Table 1: Study variables

|  |  |  |  |
| --- | --- | --- | --- |
| Variable type | Variable | Variable values | Measurement scale |
| Background | Gender | 1 = Male2 = Female | Nominal \ dichotomous |
| Independent Variable | Learning program | 0 = Traditional1 = ICT | Nominal \ dichotomous |
| Dependent variables | Motivation | 1-5 | Quasi-interval |
| Self-efficacy | 1-5 | Quasi-interval |
| Achievement | 0-100 | Quasi-interval |
| Collaboration | Low-to-high collaboration in aspects: interest, trust, support, willingness, security. | Qualitative |

Table 2

*Means and Standard Deviations of Student Motivation in the Experimental and Control Group*

|  |  |  |
| --- | --- | --- |
| *Measurement*  |  | *Group*  |
| *After* | *Before* |  |  |
| 2.26 | 2.28 | Mean | Experimental group (N = 88) |
| 0.52 | 0.48 | SD |
| 2.24 | 2.23 | Mean | Control group (N = 57)  |
| 0.43 | 0.34 | SD |

Table 3

*Testing Differences in Motivation*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *α significant* | *SE* | *Β* | *b*  | *Variable* |
| 0.000 | 0.061 | - | 2.302 | Fixed |
| 0.767 | 0.086 | - 0.028 | -0.025 | Time |
| 0.657 | 0.078 | -0.037 | -0.033 | Treatment ( ICT) |
| 0.819 | 0.110 | 0.026 | 0.024 | Time \* ICT |
|  | R=0.029, R2=0.001 |  |  |

Table 4

*Means and Standard Deviations of Students’ Self-Efficacy in the Experimental and Control Group*

|  |  |  |
| --- | --- | --- |
| *Measurement*  |  | *Group*  |
| *After* | *Before* |  |  |
| 1.69 | 1.7 | Mean | Experimental group (N = 88) |
| 0.7 | 0.7 | SD |
| 1.71 | 1.67 | Mean | Control group (N = 57)  |
| 0.43 | 0.48 | SD |

Table 5

*Testing Differences in Self-Efficacy*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *a significant* | *SE* | *Β* | *b* | *Variable* |
| 0.000 | 0.082 | - | 1.776 | Fixed |
| 0.248 | 0.115 | - 0.109 | -0.124 | Time |
| 0.058 | 0.105 | - 0.159 | -0.184 | Program ( ICT) |
| 0.296 | 0.148 | 0.117 | 0.143 | Time \* ICT |
|  | R = 0.119, R2 = 0.014 |  |  |

Table 6

*Means and Standard Deviations of Student Achievement in the Experimental and Control Group*

|  |  |  |
| --- | --- | --- |
| *Measurement*  |  | *Group*  |
| *After* | *Before* |  |  |
| 70.97 | 61.16 | Mean | Experimental group (N = 88) |
| 15.4 | 16.64 | SD |
| 71.42 | 69.74 | Mean | Control group (N = 57)  |
| 15.47 | 15.69 | SD |

Table 7

*Testing Differences in Achievement*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *a significant* | *SE* | *Β* | *b* | *Variable* |
| 0.000 | 2.100 | - | 71.421 | Fixed |
| 0.571 | 2.970 | 0.051 | 1.684 | Time |
| 0.002 | 2.696 | -0.256 | -8.578 | Program ( ICT) |
| 0.034 | 3.812 | 0.228 | 8.123 | Time \* ICT |
|  | R=0.272, R2=0.074 |  |  |

Table 8

*Testing Differences in Collaboration among Student in the Experimental and Control Group*

|  |  |  |
| --- | --- | --- |
| *Description of the degree of collaboration in the control group* | *Description of the degree of collaboration in the experimental group* | *Criteria in the checklist* |
| moderate collaboration  | high collaboration  | **General organization of the class** |
| moderate collaboration | high collaboration  | **The degree of interest in learning from colleagues** |
| moderate collaboration | high collaboration  | **Trust among students** |
| moderate collaboration | high collaboration  | **Encouragement and support among team members** |
| moderate collaboration | high collaboration  | **Students' willingness to study in a group** |
| moderate collaboration | high collaboration  | **Communication capabilities between team members** |
| low collaboration | high collaboration  | **Students' self-confidence** |
| moderate collaboration | high collaboration  | **General Assessment of Learning Outcomes** |