**Table S1.** Measurement of the assessed variables used for analyses in the paper at hand.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Variable | Description | | Special Notes/ Further Description | Coding Scheme | Interpretation | Example Item |
| MTP 1 | Sex | Recorded as female; male; others; no indication  Female: 68.18% Male: 30.91 % Other: 0.91 % | | Two participants identified as non-binary and had to be excluded from correlation analyses with the sex variable due to the small sample size | Female = 0 Male = 1 | Positive correlations = relationships to male sex  negative correlations = relationships to female sex |  |
| Age | Measured in whole years *M*= 24.98; *SD* = 3.71 Range= 19; 44 | |  |  |  |  |
| General Mental Abilities | German version of the Wonderlic Personnel Test (Wonderlic, 2002).  *M*= 24.98; *SD* = 6.12 Range = 5; 21 | | * 50 Items * 12 minutes to answer * Correct answer = 1 point * Analysis of sum scores |  | Higher sum scores = higher general mental abilities | Which number should come next: 8, 4, 2, 1, ½, ¼? |
| Retentivity | Wilde Intelligence Test 2 (WIT-2)/ module retentivity (Kersting et al., 2008).  *M* = 14.08; *SD* = 3.06 Range = 1; 5 | | * 4 minutes to memorize a story including graphic elements * 15 minutes engaging in other questionnaires * 21 items in relation to the previously presented story and the graphic elements * 3.5 minutes to answer * Correct answer = 1 point * Analysis of sum scores |  | Higher sum scores = higher retentivity |  |
| Team Partner Familiarity | Dyadic teams who knew their team partner beforehand = 29.09% | |  | Yes = 1 No = 0 | Positive correlation = relationship to knowing the team partner beforehand |  |
| Interest in AR | Interest in the topic of AR = 29.09% | |  | Yes = 1 No = 0 | Positive correlation = relationship to interest in AR |  |
| Interest in VR | Interest in the topic of VR = 85.91% | |  | Yes = 1 No = 0 | Positive correlation = relationship to interest in VR |  |
| Frequency AR Usage | *M* = 1.08; *SD* = 0.37 Range = 1; 5 | | * 5-point Likert scale; 1 = never; 5 = daily * Analysis of mean values |  | Higher values = higher usage frequency |  |
| Frequency VR Usage | *M* = 1.3; *SD* = 0.59 Range = 1; 5 | | * 5-point Likert scale; 1 = never; 5 = daily * Analysis of mean values |  | Higher values = higher usage frequency |  |
| MTP2 | Post-Training Self-Efficacy | Post-Training Self-Efficacy Scale (Kluge, 2004)  *M* = 3.59; *SD* = 0.75 Range = 1;5 Cronbachs α = .79; CI [.75; .84] | | * 5 items * Items were inverted before data analyses * 5- point Likert scale; 1 = totally agree; 5 = totally disagree |  | Higher values = higher self-efficacy | I feel confident operating WaTrSim successfully. |
| MTP3 | Performance Output | Measured in liters  *M* = 328.40; *SD* = 100.87 Range = 1.92;557.03 | | * Analysis of mean values |  | Higher values = higher performance output |  |
| Performance Time | Measured in seconds  *M* = 155.58; *SD* = 24.79 Range = 103.88; 229.25 | | * Analysis of mean values |  | Lower values = faster performance speed |  |
| Performance Errors | Measured by numbers of errors made  *M* = 0.5; *SD* = 1.06 Range = 0; 4 | | Errors were defined as either adjustment errors (incorrect value setting) or procedure error (adjustment on a wrong plant part)   * Analysis of mean values |  | Higher values = lower performance accuracy |  |
| Mental Load | Measured by applying a secondary task paradigm  *M* = 1.54; *SD* = 1.06 Range = 0; 4 | | Participants had to additionally press a “monitoring” button every 50 seconds   * Analysis of mean values |  | Higher values = lower mental load |  |
| MTP4 | Collective Orientation | | Collective Orientation Questionnaire  (Hagemann, 2017)  Affiliation: *M* = 3.02; *SD* = 0.75 Range = 1.20; 4.80 Cronbachs α = .88, CI [.86; .90}  Dominance: *M* = 3.35; *SD* = 0.70 Range = 1.76; 5.00 Cronbachs α = .77, CI [.72; .82] | * Subscales: Affiliation, dominance * Inverse coded items were recoded prior to data analyses * Affiliation: 10 items * Dominance: 6 items * 5-point Likert scale * 1 = do not agree at all; 2 = totally agree * Analysis of mean values |  | Higher values = higher collective orientation | Affiliation: I find working on team projects to be very satisfying.  Dominance: When I disagree with other team members, I tend to go with my own gut feelings. |
| Spatial Presence & Satisfaction | Presence Scale for Lab-Based Microworld Research  (Frank & Kluge, 2014a)  Spatial presence: *M* = 2.84; *SD* = 0.87 Range = 1; 4.75 Cronbachs α = .64, CI [.56; .71]  Satisfaction: *M* = 3.76; *SD* = 0.93 Range = 1.5; 5 Cronbachs α = .71, CI [.62; .78] | | * Inverse coded items were recoded prior to data analyses * Spatial presence: 4 items * Satisfaction: 2 items * 5-point Likert-scale * 1 = totally disagree; 5 = totally agree * Analysis of mean values |  | Higher values = higher spatial presence and satisfaction | Spatial presence: I felt that I was part of the WaTrSim world.  Satisfaction: Working in the WaTrSim environment was satisfying for me. |
| Task Complexity | Subscale Intrinsic Cognitive Load of the Cognitive Load Scale  (Klepsch et al., 2017)  *M* = 4.47; *SD* = 1.26 Range = 1; 7 Cronbachs α = .76, CI [.69; .82] | | * 7-point Likert scale * 1 = totally wrong; 7 = totally correct * Analysis of mean values |  | Higher values = higher perceived task complexity | This task was very complex. |
| Work Group Cohesion | Work Group Identification Questionnaire/ subscale Work Group Cohesiveness  (Riordan & Weatherly, 1999)  *M* = 3.45; *SD* = 0.84 Range = 1;5 Cronbachs α = .94, CI [.93; .95] | | As participants could not communicate, the item “In my work group, individuals take the time to listen to coworkers’ problems and worries” was excluded   * 5-point Likert scale * 1 = do not agree; 5 = totally agree * Analysis of mean values |  | Higher values = higher work group cohesion | In my work group, group members work as a team. |
| Simulator Sickness | Simulator Sickness Questionnaire  (Kennedy et al., 1993)  *M* = 27.22; *SD* = 27.69 Range = 0; 175.78 Cronbachs α = .85, CI [.82; .88] | | * 0 = not present * 1 = slight * 2 = moderate * 3 = strong * Analysis of total scores as suggested by Kennedy et al. (1993) |  | Higher values = higher simulator sickness |  |
| Physiological Stability | Participants were asked whether they felt any change in their physical condition compared to the beginning of the experiment (pre AR-use)  Changed physical condition: 31.82% | |  | Yes = 0 (change)  No = 1 (no change) | Positive correlations = relationship to unchanged physiological state  Negative correlations = relationship to changed physiological state |  |

**Table S2.** Correlation matrix.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Sex | Age | Team Partner Familiarity | Frequency AR Use | Frequency VR Use | Interest AR | Interest VR | General Mental Abilities | Retentivity | Post-Training Self-Efficacy | Simulator Sickness | Physiological Stability | Spatial Presence | Satisfaction | Work Group Cohesion | Collective Orientation Affiliation | Collective Orientation Dominance | Task Complexity | Performance Output | Performance Time | Secondary Tasks | Performance Errors |
| Sex | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age | r = .067,  p = .322 | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Team Partner Familiarity | r = .029,  p < .001 | r = -.147,  p = .029 | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Frequency AR Use | ρ = .167,  p = .137 | ρ = .041,  p = .544 | ρ = .008,  p = .909 | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Frequency VR Use | ρ = . 263,  p < .001 | ρ = -.022,  p = .744 | ρ = .019,  p = .780 | ρ = .262,  p < .001 | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Interest AR | r = .230,  p = .001\* | r = .037,  p = .584 | r = .026,  p = .701 | ρ = .008,  p = .911 | ρ = .034,  p = .617 | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Interest VR | r = .230,  p = .001 | r = .012,  p = .864 | r = .012,  p= .076 | ρ = -.008,  p = .903 | ρ = .027,  p = .692 | r = .970,  p < .001 | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| General Mental Abilities | r = -.011,  p = .871 | ρ = -.126,  p = .062 | r = .026,  p = .703 | ρ = .151,  p = .025 | ρ = .216,  p = .001 | ρ = -.079,  p = .245 | r = -.107,  p = .113 | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Retentivity | r = -.280,  p < .001 | ρ = -.115,  p = .088 | r = -.027,  p = .690 | ρ = .005,  p = .944 | ρ = .004,  p = .954 | ρ = .040, p = .555 | r = .028,  p = .680 | ρ = .397,  p < .001 | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Post-Training Self-Efficacy | r = .140,  p = .040 | ρ = -.117,  p = .083 | r = .017,  p = .797 | ρ = -.114,  p = .091 | ρ = -.030,  p = .660 | r = .172,  p = .012 | r = .158,  p = .020 | ρ = -.063,  p = .357 | ρ = -.047,  p = .493 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Simulator Sickness | r = -.185,  p = .006 | ρ = -.035,  p = .601 | r = .025,  p = .715 | ρ = -.114,  p = .091 | ρ = -.084,  p = .216 | r = -.068,  p = .314 | r = -.075, p = .268 | ρ = .016,  p = .818 | ρ = .020,  p = .769 | ρ = -.072,  p = .290 | X |  |  |  |  |  |  |  |  |  |  |  |
| Physiological Stability | r = .360,  p < .001 | r = .035,  p = .602 | r = -.024,  p = .723 | ρ = .089,  p = .188 | ρ =.128,  p = .057 | r = .220,  p = .001 | r = .270,  p < .001 | r = -.022,  p = .748 | r =-.004,  p = .952 | r = -.081,  p = .230 | r = -.396,  p < .001 | X |  |  |  |  |  |  |  |  |  |  |
| Spatial Presence | r = .028,  p = .685 | ρ = -.106,  p = .116 | r = .046,  p = .501 | ρ = -.035,  p = .609 | ρ = -.006,  p = .930 | r = .232,  p = .001 | r = .224,  p = .001 | ρ = .113,  p = .093 | ρ = -.022,  p = .750 | ρ = .203,  p = .002 | ρ = -.133,  p = .049 | r = .057,  p = .398 | X |  |  |  |  |  |  |  |  |  |
| Satisfaction | r = .080,  p = .241 | ρ = -.109,  p = .108 | r = .110,  p = .102 | ρ = .007,  p = .914 | ρ = .009,  p = .899 | r = .325,  p < .001 | r = .376,  p < .001 | ρ = -.165,  p = .014 | ρ = -.060, p = .379 | ρ = .296,  p < .001 | ρ = -.201,  p = .003 | r = .229,  p = .001 | ρ = .488,  p < .001 | X |  |  |  |  |  |  |  |  |
| Work Group Cohesion | r = .067,  p = .322 | ρ = .070,  p = .301 | r = .104,  p = .124 | ρ = -.079,  p = .243 | ρ = .001,  p = .984 | r = - .017,  p = .806 | r = -.055,  p = .419 | ρ = .101,  p = .137 | ρ = -.038,  p = .577 | ρ = -.074,  p = .276 | ρ = -.036,  p = .594 | r = -.051,  p = .452 | ρ = -.082,  p = .224 | ρ = .040, p = .551 | X |  |  |  |  |  |  |  |
| Collective Orientation Affiliation | r = .067,  p = .322 | ρ = .036,  p = .600 | r = .153,  p = .023 | ρ = .004,  p = .954 | ρ = .010,  p = .884 | r = .006,  p = .930 | r = -.035,  p = .607 | r = .011,  p = .868 | ρ = -.025,  p = .708 | ρ = .008,  p = .908 | ρ = -.106,  p = .118 | r = .080,  p = .239 | ρ = .012, p = .856 | ρ = .120, p = .076 | ρ = .216,  p = .001 | X |  |  |  |  |  |  |
| Collective Orientation Dominance | r = .055,  p = .422 | ρ = -.124,  p = .067 | r = -.067,  p = .320 | ρ = -.049,  p = .472 | ρ = .-.048,  p = .478 | r = -.101,  p = .135 | r = -.146,  p = .031 | r = -.047,  p = .490 | ρ = -.168,  p = .013 | ρ = -.232,  p < .001 | ρ = -.052,  p = .439 | r = .042,  p = .538 | ρ = -.009,  p = .890 | ρ = -.107,  p = .115 | ρ = -.019,  p = .778 | ρ = .199,  p = .003 | X |  |  |  |  |  |
| Task Complexity | r = -.111,  p = .102 | ρ = -.009,  p = .892 | r = .040,  p = .555 | ρ = .083, p = .217 | ρ = -.006,  p = .931 | r = .023,  p = .735 | r = .036,  p = .591 | ρ = .121,  p = .073 | ρ = .162,  p = .016 | ρ = -.151,  p = .026 | ρ = .205,  p = .002 | r = -.029,  p = .670 | ρ = -.037,  p = .589 | ρ = -.081,  p = .234 | ρ = .021,  p = .751 | ρ = -.070,  p = .298 | ρ = -.001,  p = .989 | X |  |  |  |  |
| Performance Output | r = .102,  p = .133 | ρ = -.318,  p < .001 | r = .129,  p = .056 | ρ = -.042,  p = .533 | ρ = .118,  p = .080 | r = .148,  p = .029 | r = .184,  p = .006 | ρ = .296,  p < .001 | ρ = .284,  p < .001 | ρ = .301,  p < .001 | ρ = -.145,  p = .032 | r = .104,  p = .123 | ρ = .057,  p = .400 | ρ =.093,  p = .168 | ρ = .045,  p = .508 | ρ = -.025,  p = .711 | ρ = -.061,  p = .370 | ρ = .047,  p = .485 | X |  |  |  |
| Performance Time | r = -.112,  p = .100 | ρ = .306,  p < .001 | r = -.127,  p = .059 | ρ = .037,  p = .585 | ρ = -.105,  p = .121 | r = -.151, p = .026 | r = -.189,  p = .005 | ρ = -.284,  p < .001 | ρ = -.284,  p < .001 | ρ = -.289,  p < .001 | ρ = .163,  p = .015 | r = -.122,  p = .070 | ρ = -.105,  p = .121 | ρ =-.082,  p = .224 | ρ = -.068,  p = .316 | ρ = -.034,  p = .615 | ρ = .072,  p = .289 | ρ = -.047,  p = .491 | ρ = -.985,  p < .001 | X |  |  |
| Secondary Tasks | r = .016,  p = .815 | ρ = -.013,  p = .852 | r = -.028,  p = .684 | ρ = -.032,  p = .638 | ρ = .012,  p = .858 | r = -.008,  p = .906 | r = -.033,  p = .631 | ρ = .294,  p < .001 | ρ = .362,  p < .001 | ρ = .045,  p = .510 | ρ = -.133,  p = .049 | r = .214,  p = .001 | ρ = -.059,  p = .381 | ρ =.007,  p = .914 | ρ = .030,  p = .661 | ρ = .047,  p = .489 | ρ = .009,  p = .891 | ρ = .110,  p = .103 | ρ = .340,  p < .001 | ρ = -.355,  p < .001 | X |  |
| Performance Error | r = -.039,  p = .563 | ρ = .083, p = .235 | r = -.106,  p = .118 | ρ = -.025,  p = .710 | ρ = -.057,  p = .402 | r = -.106,  p = .115 | r = -.086, p = .204 | ρ = -.144,  p = .033 | ρ = -.203,  p = .002 | ρ = -.055,  p = .421 | ρ = .214,  p = .001 | r = -.205,  p = .002 | ρ = -.063,  p = .349 | ρ = -.060,  p = .373 | ρ = -.040,  p = .551 | ρ = .009, p = .896 | ρ = -.056,  p = .412 | ρ = -.085,  p = .210 | ρ = -.348,  p <.001 | ρ = .331,  p < .001 | ρ = -.319,  p < .001 | X |

**Table S3.** Applied correlaiton types.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Scale Level | dichotomous | metric | dichotomous | ordinal | ordinal | dichotomous | dichotomous | metric | metric | metric | metric | dichotomous | metric | metric | metric | metric | metric | metric | metric | metric | metric | metric |
| Scale Level | Variable | Sex | Age | Team Partner Familiarity | Frequency AR Use | Frequency VR Use | Interest AR | Interest VR | General Mental Abilities | Retentivity | Post-Training Self-Efficacy | Simulator Sickness | Physiological Stability | Spatial Presence | Satisfaction | Work Group Cohesion | Collective Orientation Affiliation | Collective Orientation Dominance | Task Complexity | Performance Output | Performance Time | Secondary Tasks | Performance Errors |
| dichotomous | Sex | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| metric | Age | point-biserial | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| dichotomous | Team Partner Familiarity | point-tetrachoric | point-biserial | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ordinal | Frequency AR Use | biserial rang correlation | Spearman's Rho | biserial rang correlation | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ordinal | Frequency VR Use | biserial rang correlation | Spearman's Rho | biserial rang correlation | Spearman's Rho | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| dichotomous | Interest AR | point-tetrachoric | point-biserial | point-tetrachoric | biserial rang correlation | biserial rang correlation | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| dichotomous | Interest VR | point-tetrachoric | point-biserial | point-tetrachoric | biserial rang correlation | biserial rang correlation | point-tetrachoric | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| metric | General Mental Abilities | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| metric | Retentivity | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| metric | Post-Training Self-Efficacy | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | X |  |  |  |  |  |  |  |  |  |  |  |  |
| metric | Simulator Sickness | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | X |  |  |  |  |  |  |  |  |  |  |  |
| dichotomous | Physiological Stability | point-tetrachoric | point-biserial | point-tetrachoric | biserial rang correlation | biserial rang correlation | point-tetrachoric | point-tetrachoric | point-biserial | point-biserial | point-biserial | point-biserial | X |  |  |  |  |  |  |  |  |  |  |
| metric | Spatial Presence | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | X |  |  |  |  |  |  |  |  |  |
| metric | Satisfaction | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | Spearman's Rho | X |  |  |  |  |  |  |  |  |
| metric | Work Group Cohesion | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | X |  |  |  |  |  |  |  |
| metric | Collective Orientation Affiliation | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | X |  |  |  |  |  |  |
| metric | Collective Orientation Dominance | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | X |  |  |  |  |  |
| metric | Task Complexity | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | X |  |  |  |  |
| metric | Performance Output | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | X |  |  |  |
| metric | Performance Time | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | X |  |  |
| metric | Secondary Tasks | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | X |  |
| metric | Performance Errors | point-biserial | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | point-biserial | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | point-biserial | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | Spearman's Rho | X |

**Table S4.** Correlations among input variables.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Predispositions | | Traits & Attitudes | | | | States | | | | | CF |
|  |  | Sex | Age | General Mental Abilities | Retentivity | Collective Orientation Affiliation | Collective Orientation Dominance | Post-Training Self-Efficacy | Interest AR | Interest VR | Frequency AR Use | Frequency VR Use | Team Partner Familiarity |
| Predis- positions | Sex | x |  |  |  |  |  |  |  |  |  |  |  |
| Age | *r* = .067,  *p* = .322 | x |  |  |  |  |  |  |  |  |  |  |
| Traits & Attitudes | General Mental Abilities | *r* = -.011,  *p* = .871 | ρ = -.126,  *p* = .062 | x |  |  |  |  |  |  |  |  |  |
| Retentivity | ***r* = -.280,  *p* < .001** | ρ = -.115,  *p* = .088 | **ρ = .397,  *p* < .001** | x |  |  |  |  |  |  |  |  |
| Collective Orientation Affiliation | *r* = .067,  *p* = .322 | ρ = .036,  *p* = .600 | *r* = .011,  *p* = .868 | ρ = -.025,  *p* = .708 | x |  |  |  |  |  |  |  |
| Collective Orientation Dominance | *r* = .055,  *p* = .422 | ρ = -.124,  *p* = .067 | *r* = -.047,  *p* = .490 | ρ = -.168,  *p* = .013 | **ρ = .199,  *p* = .003** | x |  |  |  |  |  |  |
| States | Post-Training Self-Efficacy | ***r* = .140,  *p* = .040** | ρ = -.117,  *p* = .083 | ρ = -.063,  *p* = .357 | ρ = -.047,  *p* = .493 | ρ = .008,  *p* = .908 | **ρ = -.232,  *p* < .001** | x |  |  |  |  |  |
| Interest AR | ***r* = .230,  *p* = .001** | *r* = .037,  *p* = .584 | ρ = -.079,  *p* = .245 | ρ = .040, *p* = .555 | *r* = .006,  *p* = .930 | *r* = -.101,  *p* = .135 | ***r* = .172,  *p* = .012** | x |  |  |  |  |
| Interest VR | ***r* = .230,  *p* = .001** | *r* = .012,  *p* = .864 | *r* = -.107,  *p* = .113 | *r* = .028,  *p* = .680 | *r* = -.035,  *p* = .607 | ***r* = -.146,  *p* = .031** | ***r* = .158,  *p* = .020** | ***r* = .970,  *p* < .001** | x |  |  |  |
| Frequency AR Use | ρ = .167,  *p* = .137 | ρ = .041,  *p* = .544 | **ρ = .151,  *p* = .025** | ρ = .005,  *p* = .944 | ρ = .004,  *p* = .954 | ρ = -.049,  *p* = .472 | ρ = -.114,  *p* = .091 | ρ = .008,  *p* = .911 | ρ = -.008,  *p* = .903 | x |  |  |
| Frequency VR Use | **ρ = .263,  *p* < .001** | ρ = -.022,  *p* = .744 | **ρ = .216,  *p* = .001** | ρ = .004,  *p* = .954 | ρ = .010,  *p* = .884 | ρ =.-.048,  *p* = .478 | ρ = -.030,  *p* = .660 | ρ = .034,  *p* = .617 | ρ = .027,  *p* = .692 | **ρ = .262,**  ***p* < .001** | x |  |
| CF | Team Partner Familiarity | ***r* = .029,  *p* < .001** | ***r* = -.147,  *p* = .029** | *r* = .026,  *p* = .703 | *r* = -.027,  *p* = .690 | *r* = .153,  *p* = .023 | *r* = -.067,  *p* = .320 | *r* = .017,  *p* = .797 | *r* = .026, *p* = .701 | *r* = .012,  *p*= .076 | ρ = .008,  *p* = .909 | ρ = .019,  *p* = .780 | x |

*Note*. The α-level was set at .05. Secondary tasks were used to operationalize mental load (more secondary tasks = less mental load). Physiological stability was coded 1 = no change (stable), 0 = change (unstable), so that positive correlations indicated an unchanged physiological state. Male sex was coded as 1, female sex was coded as 0, so positive correlations refer to relationships with males, and negative correlations to relationships with females. CF = contextual factors.

**Table S5.** Correlations among psychological emergent state variables and among physiological emergent state variables.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Work Group Cohesion | Spatial Presence | Secondary Tasks | Perceived Task Complexity | Satisfaction |
| Work Group Cohesion | x |  |  |  |  |
| Spatial Presence | ρ = -.082,  *p* = .224 | x |  |  |  |
| Secondary Tasks | ρ = .030,  *p* = .661 | ρ = -.059,  *p* = .381 | x |  |  |
| Perceived Task Complexity | ρ = .021,  *p* = .751 | ρ = -.037,  *p* = .589 | ρ = .110,  *p* = .103 | x |  |
| Satisfaction | ρ = .040, p = .551 | **ρ = .488,  *p* < .001** | ρ =.007,  *p* = .914 | ρ = -.081,  *p* = .234 | x |

*Note*. The α-level was set at .05. Secondary tasks were used to operationalize mental load (more secondary tasks = less mental load).

Correlation between physiological emergent states **simulator sickness** and **physiological stability**: *r* = -.396, *p* < .001.

**Table S6.** Correlations among output variables.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Performance Output | Performance Time | Performance Errors |
| Performance Output | x |  |  |
| Performance Time | **ρ = -.985,  *p* < .001** | x |  |
| Performance Errors | **ρ = -.348,  *p* <.001** | **ρ = .331,  *p* < .001** | x |

*Note*. The α-level was set at .05.