 2 | 0 | 5 | 0 | 13 |
| **Presentation/ambience** | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 3 |
| **Presenter’s knowledge** | 2 | 0 | 0 | 5 | 14 | 33 | 30 | 10 | 92 |
| **Discussion /informal/experiences** | 2 | 4 | 4 | 6 | 3 | 3 | 5 | 1 | 26 |
| **Enthusiasm/passion for ES** | 2 | 0 | 2 | 8 | 14 | 8 | 6 | 4 | 42 |
| **Answered participants’ questions** | 2 | 0 | 1 | 2 | 5 | 2 | 6 | 2 | 18 |
| **Great teaching ideas** | 3 | 16 | 19 | 29 | 62 | 86 | 65 | 20 | 297 |
| **Good information/concepts** | 3 | 12 | 8 | 13 | 30 | 24 | 23 | 14 | 124 |
| **Useful in class/lesson plans** | 3 | 0 | 19 | 5 | 26 | 35 | 32 | 18 | 135 |
| **Relevant to curriculum** | 3 | 0 | 7 | 23 | 13 | 7 | 22 | 6 | 78 |
| **Right level/easy instructions** | 3 | 0 | 3 | 6 | 2 | 12 | 4 | 2 | 29 |
| **Extensions** | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| **Adaptable** | 3 | 0 | 1 | 1 | 4 | 2 | 0 | 0 | 8 |
| **Differentiation** | 3 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 6 |
| **Good for SEN** | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| **Fits own teaching** | 3 | 3 | 0 | 2 | 6 | 1 | 4 | 0 | 16 |
| **Easy delivery** | 3 | 8 | 0 | 1 | 2 | 0 | 0 | 0 | 11 |
| **Good vocabulary** | 3 | 2 | 1 | 1 | 0 | 0 | 2 | 0 | 6 |
| **Gives confidence/deliverable** | 3 | 2 | 9 | 3 | 18 | 11 | 8 | 5 | 56 |
| **Cross curricula links** | 3 | 3 | 0 | 1 | 0 | 2 | 3 | 0 | 9 |
| **Misconceptions** | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| **Relates to real world** | 3 | 0 | 0 | 0 | 0 | 4 | 3 | 3 | 10 |
| **Correlates life skills** | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 4 |
| **Improves thinking skills** | 3 | 2 | 1 | 0 | 1 | 2 | 1 | 0 | 7 |
| **Evokes curiosity/insightful** | 3 | 0 | 0 | 2 | 1 | 0 | 4 | 0 | 7 |
| **Improves understanding** | 3 | 0 | 0 | 5 | 4 | 0 | 18 | 6 | 33 |
| **Improves own knowledge** | 3 | 10 | 0 | 0 | 0 | 0 | 4 | 1 | 15 |
| **Useful resources** | 4 | 18 | 15 | 9 | 14 | 27 | 26 | 11 | 120 |
| **Good CD ROMs** | 4 | 0 | 0 | 5 | 0 | 1 | 5 | 13 | 24 |
| **Clear explanations** | 4 | 6 | 0 | 0 | 0 | 0 | 3 | 0 | 9 |
| **Knowledge giving/good info.** | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| **Not overloaded** | 5 | 3 | 0 | 1 | 4 | 0 | 2 | 0 | 10 |
| **Too short** | 5 | 1 | 0 | 3 | 16 | 1 | 7 | 2 | 30 |

#### Figure 4 Workshop theme analysis

**Figure 5 Comments on how the CPD will be used**