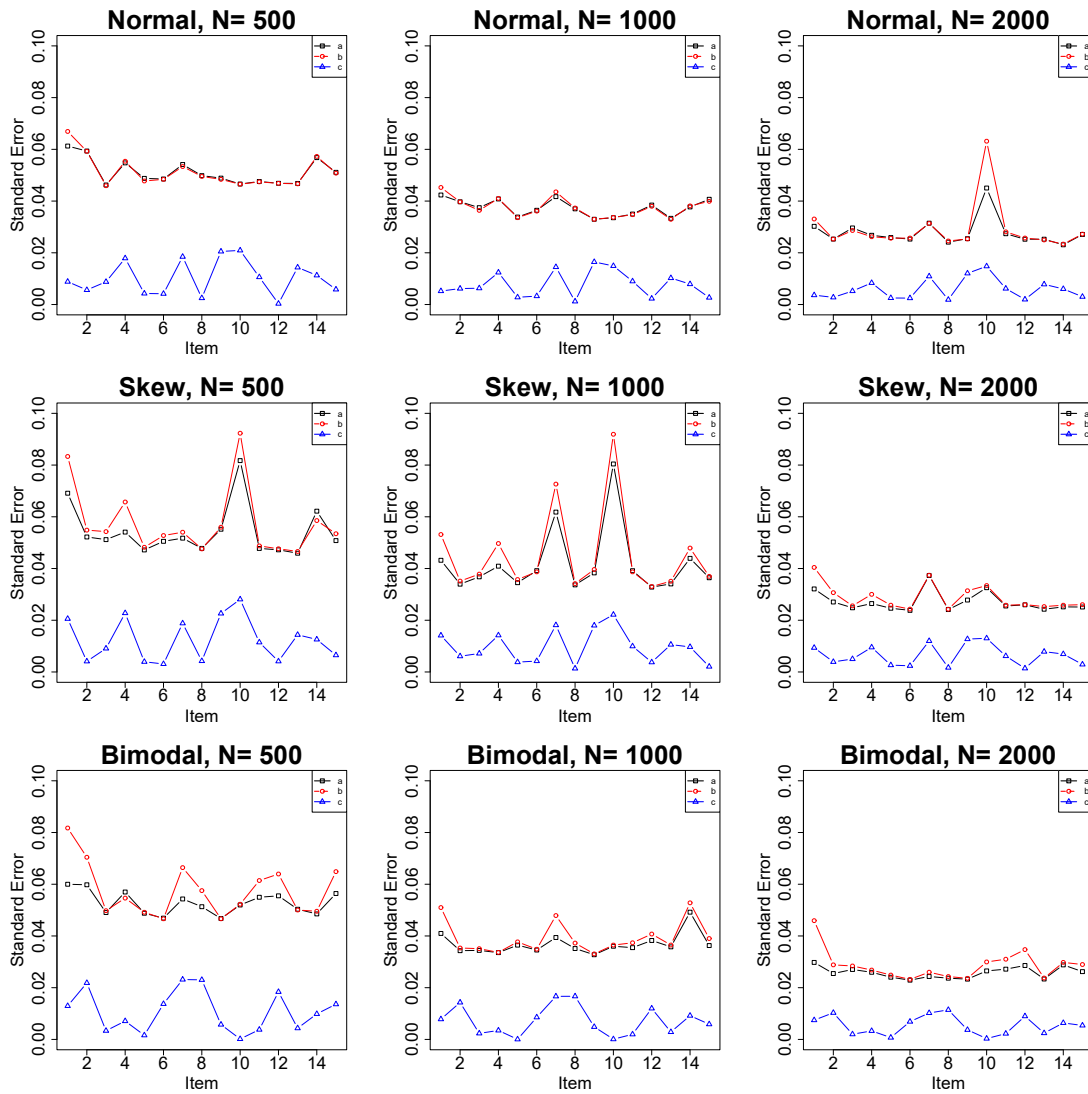# Appendix

Figure A1: The standard error of item parameters using the RC-SAEM algorithm when test length is 15 in simulation study 2.
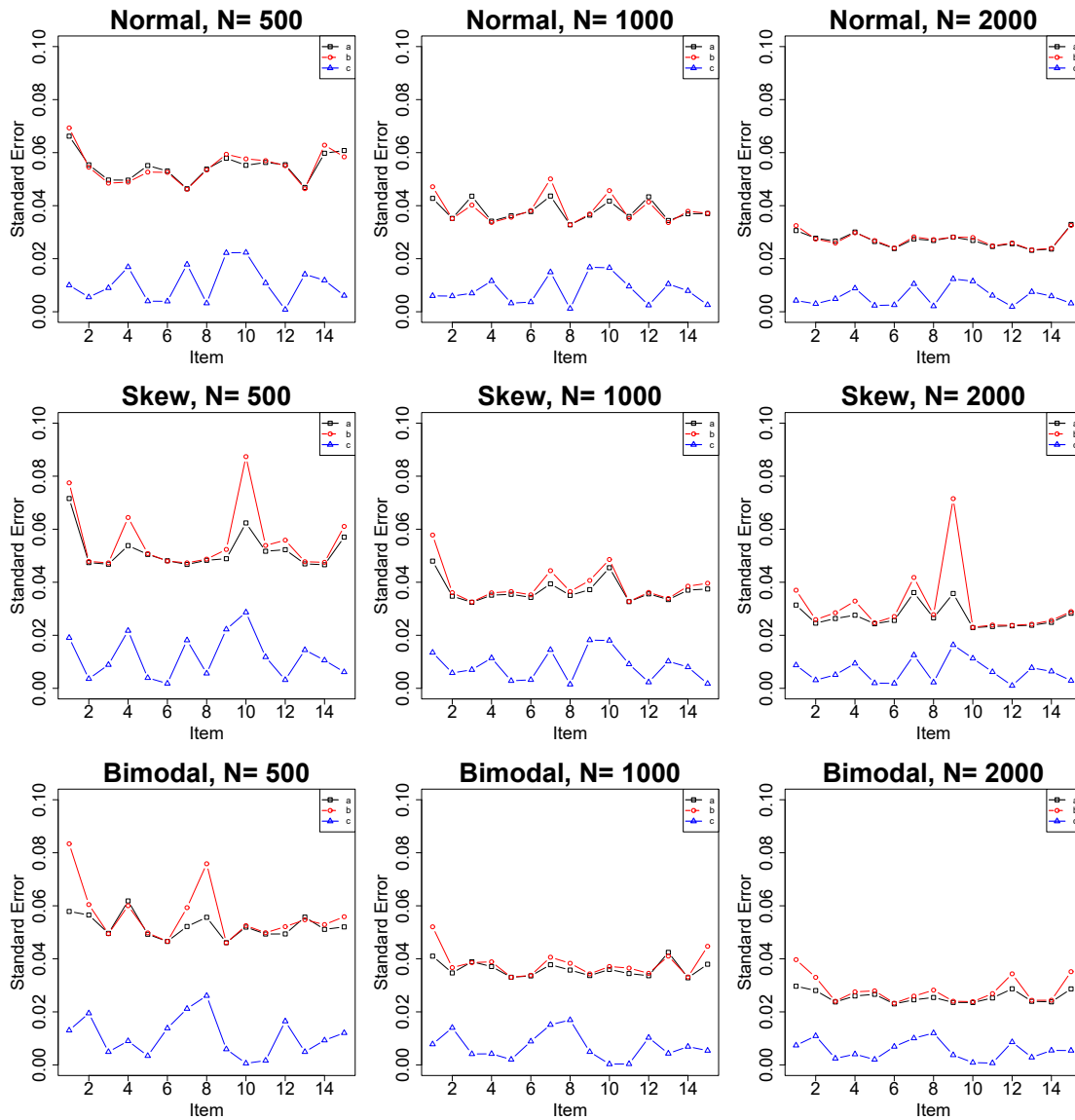
Figure A2: The standard error of item parameters using the SAEM algorithm when test length is 15 in simulation study 2.
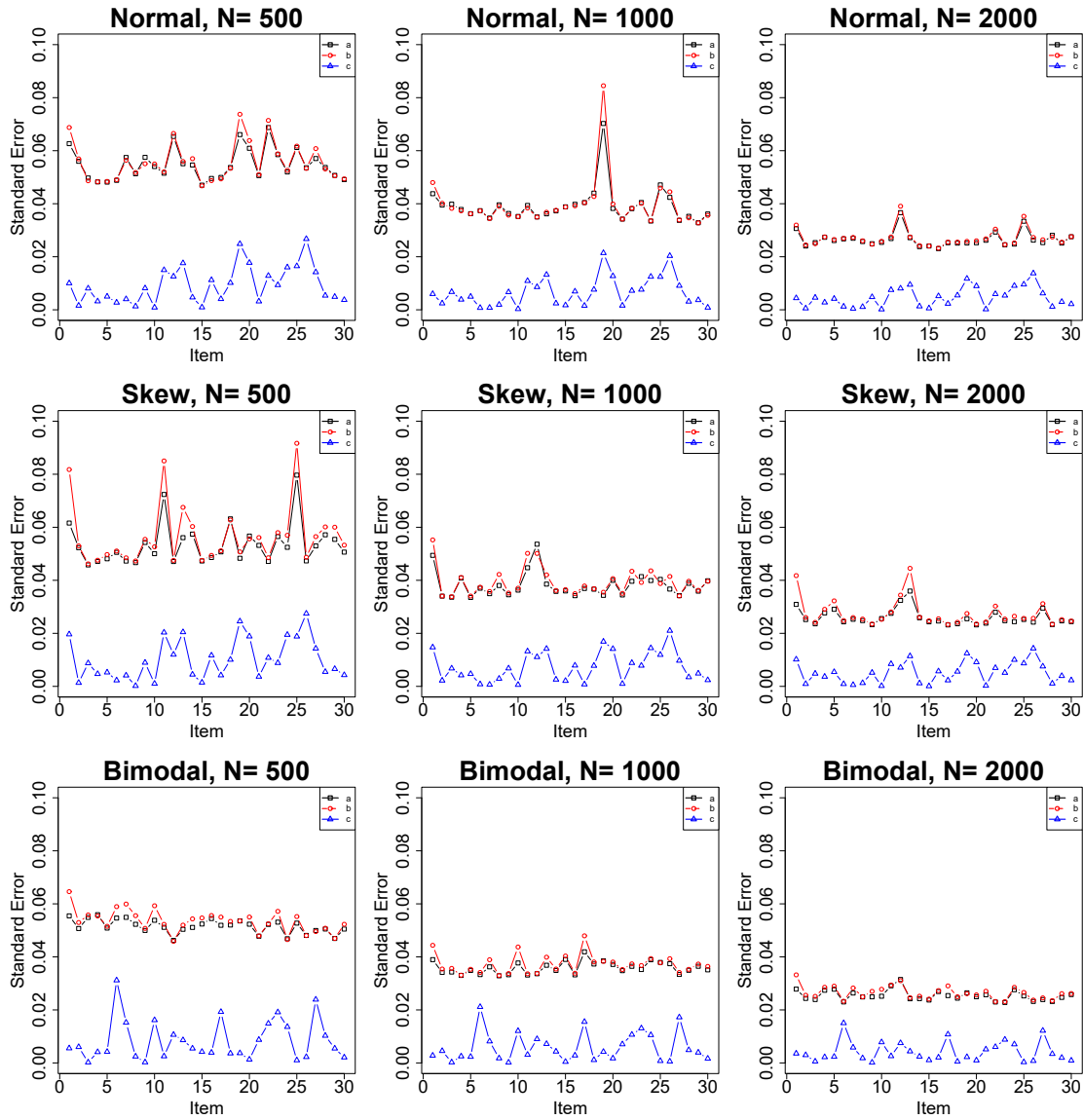
Figure A3: The standard error of item parameters using the RC-SAEM algorithm when test length is 30 in simulation study 2.
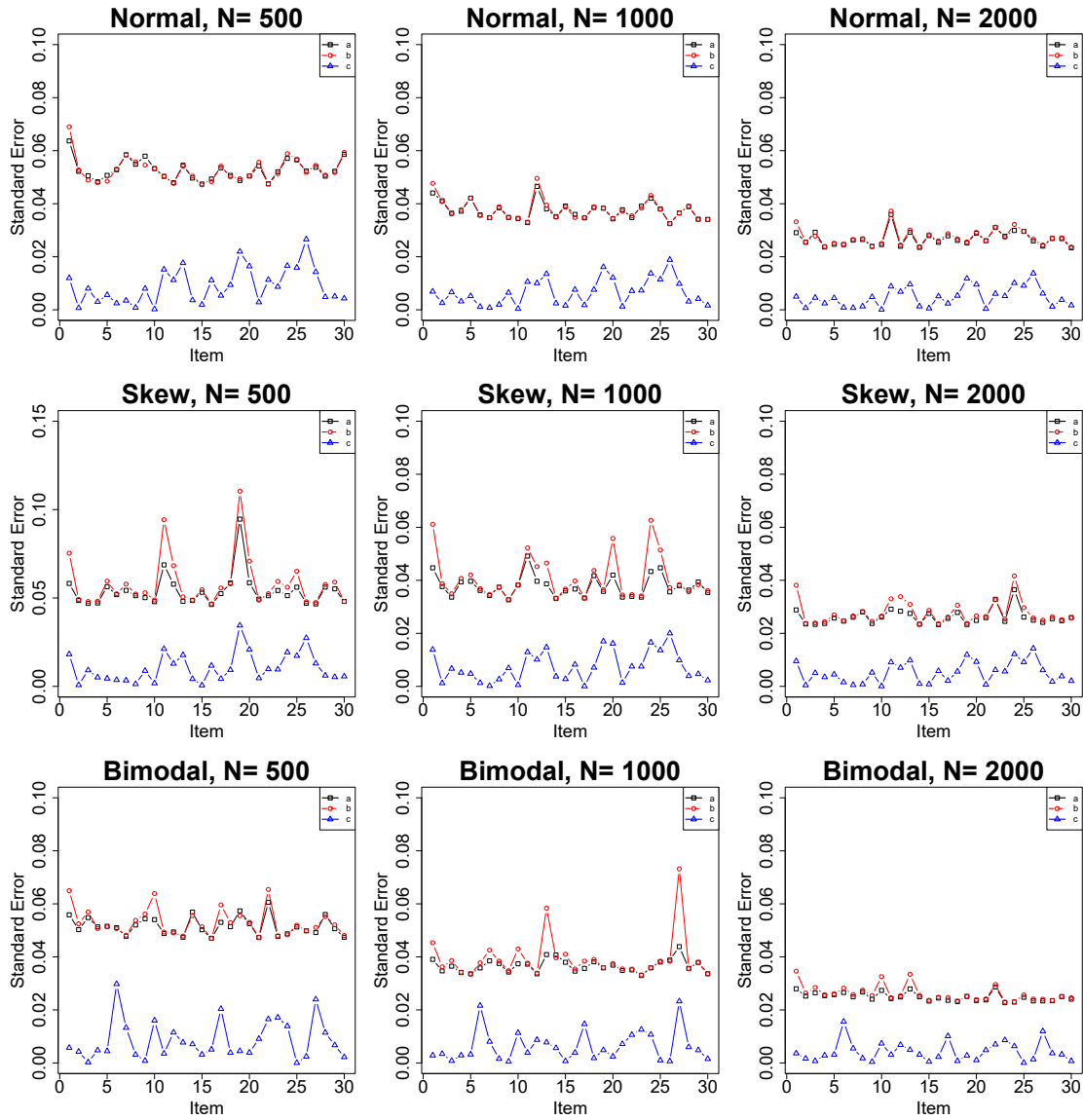
Figure A4: The standard error of item parameters using the SAEM algorithm when test length is 30 in simulation study 2.