**Appendix.** Explorator**y** Factor Analysis Results of the Questionnaire

|  |  |  |
| --- | --- | --- |
|  |  |  Factor Loadings |
|  | Items | T | SA | S |
| 1 | STEM education enhances teacher creativity. | .89 |  |  |
| 2 | STEM education improves teachers' problem-solving skills. | .85 |  |  |
| 3 | STEM education develops teachers' critical thinking skills. | .83 |  |  |
| 4 | STEM education improves teachers' ability to collaborate with teachers in other disciplines. | .77 |  |  |
| 5 | STEM education increases teacher motivation. | .75 |  |  |
| 6 | School administration provides teachers with a flexible work schedule. |  | .85 |  |
| 7 | School administration provides collaboration between school, industry and university for project work of teachers and students. |  | .83 |  |
| 8 | School administration provides in-service training opportunities to teachers for their professional development. |  | .82 |  |
| 9 | School administration supports project work of teachers and students. |  | .80 |  |
| 10 | School administration provides teachers with necessary material support for their laboratory work. |  | .79 |  |
| 11 | STEM education improves students' ability to collaborate with their classmates. |  |  | .85 |
| 12 | STEM education increases students' self-confidence. |  |  | .83 |
| 13 | STEM education improves students' communication skills. |  |  | .81 |
| Cronbach' Alpha Values | .92 | .90 | .90 |
| Eigenvalue | 6.63 | 2.27 | 1.07 |
| Explained Variance Percentage | 51.08% | 17.46% | 8.22% |

Confirmatory Factor Analysis Results of the Questionnaire

|  |  |  |  |
| --- | --- | --- | --- |
| Fit Index | Obtained values | Acceptable Fit | Good fit |
| CMIN/df | 2.58 | $${x^{2}}/{sd}\leq 5$$ | $${x^{2}}/{sd}\leq 3$$ |
| NFI | .94 | $$.90\leq NFI$$ | $$.95\leq NFI$$ |
| TLI | .95 | $$.90\leq NNFI$$ | $$.95\leq NNFI$$ |
| IFI | .96 | $$.90\leq IFI$$ | $$.95\leq IFI$$ |
| CFI | .96 | $$.95\leq CFI$$ | $$.97\leq CFI$$ |
| RMSEA | .08 | $$RMSEA\leq .08$$ | $$RMSEA\leq .05$$ |
| GFI | .92 | $$.85\leq GFI$$ | $$.90\leq GFI$$ |
| AGFI | .87 | $$.85\leq AGFI$$ | $$.90\leq AGFI$$ |
| RMR | .03 | $$0<RMR\leq .08$$ | $$0<RMR\leq .05$$ |
| SRMR | .04 | $$0<SRMR\leq .08$$ | $$0<SRMR\leq .05$$ |

Note: Chi-Square Test (CMIN/df), Normalized Index of Fit (NFI), Tucker-Lewis Index (TLI); Incremental Fit Index (IFI), Comparative Fit Index (CFI), Root Mean Square Errors of Approximation (RMSEA), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Root of Mean Errors (RMR), Standardized Root of Mean Errors ( SRMR)