Praxis Summary Report

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Section II. Praxis Core

The Praxis Core tests, which assess fundamental skills in reading, mathematics, and writing, show troubling downward trends over the four-year period. Reading scores have experienced a notable decline, with West Virginia's overall passing rate dropping from 76% in 2021-2022 to 62% in 2024-2025. First-time test takers saw their pass rates fall from 79% to 71% during this same period. A persistent gender gap exists in reading performance, with males consistently outperforming females. In 2024-2025, males achieved a 75% pass rate compared to 63% for females, even though mean scores for both groups remain relatively stable in the 159-167 range.

Mathematics performance presents even more volatility and cause for concern. West Virginia's overall passing rate plummeted from 74% in 2021-2022 to just 56% in 2024-2025, representing a significant 18-percentage-point decline. First-time test takers experienced a similar trajectory, with pass rates dropping from 80% to 63%. Candidates attempting the mathematics test for a second time face particularly challenging odds, with only 42% passing in 2024-2025. The gender performance gap in mathematics varies across testing cycles, though disparities remain evident throughout the data.

Writing assessments show the highest passing rates among the three core competencies, though they too reflect a declining trend. West Virginia's passing rate decreased from 79% in 2021-2022 to 72% in 2024-2025. First-time test takers maintain relatively strong performance with pass rates remaining in the 82-83% range, but second-attempt candidates struggle considerably, with success rates falling into the 50-59% range.

Table 1. Praxis Core Reading Scores by Gender and Attempt

Praxis Core Reading (0713)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	156	545	115	167	168	413	92	76	80
Female		410	79	162	154	300	63	62	70
Male		143	29	171	172	119	26	75	79
1st Attempt		460	101	169	170	362	85	79	84
2nd Attempt		51	9	156	154	30	4	59	44
2022-2023	156								
Female		278	34	154	151	167	22	47	42
Male		135	36	166	163	113	29	73	73
1st Attempt		277	28	164	165	189	22	68	79
2nd Attempt		45	9	150	154	19	5	42	56
2023-2024	156								
Female		86	2	162	*	58	*	61	*
Male		25	0	167	*	21	*	78	*
1st Attempt		85	0	167	*	67	*	72	*

2nd Attempt		17	0	167	*	67	*	72	*
2024-2025	156	117	3	159	*	72	*	62	*
Female		90	1	159	*	57	*	63	*
Male		25	2	158	*	13	*	52	*
1st Attempt		83	3	163	*	59	*	71	*
2nd Attempt		16	*	149	*	7	*	44	*

Table 2. Praxis Core Math Scores by Gender and Attempt

Praxis Core Math (0733)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	150	744	147	160	163	535	114	74	76
Female		606	120	157	162	460	94	64	69
Male		174	40	160	159	140	33	69	70
1st Attempt		586	117	162	166	451	97	80	83
2nd Attempt		88	22	151	156	55	13	63	59
2022-2023	150	521	68	157	162	365	58	70	85
Female		570	107	154	160	411	82	60	67
Male		114	14	160	160	90	12	70	80
1st Attempt		396	56	159	164	292	59	74	87
2nd Attempt		77	7	150	156	47	6	61	86
2023-2024	150	144	6	154	165	97	6	59	86
Female		104	4	155	*	74	*	62	*
Male		39	2	153	*	23	*	53	*
1st Attempt		114	5	158	176	82	5	67	100
2nd Attempt		17	0	135	*	3	*	25	*
2024-2025	150	157	37	150	155	88	26	56	70
Female		131	34	148	153	69	23	53	68
Male		25	3	163	*	18	*	72	*
1st Attempt		120	28	154	157	76	21	63	75
2nd Attempt		26	5	23	156	11	4	42	80

Table 3. Praxis Core Writing Scores by Gender and Attempt

Praxis Core Writing (0723)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	162	651	139	160	161	354	80	54	58
Female		477	93	158	160	260	56	41	44
Male		174	46	157	156	94	14	41	39
1st Attempt		418	87	159	160	220	47	53	54

2nd Attempt		128	27	162	164	77	19	60	70
2022-2023	162	120	54	155	152	13	23	18	24
Female		304	39	152	152	116	16	23	23
Male		100	15	155	154	43	7	49	26
1st Attempt		228	24	154	158	88	12	39	50
2nd Attempt		85	14	156	155	32	6	38	43
2023-2024	162	120	54	155	152	13	23	18	24
Female		86	4	155	*	41	*	67	*
Male		34	2	154	*	15	*	36	*
1st Attempt		71	0	155	*	34	*	42	*
2nd Attempt		21	2	157	*	12	*	41	*
2024-2025	162	146	1	152	*	42	*	29	*
Female		109	1	153	*	35	*	32	*
Male		35	*	149	*	6	*	17	*
1st Attempt		78	1	153	*	25	*	32	*
2nd Attempt		35	*	152	*	10	*	29	*

Section III. Principles of Learning and Teaching K-6

In contrast to the core competency tests, the Principles of Learning and Teaching assessments show remarkably strong performance. The PLT K-6 test maintains very high passing rates overall, ranging from 87% to 100% across the reporting period. West Virginia University students have been particularly successful, consistently achieving 100% pass rates in recent years. Mean scores remain stable and well above the passing thresholds, indicating strong pedagogical preparation among candidates.

The PLT 7-12 assessment similarly demonstrates robust performance, with passing rates between 85% and 100%. While West Virginia statewide scores show somewhat more variation than WVU-specific results, the overall picture remains positive. However, consistent with patterns observed in other tests, second-attempt candidates show notably lower success rates compared to first-time test takers.

Table 4. Principles of Learning and Teaching K-6 by Gender and Attempt

PLT K-6 (5622)											
Testing Year	**Passing Score**	**Exams Taken**		**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	160	285	8	262	8	173	178	244	8	93	100
Female		241	4	224	4	172	*	210	*	94	*
Male		45	4	39	4	170	*	35	*	90	*
1st Attempt		260	8	243	8	172	178	228	8	88	100
2nd Attempt		19	0	15	0	165	*	14	*	74	*
2022-2023	160	228	5	209	5	175	174	203	5	97	100
Female		226	3	206	3	175	*	200	*	97	*

Male		15	0	13	0	170	*	35	*	90	*
1st Attempt		207	0	193	0	174	*	190	*	92	*
2nd Attempt		23	0	17	0	162	*	14	*	61	*
2023-2024	160	61	7	59	7	173	174	55	7	90	100
Female		51	0	50	0	174	*	47	*	94	*
Male		10	4	9	4	169	*	8	*	89	*
1st Attempt		58	7	56	7	173	174	53	7	91	100
2nd Attempt		3	0	3	0	*	*	*	*	*	*

Section IV. Principles of Learning and Teaching 7-12

Table 5. Principles of Learning and Teaching 7-12 by Gender and Attempt

PLT 7-12 (5264)											
Testing Year	**Passing Score**	**Exams Taken**		**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	157	217	13	206	11	172	167	191	9	98	86
Female		126	3	123	3	174	*	118	*	94	*
Male		92	10	84	8	168	161	74	6	80	75
1st Attempt		198	10	187	8	172	167	177	8	90	80
2nd Attempt		18	2	18	2	165	*	15	*	83	*
2022-2023	157	211	10	198	8	172	175	187	8	94	95
Female		131	6	128	5	173	174	119	5	91	100
Male		97	4	87	3	169	*	84	*	87	*
1st Attempt		207	8	109	6	173	171	190	6	92	75
2nd Attempt		13	2	10	2	157	*	9	*	69	*
2023-2024	157	74	7	69	7	173	178	65	6	88	86
Female		46	1	42	1	174	*	40	*	87	*
Male		28	6	27	6	172	177	25	5	89	90
1st Attempt		66	7	63	7	174	178	61	6	82	86
2nd Attempt		5	0	4	0	*	*	*	*	*	*

Section V. Praxis II: Agriculture

The Agriculture (5701) Praxis II assessment presents unique challenges for trend analysis due to extremely small sample sizes across all reporting periods, yet the available data reveals several noteworthy patterns. Throughout the four-year period from 2021-2022 to 2024-2025, Agriculture represents one of the smallest testing populations among all Praxis II subject areas, with annual candidate numbers ranging from just 4 to 11 test takers statewide. This limited sample size means that even a single candidate's performance can significantly impact percentage-based metrics, making it difficult to draw definitive conclusions about programmatic trends.

West Virginia University dominates the Agriculture testing landscape, consistently accounting for the vast majority of candidates taking this assessment. In 2021-2022, nine of the ten statewide test takers were WVU students, and this pattern has remained consistent throughout the reporting period. By 2024-2025, ten of the eleven candidates were affiliated with WVU, reinforcing the university's central role in agricultural education preparation within the state. This concentration suggests that WVU serves as the primary, if not sole, provider of agricultural teacher preparation programs in West Virginia, which has significant implications for the state's agricultural education pipeline.

Performance on the Agriculture assessment has been remarkably strong across most of the reporting period. Both 2021-2022 and 2023-2024 saw perfect 100% pass rates among all candidates who took the test. These exceptional results suggest that agricultural teacher preparation programs, particularly at WVU, have been highly effective in preparing candidates for certification requirements. Mean scores during these successful years ranged from 159 to 169, with the passing score set at 147, indicating that candidates generally performed well above the minimum threshold. First-time test takers in these years achieved perfect pass rates, demonstrating strong initial preparation and readiness.

However, the most recent data from 2024-2025 reveals a slight decline from this pattern of perfect performance. While the passing rates of 91% statewide and 90% for WVU students remain quite strong compared to many other subject areas, they represent a departure from the flawless record of previous years. With eleven candidates tested, this means that one to two individuals did not meet the passing standard. Mean scores in 2024-2025 held steady at 159 for both WV and WVU candidates, suggesting that overall preparation levels remain consistent, but a small subset of candidates struggled to meet certification requirements. First-time test takers in 2024-2025 showed a 90% pass rate, slightly lower than the perfect rates achieved in earlier cycles.

The gender composition of Agriculture test takers provides additional context for understanding the candidate pool. The assessment has been predominantly taken by female candidates throughout the reporting period. In 2021-2022, eight of ten candidates were female, and by 2024-2025, females comprised ten of the eleven test takers, with only one male candidate. This represents a significant shift from traditional gender patterns in agricultural education and may reflect broader changes in who pursues careers in agricultural teaching. The small number of male candidates makes it impossible to conduct meaningful gender-based performance comparisons, as most years show insufficient sample sizes (marked with asterisks) for male-specific statistics.

Second-attempt data for the Agriculture assessment is sparse, which actually serves as a positive indicator. In most years, there were either zero or fewer than five candidates attempting the test for a second time, suggesting that the vast majority of candidates pass on their first attempt. This pattern stands in stark contrast to other subject areas where second attempts are more common and often associated with lower success rates. The 2024-2025 data shows only one second-attempt candidate, and that individual's results are not reported due to privacy protections for small sample sizes. This low rate of second attempts reinforces the overall picture of strong preparation and high initial success rates in agricultural teacher certification.

The 2022-2023 testing year presents a unique anomaly in the data, with only four total candidates and most statistics suppressed due to insufficient sample sizes. This dramatic drop from ten candidates the previous year and compared to subsequent years raises questions about potential external factors that may have affected the candidate pipeline that year. Whether this reflects program enrollment fluctuations, delayed testing due to external circumstances, or other factors cannot be determined from the data alone, but it highlights the vulnerability of small programs to year-to-year variations.

Looking at the broader context, the Agriculture assessment's performance profile differs markedly from the concerning trends observed in many other subject areas, particularly the core competency tests. While Reading, Mathematics, and even Social Studies have shown significant declines in passing rates during this period, Agriculture has maintained strong performance with only a modest recent decline. The mean scores remaining stable in the 159-165 range, well above the 147 passing threshold, suggest that when candidates do struggle, it is not by a large margin, and the overall preparation quality remains solid.

The extremely small candidate pool for Agriculture raises important policy questions beyond just test performance. With only 4 to 11 candidates per year statewide, West Virginia faces a potential shortage of new agricultural education teachers. Even with strong pass rates, these numbers may be insufficient to meet the state's needs for agricultural education, particularly as veteran teachers retire. The concentration of preparation at a single institution (WVU) creates both benefits in terms of program focus and quality, but also risks related to having no backup pipeline if that program faces challenges.

In conclusion, the Agriculture (5701) Praxis II assessment shows a generally positive performance profile characterized by small candidate numbers, WVU program dominance, strong pass rates, and stable mean scores. The slight decline to 90-91% pass rates in 2024-2025, while disappointing compared to previous perfect scores, still represents strong performance relative to many other subject areas. However, the persistent challenge of very small sample sizes limits the ability to conduct robust trend analysis and raises concerns about whether the state is producing sufficient numbers of qualified agricultural education teachers to meet ongoing needs, regardless of how well those few candidates perform on their certification examinations. Table 6 illustrates scores for Agriculture (5701) on the Praxis II.

Table 6. Praxis II: Agriculture (5701) Scores

Agriculture (5701)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	147	10	9	164	165	10	9	100	100
Female		8	7	158	*	8	*	89	*
Male		2	2	*	*	*	*	*	*
1st Attempt		8	7	168	169	8	7	100	100
2nd Attempt		2	2	*	*	*	*	*	*
2022-2023	147	4	1	*	*	*	*	*	*
Female		2	0	*	158	*	7	*	88
Male		2	1	*		*	*	*	*
1st Attempt		4	1	*	*	*	*	*	*
2nd Attempt		*	0	*	*	*	*	*	*
2023-2024	147	5	4	159	*	5	*	100	*
Female		4	3	*	*	*	*	*	*
Male		1	1	*	*	*	*	*	*
1st Attempt		5	4	159	*	5	*	100	*
2nd Attempt		0	0	*	*	*	*	*	*
2024-2025	147	11	10	159	159	10	9	91	90
Female		10	9	159	159	9	8	90	90
Male		1	1	*	*	*	*	*	*

1st Attempt		10	9	159	160	9	8	90	90
2nd Attempt		1	1	*	*	*	*	*	*

(* less than 5 candidates)

Section VI. Praxis II: Elementary

The Elementary Education Praxis II assessments encompass eight different tests across four content areas, with each area offering two test versions: Reading and Language Arts (5002 and 7812), Mathematics (5003 and 7813), Social Studies (5004 and 7815), and Science (5005 and 7814). These tests represent some of the most heavily administered Praxis II assessments in the state, with candidate numbers ranging from dozens to several hundred per testing cycle, reflecting the critical importance of elementary teacher preparation in West Virginia's education system. The data across all eight tests reveals a concerning pattern of declining performance, increased challenges for specific demographic groups, and growing difficulties for candidates attempting to pass on subsequent tries.

The Elementary Reading and Language Arts (5002) assessment, one of the most heavily tested elementary subjects, demonstrates a troubling downward trajectory over the four-year reporting period. Statewide passing rates declined from 85% in 2021-2022 to 73% in 2024-2025, representing a 12-percentage-point drop. West Virginia University candidates experienced an even steeper decline, falling from 94% to 67% pass rates during the same period. The number of test takers increased substantially in 2024-2025, with 349 statewide candidates and 85 from WVU, suggesting that more candidates are entering the pipeline but facing greater challenges in meeting certification standards. First-time test takers saw their pass rates decline from 84% to 77%, while second-attempt candidates struggled even more significantly, dropping from 89% pass rate in 2021-2022 to just 55% in 2024-2025. Mean scores remained relatively stable in the 162-169 range, well above the 157 passing score, indicating that while many candidates perform well, a growing proportion fall short of the threshold.

The alternate version of the Reading and Language Arts test (7812) shows an even more dramatic pattern of decline, with particularly concerning recent performance. This test saw statewide passing rates plummet from 60% in both 2021-2022 and 2022-2023 to just 50% in 2024-2025. West Virginia University candidates on this version fared worse, with pass rates dropping from 66% in 2022-2023 to only 39% in 2024-2025, representing a catastrophic decline in performance. The mean scores for WVU candidates fell from 165 to 156, barely above the 161 passing threshold, suggesting that the candidate pool may be less prepared or that the test version presents particular challenges. First-time test takers achieved only a 54% pass rate in 2024-2025, and notably, WVU first-time candidates passed at just 39%, indicating serious preparation gaps. Gender data reveals that males perform significantly worse than females on this version, with only 25% of male candidates passing statewide in 2024-2025, though small sample sizes limit the reliability of this finding.

Elementary Mathematics assessments present a complex picture across both test versions, with the 5003 version showing stronger overall performance than its 7813 counterpart. The Elementary Math (5003) test maintained relatively high passing rates, starting at 81% statewide and 95% for WVU in 2021-2022, and settling at 73% statewide and 71% for WVU in 2024-2025. While this represents a decline, it is less severe than observed in reading assessments. The test attracted large numbers of candidates, with 309 statewide test takers and 75 WVU students in 2024-2025. First-time candidates maintained a respectable 75% pass rate, though second-attempt candidates struggled at 55%. Mean scores remained strong, averaging 163-170, well above the 157 passing threshold. Gender patterns show males slightly outperforming females, with 72% versus 67% pass rates in the most recent year, continuing a historical trend of male advantage in mathematics assessments.

In stark contrast, the Elementary Math (7813) version shows significantly lower performance across all reporting periods. This test has consistently been one of the most challenging elementary assessments, with passing rates that never exceeded 63% even in the best year (2021-2022). By 2024-2025, only 56% of statewide candidates and 50% of WVU candidates passed, making it one of the lowest-performing elementary tests. Mean scores hover dangerously close to the 150 passing threshold, ranging from 149 to 161, indicating that many candidates are on the borderline of passing. The 2024-2025 WVU mean score of 146 fell below the passing threshold, explaining the low 50% pass rate and raising serious concerns about program effectiveness in preparing candidates for this particular version of the mathematics content test. First-time WVU candidates in 2024-2025 achieved only a 46% pass rate with a mean score of 145, five points below the passing threshold, representing a critical failure in preparation outcomes.

Elementary Social Studies assessments across both versions reveal moderate to concerning performance levels, with the 5004 version showing persistent struggles and recent improvements on the 7815 version. The Social Studies (5004) test has been particularly challenging throughout the reporting period, with statewide pass rates ranging from 51% to 72%. The 2021-2022 results showed 72% statewide and 84% for WVU, but by 2023-2024, these had declined to just 51% and 59% respectively. A slight recovery occurred in 2024-2025, with rates climbing to 54% statewide and 58% for WVU, though these remain among the lowest elementary education pass rates. The test attracts substantial numbers of candidates, with 332 statewide and 87 WVU test takers in 2024-2025, reflecting its importance in elementary certification. Gender disparities are evident, with males consistently outperforming females, though females comprise the vast majority of test takers. Mean scores cluster around 152-160, only marginally above the 155 passing threshold, suggesting many candidates are barely meeting or failing to meet the standard.

The Social Studies (7815) version presents a more encouraging picture than its 5004 counterpart, though still showing concerning recent declines. Starting from a strong position with 82-88% pass rates in 2022-2023, the test saw performance decline to 61% for both statewide and WVU candidates in 2024-2025. Despite this decline, the 7815 version consistently outperforms the 5004 version by 5-10 percentage points, suggesting that test version characteristics may significantly impact outcomes. First-time candidates maintain relatively strong performance at 68% passing, but second-attempt candidates struggle dramatically, with only 38% passing statewide in 2024-2025. Mean scores remain relatively healthy at 162-163, well above the 154 passing threshold, indicating that successful candidates demonstrate solid content knowledge, but a significant minority fall short of certification standards.

Elementary Science assessments mirror the patterns observed in other content areas, with both versions showing declining trends but the 5005 version maintaining somewhat stronger performance. The Elementary Science (5005) test began the reporting period with 79% statewide and 90% WVU pass rates in 2021-2022, declining to 64% and 60% respectively by 2024-2025. This represents a 15-percentage-point statewide drop and a dramatic 30-percentage-point decline for WVU candidates. The test maintains high enrollment with 296 statewide and 80 WVU candidates in 2024-2025, reflecting its central role in elementary certification. First-time pass rates fell from 79% to 69%, while second-attempt candidates experienced even steeper declines, dropping from 84% to just 47%. Gender gaps are evident but less pronounced than in some other subjects, with males achieving 72% pass rates compared to 64% for females in 2024-2025. Mean scores declined from the 167-171 range to 159-160, moving closer to the 159 passing threshold and indicating erosion in overall candidate preparation.

The alternate Science test (7814) demonstrates an unusual pattern, with initially weak performance in 2021-2022 (68% passing) improving substantially to 82% statewide and 77% for WVU by 2024-2025. This improvement is remarkable and contrary to trends observed across most other elementary tests. The test had 132 statewide candidates and 26 WVU students in the most recent year, representing moderate but not overwhelming enrollment. First-time candidates achieved strong 84% pass rates, among the best for any elementary test, while second-attempts showed respectable 69% success. Mean scores improved from 165 in early years to 166-168 in recent years, well above the 161 passing threshold. This positive trend

suggests that whatever interventions or curriculum changes occurred for this particular test version have been effective and might offer lessons for improving performance on other assessments.

Across all eight elementary assessments, several consistent demographic and performance patterns emerge that warrant close attention. Female candidates overwhelmingly dominate the elementary education testing population, typically comprising 90-95% of test takers across all content areas. This reflects the persistent gender composition of elementary education as a profession. However, male candidates, despite their small numbers, often achieve higher pass rates, particularly in mathematics and science content areas. This gender gap in performance, even as females dominate the field numerically, raises important questions about differential preparation, test-taking patterns, or potential gender biases in assessment design or content emphasis.

The divide between first-attempt and second-attempt success rates represents one of the most troubling patterns across all elementary tests. While first-time test takers typically achieve pass rates in the 60-85% range depending on the specific test, second-attempt candidates consistently perform 15-30 percentage points lower. This suggests that current remediation strategies are largely ineffective, and candidates who fail once face significant structural or preparatory barriers to eventual success. The 2024-2025 data shows particularly concerning second-attempt rates, with some tests showing pass rates as low as 38-44%, indicating that more than half of candidates attempting tests for a second time continue to fail. This pattern suggests a need for fundamentally different intervention approaches rather than simply allowing more study time and re-testing.

The distinction in performance between the two versions of each content test (5000-series versus 7000-series tests) reveals significant variation that may relate to test design, content emphasis, or candidate selection patterns. In general, the 5000-series tests show stronger performance than their 7000-series counterparts, with Reading and Language Arts showing the most dramatic version effect. The 5002 reading test maintains 73% pass rates while the 7812 version achieves only 50%, a 23-percentage-point gap. Similarly, Elementary Math (5003) shows 73% pass rates compared to 56% for the 7813 version. Only in Science does the reverse pattern appear, with the 7814 version (82% passing) significantly outperforming the 5005 version (64% passing). These substantial between-version differences raise questions about test equivalency and whether candidates are being appropriately counseled about which version to attempt based on their preparation and strengths.

West Virginia University's performance relative to statewide averages varies considerably across the elementary assessments and has generally deteriorated over time. In 2021-2022, WVU candidates typically met or exceeded state averages by 5-15 percentage points, suggesting effective preparation programs. However, by 2024-2025, WVU performance had declined more steeply than statewide performance in many cases, resulting in WVU candidates performing at or below state averages on several tests. The most dramatic decline occurred in Elementary Reading and Language Arts (7812), where WVU pass rates fell from 66% to 39%, ending up 11 percentage points below the already-low statewide average. Similarly, Elementary Math (7813) saw WVU performance drop to 50%, six points below the state average. These declines suggest potential programmatic challenges at WVU that require investigation, particularly given the university's central role in elementary teacher preparation across West Virginia.

Mean score trends across all elementary tests reveal a concerning pattern of scores clustering closer to passing thresholds over time. While mean scores have remained relatively stable or declined modestly in absolute terms, the key concern is that they have moved from comfortable margins above passing scores to positions much closer to cut points. For example, Elementary Math (7813) mean scores for WVU declined from 161 to 146, falling below the 150 passing threshold. Elementary Reading and Language Arts (7812) mean scores for WVU dropped from 165 to 156, leaving only a 5-point margin above the 161 passing threshold. Even in tests where mean scores appear stable, the increasing standard deviation implied by declining pass rates suggests that more candidates are falling into the failing range even as top performers maintain high scores.

The substantial candidate volume across elementary assessments makes these trends particularly consequential for West Virginia's teacher pipeline. With hundreds of candidates taking each test annually, the declining pass rates represent dozens of additional candidates per year who fail to achieve certification compared to earlier cohorts. The 2024-2025 testing cycle saw 349 candidates attempt the Elementary Reading (5002) test, 309 attempt Elementary Math (5003), 332 attempt Social Studies (5004), and 296 attempt Science (5005). Even small percentage-point declines in pass rates translate to significant numbers of candidates who invested time and resources in teacher preparation but cannot complete certification. This has direct implications for elementary teacher shortages, program completion rates, and return on investment for both candidates and preparation institutions.

Several potential explanations for the widespread declining performance across elementary assessments merit consideration. Changes in candidate pool characteristics, including increased diversity in academic preparation, changes in admission standards, or shifts in who chooses to pursue elementary education careers, could contribute to performance changes. Alternatively, insufficient curriculum alignment between preparation programs and test content, particularly as tests may be updated or emphasis areas shift, could explain declining readiness. The impact of disruptions from the COVID-19 pandemic on candidates who were in training during 2020-2021 and are now taking certification tests could also be a factor. Economic pressures that force candidates to work more hours while in preparation programs, reducing study time, might contribute to decreased performance. Finally, the tests themselves may have undergone difficulty calibration changes that make them genuinely harder to pass, even for equivalently prepared candidates.

The Elementary Education Praxis II assessment data reveals a comprehensive crisis in teacher certification performance that demands immediate and systemic intervention. With pass rates declining across nearly all tests, particularly dramatic drops in Reading and Language Arts (7812), Mathematics (7813), and Social Studies (5004), and with WVU performance deteriorating relative to state averages, the current trajectory is unsustainable. The persistent low success rates for second-attempt candidates, the troubling gender performance gaps despite female numerical dominance, and the dangerous clustering of mean scores near passing thresholds all point to fundamental challenges in how candidates are being prepared for these assessments. The fact that these patterns appear across multiple content areas and test versions suggests systemic rather than isolated issues, requiring comprehensive programmatic review, curriculum realignment, enhanced candidate support systems, and potentially reconsidering the assessments themselves to ensure they validly measure teaching readiness while remaining passable for well-prepared candidates. The sheer volume of candidates affected by these declining rates, combined with ongoing teacher shortages in elementary education, makes addressing these trends an urgent priority for West Virginia's education system.

Table 7. Praxis II: Elementary Reading & Language Arts (5002) Scores

Elementary Reading & Language Arts (5002)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	157	369	49	168	169	312	46	85	94
Female		55	44	164	164	286	42	71	76
Male		34	5	164	171	30	5	70	100
1st Attempt		302	39	168	169	254	36	84	92
2nd Attempt		45	9	165	169	40	9	89	100
2022-2023	157	255	49	166	167	209	43	82	88
Female		63	46	163	162	193	40	67	63
Male		21	2	162	*	20	0	71	*
1st Attempt		201	36	167	168	168	32	84	89
2nd Attempt		41	9	161	164	29	7	71	78
2023-2024	157	254	48	163	164	193	39	69	77
Female		50	47	163	164	174	38	68	76
Male		23	1	170	*	19	0	83	*
1st Attempt		212	44	165	165	170	36	74	77
2nd Attempt		31	4	155	*	16	*	43	*
2024-2025	157	349	85	162	161	254	64	73	67
Female		330	95	162	161	242	64	73	67
Male		18	0	157	*	11	*	61	*
1st Attempt		269	65	163	162	206	44	77	68
2nd Attempt		58	23	156	160	32	16	55	70

(* less than 5 candidates)

Table 8. Praxis II: Elementary Reading & Language Arts (7812) Scores

Elementary Reading & Language Arts (7812)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	161	46	0	163	*	32	*	60	*
Female		44	0	162	*	30	*	60	*
Male		2	0	*	*	0	*	*	*
1st Attempt		40	0	163	*	28	*	61	*
2nd Attempt		5	0	158	*	3	*	50	*
2022-2023	161	151	39	163	165	114	33	60	66
Female		142	38	162	165	107	32	59	65
Male		9	1	166	*	7	*	70	*
1st Attempt		117	31	163	165	91	26	63	67
2nd Attempt		25	6	163	168	18	5	58	71
2023-2024	161	115	11	161	160	72	7	51	54
Female		110	11	161	160	71	7	53	54
Male		5	0	148	*	1	*	20	*
1st Attempt		87	8	161	160	58	5	54	50
2nd Attempt		23	3	151	*	14	*	52	*
2024-2025	161	123	18	161	156	62	7	50	39
Female		115	18	162	156	60	7	52	39
Male		8		148	*	2		25	
1st Attempt		94	13	162	155	51	5	54	39
2nd Attempt		20	3	157	*	8	*	40	*

(* less than 5 candidates)

Table 9. Praxis II: Elementary Math (5003)

Elementary Math (5003)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	157	364	46	170	179	294	63	81	95
Female		334	41	169	178	267	58	80	98
Male		30	5	176	184	27	5	90	100
1st Attempt		291	38	171	181	238	37	82	97
2nd Attempt		40	6	163	172	30	6	75	100
2022-2023	157	279	47	168	177	210	46	75	98
Female		256	44	167	177	192	43	75	98
Male		21	2	174	*	16	*	76	*
1st Attempt		211	41	170	178	165	40	78	98
2nd Attempt		39	4	161	*	28	*	72	*
2023-2024	157	257	49	169	174	193	42	75	86
Female		238	48	169	174	176	43	74	98
Male		19	1	175	*	17	*	90	*

1st Attempt		209	46	169	174	161	39	70	81
2nd Attempt		32	2	155	*	22	*	50	*
2024-2025	157	331	80	163	167	232	64	70	80
Female		312	79	163	167	218	63	70	80
Male		18	1	163	*	13	*	72	*
1st Attempt		256	63	165	170	193	54	75	86
2nd Attempt		53	12	155	153	29	6	55	50

(* less than 5 candidates)

Table 10. Praxis II: Elementary Math (7813) Scores

Elementary Math (7813)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	150	43	0	151	*	31	*	63	*
Female		40	0	153	29	29	*	66	*
Male		3	0	*	*	0	*	*	*
1st Attempt		39	0	153	*	28	*	65	*
2nd Attempt		3	0	*	*	0	*	*	*
2022-2023	150	159	36	153	161	112	31	57	76
Female		150	35	152	103	103	30	56	77
Male		9	1	160	*	9	*	82	*
1st Attempt		126	33	154	162	91	29	61	81
2nd Attempt		21	1	150	*	13	*	43	*
2023-2024	150	127	9	150	159	75	6	50	67
Female		118	9	151	73	73	6	52	67
Male		9	0	142	*	2	*	*	*
1st Attempt		96	8	151	160	57	5	50	63
2nd Attempt		22	1	148*	*	12	*	44	*
2024-2025	150	120	18	149	146	67	9	56	50
Female		113	18	149	146	63	9	56	50
Male		7		149	*	4		57	
1st Attempt		95	13	151	145	56	6	59	46
2nd Attempt		21	4	145		9	*	43	*

(* less than 5 candidates)

Table 11. Praxis II: Elementary Social Studies (5004) Scores

Elementary Social Studies (5004)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	155	377	51	160	163	273	43	72	84
Female		343	46	154	158	240	38	47	58
Male		34	5	167	167	33	5	80	100

1st Attempt		263	36	161	165	189	32	72	89
2nd Attempt		50	9	160	163	38	9	76	100
2022-2023	155	253	53	160	162	160	39	63	74
Female		238	50	155	155	146	36	46	44
Male		20	2	175	*	18	*	86	*
1st Attempt		180	30	162	165	120	23	67	76
2nd Attempt		43	11	155	161	24	9	56	82
2023-2024	155	235	55	155	158	140	40	51	59
Female		219	54	154	158	128	39	49	58
Male		16	1	172	*	12	*	71	*
1st Attempt		171	38	157	156	106	26	53	54
2nd Attempt		40	10	152	161	20	9	43	75
2024-2025	155	332	87	152	153	173	50	54	58
Female		307	86	152	152	164	49	53	57
Male		14	1	151	*	8	*	57	*
1st Attempt		225	59	154	154	128	37	57	63
2nd Attempt		72	23	148	150	33	11	46	48

(* less than 5 candidates)

Table 12. Praxis II: Elementary Social Studies (7815) Scores

Elementary Social Studies (7815)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	154	43	*	169	*	38	*	86	*
Female		65	46	165	165	7	*	78	*
Male		2	3	*	*	*	*	*	*
1st Attempt		42	*	169	*	38	*	88	*
2nd Attempt		1	*	*	*	*	*	*	*
2022-2023	154	180	41	168	171	156	38	82	90
Female		197	12	162	170	145	10	57	83
Male		8	1	162	*	6	*	43	*
1st Attempt		167	40	168	171	146	37	83	90
2nd Attempt		10	1	158	*	7	*	58	*
2023-2024	154	136	10	168	169	115	9	80	69
Female		158	12	166	170	107	10	68	83
Male		9	0	160	*	7	*	78	*
1st Attempt		125	7	169	173	108	7	83	70
2nd Attempt		10	2	155	*	6	*	50	*
2024-2025	154	226	31	163	162	138	19	61	61
Female		214	31	163	162	132	19	62	61
Male		12		162	*	6		50	
1st Attempt		155	26	165	162	106	16	68	62
2nd Attempt		42	5	158	162	16	3	38	60

(* less than 5 candidates)

Table 13. Praxis II: Elementary Science (5005) Scores

Elementary Science (5005)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	159	362	51	167	171	286	46	79	90
Female		329	46	161	163	259	41	58	57
Male		33	5	169	176	27	5	71	100
1st Attempt		267	29	167	169	212	24	79	83
2nd Attempt		49	7	166	168	41	7	84	100
2022-2023	159	253	50	166	167	192	41	76	82
Female		239	47	161	162	179	38	60	59
Male		22	2	168	*	20	*	67	*
1st Attempt		187	11	167	165	143	9	76	73
2nd Attempt		45	16	163	166	33	13	73	81
2023-2024	159	224	47	162	165	159	39	62	71
Female		210	46	162	165	148	38	61	70
Male		14	1	177	*	11	*	79	*
1st Attempt		178	40	164	166	130	33	64	73
2nd Attempt		33	5	156	158	21	4	54	57
2024-2025	159	296	80	160	159	190	48	64	60
Female		277	79	159	159	176	47	64	60
Male		18	1	161	*	13	*	72	*
1st Attempt		235	57	161	162	161	37	69	65
2nd Attempt		51	18	152	151	24	8	47	44

(* less than 5 candidates)

Table 14. Praxis II: Elementary Science (7814) Scores

Elementary Science (7814)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	161	67	0	165	*	54	*	68	*
Female		40	0	168	*	35	*	81	*
Male		3	0	*	*	0	*	*	*
1st Attempt		56	0	166	*	47	*	70	*
2nd Attempt		10	0	161	*	7	*	64	*
2022-2023	161	205	47	162	165	151	39	56	67
Female		171	40	167	171	147	37	81	90
Male		9	1	175	*	9	*	100	*
1st Attempt		157	39	163	166	119	32	60	68
2nd Attempt		26	4	158	*	41	*	41	*
2023-2024	161	167	12	163	170	114	10	56	83
Female		130	10	169	169	111	9	85	69

Male		6	0	162	*	4	*	67	*
1st Attempt		124	11	165	171	92	9	62	82
2nd Attempt		31	1	159	*	19	*	49	*
2024-2025	161	132	26	166	160	108	20	82	77
Female		127	26	167	160	106	20	84	77
Male		5	*	149	*	2	*	40	*
1st Attempt		115	22	168	161	96	17	84	77
2nd Attempt		16	4	155	*	11	*	69	*

(* less than 5 candidates)

Section VII. Praxis II: **English**

The English Language Arts (5038) Praxis II assessment reveals a complex performance pattern characterized by relatively strong overall results compared to many other subject areas, yet showing troubling recent declines and persistent challenges for specific candidate groups. Throughout the four-year reporting period from 2021-2022 to 2024-2025, the English test has maintained moderate candidate volumes, ranging from 63 to 112 test takers statewide annually, with West Virginia University contributing between 6 and 16 candidates per year. This moderate testing population reflects the sustained but not overwhelming demand for secondary English teachers in West Virginia, positioning it as neither the largest nor smallest certification pathway among the subject-specific Praxis II assessments.

The overall passing rate trajectory for the English (5038) assessment shows initial strength followed by concerning deterioration. In 2021-2022, the statewide passing rate stood at 78%, with WVU candidates achieving a comparable 77% pass rate. Performance actually improved in 2022-2023, with statewide rates climbing to an impressive 87% and WVU candidates reaching a perfect 100% pass rate, suggesting that cohort was exceptionally well-prepared or benefited from effective programmatic interventions. However, this peak performance proved unsustainable. By 2023-2024, passing rates had declined to 76% statewide and 88% for WVU, still respectable but showing signs of regression. The 2024-2025 results reveal a more dramatic decline, with statewide pass rates dropping to just 60% and WVU rates falling to 81%. This 18-percentage-point statewide decline from the peak represents a significant erosion in candidate readiness over just two years and places the most recent pass rate at the lowest point in the reporting period.

Mean score trends provide additional context for understanding these performance shifts. Throughout the reporting period, mean scores have remained relatively stable and well above the 167 passing threshold, ranging from 170 to 176 across different years and populations. In 2021-2022, the statewide mean was 173 with WVU at 176. These scores held remarkably steady through 2022-2023 and 2023-2024, with means in the 172-177 range. The 2024-2025 results show a modest decline to 170 statewide and 175 for WVU candidates. While these scores remain comfortably above the passing threshold, the declining trend coupled with the sharp drop in passing rates suggests increasing dispersion in candidate performance, with more candidates scoring significantly below the mean and failing to meet certification standards even as many continue to perform well. The fact that mean scores remained relatively high while passing rates dropped substantially indicates a bifurcation in the candidate pool, with successful candidates maintaining strong performance while an increasing proportion of candidates fall well short of requirements.

The divide between first-attempt and second-attempt performance on the English assessment reveals one of the most concerning patterns in the data. First-time test takers have generally achieved strong results throughout the reporting period, with pass rates ranging from 71% to 90%. In 2021-2022,

first-time candidates achieved an exceptional 90% statewide pass rate, with WVU reaching a perfect 100%. Even in the challenging 2024-2025 year, first-time candidates maintained a respectable 71% statewide pass rate, with WVU candidates achieving an impressive 92%. These first-attempt results suggest that initial teacher preparation programs are generally effective for most candidates who complete them. However, the second-attempt story tells a dramatically different and more troubling narrative. Candidates taking the test for a second time face substantially worse odds, with pass rates ranging from a high of 67% in 2021-2022 to catastrophic lows in recent years. The 2024-2025 data shows second-attempt pass rates plummeting to just 17% statewide, meaning that more than four out of five candidates who failed once and tried again continued to fail. This represents one of the lowest second-attempt success rates across all Praxis II assessments and suggests that current remediation strategies are profoundly ineffective for English candidates.

Gender patterns in English (5038) performance present an interesting contrast to patterns observed in some other subject areas. Female candidates overwhelmingly dominate the test-taking population, representing approximately 80-85% of all candidates across the reporting period, which aligns with traditional gender distributions in English education. In 2024-2025, 73 of 88 total candidates were female. Despite their numerical dominance, female candidates have generally achieved slightly lower pass rates than their male counterparts in most years, though small sample sizes for males limit the reliability of these comparisons. In 2024-2025, female candidates achieved a 59% pass rate compared to 69% for males, continuing a pattern where males modestly outperform females despite representing a small minority of test takers. However, the absolute performance levels for both genders have declined, with females dropping from 61% in 2022-2023 to 59% in 2024-2025, and males showing more volatility due to small sample sizes. The mean scores tell a similar story, with females scoring 169 compared to males at 174 in the most recent year, suggesting that males who enter English education programs may be particularly strong candidates who outperform their female peers on this standardized assessment.

West Virginia University's role in English teacher preparation shows both strengths and areas requiring attention. WVU candidates have generally performed at or above statewide averages throughout most of the reporting period, often by substantial margins. The 2022-2023 cohort achieved a perfect 100% pass rate, demonstrating the program's capacity for excellence. However, WVU's relative advantage has narrowed over time, and the program has not been immune to broader declining trends. In 2024-2025, while WVU's 81% pass rate significantly exceeded the 60% statewide average, it represented a substantial decline from the program's peak performance and from the 88% achieved the previous year. The number of WVU candidates taking the test has also shown considerable volatility, ranging from just 6 candidates in 2022-2023 to 16 in 2024-2025, suggesting possible fluctuations in program enrollment or timing of when candidates take their certification exams. The mean scores for WVU candidates have remained consistently strong, ranging from 173 to 179, indicating that the institution attracts and prepares relatively strong candidates, but the declining pass rates suggest that a growing minority struggle to meet standards despite overall program quality.

The relatively small absolute numbers of English test takers compared to elementary education or some other high-volume assessments creates both opportunities and challenges for analysis and intervention. With 88 candidates statewide in 2024-2025, the subject area represents a manageable population for targeted intervention efforts, and changes in even a few candidates' performance can substantially affect percentage-based metrics. The 18-percentage-point decline in statewide pass rates from 78% to 60% represents approximately 16 additional failing candidates compared to what would be expected if 2021-2022 rates had held constant. While this absolute number is smaller than declines observed in high-volume tests like elementary assessments, it is nonetheless significant for a state that likely has ongoing needs for qualified English teachers. The small WVU cohort of 16 candidates means that even individual candidate struggles can substantially impact institutional pass rates, making year-to-year comparisons somewhat volatile.

Comparing English (5038) performance to other secondary content area assessments provides valuable context. English pass rates, while declining, remain substantially higher than those observed in Mathematics (5165), where statewide rates ranged from 42% to 60% during the same period. English also outperforms several elementary content tests, particularly the Mathematics and Social Studies assessments. However, English pass rates are lower than those observed in Social Studies (5081) during most of the reporting period, and significantly lower than the near-perfect rates achieved in Agriculture and Physical Education, though those assessments involve much smaller candidate populations. The English assessment appears to occupy a middle position in difficulty, neither exceptionally challenging like mathematics nor remarkably accessible like some smaller specialty areas.

The pattern of declining performance across multiple years and cohorts suggests systemic factors rather than isolated anomalies affecting English (5038) results. Several potential explanations warrant consideration. Changes in the candidate pipeline, including shifts in who chooses to pursue English education careers or modifications to program admission standards, could affect the baseline preparedness of test takers. Curriculum misalignment between English teacher preparation programs and the specific content or formats emphasized on the Praxis II could explain why well-intentioned preparation fails to translate to test success. The lingering effects of COVID-19 disruptions on candidates who completed substantial portions of their preparation during pandemic conditions might contribute to observed declines. Changes in the test itself, whether through content updates, difficulty calibration adjustments, or shifts in the balance of assessment components, could also explain performance trends, though without access to test revision histories, this hypothesis cannot be confirmed or rejected.

The particularly severe decline in second-attempt success rates demands specific attention and explanation. The catastrophic 17% second-attempt pass rate in 2024-2025 suggests that candidates who fail initially face fundamental barriers to improvement that are not being addressed by current remediation approaches. This could reflect inadequate diagnostic information provided to failing candidates about specific content or skill weaknesses, insufficient availability or quality of targeted remediation resources specifically for the English assessment, financial or time constraints that prevent candidates from engaging in meaningful additional preparation between attempts, or fundamental content knowledge or skill gaps that cannot be easily remedied through short-term study. The fact that first-attempt rates remain relatively strong while second-attempt rates have collapsed suggests that the issue lies more in remediation effectiveness than in initial preparation quality.

The stable mean scores despite declining pass rates point to a growing achievement gap within the candidate population. Rather than overall preparation quality declining uniformly, the data suggests that successful candidates continue to perform well, achieving scores comfortably above the passing threshold, while an increasing proportion of candidates fall significantly short of requirements. This bifurcation could reflect increasing heterogeneity in candidate preparation, with some programs or pathways producing well-prepared candidates while others struggle, differential impacts of external factors like work obligations or family responsibilities on candidates' ability to engage fully with preparation, or a mismatch between assessment requirements and the competencies emphasized in some preparation approaches. The fact that this pattern appears across both WVU and statewide data suggests it is not institution-specific but rather reflects broader trends in English teacher preparation or assessment.

Looking forward, the English (5038) assessment presents both concerning trends and opportunities for improvement. The relatively small candidate population makes targeted interventions feasible, and the fact that some cohorts have achieved very high pass rates demonstrates that strong performance is possible under the right conditions. However, the recent declines, particularly the dramatic drop to 60% statewide passing in 2024-2025, represent a critical threshold that demands immediate attention. If trends continue, English could join mathematics and some elementary assessments as areas where more candidates fail than pass, creating serious bottlenecks in the teacher certification pipeline. The severe second-attempt problem requires innovative remediation strategies that go beyond simply allowing more study time and retesting. The modest but persistent

gender performance gap warrants investigation to understand whether it reflects differential preparation, test design factors, or other influences that could be addressed through programmatic changes.

The English (5038) Praxis II assessment data reveals a subject area in transition from a position of relative strength to one of growing concern. While not yet facing the crisis-level challenges observed in mathematics or some elementary assessments, the trajectory is clearly negative and accelerating. The combination of declining overall pass rates, catastrophic second-attempt results, persistent gender performance differences, and bifurcating score distributions suggests that English teacher certification faces systemic challenges requiring comprehensive responses. The fact that first-attempt candidates continue to achieve reasonable success rates while second-attempt candidates fail at historic levels indicates that the certification system is working for initially well-prepared candidates but completely failing those who need additional support. Addressing these trends will require not only improved initial preparation but also fundamentally reimagined approaches to supporting candidates who struggle initially, potentially including enhanced diagnostic assessment, targeted content remediation, alternative preparation pathways, and reconsideration of whether a single standardized test adequately captures the competencies required for effective English teaching. Without such interventions, the declining trends risk creating unnecessary barriers to entering the teaching profession for candidates who might otherwise become effective educators, exacerbating existing teacher shortages in a critical content area. Table 15 shows candidates scores on the English Language Arts Praxis II.

Table 15. Praxis II: English (5038) Scores

English (5038)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	167	112	13	173	176	87	10	78	77
Female		95	12	169	173	74	10	59	71
Male		17	1	170	*	13	*	59	*
1st Attempt		71	6	177	177	64	6	90	100
2nd Attempt		9	*	169	*	6	*	67	*
2022-2023	167	93	6	176	177	81	6	87	100
Female		76	4	172	*	64	*	61	*
Male		20	2	172	*	19	*	68	*
1st Attempt		26	7	172	175	20	6	77	86
2nd Attempt		12	*	166	*	8	*	36	*
2023-2024	167	63	7	172	174	53	7	76	88
Female		54	4	172	*	45	*	78	*
Male		8	3	170	*	7	*	64	*
1st Attempt		51	6	173	175	46	6	82	86
2nd Attempt		7	1	168	*	8	*	50	*
2024-2025	167	88	16	170	175	53	13	60	81
Female		73	13	169	175	43	10	59	77
Male		13	3	174	*	9	*	69	*
1st Attempt		63	13	172	179	45	12	71	92
2nd Attempt		12	1	159	*	2	*	17	*

(* less than 5 candidates)

Section VIII. Praxis II: Math

The Mathematics (5165) Praxis II assessment represents one of the most challenging certification hurdles for teacher candidates in West Virginia, consistently demonstrating the lowest passing rates among major secondary content areas throughout the four-year reporting period from 2021-2022 to 2024-2025. With candidate numbers ranging from 34 to 50 test takers statewide annually, the mathematics assessment reflects a relatively small but critical pipeline for secondary mathematics teachers, a perpetually high-need area in education. The data reveals persistent struggles across all candidate groups, with only modest signs of recent improvement that remain insufficient to address the fundamental crisis in mathematics teacher certification that the assessment results document.

The overall passing rate trajectory for Mathematics (5165) tells a story of consistent difficulty and failure to meet certification standards for the majority of candidates in most years. The 2021-2022 testing year began with a 60% statewide pass rate, which, while concerning, represented the highest performance level observed during the entire reporting period. West Virginia University candidates in that initial year achieved a perfect 100% pass rate with 7 candidates, though the small sample size limits the generalizability of this exceptional result. Performance deteriorated sharply in 2022-2023, with statewide pass rates plummeting to just 44%, meaning that more than half of all mathematics teacher candidates failed to achieve certification on this assessment. This represented a 16-percentage-point decline in just one year and marked the lowest point in the four-year period. The 2023-2024 results showed minimal improvement to 42% statewide, essentially maintaining the crisis-level performance of the previous year. The 2024-2025 data provides the first glimmer of hope, with statewide pass rates climbing to 54%, still barely above the halfway mark but representing a 12-percentage-point improvement from the low point. However, even this modest recovery leaves mathematics pass rates far below those of virtually every other subject area and well below levels that would be considered acceptable for a functioning teacher certification system.

West Virginia University's performance on the Mathematics (5165) assessment has shown remarkable volatility and recent improvement, though small sample sizes necessitate cautious interpretation. After the exceptional 100% pass rate in 2021-2022 with 7 candidates, WVU data became largely unavailable for 2022-2023 and 2023-2024 due to having fewer than 5 candidates in most subcategories, with asterisks marking most statistics. The institution had only 4 candidates in 2022-2023 and just 2 in 2023-2024, reflecting either very small program enrollments or candidates delaying certification testing. The 2024-2025 year saw WVU candidate numbers increase to 6, with an impressive 83% pass rate that substantially exceeded the 54% statewide average. This strong recent performance suggests that WVU's mathematics preparation program may be implementing effective strategies, though the small numbers make it impossible to determine whether this represents a sustainable programmatic success or statistical variation. The fact that WVU could produce such divergent results from statewide trends indicates significant variation in preparation quality across institutions and raises questions about what WVU might be doing differently that could inform practices at other teacher preparation programs.

Mean score analysis reveals that mathematics candidates struggle not just at the margins but often fall well short of the 159 passing threshold. Statewide mean scores have ranged from a low of 153 to a high of 161 during the reporting period, placing average performance dangerously close to or even below the passing standard. The 2021-2022 statewide mean of 161 barely exceeded the threshold by 2 points, and subsequent years saw means decline to 153-154 in 2022-2023 and 2023-2024, indicating that the typical candidate was failing by 5-6 points. The 2024-2025 mean of 159 exactly matches the passing threshold, suggesting that half of candidates score above and half below this critical cut point. WVU's mean scores, when available, have been substantially higher, reaching 176 in 2021-2022 and an impressive 184 in 2024-2025, demonstrating that WVU candidates not only pass at higher rates but do so with comfortable margins above the minimum standard. This dramatic difference between WVU means (184) and statewide means (159) in 2024-2025—a 25-point gap—suggests fundamentally different levels of mathematical content knowledge or test-taking preparation between WVU candidates and those from other institutions or alternative certification pathways.

The first-attempt versus second-attempt performance divide in mathematics reveals troubling patterns similar to those observed in other subject areas but occurring at lower baseline success rates. First-time test takers have achieved pass rates ranging from 52% to 62% across the four-year period, representing the best-case scenario for mathematics candidates but still reflecting failure rates approaching or exceeding 40% even for initially prepared candidates. The 2021-2022 first-attempt rate of 62% was the highest observed, declining to 52% in both 2022-2023 and 2023-2024 before recovering slightly to 53% in 2024-2025. These rates stand in stark contrast to first-attempt success in other subject areas, where rates of 70-90% are common. The fact that nearly half of first-time mathematics candidates fail suggests fundamental misalignment between preparation programs and assessment requirements or genuine difficulty in mastering the mathematical content and pedagogical knowledge required for certification. Second-attempt candidates face even grimmer prospects, with success rates ranging from just 22% to 31% across years where data is available. The 2024-2025 second-attempt pass rate of 22% means that more than three-quarters of candidates who failed once and tried again continued to fail, representing one of the worst remediation success rates across all Praxis II assessments and suggesting that current support systems are almost entirely ineffective for mathematics candidates who struggle initially.

Gender patterns in mathematics performance present a stark reversal of patterns observed in most other teaching fields and reveal troubling equity implications. Unlike elementary education or English, where females overwhelmingly dominate the candidate pool, mathematics shows more balanced gender representation, with females typically comprising 55-70% of test takers rather than the 85-95% seen in other areas. In 2024-2025, 23 of 41 candidates were female, representing 56% of the population. More concerning than the demographic balance is the substantial gender performance gap, with males consistently and significantly outperforming females across the reporting period. In 2021-2022, males achieved a 56% pass rate compared to 61% for females, a modest 5-percentage-point gap. However, the 2024-2025 data reveals a dramatic 33-percentage-point gender gap, with males passing at 72% while females achieved only 39% success. This represents one of the largest gender disparities observed across all Praxis II assessments and raises serious questions about differential preparation, test content or format effects, stereotype threat, or other factors that disproportionately impact female mathematics candidates. Mean scores reinforce this pattern, with males scoring 168 compared to females at 152 in 2024-2025, a 16-point difference that places the average female candidate 7 points below the passing threshold while the average male candidate comfortably exceeds it.

The relatively small absolute numbers of mathematics test takers creates both challenges and opportunities for understanding and addressing performance issues. With only 41 candidates statewide in 2024-2025, each individual represents approximately 2.4% of the total population, making percentage-based metrics highly sensitive to individual performance variations. The increase from 37 candidates in 2023-2024 to 41 in 2024-2025 represents only 4 additional test takers but could signal growing interest in mathematics teaching or simply reflect timing variations in when candidates complete preparation and attempt certification. The persistently small candidate pool raises fundamental questions about pipeline adequacy—even if pass rates improved to 100%, the state would be producing fewer than 50 newly certified mathematics teachers annually, likely insufficient to meet ongoing demand given retirements, attrition, and expanding student populations. The small numbers also limit statistical power for identifying specific programmatic factors that distinguish successful from unsuccessful candidates and make it difficult to implement and evaluate targeted interventions at meaningful scale.

Comparing mathematics performance to other secondary content areas highlights its status as an outlier in difficulty. While English (5038) showed concerning recent declines to 60% passing, and Social Studies (5081) maintained 54-100% rates depending on the year, mathematics consistently performed at or near the bottom of all major assessments. Only some elementary content tests, particularly Elementary Mathematics (7813) and Elementary Social Studies (5004), showed comparably low pass rates, suggesting that mathematics content assessment poses particular challenges regardless of grade level. The striking contrast between mathematics and other STEM subjects is notable—while data for science assessments shows

mixed results, physics and chemistry tests with sufficient sample sizes generally showed higher pass rates than mathematics, suggesting that the challenge is specific to mathematical content rather than broadly applicable to quantitative or technical subjects.

The persistent underperformance on mathematics certification raises fundamental questions about the relationship between undergraduate mathematics coursework, pedagogical preparation, and the specific competencies assessed by the Praxis II. Mathematics education majors typically complete substantial coursework in both pure mathematics content at the college level and mathematics pedagogy and teaching methods. The fact that candidates emerging from these programs pass at rates barely above 50% suggests either that preparation programs are inadequately emphasizing content and skills tested on the Praxis II, that the assessment measures content or cognitive demands not well-aligned with actual teaching requirements, that candidates with weaker mathematical aptitude self-select into teaching careers and struggle with advanced content, or that the passing threshold is set at a level that excludes candidates who might nonetheless become effective teachers with appropriate support and professional development. The dramatically better performance of WVU candidates in recent years suggests that effective preparation is possible, making system-wide failures at other institutions or pathways particularly troubling and suggestive of addressable programmatic deficiencies.

The implications of persistently low mathematics pass rates extend far beyond individual candidate outcomes to affect the entire educational system. Mathematics is consistently identified as a critical shortage area for teachers, and the inability of the certification system to produce adequate numbers of qualified candidates exacerbates these shortages. When barely half of prepared candidates can pass the certification exam, schools face impossible choices: leave mathematics positions unfilled, fill them with alternatively certified or out-of-field teachers who may lack adequate content knowledge, or resort to emergency credentials that bypass certification requirements. Each of these options undermines educational quality for students, particularly those in rural or economically disadvantaged areas that already face the greatest challenges in attracting and retaining qualified teachers. The opportunity costs are also significant—candidates who invest years in preparation and substantial financial resources but cannot achieve certification represent wasted human capital and lost potential contributions to the teaching profession.

The stark gender performance gap in mathematics carries particular policy significance given longstanding concerns about gender equity in STEM fields and the role of teacher quality in perpetuating or disrupting gendered patterns in student mathematics achievement. If female candidates, who still represent the majority of those entering mathematics teaching, face systematic barriers to certification that males do not experience, this has implications for both teacher supply and the diversity of role models available to students. Female students who might benefit from seeing female mathematics teachers as role models will have fewer such opportunities if female candidates cannot pass certification exams at rates comparable to males. The fact that the gender gap widened dramatically in the most recent year—from relatively modest historical differences to a 33-percentage-point chasm—suggests that recent changes in the assessment, preparation approaches, or candidate characteristics have had differential gender impacts that require investigation and remediation.

The catastrophic second-attempt failure rates in mathematics point to fundamental inadequacies in remediation support systems. When 78% of candidates who failed initially and attempted the test again continued to fail in 2024-2025, it indicates that simply allowing more time and retesting is almost entirely ineffective as an intervention strategy. Current approaches likely provide candidates with limited diagnostic information about specific content weaknesses, minimal access to targeted remediation resources specifically designed for Praxis mathematics content, inadequate understanding of how to translate failed attempt experiences into effective study plans, and insufficient support for addressing potential test-taking anxiety or other psychological barriers that may compound content knowledge gaps. The fact that remediation is particularly ineffective in mathematics compared to some other subjects suggests that the content and cognitive demands of the assessment are sufficiently complex that self-

directed improvement is extremely difficult, and that more intensive, structured intervention programs would be necessary to help struggling candidates succeed.

Looking at trends over time, the modest improvement from 42-44% pass rates in 2022-2023 and 2023-2024 to 54% in 2024-2025 offers some hope but requires careful interpretation. This 10-12 percentage point increase could reflect genuine improvements in candidate preparation, whether through programmatic reforms, enhanced support services, or better alignment between coursework and assessment content. Alternatively, it could represent statistical variation, temporary cohort effects, or even changes in who attempts the exam, with less-prepared candidates delaying certification or pursuing alternative pathways. The fact that WVU's performance improved dramatically while contributing more candidates suggests that at least part of the improvement reflects real programmatic success at that institution. However, the statewide mean score remaining exactly at the passing threshold indicates that overall preparation levels remain marginal, and that many candidates continue to struggle with the content demands of the assessment. Sustained improvement would require multiple consecutive years of increasing pass rates and rising mean scores to demonstrate genuine progress rather than temporary fluctuations.

Several potential interventions merit consideration for addressing the mathematics certification crisis. Enhanced alignment between teacher preparation coursework and Praxis content specifications could ensure that candidates encounter and master all assessed content areas during their programs. Diagnostic pre-assessments early in preparation programs could identify at-risk candidates before they invest years in a pathway they may struggle to complete. Targeted intervention courses or tutoring specifically addressing common areas of weakness on the mathematics Praxis could provide focused remediation. Alternative assessment pathways that evaluate mathematical knowledge and teaching competence through portfolios, teaching demonstrations, or other authentic assessments might identify effective teachers who struggle with standardized testing. Reconsideration of the passing threshold to determine whether current cut scores appropriately balance content rigor with the practical need to staff classrooms could expand the pool of certified candidates while maintaining quality standards. Enhanced partnerships between mathematics and education departments could improve the integration of content knowledge and pedagogical preparation.

The gender equity dimensions of mathematics performance demand specific attention and intervention. Research into the specific content areas, question formats, or testing conditions that contribute to gender performance gaps could inform targeted remediation. Explicit attention to stereotype threat and test anxiety in preparation programs, particularly for female candidates, might address psychological factors that compound content challenges. Recruitment of female mathematics candidates who are particularly strong in content areas could shift the demographic composition of the pool. Mentoring and support programs pairing struggling female candidates with successful female mathematics teachers could provide both academic and psychosocial support. Investigation of whether WVU's strong recent performance included more equitable gender outcomes could identify practices worth replicating at other institutions.

The Mathematics (5165) Praxis II assessment data reveals a subject area in crisis, with pass rates that have hovered around or below 50% for most of the reporting period, catastrophic remediation failure rates, and troubling gender equity implications. While recent modest improvements provide some hope, the fact remains that mathematics represents the most significant barrier to teacher certification among major subject areas, with implications that extend throughout the educational system. The dramatic performance differences between WVU and statewide candidates in recent years demonstrate that effective preparation is possible, making widespread failures elsewhere particularly troubling and suggestive of systemic problems in how most mathematics teacher candidates are being prepared for certification. The small absolute numbers of candidates attempting the exam compound the challenge, as even perfect pass rates would produce insufficient teachers to meet state needs. Addressing this crisis will require comprehensive interventions that simultaneously improve initial preparation quality, provide effective remediation for struggling candidates, address

gender equity gaps, ensure appropriate alignment between preparation and assessment, and potentially reconsider whether current assessment approaches adequately identify candidates who can become effective mathematics teachers. Without such fundamental reforms, mathematics will continue to represent a catastrophic bottleneck in the teacher certification pipeline, perpetuating teacher shortages and undermining educational quality in a critical content area that is essential for student success in an increasingly technical and quantitative world. Table 16 shows candidates scores on the Math Praxis II.

Table 16. Praxis II: Math (5165) Scores

Math (5165)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	159	50	3	161	176	30	7	60	100
Female		28	7	162	176	17	7	61	100
Male		8	0	157	*	5	*	56	*
1st Attempt		42	2	*	*	26	*	62	*
2nd Attempt		4	*	145	*	0	*	*	*
2022-2023	159	34	4	153	*	15	*	44	*
Female		31	2	150	*	17	7	37	*
Male		19	1	158	*	13	*	54	*
1st Attempt		23	4	156	*	12	*	52	*
2nd Attempt		8	*	146	*	2	*	25	*
2023-2024	159	37	2	154	*	21	*	42	*
Female		24	2	153	*	13	*	41	*
Male		13	0	155	*	8	*	44	*
1st Attempt		22	1	159	*	15	*	52	*
2nd Attempt		8	1	146	*	4	*	31	*
2024-2025	159	41	6	159	184	22	5	54	83
Female		23	3	152	*	9	*	39	*
Male		18	3	168	*	13	*	72	*
1st Attempt		30	5	160	185	16	4	53	80
2nd Attempt		6	1	157	*	2	*	22	*

(* less than 5 candidates)

Section IX. Praxis II: **Physical Education**

The Physical Education (5091) Praxis II assessment presents a troubling narrative of declining performance and emerging challenges in a content area that historically maintained strong certification rates. Throughout the four-year reporting period from 2021-2022 to 2024-2025, the physical education test has involved moderate candidate volumes, ranging from 29 to 51 test takers statewide annually, with West Virginia University contributing between 12 and 21 candidates per year. These numbers reflect the sustained but specialized demand for physical education teachers in West Virginia schools, positioning it as a mid-sized certification pathway that serves an important but not overwhelming proportion of the teacher preparation pipeline. The data reveals a dramatic deterioration in passing rates, particularly concerning performance at West Virginia University, persistent gender disparities, and mean scores that hover dangerously close to the passing threshold, creating a picture of a subject area moving from strength to crisis over just four years.

The overall passing rate trajectory for Physical Education (5091) demonstrates one of the most dramatic declines observed across all Praxis II subject areas. The assessment began the reporting period in a position of relative strength, with 2021-2022 showing an 87% statewide pass rate and 80% for West Virginia University candidates. These results suggested effective preparation programs and appropriate alignment between coursework and assessment requirements. Performance remained relatively stable in 2022-2023, with statewide rates dipping slightly to 78% while WVU improved to 82%, maintaining a generally positive picture. However, 2023-2024 brought a shocking collapse in performance, with statewide pass rates plummeting to just 61% and WVU experiencing a catastrophic decline to only 41%. This 41% WVU pass rate represented one of the lowest institutional performance levels observed across any major Praxis II assessment and signaled a fundamental crisis in the preparation program. The 2024-2025 results show modest recovery for both populations, with statewide rates remaining at 62% and WVU improving to 52%, but these figures remain far below the strong performance of earlier years and indicate that approximately 40-48% of candidates continue to fail, creating significant barriers to physical education teacher certification.

West Virginia University's role in physical education teacher preparation reveals a particularly troubling pattern of deteriorating performance relative to state averages. In 2021-2022, WVU candidates achieved an 80% pass rate, slightly below the 87% statewide average but still representing strong performance and suggesting generally effective preparation. The 2022-2023 results actually showed WVU outperforming the state with 82% passing compared to 78% statewide, indicating program improvements and high-quality candidate preparation. However, the 2023-2024 collapse was particularly severe for WVU, with the 41% pass rate falling 20 percentage points below the already-concerning 61% state average. This dramatic underperformance raised serious questions about what changed within the WVU program or candidate pool to produce such catastrophic results. While WVU's 2024-2025 recovery to 52% represented an 11-percentage-point improvement, it still left the institution 10 points below the state average and at barely above 50% success rates. The fact that WVU transformed from outperforming to substantially underperforming state averages in just two years suggests significant programmatic disruptions, changes in candidate quality, or other institution-specific factors that require urgent investigation and intervention.

Mean score analysis provides crucial context for understanding the performance challenges in physical education. Throughout the reporting period, mean scores have remained remarkably stable but problematically close to the 150 passing threshold, creating a situation where small variations in individual performance substantially affect pass rates. Statewide mean scores have ranged from 152 to 156, providing only 2-6 points of cushion above the minimum standard. The 2021-2022 statewide mean of 154 with WVU at 154 showed both populations comfortably clearing the threshold, consistent with the strong pass rates that year. Mean scores remained stable in 2022-2023 at 154 statewide and 157 for WVU. The 2023-2024 crisis year showed means of 152 statewide and a troubling 149 for WVU, with the WVU average actually falling one point below the passing threshold, mathematically explaining the catastrophic 41% pass rate and indicating that more than half of WVU candidates that year scored below 150. The 2024-2025 means of 153 for both populations represent slight recovery but remain dangerously close to the cut point. The fact that mean scores consistently hover only 2-4 points above passing indicates that physical education candidates as a group demonstrate minimal margin for error, and that even modest weaknesses in preparation or test performance can result in failure for large proportions of candidates.

Gender patterns in physical education performance reveal both demographic characteristics and concerning performance disparities that distinguish this subject area from most others. Unlike elementary education or English, where females overwhelmingly dominate the candidate pool, physical education shows more balanced or even male-dominated demographics. In 2021-2022, males represented approximately 70% of test takers (32 of 46 statewide), and while proportions varied somewhat across years, males consistently comprised the majority or near-majority of candidates. The 2024-2025 data shows 20 males and 13 females statewide, with males representing 59% of the population. This gender balance more closely resembles patterns in mathematics than in most other teaching fields and may reflect traditional gender associations with physical education and athletics.

Performance patterns by gender have shown considerable variation across years, with neither gender consistently dominating. In 2021-2022, females actually outperformed males with 76% passing compared to 68% for males, an unusual reversal of typical STEM-related gender gaps. However, by 2024-2025, males achieved 70% pass rates while females managed only 46%, a 24-percentage-point gap that represents one of the largest gender disparities observed in the most recent testing cycle. This dramatic reversal in gender performance patterns over just a few years, combined with the small absolute numbers involved, makes it difficult to draw definitive conclusions about systematic gender effects versus cohort-specific variations.

The first-attempt versus second-attempt performance patterns in physical education show trends consistent with other subject areas but occurring at concerning baseline levels. First-time test takers have generally achieved substantially higher pass rates than overall populations, though these rates have declined over time. The 2021-2022 first-attempt pass rate of 92% statewide and 85% for WVU represented strong performance suggesting effective initial preparation. These rates remained solid in 2022-2023 at 80% statewide and 92% for WVU. However, 2023-2024 saw first-attempt rates decline to 75% statewide and 60% for WVU, indicating growing challenges even for initially prepared candidates. The 2024-2025 results show 76% statewide and 77% for WVU, representing modest recovery but remaining well below the excellent rates of earlier years. Second-attempt data is limited due to small sample sizes, with most years showing asterisks due to having fewer than five candidates in this category. Where data is available, second attempts show mixed results, ranging from 63% to 80% success, though the small numbers make these percentages highly unstable and difficult to interpret. The fact that relatively few candidates appear to attempt the test multiple times may suggest that those who fail initially pursue alternative career paths rather than persisting in physical education certification.

The moderate absolute numbers of physical education test takers create both analytical challenges and practical implications for the teacher pipeline. With 34 candidates statewide in 2024-2025, including 21 from WVU, the subject area represents a modest but important component of the teacher certification system. The fact that WVU candidates represent approximately 62% of all physical education test takers (21 of 34) in the most recent year indicates the institution's dominant role in preparing physical education teachers for West Virginia. This concentration means that WVU's performance challenges have outsized impact on the statewide teacher supply in this content area. The declining pass rates translate to meaningful reductions in newly certified teachers—the difference between an 87% pass rate in 2021-2022 (40 of 46 passing) and a 62% rate in 2024-2025 (21 of 34 passing) represents approximately 6-7 fewer certified physical education teachers entering the workforce annually, significant given the specialized nature of the field and ongoing needs in schools across the state.

Comparing physical education performance to other Praxis II assessments provides important context for understanding whether observed challenges are unique to this content area or reflect broader trends. Physical education's current 62% statewide pass rate falls in the middle range of subject-area performance, substantially better than Mathematics (5165) at 54% but worse than English (5038) at 60% in the same testing year. Physical education significantly underperforms compared to Social Studies (5081) and maintains roughly comparable pass rates to many elementary content tests. The dramatic decline from initial high performance distinguishes physical education from subjects like mathematics that have consistently struggled throughout the reporting period. Physical education's trajectory—from strength to crisis—more closely resembles patterns observed in some elementary assessments and in Social Studies, suggesting that whatever factors are driving declining performance may affect multiple content areas rather than being specific to physical education content or preparation approaches.

The small sample sizes at WVU, combined with the institution's dominant role in physical education preparation, create particular vulnerability to year-to-year performance fluctuations that may reflect cohort effects rather than stable programmatic characteristics. The dramatic swings in WVU performance—from 80% to 82% to 41% to 52% across four consecutive years—strain credibility as representations of genuine programmatic quality changes occurring on such rapid timelines. With only 12-21 candidates per year, even a few particularly strong or weak individuals can substantially

affect aggregate pass rates. The 2023-2024 cohort of 12 WVU candidates, with only 9 passing (75% rate listed seems incorrect given the 41% overall—this may reflect a data interpretation issue), suggests that something unusual affected that particular group. Whether this reflected changes in admission standards, disruptions from COVID-19 affecting candidates in training during the pandemic, instructional changes within the program, or simply a weak cohort remains unclear from the data alone but warrants institutional investigation.

Mean scores hovering near the passing threshold throughout the reporting period raise important questions about the appropriateness of either preparation effectiveness or the cut score itself. Physical education differs from purely academic subjects in that it combines theoretical knowledge of exercise physiology, motor learning, pedagogy, and related content with practical teaching skills that may not be fully captured by a standardized written examination. The fact that even in strong years, mean scores only exceeded passing thresholds by 4-7 points suggests that either candidates are being marginally prepared for the content knowledge demands of the assessment or that the assessment may be testing content at levels of specificity or depth that exceed what is necessary for effective physical education teaching. The consistency of scores near the threshold across multiple years and candidate cohorts suggests a systematic relationship between typical preparation outcomes and assessment demands rather than temporary misalignment, indicating that fundamental reforms in either preparation or assessment may be necessary to improve outcomes.

The particularly severe 2023-2024 performance collapse, followed by partial recovery in 2024-2025, invites speculation about causative factors and whether improvements represent sustainable progress or temporary fluctuations. Several potential explanations merit consideration for the 2023-2024 crisis. Candidates in that testing cohort would have completed significant portions of their preparation during the COVID-19 pandemic years of 2020-2022, potentially experiencing disruptions to practicum experiences, reduced access to facilities for hands-on learning, or compressed coverage of content that negatively affected their readiness. Changes in physical education program faculty, curriculum, or instructional approaches at WVU or other preparation institutions could have affected the 2023-2024 graduating cohort specifically. The assessment itself may have undergone content updates or difficulty recalibration that temporarily affected performance before candidates and programs adapted. Changes in who chooses to pursue physical education teaching careers, potentially affecting the baseline aptitude or preparation of the candidate pool, could explain performance shifts. The modest 2024-2025 recovery suggests that whatever factors caused the crisis may be resolving, though performance remains far below initial levels and indicates that underlying challenges persist.

Gender performance patterns in physical education warrant particular attention given the field's historical gender associations and the potential implications for teacher diversity and student role modeling. The reversal from females outperforming males in 2021-2022 (76% versus 68%) to males substantially outperforming females in 2024-2025 (70% versus 46%) represents a 42-percentage-point swing in relative performance that demands explanation. The small sample sizes—only 13 female candidates statewide in 2024-2025—mean that individual variations substantially affect percentages, and with only 6 of 13 passing, two or three additional successful candidates would have dramatically changed the female pass rate. At WVU specifically, only 2 of 7 female candidates passed in 2024-2025, a 29% rate that is catastrophically low and raises urgent questions about whether female candidates are receiving adequate preparation, whether the assessment includes content or formats that disadvantage females, or whether other factors are creating barriers to female success in physical education certification. Given ongoing concerns about gender equity in physical education and athletics, ensuring that certification systems do not systematically disadvantage female candidates is essential for maintaining teacher diversity and providing appropriate role models for female students.

The limited second-attempt data in physical education, while making it difficult to assess remediation effectiveness, may actually represent a positive signal if it indicates that few candidates require multiple attempts. In many subject areas, substantial proportions of candidates fail initially and attempt tests multiple times, with second-attempt success rates typically much lower than first attempts. The fact that physical education shows

relatively few second attempts could indicate either that most candidates pass initially, as suggested by the relatively strong first-attempt rates, or that candidates who fail choose not to persist with multiple testing attempts, possibly pursuing alternative careers or certification in other teaching areas. The data suggests that physical education certification operates more as a pass-fail gateway with limited cycling of repeat attempts, contrasting with subjects like mathematics or some elementary tests where candidates frequently attempt certification multiple times before either succeeding or abandoning the pathway.

Looking forward, physical education certification faces critical challenges that require immediate attention and systematic intervention. The dramatic decline from 87% to 62% statewide passing represents a loss of approximately 25 percentage points over four years, indicating fundamental erosion in either preparation quality, candidate readiness, or the alignment between the two. West Virginia University's particular struggles, transforming from a program that met or exceeded state averages to one substantially underperforming them, necessitates comprehensive programmatic review to identify specific factors contributing to declining outcomes. The dangerously low mean scores, consistently hovering only 2-4 points above passing thresholds, suggest that even minor improvements in preparation could yield substantial improvements in pass rates, making this a potentially addressable challenge if root causes can be identified and corrected. The gender performance disparities, particularly the catastrophically low 46% pass rate for females statewide and 29% at WVU in the most recent year, demand investigation to ensure that certification systems provide equitable opportunities for both male and female candidates to demonstrate competence and enter the teaching profession.

Several potential interventions merit serious consideration for addressing the physical education certification crisis. Enhanced curriculum alignment between preparation programs and Praxis content specifications could ensure that candidates encounter and master all assessed content areas during their coursework. Diagnostic assessments earlier in preparation programs could identify at-risk candidates and provide targeted intervention before they reach certification testing. Given the practical nature of physical education teaching, consideration of alternative or supplementary assessment approaches that evaluate teaching effectiveness through performance assessments, portfolios, or teaching demonstrations might provide more valid measures of teaching readiness than standardized written tests alone. Partnerships with successful programs in other states or institutions that maintain high pass rates could identify effective practices for replication. Enhanced support specifically for female candidates, including mentoring, test preparation resources, and explicit attention to any content areas where female candidates disproportionately struggle, could address gender equity concerns. Investigation of whether mean scores near the passing threshold indicate appropriately rigorous standards or unnecessarily high cut points that exclude potentially effective teachers could inform discussions about optimal threshold placement.

The Physical Education (5091) Praxis II assessment data reveals a subject area in transition from a position of strength to one of significant concern, with dramatic declines in passing rates, particularly troubling institutional performance at the state's dominant preparation program, persistent challenges with mean scores clustering near passing thresholds, and emerging gender equity issues that threaten teacher diversity in the field. While the moderate candidate numbers mean that absolute impacts on teacher supply are smaller than in high-volume areas like elementary education, the specialized nature of physical education teaching means that shortfalls in newly certified teachers directly affect schools' ability to provide quality physical education programs that are essential for student health and development. The partial recovery in 2024-2025 from the catastrophic 2023-2024 results provides some hope that trends may be reversible, but the fact that recovery remains incomplete—with pass rates 25 percentage points below initial levels—indicates that fundamental challenges persist and require systematic intervention. Without comprehensive reforms addressing preparation quality, curriculum alignment, candidate support, and potentially assessment approaches themselves, physical education will continue to face significant certification barriers that limit the supply of qualified teachers and potentially compromise the quality of physical education programs available to West Virginia students at a time when childhood physical activity and health have never been more important. Table 17 shows candidates scores on the Physical Education Praxis II.

Table 17. Praxis II: Physical Education (5091) Scores

Physical Education (5091)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	150	46	15	154	154	40	12	87	80
Female		10	5	151	155	13	4	76	80
Male		32	10	152	152	27	8	68	67
1st Attempt		36	13	156	155	33	11	92	85
2nd Attempt		6	1	150	*	4	*	67	*
2022-2023	150	51	17	154	157	40	14	78	82
Female		25	5	153	159	21	5	72	83
Male		26	12	151	152	19	9	54	53
1st Attempt		41	13	155	160	33	12	80	92
2nd Attempt		5	2	150	*	4	0	80	*
2023-2024	150	29	12	152	149	25	9	61	41
Female		10	3	154	*	8	*	62	*
Male		19	9	152	149	17	7	61	41
1st Attempt		19	6	154	151	18	6	75	60
2nd Attempt		6	3	149	*	5	*	63	*
2024-2025	150	34	21	153	153	21	11	62	52
Female		13	7	151	150	6	2	46	29
Male		20	14	154	154	14	9	70	64
1st Attempt		25	13	155	157	19	10	76	77
2nd Attempt		4	3	*	*	*	*	*	*

(* less than 5 candidates)

Section X. Praxis II: **Science**

The science Praxis II assessments encompassing Biology (5235 and 5236), Chemistry (5245 and 5246), and Physics (5265 and 5266) present a complex and troubling picture characterized by extremely small candidate numbers, test version transitions that complicate trend analysis, persistently low passing rates across most science disciplines, and severe data limitations that make definitive conclusions difficult. Across all six test versions and the four-year reporting period from 2021-2022 to 2024-2025, science assessments collectively involve some of the smallest candidate populations of any Praxis II subject area, with annual test taker numbers frequently falling below the five-candidate threshold that triggers data suppression for privacy protection. This combination of small sample sizes, test transitions, and variable performance creates significant challenges for understanding science teacher preparation effectiveness and raises critical questions about whether West Virginia is producing adequate numbers of qualified science teachers to meet student needs in these essential STEM disciplines.

The Biology assessments reveal a pattern of test version transition with concerning performance implications across both the older 5235 and newer 5236 versions. Biology (5235), which appeared in 2021-2022 and 2022-2023 before being discontinued, showed troublingly low passing rates throughout its brief appearance in the data. In 2021-2022, only 60% of the 35 statewide candidates passed, with West Virginia University achieving a somewhat better 73% rate among its 13 test takers. Mean scores of 154 statewide and 157 for WVU provided only minimal cushion above the 152 passing threshold, with WVU averaging just 5 points above the cut score. First-time test takers performed substantially better at 74% statewide and

85% for WVU, suggesting that initial preparation was reasonably effective but that a significant minority of candidates struggled. Gender patterns showed females outperforming males with 70% passing compared to 52%, though small sample sizes limit the reliability of this comparison. The 2022-2023 results for Biology (5235) showed catastrophic deterioration, with statewide pass rates plummeting to just 50% and WVU declining to 44%. With only 21 statewide candidates and 6 from WVU, performance had collapsed to coin-flip odds, indicating fundamental preparation failures or assessment challenges. Mean scores remained at 154 statewide while WVU declined to 151, barely above the passing threshold and indicating that the average candidate was at serious risk of failure. The disappearance of this test version after 2022-2023 suggests it may have been replaced by the 5236 version, though the transition timeline and rationale remain unclear from the data alone.

Biology (5236), which appears to be the replacement version, shows limited data due to extremely small candidate numbers but reveals persistently concerning performance levels. In its first appearance in 2022-2023, only 5 candidates statewide took the test, with 4 passing for a 57% rate, though most subcategory data is suppressed due to small samples. The 2023-2024 results showed 10 statewide candidates with 50% passing, representing a coin-flip certification process that is utterly inadequate for a critical STEM teaching area. The mean score of 147 fell 7 points below the 154 passing threshold, mathematically explaining the low pass rate and indicating that the typical candidate was substantially unprepared for the assessment demands. By 2024-2025, candidate numbers increased to 30 statewide, suggesting growing interest or program expansion, but pass rates remained stuck at 57%, meaning that nearly half of all biology teacher candidates continued to fail certification. The mean score of 155 showed modest improvement, rising barely above the threshold, but the persistent 57% pass rate across multiple years suggests systematic challenges in either preparation quality, assessment appropriateness, or the match between the two. First-time candidates in 2024-2025 achieved 62% passing, better than the overall rate but still representing failure for more than one-third of initially prepared candidates. The transition from Biology (5235) to (5236) appears to have maintained low performance levels rather than resolving underlying preparation or assessment challenges, raising questions about whether test changes addressed fundamental issues or simply perpetuated existing problems under a different version number.

Chemistry assessments present even more severe challenges, with candidate numbers so small that meaningful statistical analysis becomes nearly impossible and data suppression dominates the reporting. Chemistry (5245), the older version appearing only in 2021-2022, involved just 14 statewide candidates and 9 from WVU, reflecting extremely limited pipeline numbers for this critical shortage area. Pass rates were alarmingly low at 56% statewide and a catastrophic 42% for WVU, indicating that more than half of chemistry teacher candidates failed certification even at the state's primary preparation institution. Mean scores of 156 statewide and 154 for WVU provided minimal margins above the 157 passing threshold, with WVU candidates averaging 3 points below the standard, explaining the abysmal pass rate. First-time test takers achieved only 42% passing statewide and 44% at WVU, indicating that even initially prepared candidates faced worse than coin-flip odds of certification success. Gender data showed females achieving 47% passing compared to insufficient male samples, though with only 11 female candidates, these percentages represent small absolute numbers. The disappearance of Chemistry (5245) after a single year of data raises questions about whether the test was discontinued, replaced, or simply had zero candidates in subsequent years, though the emergence of Chemistry (5246) suggests test version transition.

Chemistry (5246), appearing as the apparent replacement version, shows such limited data that drawing any meaningful conclusions becomes speculative. In 2022-2023, only 3 candidates statewide attempted the test, with all data suppressed due to small sample size. The fact that any data appears at all suggests that some candidates took the test, but performance outcomes remain entirely unknown. After no reported data for 2023-2024, the 2024-2025 results show 5 statewide candidates achieving a perfect 100% pass rate with a mean score of 165, well above the 146 passing threshold. While this appears to represent a dramatic success, the tiny sample size—just 5 individuals—means that this could reflect anything from programmatic excellence to a particularly strong cohort to random variation. The fact that all 5 passed on their first attempt suggests effective preparation, but generalizing from 5 candidates to draw conclusions about chemistry teacher preparation quality would be statistically inappropriate.

The much lower passing threshold of 146 for Chemistry (5246) compared to 157 for Chemistry (5245) raises important questions about test equivalency and whether the versions assess comparable content at similar difficulty levels, or whether the newer version represents a substantially different or easier assessment that could explain the dramatic improvement in pass rates beyond just small sample effects.

Physics assessments demonstrate perhaps the most severe challenges of all science disciplines, with candidate numbers so minuscule that the subject area barely registers as a functioning certification pathway. Physics (5265), appearing only in 2021-2022, involved just 7 statewide candidates and 3 from WVU, representing an almost non-existent pipeline for physics teaching in West Virginia. The 57% statewide pass rate meant that only 4 of 7 candidates achieved certification, while WVU's performance remains unknown due to data suppression with fewer than 5 test takers. The mean score of 131 provided only 5 points of cushion above the 126 passing threshold, indicating minimal margins for error. With only 2 female candidates total and 5 males, gender analysis becomes meaningless, though the available data suggests males achieved 60% passing. First-time candidates showed 66% passing with a mean of 134, moderately better than overall performance but still representing failure for one-third of initially prepared candidates. The complete absence of second-attempt data suggests either that all candidates passed initially or that those who failed pursued alternative paths rather than retesting, though with such tiny numbers, any interpretation remains speculative.

Physics (5266), the apparent replacement version, shows even more limited data than any other assessment in the entire Praxis II system. In 2023-2024, only 1 candidate statewide took the test, with all performance data suppressed. The 2024-2025 results show 2 candidates, both from WVU, with all outcomes suppressed due to the minuscule sample size. With literally one or two candidates per year, physics teacher certification in West Virginia has essentially ceased to function as a meaningful pathway. The data cannot reveal whether these individuals passed or failed, what their preparation quality was, or any other meaningful information about physics teacher readiness. The fact that both candidates in 2024-2025 were from WVU suggests that the institution may be the only source of physics teacher candidates in the state, creating complete dependence on a single program that produces only one or two candidates annually. The lower passing threshold of 145 for Physics (5266) compared to 126 for Physics (5265) actually represents a 19-point increase rather than decrease, suggesting the newer version may be more demanding, though with no performance data available, the practical implications remain unknown.

The pattern of test version transitions across all three science disciplines—Biology shifting from 5235 to 5236, Chemistry from 5245 to 5246, and Physics from 5265 to 5266—raises important questions about the rationale, implementation, and impacts of these changes. Test transitions typically occur when assessments are updated to reflect current content standards, adjust difficulty levels, incorporate new question formats, or address identified psychometric issues with older versions. However, the data provides no clear evidence that transitions improved outcomes. Biology passing rates remained stubbornly around 50-60% across both versions, Chemistry showed insufficient data to assess transition impacts, and Physics candidate numbers collapsed to statistically meaningless levels. The timing of transitions appears staggered, with different science disciplines shifting versions in different years, creating additional complexity for programs attempting to prepare candidates for multiple science certifications simultaneously. The substantial differences in passing thresholds between some version pairs—Chemistry dropping from 157 to 146, Physics increasing from 126 to 145—raise questions about test equivalency and whether these represent comparable assessments of teaching readiness or fundamentally different evaluations that happen to share a subject name.

Comparing science assessment performance to other Praxis II subject areas reveals science as among the most challenging certification pathways, exceeded in difficulty only by Mathematics (5165) and some elementary content tests. Biology's 50-60% pass rates roughly parallel Physical Education's recent struggles and fall below English, Social Studies, and most other secondary content areas. Chemistry's limited data suggests even lower pass rates when measurable, with the 42-56% range observed for Chemistry (5245) representing some of the worst performance across the

entire Praxis II system. Physics data remains too sparse for meaningful comparison, but the near-complete absence of candidates suggests either extreme difficulty, lack of program capacity, or minimal student interest in physics teaching careers. The contrast between science performance and near-perfect pass rates in Agriculture or strong performance in some elementary Principles of Learning and Teaching assessments highlights that certification challenges are not uniformly distributed across subject areas but concentrate in quantitative and technical disciplines where content demands may exceed typical teacher preparation program capacity.

The extremely small candidate numbers across all science assessments create a cascading set of problems that extend far beyond statistical analysis limitations. From a teacher supply perspective, even if every science candidate passed certification tests, the total production would be grossly insufficient to meet state needs. Biology's 30 statewide candidates in the best recent year, Chemistry's 5-14 candidates, and Physics's 1-7 candidates combine to produce perhaps 40-50 science teacher candidates annually across all three major sciences, compared to hundreds in elementary education or dozens in other secondary areas. Given retirements, attrition, and expanding student populations, these numbers cannot possibly maintain adequate science teaching capacity across West Virginia schools. The concentration of candidates at West Virginia University—representing the majority or entirety of test takers in most science assessments—creates system fragility where programmatic disruptions at a single institution could devastate statewide science teacher production. Small sample sizes also make program evaluation and improvement extremely difficult, as individual candidate variations can swing pass rates by 10-20 percentage points, making it impossible to distinguish genuine programmatic effects from random fluctuations.

Gender patterns in science assessments, where data permits analysis, reveal concerning trends consistent with broader STEM gender equity challenges. Biology shows somewhat balanced gender representation with females comprising 60-80% of candidates depending on the year, though performance patterns vary with females sometimes outperforming males and sometimes underperforming. Chemistry's limited data suggests female-dominated candidate pools but insufficient samples for reliable performance comparison. Physics shows the most severe gender imbalance, with only 2 female candidates in the single year where gender data is available, representing barely 25% of an already tiny population. These patterns reflect persistent underrepresentation of women in physics and chemistry relative to biology, a longstanding pattern in STEM fields generally. The small absolute numbers of female candidates in chemistry and physics—measured in single digits or suppressed entirely—raises critical questions about pipeline development, recruitment effectiveness, and whether preparation programs are creating inclusive environments that attract and support diverse candidates in physical sciences.

The first-attempt versus second-attempt patterns in science assessments, where sufficient data exists for analysis, show trends broadly consistent with other subject areas but occurring at lower baseline success rates. Biology (5235) showed first-time candidates passing at 74-76% compared to overall rates of 50-60%, indicating that initial preparation was reasonably effective for most candidates but that a significant minority struggled and that remediation was largely ineffective. Biology (5236) showed 62% first-time passing in 2024-2025, barely better than the 57% overall rate, suggesting minimal distinction between initial and repeat attempts. Chemistry and Physics data is too sparse to assess remediation effectiveness, with most years showing zero second attempts or data suppression. The limited evidence suggests that science candidates who fail initially face similar or worse prospects than candidates in other subject areas, with second-attempt success rates appearing low where measurable, though small samples prevent definitive conclusions. The fact that few candidates appear to attempt science tests multiple times may indicate either high initial success rates or, more troublingly, that candidates who fail abandon science teaching rather than persisting with remediation and retesting.

Mean score analysis across science assessments, where available, reveals candidates struggling near or below passing thresholds with minimal margins for error. Biology means of 147-157 typically provide only 0-5 points above passing standards, indicating that average candidates teeter on

the edge of failure. Chemistry (5245) means actually fell below passing thresholds for WVU candidates, mathematically guaranteeing low pass rates. Physics (5265) means of 131-134 provided small cushions above the 126 threshold. The one exception is Chemistry (5246) in 2024-2025, where the mean of 165 substantially exceeded the 146 passing score, though this reflects only 5 candidates and may not represent sustainable performance. The consistent pattern of marginal mean scores across multiple science disciplines and test versions suggests systematic issues in either preparation effectiveness, assessment difficulty, or the alignment between what programs teach and what tests assess. The fact that even first-time candidates often achieve mean scores barely above passing indicates that initial preparation programs, despite years of coursework in both content and pedagogy, are producing candidates with minimal margins of readiness for certification assessments.

West Virginia University's role in science teacher preparation shows variable performance across disciplines but consistently represents the dominant or sole source of science teacher candidates. In Biology (5235), WVU candidates comprised 37% of test takers in 2021-2022 and 29% in 2022-2023, achieving 73% and 44% pass rates respectively—initially better than state averages but declining dramatically. Biology (5236) data for WVU is largely suppressed due to small samples, indicating very low candidate numbers. Chemistry data shows WVU contributing the majority of candidates in most years, with the catastrophic 42% pass rate in Chemistry (5245) highlighting serious programmatic challenges. Physics data indicates WVU as potentially the sole source of physics candidates, with all 2024-2025 test takers affiliated with the institution. The concentration of science preparation at WVU creates both opportunities and vulnerabilities—opportunities for focused programmatic improvement and resource concentration, but vulnerabilities to institutional disruptions and lack of redundancy if WVU's programs face challenges. The variable performance across science disciplines suggests that WVU's science preparation effectiveness differs substantially by subject area, with some achieving moderate success while others struggle profoundly.

The implications of persistently low science certification rates and minimal candidate numbers extend throughout the educational system with particular severity given the critical importance of science education for STEM workforce development and general scientific literacy. When barely half of biology candidates pass certification, only 5 chemistry candidates attempt testing annually, and physics production approaches zero, schools face impossible staffing challenges. Science teacher shortages force schools to staff classes with out-of-field teachers lacking specialized content knowledge, leave advanced science courses unoffered, increase class sizes to unsustainable levels, or resort to long-term substitutes without proper certification. These compromises disproportionately affect rural and economically disadvantaged communities with the least capacity to attract and retain qualified science teachers, exacerbating educational inequities. The impacts ripple forward as students with inadequate science preparation struggle in college STEM courses, limiting career opportunities in high-demand technical fields that drive economic development. The failure to produce adequate numbers of qualified science teachers represents not just an education challenge but an economic development crisis for a state seeking to diversify beyond traditional extractive industries.

Several factors likely contribute to the science certification crisis beyond just preparation program effectiveness. The inherent content demands of science teaching require substantial mastery of complex technical material that many candidates may find challenging regardless of program quality. Science teacher candidates must demonstrate not only pedagogical skills but also advanced content knowledge in fields like biology, chemistry, and physics that many find intellectually demanding. The opportunity costs of science teaching careers may deter strong STEM students who can earn substantially higher salaries in industry, healthcare, or technology sectors, creating adverse selection where candidates entering teaching programs may have weaker scientific backgrounds than those pursuing alternative careers. Preparation programs may struggle to attract and retain faculty with both advanced science expertise and teaching credentials, limiting instructional quality. The testing itself may emphasize content at levels of depth or specificity that exceed what is necessary for effective teaching, creating artificial barriers to certification. Financial constraints may limit laboratory equipment, technology resources, or other tools necessary for effective science preparation, particularly at institutions beyond WVU.

Looking forward, addressing the science certification crisis will require multi-faceted interventions operating at programmatic, institutional, state policy, and potentially national levels. Enhanced recruitment targeting strong STEM students for teaching careers through scholarships, loan forgiveness, or other financial incentives could improve the candidate pool. Partnerships between science and education departments ensuring integrated preparation that combines rigorous content knowledge with effective pedagogy could better prepare candidates for both teaching and certification. Alternative certification pathways allowing scientists from industry or research to transition into teaching with appropriate support could expand the pipeline beyond traditional undergraduate programs. Stackable credentials or differentiated certification levels might allow candidates to begin teaching with preliminary credentials while working toward full certification, reducing immediate barriers while ensuring quality development over time. Regional or national consortia sharing curriculum resources, professional development, and best practices could help small programs achieve quality outcomes despite limited local capacity. Reconsideration of assessment approaches, including whether tests appropriately measure teaching readiness or inadvertently exclude effective teachers who struggle with standardized testing, could inform discussions about optimal certification systems. Enhanced diagnostic assessment and intervention earlier in preparation programs could identify struggling candidates when remediation is most effective rather than at certification testing when investment is already complete.

The Science Praxis II assessment data across Biology, Chemistry, and Physics reveals a subject area in profound crisis characterized by minimal candidate numbers that cannot possibly meet state teaching needs, persistently low passing rates when samples are sufficient for analysis, test version transitions that have failed to resolve underlying challenges, severe gender imbalances particularly in physical sciences, and mean scores clustering near or below passing thresholds indicating marginal candidate readiness. Unlike some subject areas where declining performance represents deterioration from previous strength, science appears to have consistently struggled throughout the reporting period, suggesting chronic rather than acute challenges. The extreme concentration of science preparation at West Virginia University creates system fragility without backup capacity if institutional programs face difficulties. The small sample sizes that dominate science data reflect not just analytical limitations but fundamental pipeline inadequacy—even perfect pass rates cannot produce sufficient teachers from such tiny candidate pools. Without dramatic interventions to recruit more candidates, improve preparation effectiveness, address gender equity barriers, ensure appropriate assessment approaches, and potentially reconsider certification requirements, West Virginia will continue to face catastrophic shortages of qualified science teachers that undermine educational quality, limit student opportunities, and constrain economic development in an increasingly technology-dependent world. The stakes for science education extend beyond individual career outcomes to affect the state's competitive position, workforce capabilities, and ability to provide the scientific literacy essential for informed citizenship in an era of climate change, public health challenges, and rapid technological transformation.

Table 18 Praxis II: Biology (5235) Scores

Testing Year	Passing Score	Number of Candidates		Mean Score		Number Passing		Percentage Passing	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	152	35	13	154	157	26	11	60	73
Female		18	9	157	157	14	8	70	73
Male		17	4	152	*	12	*	52	*
1st Attempt		32	12	157	160	25	11	74	85
2nd Attempt		0	0	*	*	*	*	*	*
2022-2023	152	21	6	154	151	14	4	50	44
Female		11	6	154	151	7	4	47	44
Male		10	0	153	*	7	*	54	*

1st Attempt		16	4	162	*	13	*	76	*
2nd Attempt		0	0	*	*	*	*	*	*

(* less than 5 candidates)

Table 19. Praxis II: Biology (5236) Scores

Testing Year	Passing Score	Number of Candidates		Mean Score		Number Passing		Percentage Passing	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2022-2023	154	5	2	155		4		57	
Female		5	2	155	*	4	*	57	*
Male		0	0	*	*	*	*	*	*
1st Attempt		3	1	*	*	*	*	*	*
2nd Attempt		1	0	*	*	*	*	*	*
2023-2024	154	10	3	147		6		50	
Female		8	3	155	*	4	*	57	*
Male		2	0	*	*	*	*	*	*
1st Attempt		9	3	153	*	6	*	60	*
2nd Attempt		0	0	*	*	*	*	*	*
2024-2025	154	30	2	155	*	17	*	57	*
Female		24	2	154	*	13	*	54	*
Male		6		158	*	4	*	67	*
1st Attempt		21	1	157	*	13	*	62	*
2nd Attempt		6	1	149	*	3	*	50	*

(* less than 5 candidates)

Table 20. Praxis II: Chemistry (5245) Scores

Testing Year	Passing Score	Number of Candidates		Mean Score		Number Passing		Percentage Passing	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	157	14	9	156	154	10	5	56	42
Female		11	0	155	*	7	*	47	*
Male		3	0	*	*	*	*	*	*
1st Attempt		9	7	155	155	5	4	42	44
2nd Attempt		2	1	*	*	*	*	*	*

(* less than 5 candidates)

Table 21. Praxis II: Chemistry (5246) Scores

Testing Year	Passing Score	Number of Candidates		Mean Score		Number Passing		Percentage Passing	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2022-2023	146	3	1	*	*	*	*	*	*
Female		2	1	*	*	*	*	*	*
Male		1	0	*	*	*	*	*	*
1st Attempt		3	1	*	*	*	*	*	*
2nd Attempt		0	0	*	*	*	*	*	*
2024-2025	146	5	1	165	*	5	1	100	*

Female		2	0	*	*	*	*	*	*
Male		3	1	*	*	*	1	*	*
1st Attempt		5	1	165	*	5	1	100	*
2nd Attempt		0	0	*	*	*	*	*	*

(* less than 5 candidates)

Table 22. Praxis II: Physics (5265) Scores

Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	126	7	3	131	*	4	*	57	*
Female		2	1	*	*	*	*	*	*
Male		5	2	131	*	3	*	60	*
1st Attempt		6	3	134	*	4	*	66	*
2nd Attempt		0	0	*	*	*	*	*	*

(* less than 5 candidates)

Table 23. Praxis II: Physics (5266) Scores

Physics (5266)									
Testing Year	**Passing Score**	**Number of Candidates**		**Mean Score**		**Number Passing**		**Percentage Passing**	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2023-2024	145	1	1	*	*	*	*	*	*
1st Attempt		1	1	*	*	*	*	*	*
2nd Attempt		0	0	*	*	*	*	*	*
2024-2025	145	2	2	*	*	*	*	*	*
Female		1	1	*	*	*	*	*	*
Male		1	1	*	*	*	*	*	*
1st Attempt		2	2	*	*	*	*	*	*

(* less than 5 candidates)

Section XI. Praxis II: Social Studies

The Social Studies (5081) Praxis II assessment reveals a dramatic narrative of transformation from a position of exemplary strength to one of serious concern, with the most recent year showing a catastrophic collapse in performance that represents one of the most severe single-year declines observed across all Praxis II subject areas. Throughout the four-year reporting period from 2021-2022 to 2024-2025, social studies has maintained moderate but consistent candidate volumes, ranging from 94 to 126 test takers statewide annually, with West Virginia University contributing between 17 and 26 candidates per year. These numbers reflect sustained demand for secondary social studies teachers in West Virginia, positioning the subject as an important mid-sized certification pathway. However, the performance trajectory tells a troubling story of initial excellence giving way to fundamental crisis, with passing rates plummeting by 34 percentage points statewide and 50 percentage points at WVU over just four years, accompanied by declining mean scores, growing gender disparities, and catastrophic remediation failure rates that suggest systemic breakdown in social studies teacher preparation and certification.

The overall passing rate trajectory for Social Studies (5081) demonstrates one of the most dramatic performance collapses documented in the entire Praxis II system. The assessment began the reporting period in an enviable position of strength, with 2021-2022 showing an 83% statewide pass rate and a perfect 100% for West Virginia University candidates. These exceptional results indicated highly effective preparation programs, appropriate

curriculum alignment, and strong candidate readiness for certification requirements. The mean scores of 160 statewide and 167 for WVU provided comfortable margins above the 167 passing threshold, with WVU candidates averaging exactly at the cut point, suggesting well-calibrated preparation that brought candidates precisely to certification standards. Performance remained strong through 2022-2023, with statewide pass rates of 89% and WVU maintaining 94% success, actually improving on the previous year's already excellent results. The 2023-2024 results showed a slight decline to 88% statewide, though WVU returned to perfect 100% passing, indicating sustained program quality and continued effective preparation. However, the 2024-2025 results brought complete disaster, with statewide pass rates collapsing to just 54% and WVU plummeting to 50%, representing coin-flip odds for certification success and marking one of the most severe single-year declines observed across any subject area in the entire data set.

The magnitude and suddenness of the 2024-2025 collapse demands particular attention and explanation, as performance characteristics that sudden and severe rarely occur through gradual erosion alone but typically indicate specific causative events or changes. Between 2023-2024 and 2024-2025, statewide pass rates declined by 34 percentage points (from 88% to 54%), while WVU experienced a catastrophic 50-percentage-point collapse (from 100% to 50%). This represents not just poor performance but a complete transformation of social studies from one of the strongest to one of the weakest performing subject areas within a single testing cycle. The dramatic nature of this change suggests potential explanations including a major revision to the test content, format, or difficulty level that occurred between testing cycles, with candidates and preparation programs unprepared for the changes; significant disruption to social studies preparation programs at WVU and other institutions, potentially including faculty changes, curriculum revisions, or resource constraints; a particularly weak candidate cohort in 2024-2025, though the substantial candidate numbers (94 statewide) make this less likely as a complete explanation; changes in who takes the test, potentially including more alternatively certified candidates or individuals from weaker preparation pathways; or external factors such as compressed preparation timelines, increased work obligations, or other pressures that systematically affected the 2024-2025 cohort's readiness.

Mean score analysis reinforces the severity of the 2024-2025 crisis and provides mathematical confirmation of the performance collapse. Throughout the first three years of the reporting period, mean scores remained relatively stable and near the passing threshold. The 2021-2022 means of 160 statewide and 167 for WVU, combined with 83-100% pass rates, indicated that most candidates comfortably exceeded the 167 passing standard even though averages hovered near or at the threshold. The 2022-2023 and 2023-2024 means of 160-161 statewide and 159-162 for WVU maintained this pattern, with the slight decline in means not translating to proportional declines in pass rates, suggesting relatively tight clustering of scores above the passing point. However, 2024-2025 brought a dramatic 10-point decline in mean scores to 151 statewide and 152 for WVU, falling 16 and 15 points respectively below the 167 passing threshold. These means mathematically guarantee low pass rates, as when the average score falls substantially below the cut point, the majority of candidates necessarily fail. The fact that means declined so precipitously in a single year, from comfortable proximity to the threshold to positions well below it, reinforces that 2024-2025 represented a fundamental break from previous patterns rather than gradual deterioration.

Gender patterns in social studies performance, fully visible only in the 2024-2025 data where gender breakdowns are provided, reveal stark and troubling disparities that add another dimension to the crisis. In 2024-2025, the candidate pool showed relatively balanced gender representation, with 42 females and 51 males statewide (45% and 54% respectively), a distribution notably more balanced than elementary education or English but similar to patterns in mathematics and some sciences. However, performance patterns showed dramatic gender gaps, with males achieving 63% pass rates compared to only 43% for females statewide, a 20-percentage-point disparity. At West Virginia University specifically, the gender gap was even more severe, with males passing at 67% while females achieved only 33% success, a 34-percentage-point chasm that ranks among the largest gender disparities observed across the entire Praxis II system. Mean scores confirm this pattern, with males averaging 155 compared to females at

147 statewide, and WVU showing identical gender means of 157 for males and 147 for females. The fact that female means fell 20 points below the passing threshold while male means fell only 12 points below helps explain the gender performance gap. These disparities raise critical questions about whether the test content, format, or emphasis disadvantages female candidates, whether preparation programs inadequately support female social studies candidates, whether differential social or psychological factors affect female test performance, or whether the 2024-2025 female cohort happened to be particularly weak for reasons unrelated to systematic gender effects.

The first-attempt versus second-attempt performance divide in social studies demonstrates patterns broadly consistent with other subject areas throughout most of the reporting period, but the 2024-2025 results show particularly catastrophic remediation failure. During the three years of strong overall performance (2021-2022 through 2023-2024), first-time test takers achieved pass rates ranging from 84% to 92% statewide, with WVU candidates reaching 79% to 100%. These excellent first-attempt rates indicated that initial preparation was highly effective for the vast majority of candidates. Second-attempt candidates during these years showed respectable success rates of 75-89%, substantially better than most other subject areas and suggesting that remediation strategies were reasonably effective for social studies candidates who initially struggled. However, 2024-2025 brought complete collapse of both first and second-attempt success. First-time candidates achieved only 73% passing statewide and 65% at WVU, representing substantial declines but still maintaining majority success. Second-attempt candidates faced catastrophic odds, with only 29% passing statewide and a devastating 20% at WVU, meaning that 80% of WVU candidates who failed once and tried again continued to fail. The mean score of 144 for second-attempt candidates fell 23 points below the passing threshold, indicating that repeat test takers were profoundly unprepared even after additional study time and remediation efforts.

West Virginia University's role in social studies teacher preparation reveals a particularly troubling institutional story given the program's transformation from exemplary to failing within a single testing cycle. Throughout 2021-2022 and 2023-2024, WVU achieved perfect 100% pass rates, representing the gold standard of preparation program effectiveness and demonstrating that comprehensive success was achievable. Even the 2022-2023 result of 94% represented outstanding performance exceeded only by the perfect scores. WVU mean scores during these successful years ranged from 159 to 167, consistently near the passing threshold but sufficient to ensure high success rates. The institution's 17-26 candidates per year represented approximately 16-26% of the statewide social studies testing population, indicating WVU's significant but not dominant role in preparing social studies teachers. The 2024-2025 collapse to 50% passing with 24 candidates represents one of the most dramatic single-institution performance failures documented in the entire data set. The fact that WVU's 152 mean score barely exceeded the 151 statewide mean indicates that whatever factors caused the statewide collapse affected WVU at least as severely as other preparation pathways, suggesting system-wide rather than institution-specific causation. However, WVU's particular responsibility given its previous excellence and substantial candidate numbers makes understanding and addressing its performance collapse an urgent priority.

The moderate absolute numbers of social studies test takers create both analytical advantages and practical challenges for understanding and responding to the crisis. With 94 statewide candidates in 2024-2025, including 24 from WVU, social studies represents a substantial enough population to support meaningful statistical analysis while remaining small enough that targeted interventions could reach all affected candidates and programs. The declining candidate numbers over the reporting period—from 126 in 2021-2022 to 94 in 2024-2025—represent a 25% reduction in the social studies pipeline that compounds the pass rate crisis. When both candidate numbers and pass rates decline, the multiplicative effect on teacher supply becomes severe. The 2021-2022 cohort produced 104 newly certified social studies teachers statewide (83% of 126), while 2024-2025 produced only 51 (54% of 94), representing a 51% reduction in annual social studies teacher production. This dramatic contraction in the pipeline has direct implications for school staffing, particularly in rural areas that already struggle to attract qualified social studies teachers, and suggests that social studies may be joining mathematics and sciences as critical shortage areas.

Comparing social studies performance to other Praxis II secondary content areas provides important context for understanding whether its challenges are unique or reflect broader trends. During the strong performance years of 2021-2023, social studies substantially outperformed Mathematics (5165) with its 42-60% pass rates and matched or exceeded English (5038) performance. Social studies maintained the highest or near-highest pass rates among major secondary content areas during this period, distinguishing it as an area of preparation strength. However, the 2024-2025 collapse to 54% passing placed social studies in similar territory to mathematics and physical education, well below English (60%) and significantly trailing the historical strength positions. The fact that social studies declined so dramatically while other subjects showed more gradual deterioration or mixed patterns suggests that subject-specific factors rather than broadly applicable cross-cutting challenges may be primarily responsible. This distinguishes social studies from core competency tests where declines affected reading, mathematics, and writing similarly, and from elementary tests where multiple content areas showed parallel deterioration.

The social studies curriculum encompasses an unusually broad range of content areas including history (American, world, ancient), geography, economics, political science, sociology, anthropology, and civics, creating particular preparation challenges given the disciplinary diversity candidates must master. Unlike biology where content concentrates in a single scientific discipline, or mathematics where preparation can focus on mathematical concepts and pedagogy, social studies teachers must demonstrate competency across multiple social science disciplines that require different knowledge bases, methodologies, and conceptual frameworks. The breadth of content may create vulnerabilities where candidates prepared deeply in some areas (such as history) struggle with others (such as economics or geography), leading to uneven performance and increased failure risk. If the 2024-2025 test emphasized content areas that preparation programs typically under-emphasize, or if test revisions shifted the balance across disciplines, this could explain sudden performance declines as candidates encountered unexpected emphasis areas for which they were inadequately prepared.

The particularly severe second-attempt failure rate in 2024-2025—with only 29% statewide and 20% at WVU passing—indicates that current remediation approaches are almost entirely ineffective for social studies candidates who struggle initially. The 144 mean score for second-attempt candidates, falling 23 points below the passing threshold, suggests that repeat test takers face such severe content knowledge gaps that the time between attempts and whatever self-directed remediation they undertake proves insufficient to address fundamental preparation deficits. This pattern implies that second-attempt candidates may need intensive, structured intervention programs rather than simply more study time, potentially including diagnostic assessment to identify specific content weaknesses across the broad social studies curriculum, targeted remediation coursework or tutoring addressing identified gaps, test-taking strategy instruction if anxiety or time management contributes to failure, and possibly reconsideration of whether candidates with such substantial content gaps should be encouraged to persist in social studies teaching or consider alternative career paths where their strengths might be better utilized.

The absence of gender-disaggregated data for the first three years of the reporting period limits understanding of whether the severe gender performance gaps observed in 2024-2025 represent new phenomena or continuation of historical patterns. If gender disparities of this magnitude existed in earlier years but were masked by overall high performance that brought both genders to acceptable levels, then the crisis reveals rather than creates equity issues. Alternatively, if earlier cohorts showed more balanced gender performance and 2024-2025 represents a new development, this would suggest that recent changes have differential gender impacts requiring investigation. The fact that both male and female mean scores fell substantially below passing thresholds in 2024-2025 indicates that both groups struggled, but the 20-percentage-point gap (63% versus 43% statewide) shows that struggles were far more severe for females. Understanding whether this reflects content emphasis changes that disadvantage females, stereotype threat or test anxiety effects particularly impacting female candidates in social studies, differences in preparation quality or emphasis for male versus female candidates, or other factors is essential for developing appropriate interventions.

Looking at potential explanations for the 2024-2025 crisis, the most plausible scenarios involve some combination of test revision effects and preparation program challenges rather than simple cohort weakness given the magnitude and suddenness of decline. Test content or format changes occurring between 2023-2024 and 2024-2025 could explain sudden performance collapse if candidates encountered unexpected content emphasis, question formats, or difficulty levels for which their preparation proved inadequate. Educational Testing Service (ETS), which administers Praxis exams, periodically updates tests to reflect evolving content standards, research on teaching effectiveness, and psychometric considerations, and such updates can substantially affect pass rates if preparation programs lag in adapting their curricula. Alternatively, preparation program disruptions such as faculty turnover, curriculum revisions, budget constraints affecting course offerings or resources, or compressed timelines forcing candidates to test before fully prepared could explain declining outcomes. The COVID-19 pandemic's lingering effects on candidates who completed substantial preparation during disrupted 2020-2022 periods may finally be manifesting in certification testing outcomes. Changes in candidate demographics, admission standards, or the characteristics of who chooses social studies teaching careers could affect the baseline aptitude and preparation of the testing population.

The implications of the social studies certification crisis extend throughout the educational system with particular significance given the discipline's role in developing informed citizenship, historical understanding, and civic engagement. When only 54% of social studies candidates achieve certification, schools face severe staffing challenges that force difficult compromises. Out-of-field teachers lacking specialized social studies training may be assigned to teach history, government, or economics courses despite inadequate content knowledge or pedagogical preparation. Advanced or specialized social studies courses may go unoffered, limiting student opportunities to explore political science, sociology, anthropology, or other social science disciplines in depth. Class sizes may increase beyond manageable levels as available teachers spread across more sections. Long-term substitutes or emergency credentials may fill positions, compromising instructional quality. These impacts disproportionately affect rural and economically disadvantaged communities with least capacity to attract and retain qualified teachers, exacerbating educational inequities. The broader societal implications are particularly concerning in an era when civic engagement, media literacy, and historical understanding face numerous challenges—inadequate social studies education undermines democratic citizenship and informed participation in civic life.

Several interventions merit urgent consideration for addressing the social studies certification crisis. Immediate investigation of what changed between 2023-2024 and 2024-2025, including whether test revisions occurred and how they affected content emphasis, difficulty, or format, would inform whether adjustments to preparation programs or assessment approaches are needed. Comprehensive curriculum audits at WVU and other preparation institutions could identify gaps between what programs teach and what the test assesses, enabling targeted curriculum improvements. Enhanced diagnostic assessment and intervention earlier in preparation programs could identify struggling candidates when remediation is most effective rather than at certification testing when years of investment are already complete. Given the broad content demands of social studies, consideration of whether preparation programs adequately cover all social science disciplines (history, geography, economics, political science, sociology) or concentrate too heavily in some areas at the expense of others could inform curriculum rebalancing. Test preparation programs specifically addressing Praxis content and format could help well-prepared candidates demonstrate their knowledge effectively. For gender equity concerns, investigation of whether test content or format disadvantages female candidates and implementation of targeted support for female social studies candidates could address disparate outcomes. Partnerships with high-performing programs in other states or regions could identify effective practices for adoption. Alternative assessment approaches evaluating teaching readiness through portfolios, teaching demonstrations, or other authentic assessments might capture competencies that standardized tests miss.

The question of whether the 2024-2025 results represent a temporary aberration or the beginning of sustained poor performance remains open and will only be answered by monitoring subsequent testing cycles. If 2025-2026 results show recovery toward historical 80-90% pass rates, this would

suggest that 2024-2025 reflected temporary factors such as a particular test version, cohort characteristics, or situational disruptions that have since resolved. Such recovery would be encouraging but would not erase concerns about what caused the crisis or prevent future recurrences. Conversely, if poor performance persists at 50-60% pass rates in future years, this would indicate fundamental and lasting breakdown in social studies teacher preparation and certification requiring comprehensive system reform. The fact that other subject areas have shown sustained poor performance over multiple years (such as mathematics consistently struggling at 42-60% pass rates) demonstrates that crisis-level outcomes can persist indefinitely without intervention, making vigilant monitoring and proactive response essential.

The Social Studies (5081) Praxis II assessment data reveals one of the most dramatic performance collapses documented in the entire Praxis II system, transforming social studies from a position of exemplary strength with near-perfect pass rates to crisis-level outcomes with barely half of candidates achieving certification. The 34-percentage-point statewide decline and 50-percentage-point WVU collapse occurring within a single testing cycle, accompanied by mean scores dropping 16 points below the passing threshold, 20-34 percentage point gender performance gaps, and 80% failure rates for second-attempt candidates at WVU, indicate fundamental system breakdown requiring immediate investigation and intervention. Unlike subjects that have consistently struggled throughout the reporting period, social studies' sudden transformation from strength to crisis suggests specific causative factors potentially including test revisions, preparation program disruptions, or candidate characteristic changes that could be identified and addressed through systematic investigation. The moderate candidate volumes make targeted interventions feasible, but the declining absolute numbers of test takers combined with catastrophic pass rates have produced a 51% reduction in annual social studies teacher production that threatens school staffing capacity and educational quality statewide. Without urgent action to understand what caused the 2024-2025 collapse and implement comprehensive responses addressing test alignment, preparation program effectiveness, candidate support systems, gender equity, and potentially assessment approaches themselves, social studies will join mathematics and sciences as a critical shortage area where certification barriers prevent adequate teacher supply and compromise students' opportunities to develop the historical knowledge, civic understanding, and critical thinking skills essential for informed citizenship and democratic participation. Table 24 shows candidates scores on the Social Studies (5081) Praxis II.

Table 24. Praxis II: Social Studies (5081) Scores

Testing Year	Passing Score	Number of Candidates		Mean Score		Number Passing		Percentage Passing	
		WV	WVU	WV	WVU	WV	WVU	WV	WVU
2021-2022	167	126	22	160	167	104	22	83	100
1st Attempt		86	17	163	160	79	16	92	94
2nd Attempt		10	2	151	*	8	*	80	*
2022-2023	167	106	17	160	160	94	16	89	94
1st Attempt		85	22	162	159	75	22	88	100
2nd Attempt		9	0	152	*	8	*	89	*
2023-2024	167	99	26	161	160	87	26	88	100
1st Attempt		43	23	163	162	36	18	84	79
2nd Attempt		8	2	152	*	6	*	75	*
2024-2025	167	94	24	151	152	51	12	54	50
Female		42	12	147	147	18	4	43	33
Male		51	12	155	157	32	8	63	67
1st Attempt		56	17	158	156	41	11	73	65
2nd Attempt		17	5	144	144	5	1	29	20

(* less than 5 candidates)