

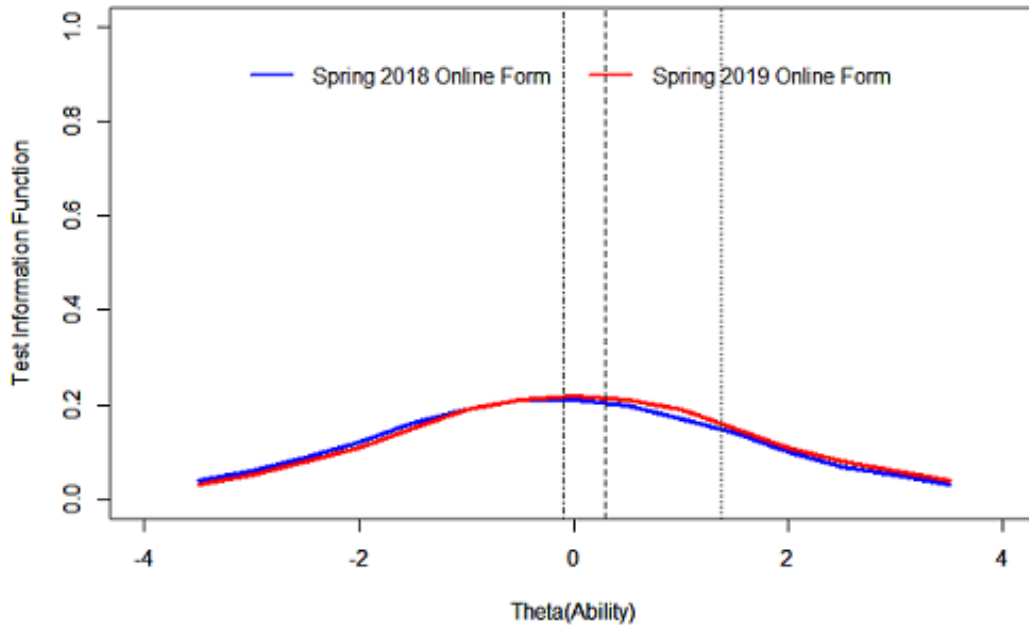
## **Appendix I**

### **Test Information Function**

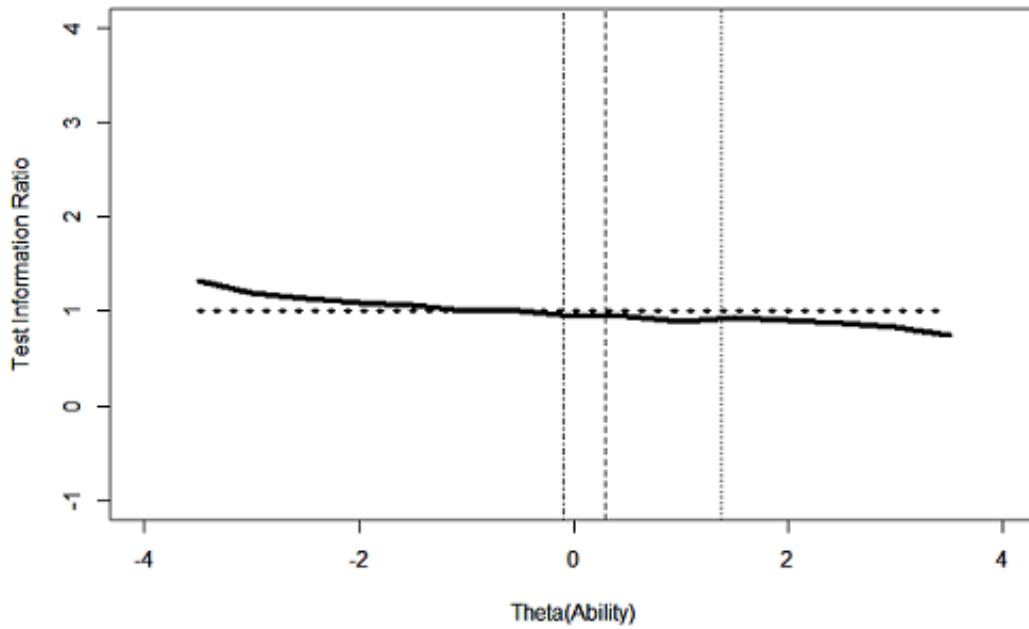
**Appendix I.1. Test Information Function and Ratio of Test Information Function for Grade 3 ELA**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.04	0.03	1.33
-3.00	0.06	0.05	1.20
-2.50	0.09	0.08	1.13
-2.00	0.12	0.11	1.09
-1.50	0.16	0.15	1.07
-1.00	0.19	0.19	1.00
-0.50	0.21	0.21	1.00
0.00	0.21	0.22	0.95
0.50	0.20	0.21	0.95
1.00	0.17	0.19	0.89
1.50	0.14	0.15	0.93
2.00	0.10	0.11	0.91
2.50	0.07	0.08	0.88
3.00	0.05	0.06	0.83
3.50	0.03	0.04	0.75

### Grade 3 ELA



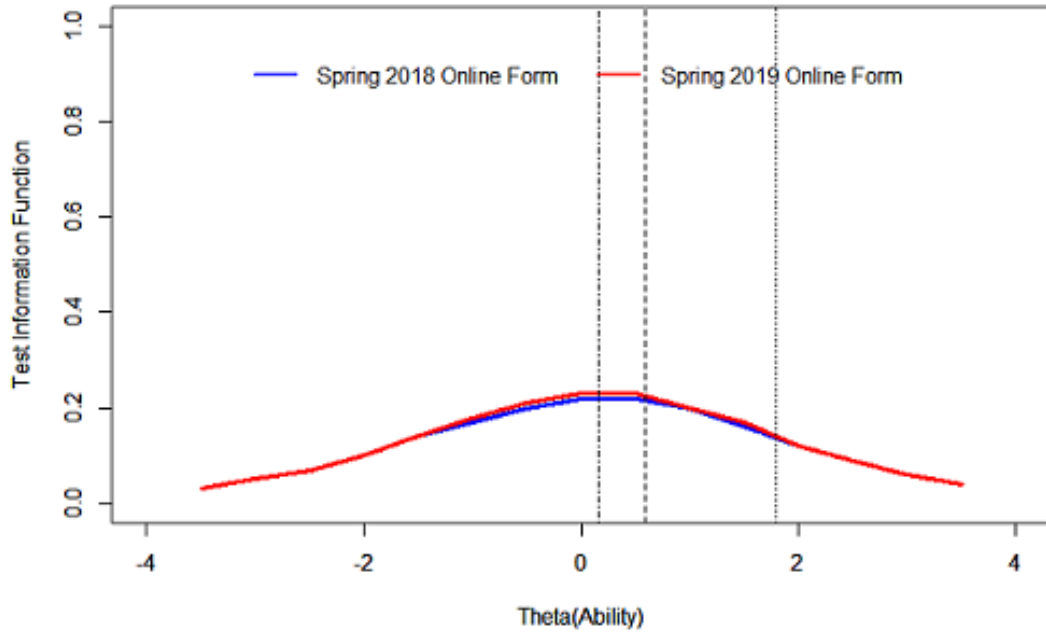
### Ratio of Test Information



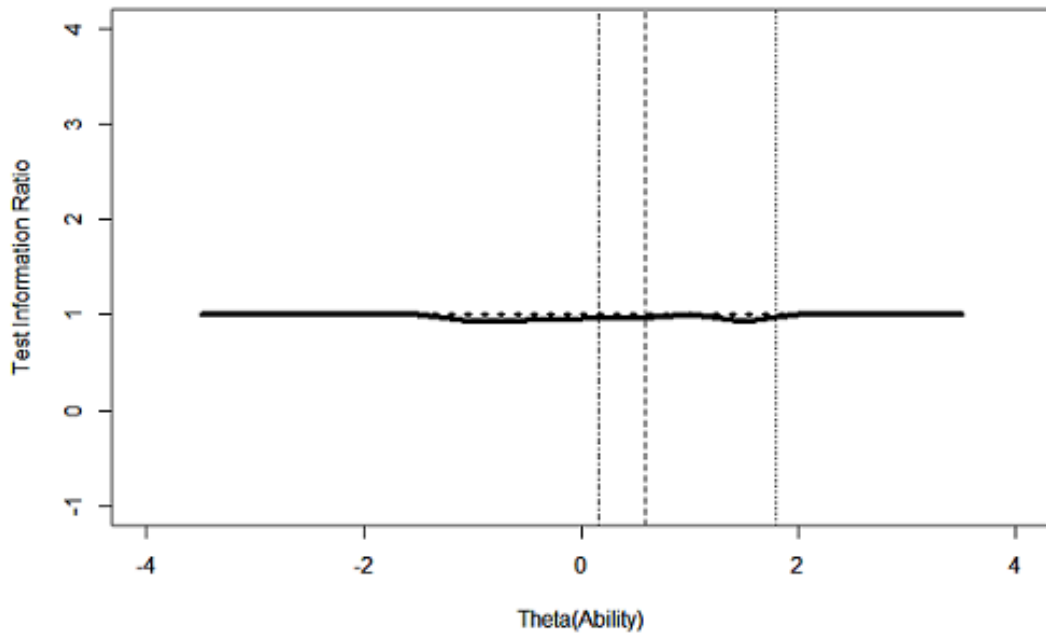
**Appendix I.2. Test Information Function and Ratio of Test Information Function for Grade 4 ELA**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.03	0.03	1.00
-3.00	0.05	0.05	1.00
-2.50	0.07	0.07	1.00
-2.00	0.10	0.10	1.00
-1.50	0.14	0.14	1.00
-1.00	0.17	0.18	0.94
-0.50	0.20	0.21	0.95
0.00	0.22	0.23	0.96
0.50	0.22	0.23	0.96
1.00	0.20	0.20	1.00
1.50	0.16	0.17	0.94
2.00	0.12	0.12	1.00
2.50	0.09	0.09	1.00
3.00	0.06	0.06	1.00
3.50	0.04	0.04	1.00

### Grade 4 ELA



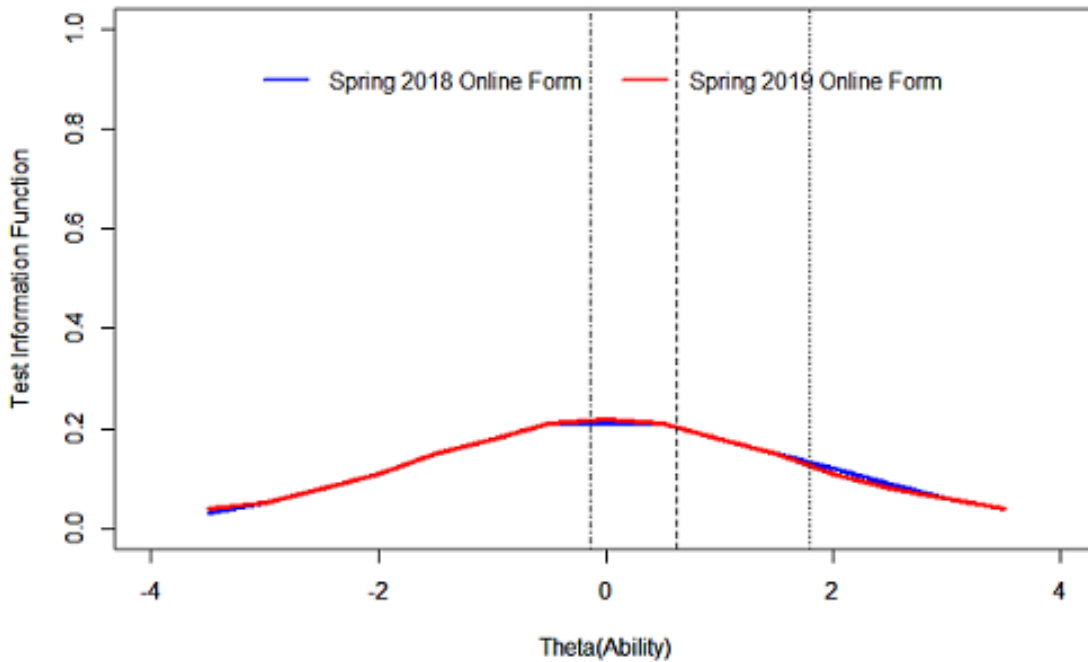
### Ratio of Test Information



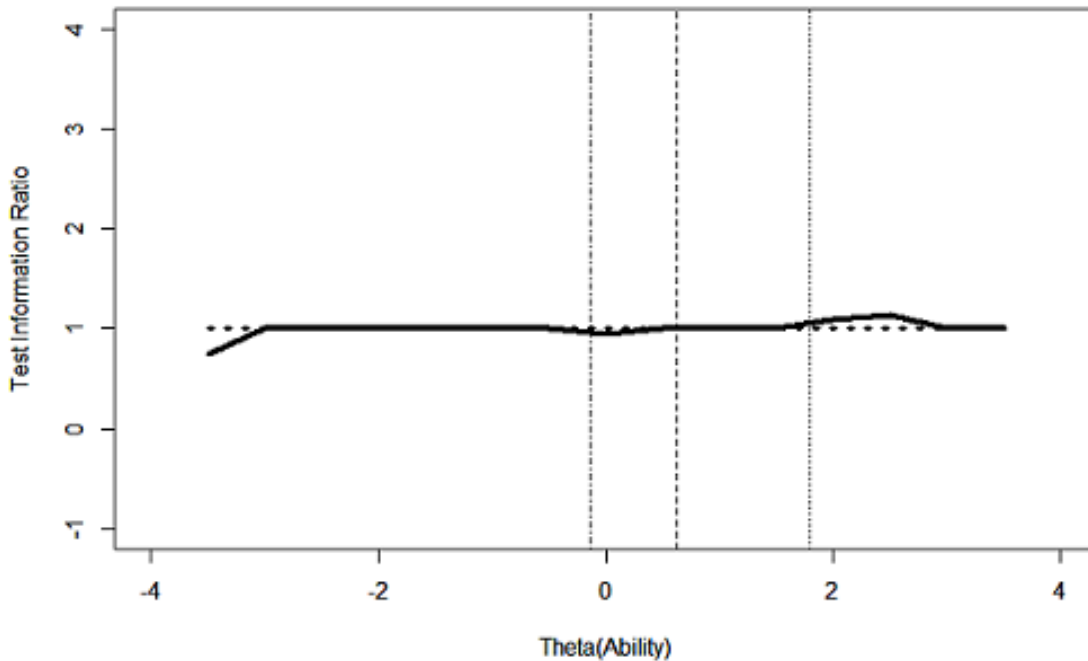
**Appendix I.3. Test Information Function and Ratio of Test Information Function for Grade 5 ELA**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.03	0.04	0.75
-3.00	0.05	0.05	1.00
-2.50	0.08	0.08	1.00
-2.00	0.11	0.11	1.00
-1.50	0.15	0.15	1.00
-1.00	0.18	0.18	1.00
-0.50	0.21	0.21	1.00
0.00	0.21	0.22	0.95
0.50	0.21	0.21	1.00
1.00	0.18	0.18	1.00
1.50	0.15	0.15	1.00
2.00	0.12	0.11	1.09
2.50	0.09	0.08	1.13
3.00	0.06	0.06	1.00
3.50	0.04	0.04	1.00

### Grade 5 ELA



### Ratio of Test Information

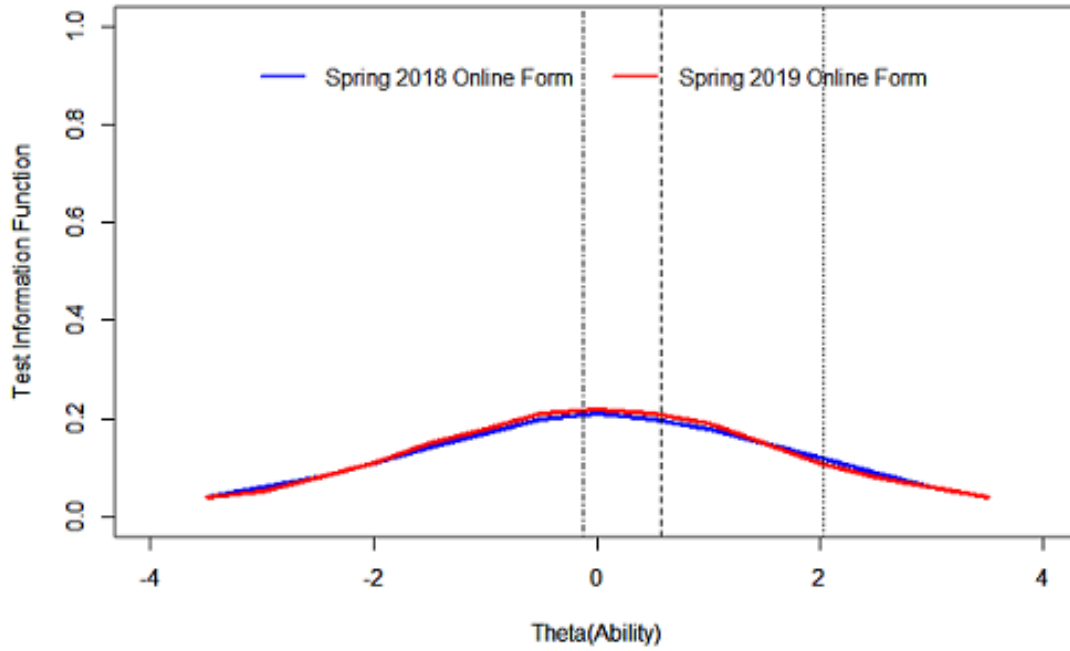


**Appendix I.4. Test Information Function and Ratio of Test Information Function for Grade 6 ELA**

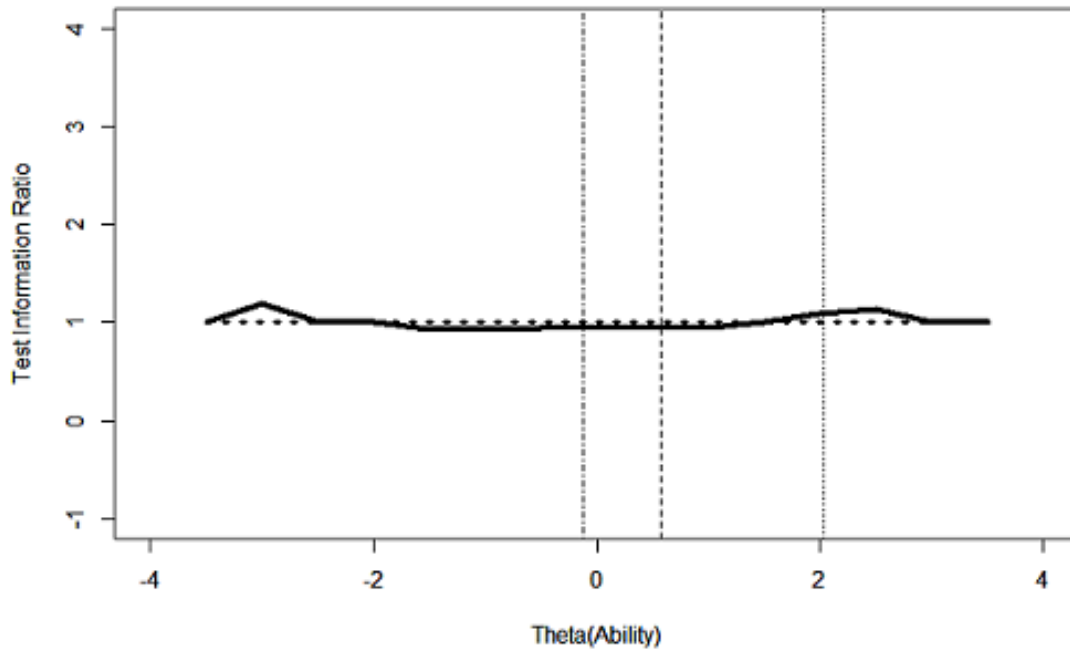
<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.04	0.04	1.00
-3.00	0.06	0.05	1.20
-2.50	0.08	0.08	1.00
-2.00	0.11	0.11	1.00
-1.50	0.14	0.15	0.93
-1.00	0.17	0.18	0.94
-0.50	0.20	0.21	0.95
0.00	0.21	0.22	0.95
0.50	0.20	0.21	0.95
1.00	0.18	0.19	0.95
1.50	0.15	0.15	1.00
2.00	0.12	0.11	1.09
2.50	0.09	0.08	1.13
3.00	0.06	0.06	1.00
3.50	0.04	0.04	1.00



### Grade 6 ELA



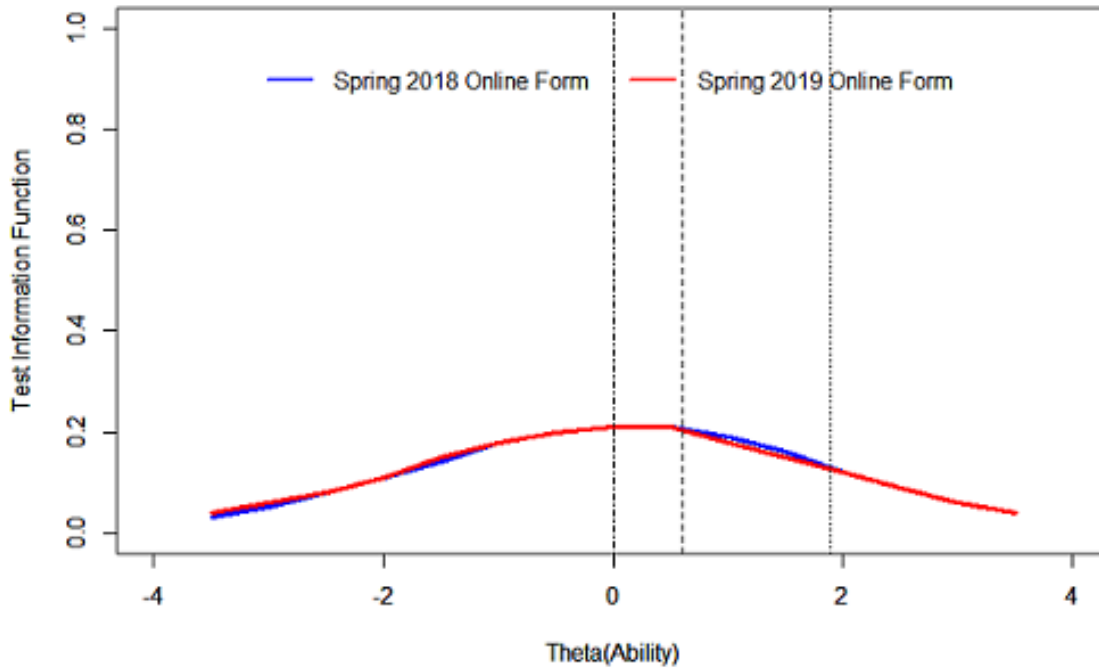
### Ratio of Test Information



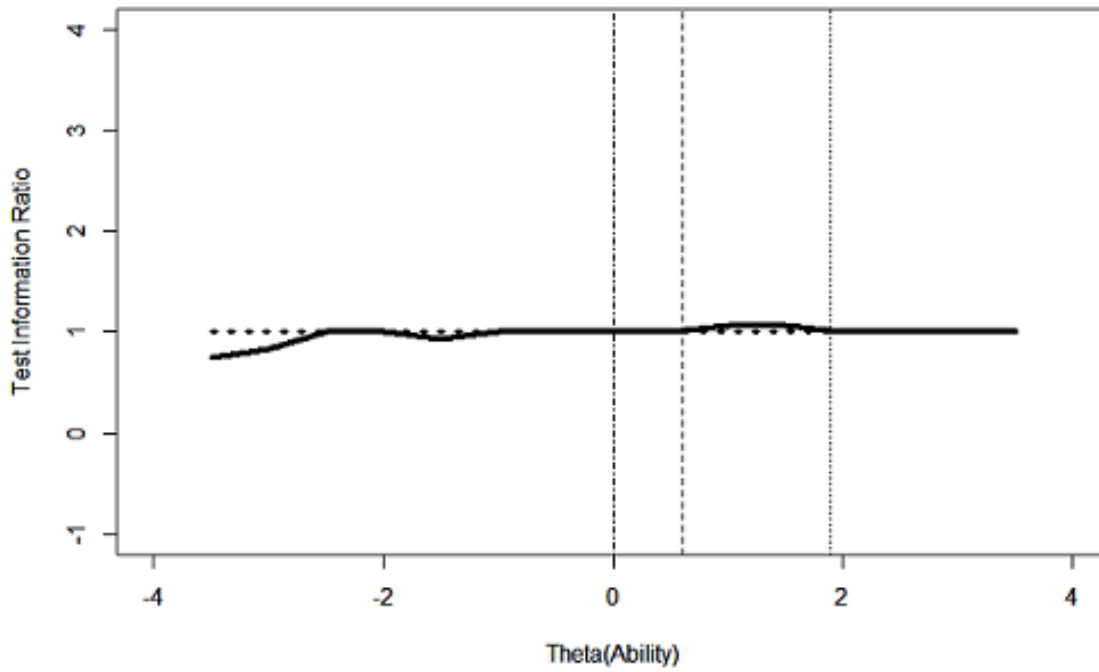
**Appendix I.5. Test Information Function and Ratio of Test Information Function for Grade 7 ELA**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.03	0.04	0.75
-3.00	0.05	0.06	0.83
-2.50	0.08	0.08	1.00
-2.00	0.11	0.11	1.00
-1.50	0.14	0.15	0.93
-1.00	0.18	0.18	1.00
-0.50	0.20	0.20	1.00
0.00	0.21	0.21	1.00
0.50	0.21	0.21	1.00
1.00	0.19	0.18	1.06
1.50	0.16	0.15	1.07
2.00	0.12	0.12	1.00
2.50	0.09	0.09	1.00
3.00	0.06	0.06	1.00
3.50	0.04	0.04	1.00

### Grade 7 ELA



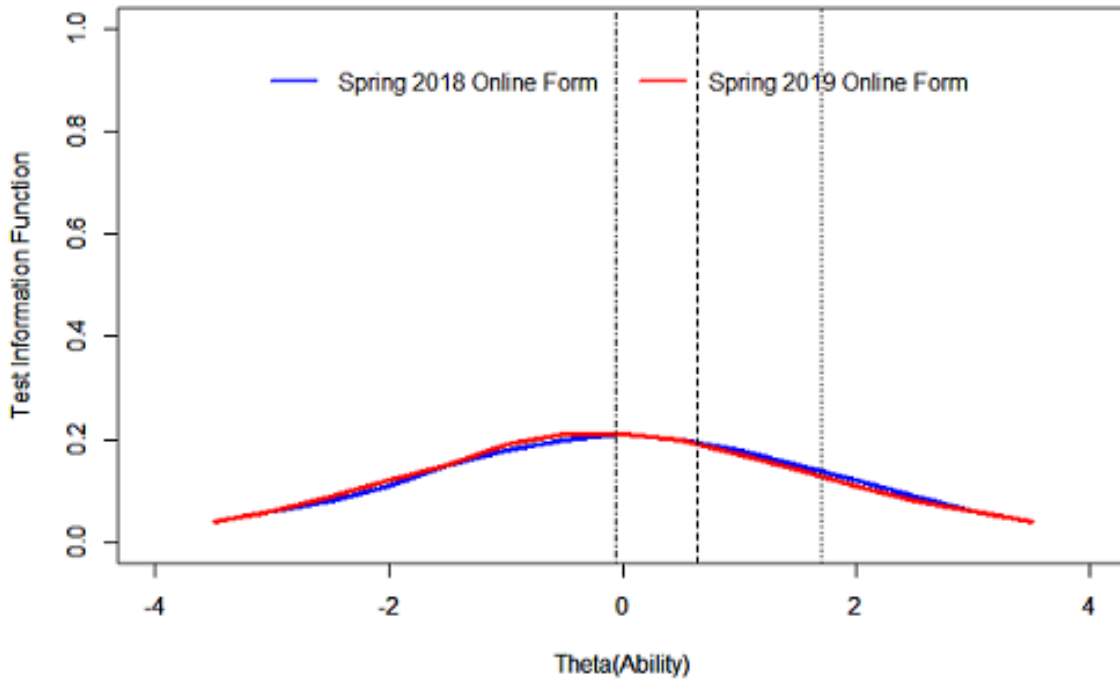
### Ratio of Test Information



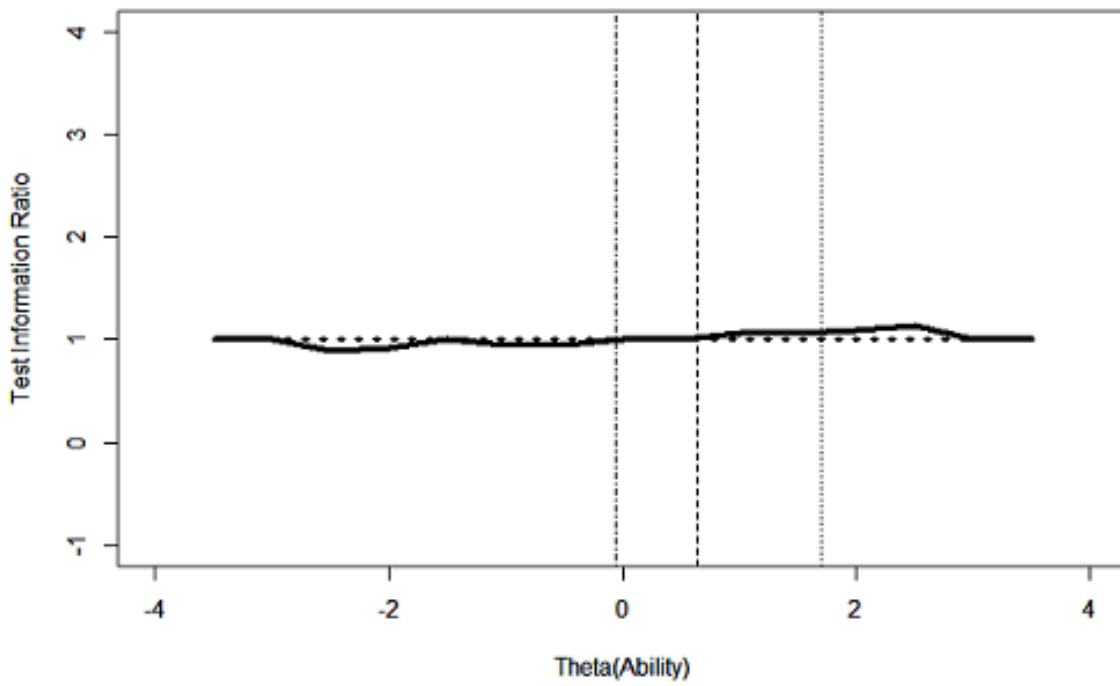
**Appendix I.6. Test Information Function and Ratio of Test Information Function for Grade 8 ELA**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.04	0.04	1.00
-3.00	0.06	0.06	1.00
-2.50	0.08	0.09	0.89
-2.00	0.11	0.12	0.92
-1.50	0.15	0.15	1.00
-1.00	0.18	0.19	0.95
-0.50	0.20	0.21	0.95
0.00	0.21	0.21	1.00
0.50	0.20	0.20	1.00
1.00	0.18	0.17	1.06
1.50	0.15	0.14	1.07
2.00	0.12	0.11	1.09
2.50	0.09	0.08	1.13
3.00	0.06	0.06	1.00
3.50	0.04	0.04	1.00

### Grade 8 ELA



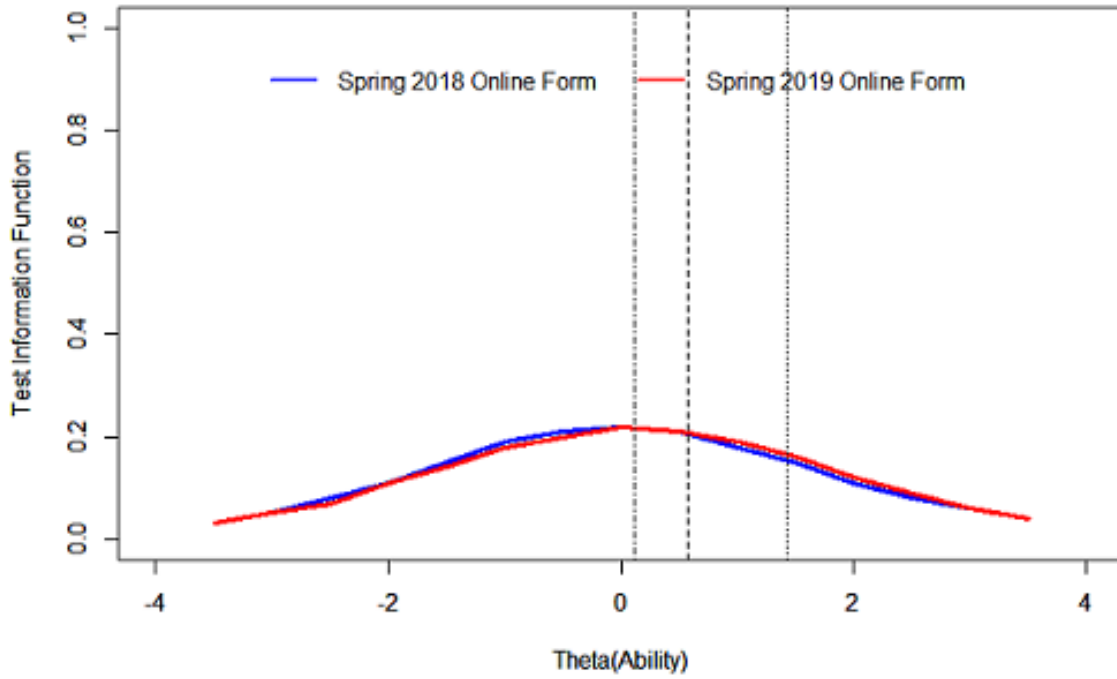
### Ratio of Test Information



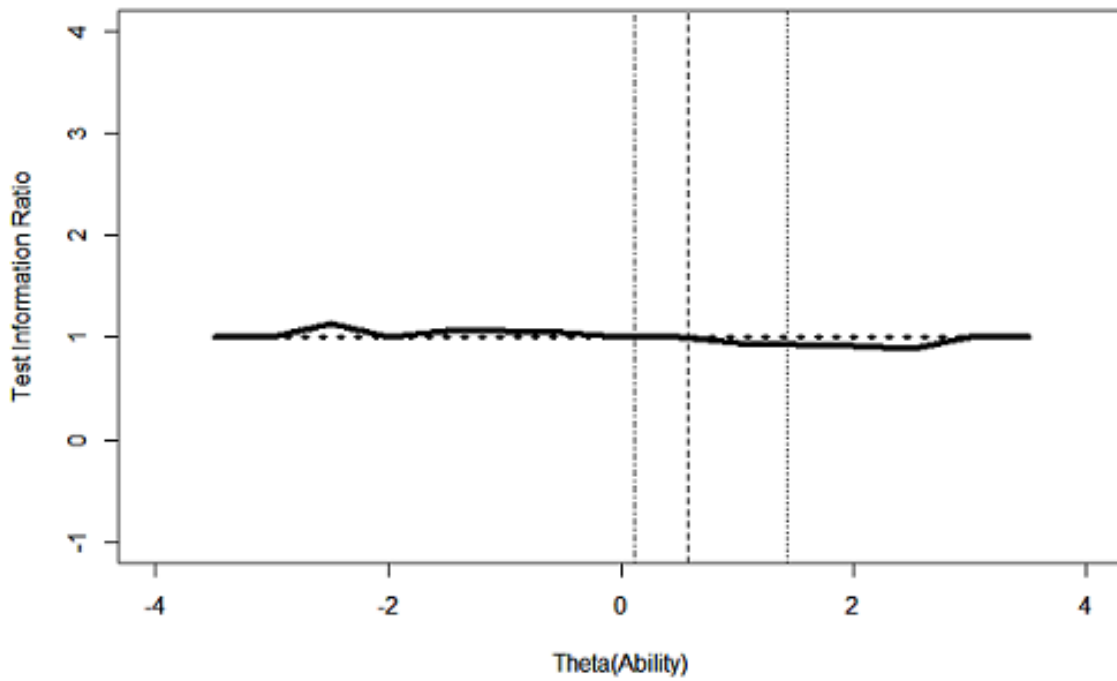
**Appendix I.7. Test Information Function and Ratio of Test Information Function for Grade 10 ELA**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.03	0.03	1.00
-3.00	0.05	0.05	1.00
-2.50	0.08	0.07	1.14
-2.00	0.11	0.11	1.00
-1.50	0.15	0.14	1.07
-1.00	0.19	0.18	1.06
-0.50	0.21	0.20	1.05
0.00	0.22	0.22	1.00
0.50	0.21	0.21	1.00
1.00	0.18	0.19	0.95
1.50	0.15	0.16	0.94
2.00	0.11	0.12	0.92
2.50	0.08	0.09	0.89
3.00	0.06	0.06	1.00
3.50	0.04	0.04	1.00

### Grade 10 ELA



### Ratio of Test Information

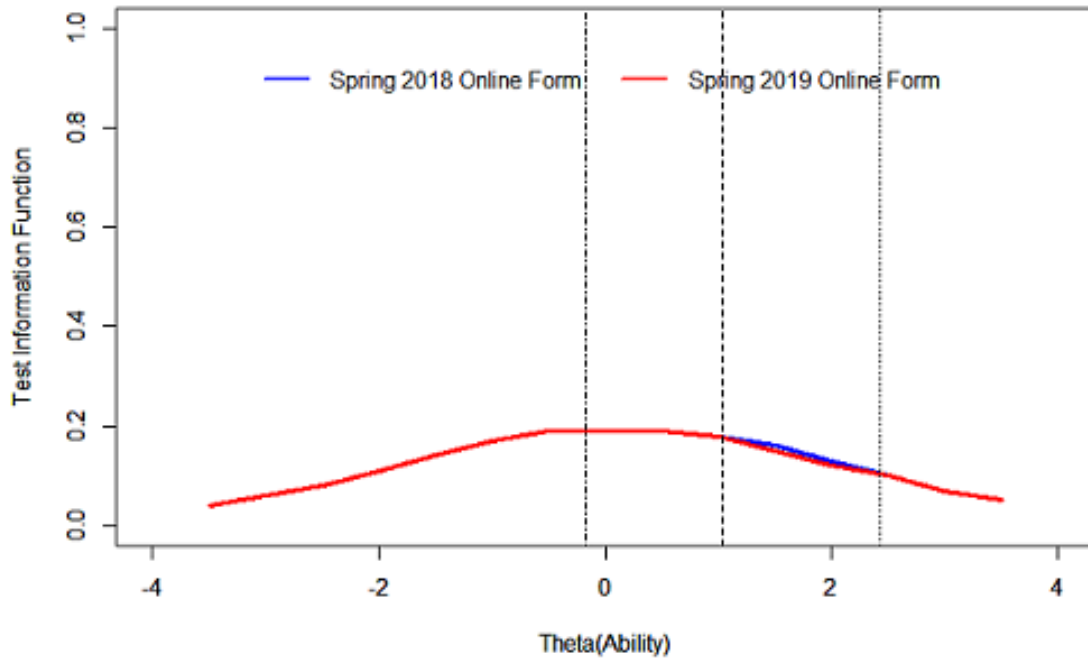


**Appendix I.8. Test Information Function and Ratio of Test Information Function for Grade 3 Math**

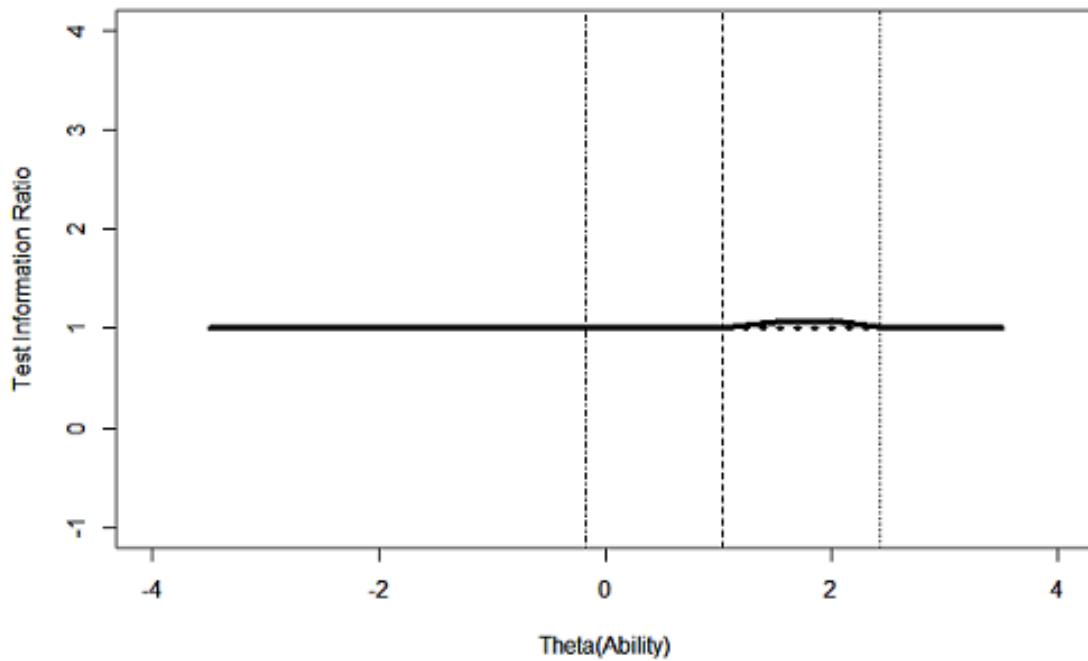
<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.04	0.04	1.00
-3.00	0.06	0.06	1.00
-2.50	0.08	0.08	1.00
-2.00	0.11	0.11	1.00
-1.50	0.14	0.14	1.00
-1.00	0.17	0.17	1.00
-0.50	0.19	0.19	1.00
0.00	0.19	0.19	1.00
0.50	0.19	0.19	1.00
1.00	0.18	0.18	1.00
1.50	0.16	0.15	1.07
2.00	0.13	0.12	1.08
2.50	0.10	0.10	1.00
3.00	0.07	0.07	1.00
3.50	0.05	0.05	1.00



### Grade 3 Math



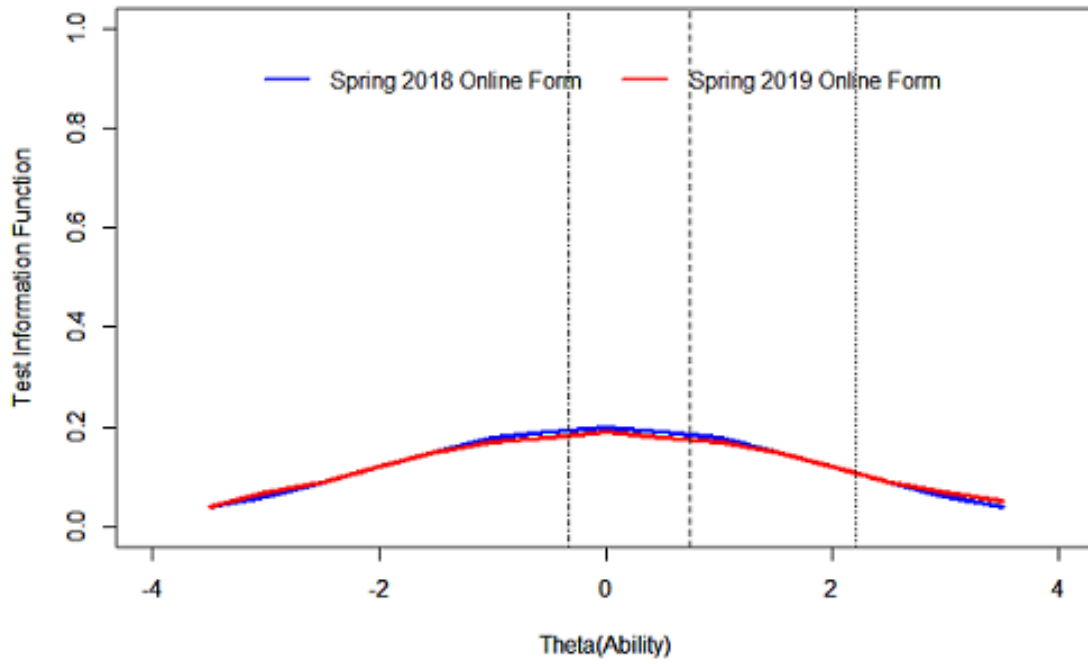
### Ratio of Test Information



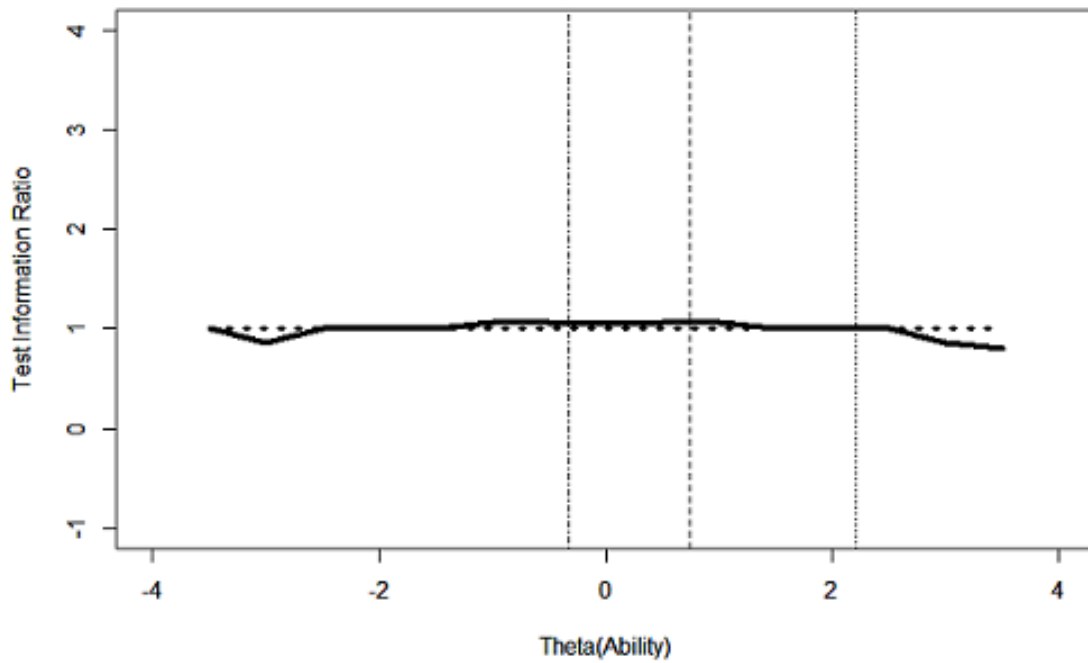
**Appendix I.9. Test Information Function and Ratio of Test Information Function for Grade 4 Math**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.04	0.04	1.00
-3.00	0.06	0.07	0.86
-2.50	0.09	0.09	1.00
-2.00	0.12	0.12	1.00
-1.50	0.15	0.15	1.00
-1.00	0.18	0.17	1.06
-0.50	0.19	0.18	1.06
0.00	0.20	0.19	1.05
0.50	0.19	0.18	1.06
1.00	0.18	0.17	1.06
1.50	0.15	0.15	1.00
2.00	0.12	0.12	1.00
2.50	0.09	0.09	1.00
3.00	0.06	0.07	0.86
3.50	0.04	0.05	0.80

### Grade 4 Math



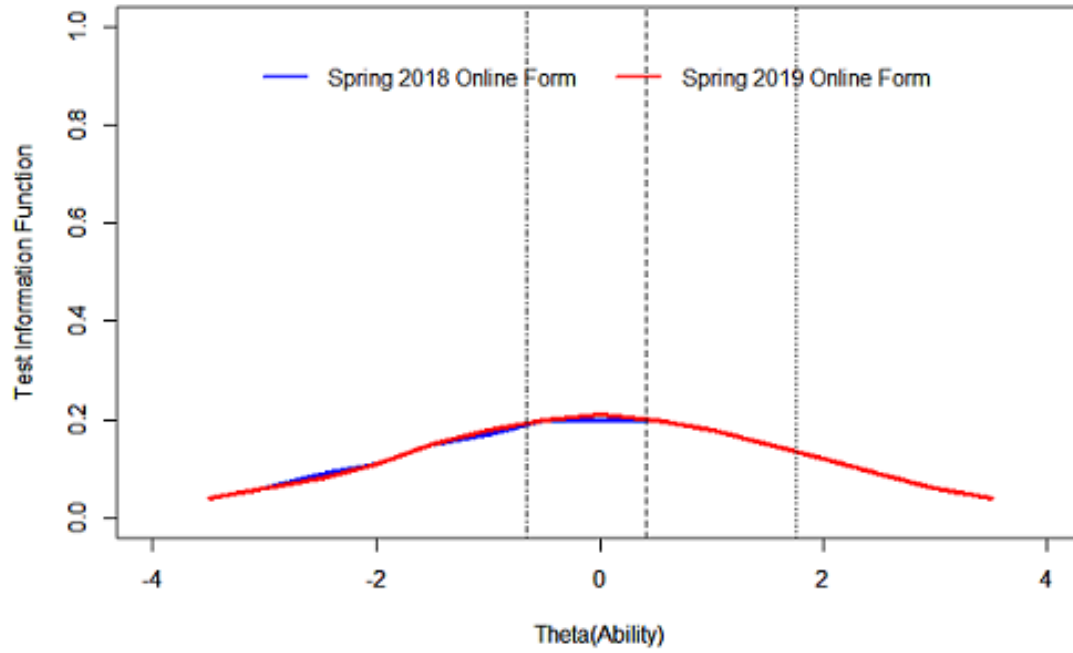
### Ratio of Test Information



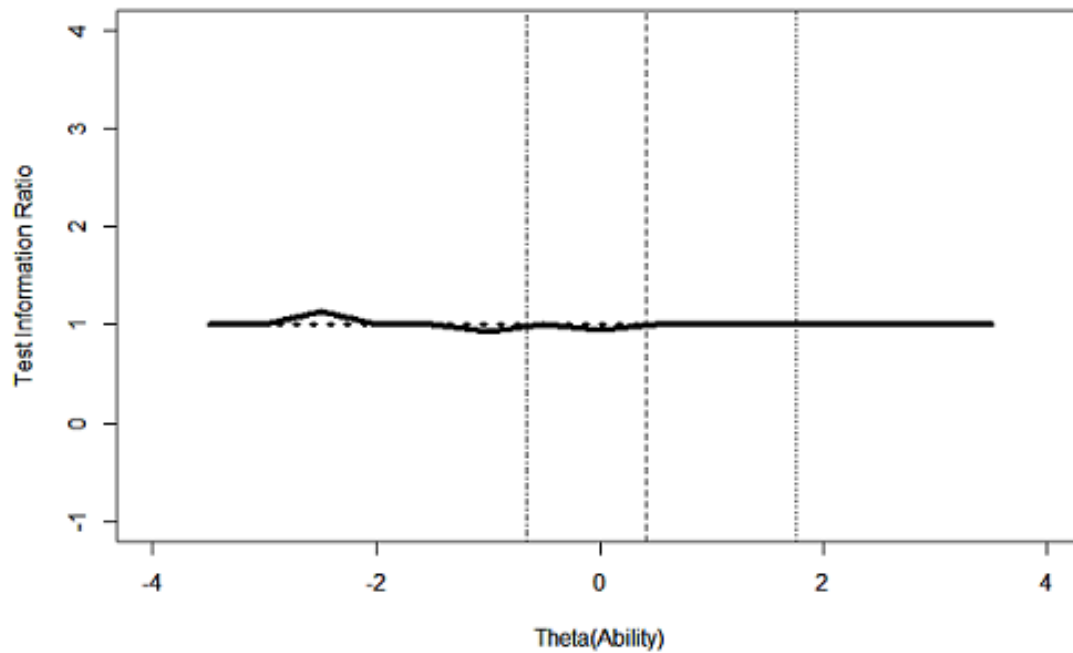
**Appendix I.10. Test Information Function and Ratio of Test Information Function for Grade 5 Math**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.04	0.04	1.00
-3.00	0.06	0.06	1.00
-2.50	0.09	0.08	1.13
-2.00	0.11	0.11	1.00
-1.50	0.15	0.15	1.00
-1.00	0.17	0.18	0.94
-0.50	0.20	0.20	1.00
0.00	0.20	0.21	0.95
0.50	0.20	0.20	1.00
1.00	0.18	0.18	1.00
1.50	0.15	0.15	1.00
2.00	0.12	0.12	1.00
2.50	0.09	0.09	1.00
3.00	0.06	0.06	1.00
3.50	0.04	0.04	1.00

### Grade 5 Math



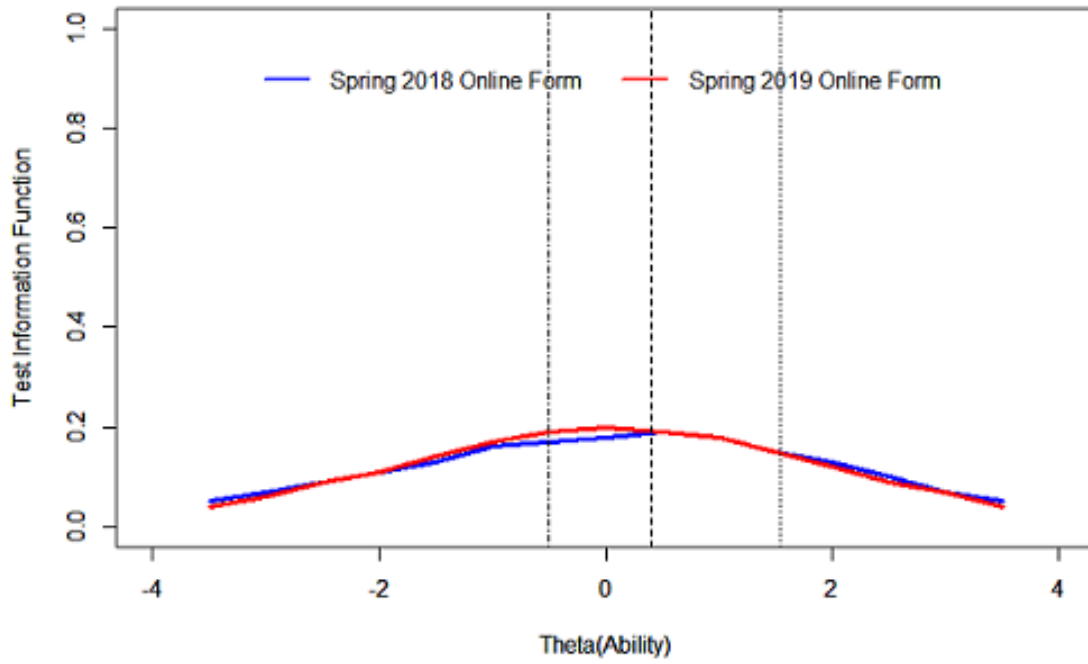
### Ratio of Test Information



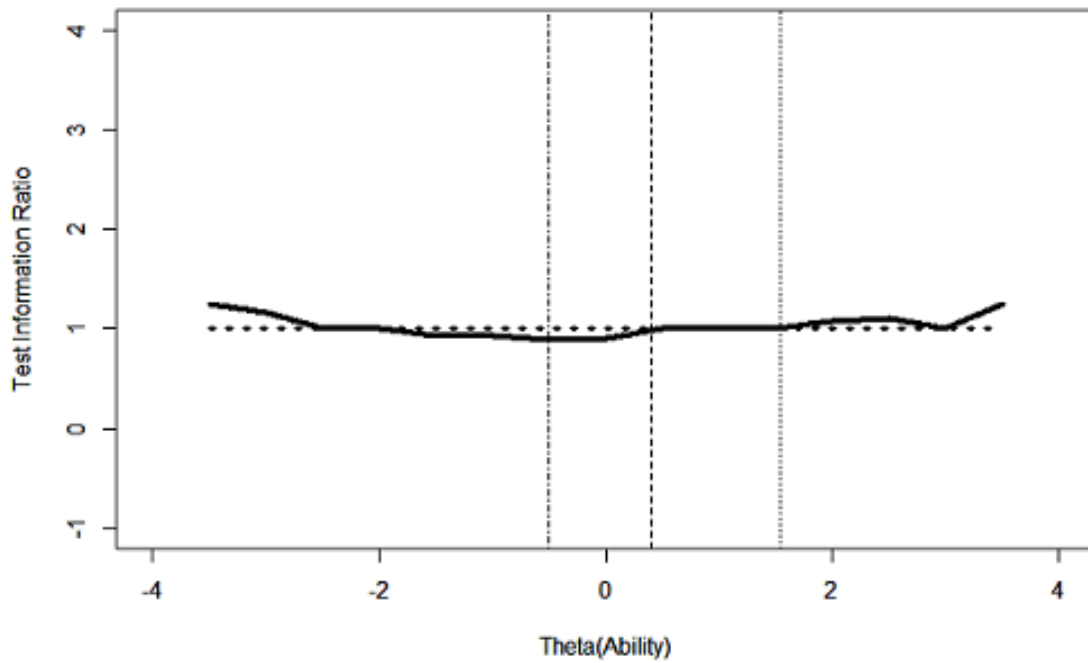
**Appendix I.11. Test Information Function and Ratio of Test Information Function for Grade 6 Math**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.05	0.04	1.25
-3.00	0.07	0.06	1.17
-2.50	0.09	0.09	1.00
-2.00	0.11	0.11	1.00
-1.50	0.13	0.14	0.93
-1.00	0.16	0.17	0.94
-0.50	0.17	0.19	0.89
0.00	0.18	0.20	0.90
0.50	0.19	0.19	1.00
1.00	0.18	0.18	1.00
1.50	0.15	0.15	1.00
2.00	0.13	0.12	1.08
2.50	0.10	0.09	1.11
3.00	0.07	0.07	1.00
3.50	0.05	0.04	1.25

### Grade 6 Math



### Ratio of Test Information

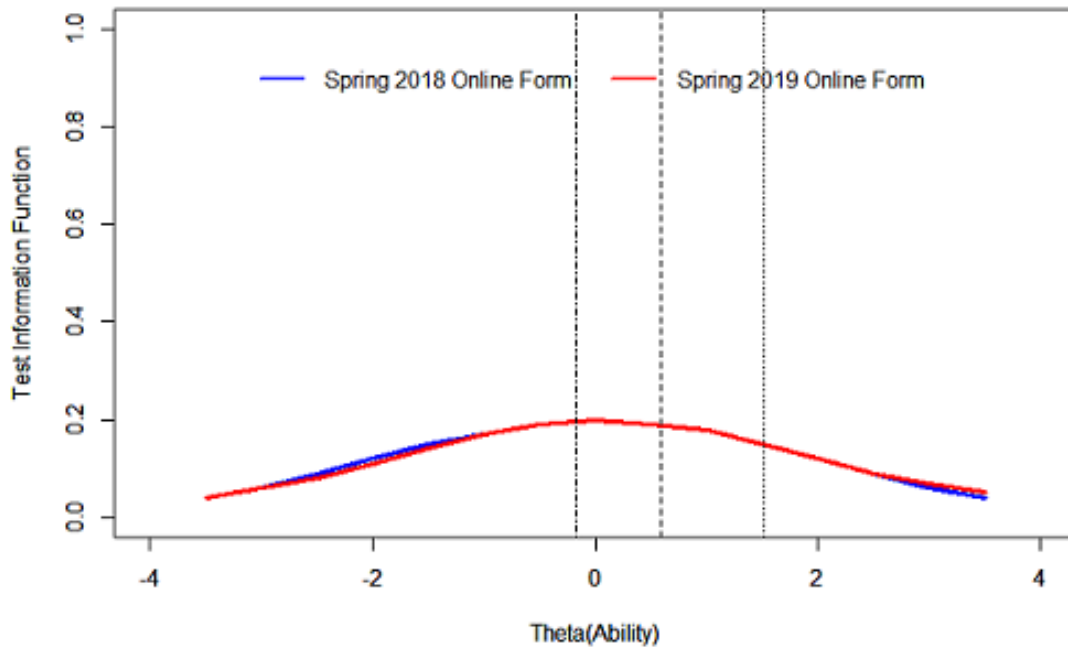


**Appendix I.12. Test Information Function and Ratio of Test Information Function for Grade 7 Math**

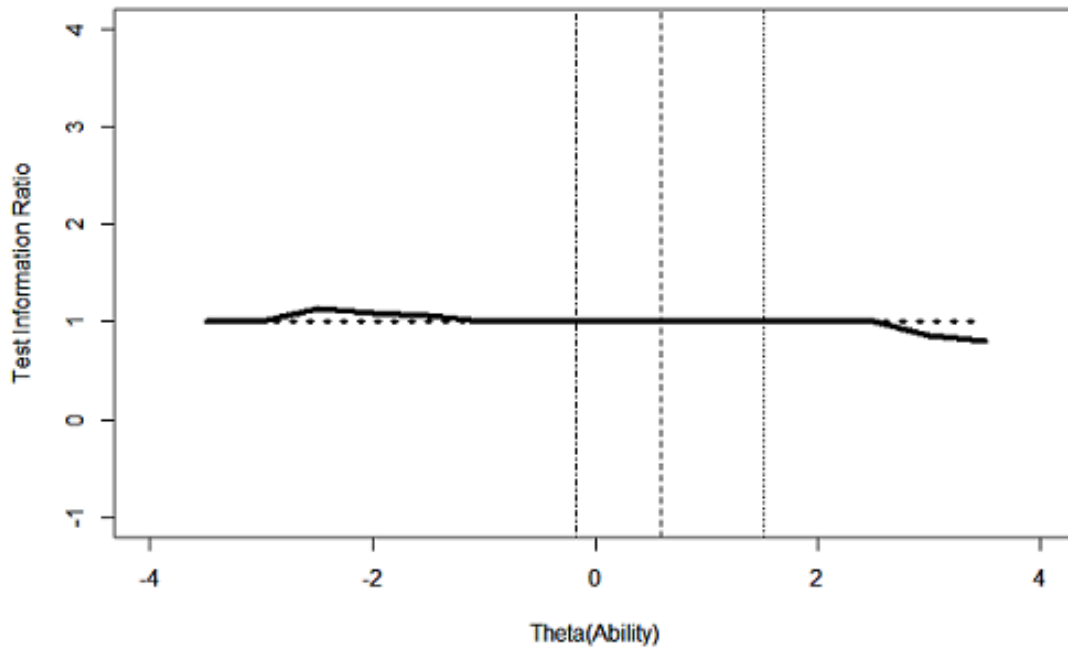
<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.04	0.04	1.00
-3.00	0.06	0.06	1.00
-2.50	0.09	0.08	1.13
-2.00	0.12	0.11	1.09
-1.50	0.15	0.14	1.07
-1.00	0.17	0.17	1.00
-0.50	0.19	0.19	1.00
0.00	0.20	0.20	1.00
0.50	0.19	0.19	1.00
1.00	0.18	0.18	1.00
1.50	0.15	0.15	1.00
2.00	0.12	0.12	1.00
2.50	0.09	0.09	1.00
3.00	0.06	0.07	0.86
3.50	0.04	0.05	0.80



### Grade 7 Math



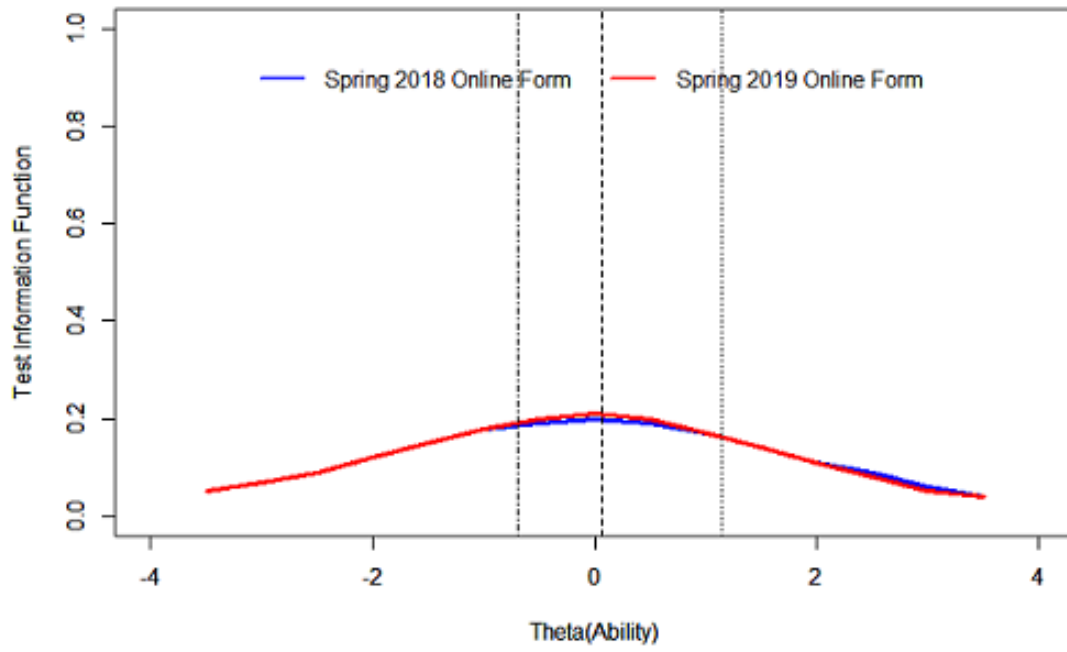
### Ratio of Test Information



**Appendix I.13. Test Information Function and Ratio of Test Information Function for Grade 8 Math**

<b>Theta</b>	<b>Spring 2019 Online Form</b>	<b>Spring 2021 Online Form</b>	<b>Ratio (Spring 2019 Online Form / Spring 2021 Online Form)</b>
-3.50	0.05	0.05	1.00
-3.00	0.07	0.07	1.00
-2.50	0.09	0.09	1.00
-2.00	0.12	0.12	1.00
-1.50	0.15	0.15	1.00
-1.00	0.18	0.18	1.00
-0.50	0.19	0.20	0.95
0.00	0.20	0.21	0.95
0.50	0.19	0.20	0.95
1.00	0.17	0.17	1.00
1.50	0.14	0.14	1.00
2.00	0.11	0.11	1.00
2.50	0.09	0.08	1.13
3.00	0.06	0.05	1.20
3.50	0.04	0.04	1.00

### Grade 8 Math



### Ratio of Test Information

