APPENDIX A

SEAL – ESG DATASET RESULTS

Table A.1. SEAL-ESG ISELTA Dataset Iteration Best Results

Iteration	SEAL-ESG – ISELTA Dataset								
	Training			Validation			Test		
	loss	acc	auc	loss	acc	auc	loss	acc	auc
1	0.326	0.872	0.934	0.267	0.938	0.969	0.474	0.813	0.874
2	0.324	0.880	0.933	0.317	0.875	0.949	0.488	0.800	0.866
3	0.341	0.896	0.928	0.351	0.906	0.953	0.529	0.738	0.873
4	0.522	0.767	0.813	0.482	0.813	0.859	0.461	0.863	0.870
5	0.360	0.856	0.921	0.306	0.875	0.957	0.462	0.800	0.884
6	0.358	0.855	0.921	0.298	0.875	0.953	0.497	0.800	0.863
7	0.370	0.850	0.914	0.324	0.875	0.965	0.531	0.750	0.869
8	0.386	0.837	0.906	0.339	0.906	0.961	0.492	0.788	0.896
9	0.639	0.696	0.746	0.627	0.719	0.805	0.651	0.688	0.845
10	0.569	0.731	0.809	0.545	0.750	0.836	0.565	0.775	0.834
11	0.407	0.825	0.899	0.336	0.844	0.945	0.478	0.800	0.874
12	0.390	0.830	0.908	0.299	0.906	0.965	0.534	0.750	0.860
13	0.338	0.868	0.932	0.369	0.844	0.918	0.549	0.750	0.826
14	0.323	0.884	0.939	0.384	0.844	0.922	0.535	0.750	0.832
15	0.341	0.868	0.929	0.392	0.844	0.918	0.577	0.738	0.819
16	0.422	0.813	0.882	0.453	0.781	0.879	0.683	0.650	0.776
17	0.389	0.836	0.908	0.429	0.750	0.871	0.578	0.775	0.795
18	0.326	0.884	0.937	0.397	0.844	0.922	0.559	0.738	0.821
19	0.336	0.882	0.931	0.400	0.844	0.898	0.604	0.713	0.799
20	0.376	0.851	0.910	0.410	0.844	0.922	0.635	0.688	0.801
21	0.594	0.712	0.763	0.689	0.688	0.660	0.681	0.588	0.597
22	0.500	0.778	0.853	0.606	0.688	0.754	0.641	0.650	0.750
23	0.431	0.811	0.885	0.492	0.688	0.848	0.595	0.688	0.794
24	0.332	0.861	0.929	0.449	0.813	0.902	0.645	0.688	0.825
25	0.399	0.844	0.906	0.420	0.813	0.879	0.568	0.750	0.800
26	0.347	0.865	0.929	0.377	0.844	0.918	0.504	0.750	0.849
27	0.364	0.857	0.917	0.411	0.844	0.922	0.589	0.750	0.806
28	0.380	0.833	0.911	0.358	0.875	0.945	0.548	0.750	0.837
								(cont. on next page)	

				Table A.1. (cont.)					
29	0.589	0.716	0.760	0.691	0.656	0.637	0.681	0.588	0.573
30	0.534	0.745	0.825	0.625	0.625	0.758	0.645	0.600	0.714
31	0.454	0.793	0.876	0.501	0.750	0.848	0.599	0.675	0.781
32	0.366	0.851	0.918	0.397	0.844	0.918	0.559	0.750	0.839

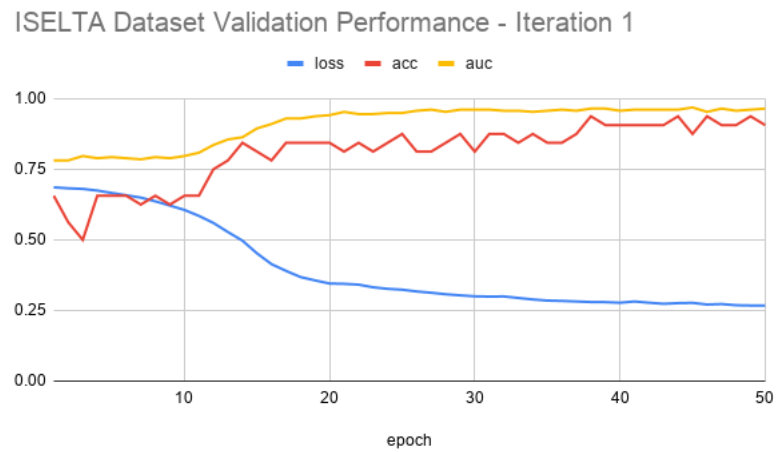Figure A.1. SEAL - ISELTA Dataset – Training – Iteration.1

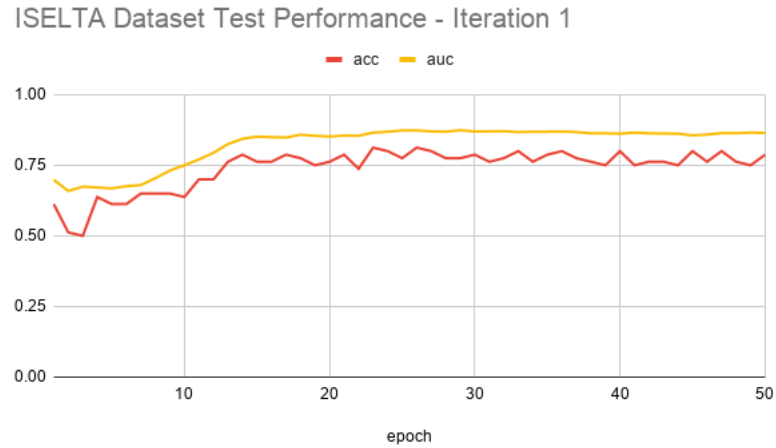Figure A.2. SEAL - ISELTA Dataset – Validation – Iteration.1

Figure A.3. SEAL - ISELTA Dataset – Test – Iteration.1

Table A.2. SEAL-ESG Bank Account Dataset Iteration Best Results

Iteration	SEAL-ESG – Bank Account Dataset								
	Training			Validation			Test		
	loss	acc	auc	loss	acc	auc	loss	acc	auc
1	*0.380*	*0.880*	*0.903*	*0.695*	*0.400*	*NaN*	*0.646*	*0.786*	*0.714*
2	*0.329*	*0.880*	*0.924*	*0.696*	*0.400*	*NaN*	*0.665*	*0.786*	*0.673*
3	*0.261*	*0.900*	*0.964*	*0.745*	*0.600*	*NaN*	*0.659*	*0.786*	*0.796*
4	*0.331*	*0.868*	*0.932*	*0.451*	*0.800*	*NaN*	*0.617*	*0.786*	*0.755*
5	*0.457*	*0.820*	*0.896*	*0.686*	*0.400*	*NaN*	*0.658*	*0.643*	*0.673*
6	*0.387*	*0.860*	*0.907*	*0.687*	*0.400*	*NaN*	*0.660*	*0.786*	*0.694*
7	*0.317*	*0.880*	*0.932*	*0.711*	*0.400*	*NaN*	*0.654*	*0.786*	*0.776*
8	*0.363*	*0.887*	*0.921*	*0.734*	*0.400*	*NaN*	*0.630*	*0.786*	*0.694*
9	*0.644*	*0.780*	*0.844*	*0.678*	*NaN*	*NaN*	*0.675*	*0.643*	*0.694*
10	*0.609*	*0.780*	*0.810*	*0.679*	*NaN*	*NaN*	*0.663*	*0.643*	*0.673*
11	*0.473*	*0.840*	*0.916*	*0.683*	*0.600*	*NaN*	*0.657*	*0.643*	*0.714*
12	*0.427*	*0.849*	*0.876*	*0.701*	*0.400*	*NaN*	*0.646*	*0.786*	*0.714*
13	*0.400*	*0.880*	*0.920*	*0.616*	*0.600*	*NaN*	*0.702*	*0.500*	*0.449*
14	*0.371*	*0.880*	*0.925*	*0.519*	*0.800*	*NaN*	*0.702*	*0.500*	*0.510*
15	*0.261*	*0.900*	*0.968*	*0.465*	*0.600*	*NaN*	*0.720*	*0.500*	*0.592*
16	*0.471*	*0.811*	*0.874*	*0.330*	*0.800*	*NaN*	*0.601*	*0.714*	*0.735*
17	*0.476*	*0.820*	*0.885*	*0.653*	*0.600*	*NaN*	*0.701*	*0.571*	*0.388*
								(cont. on next page)	

				Table A.2. (cont.)					
18	*0.438*	*0.860*	*0.883*	*0.605*	*0.600*	*NaN*	*0.699*	*0.571*	*0.449*
19	*0.343*	*0.880*	*0.942*	*0.533*	*0.600*	*NaN*	*0.710*	*0.500*	*0.490*
20	*0.263*	*0.906*	*0.961*	*0.362*	*NaN*	*NaN*	*0.706*	*0.571*	*0.490*
21	*0.609*	*0.740*	*0.825*	*0.728*	*0.000*	*NaN*	*0.700*	*0.500*	*0.367*
22	*0.589*	*0.860*	*0.844*	*0.724*	*0.400*	*NaN*	*0.700*	*0.571*	*0.408*
23	*0.537*	*0.820*	*0.839*	*0.718*	*0.600*	*NaN*	*0.703*	*0.571*	*0.408*
24	*0.458*	*0.849*	*0.864*	*0.534*	*0.600*	*NaN*	*0.703*	*0.500*	*0.429*
25	*0.555*	*0.820*	*0.846*	*0.671*	*0.600*	*NaN*	*0.694*	*0.571*	*0.449*
26	*0.481*	*0.820*	*0.862*	*0.623*	*0.800*	*NaN*	*0.695*	*0.571*	*0.449*
27	*0.393*	*0.860*	*0.899*	*0.532*	*0.800*	*NaN*	*0.699*	*0.500*	*0.469*
28	*0.427*	*0.830*	*0.901*	*0.418*	*0.800*	*NaN*	*0.695*	*0.500*	*0.551*
29	*0.643*	*0.680*	*0.812*	*0.722*	*0.000*	*NaN*	*0.695*	*0.500*	*0.510*
30	*0.630*	*0.800*	*0.838*	*0.722*	*0.000*	*NaN*	*0.695*	*0.571*	*0.469*
31	*0.586*	*0.760*	*0.828*	*0.729*	*0.400*	*NaN*	*0.696*	*0.571*	*0.408*
32	*0.494*	*0.811*	*0.864*	*0.586*	*0.800*	*NaN*	*0.695*	*0.500*	*0.449*

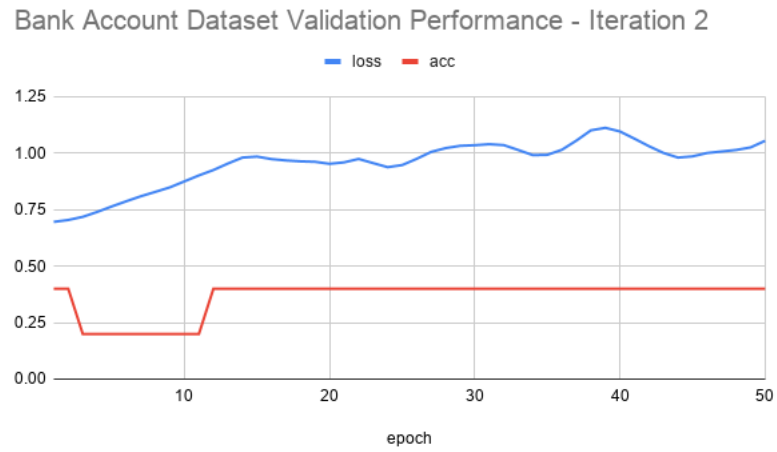Figure A.4. SEAL – Bank Account Dataset – Training – Iteration.2

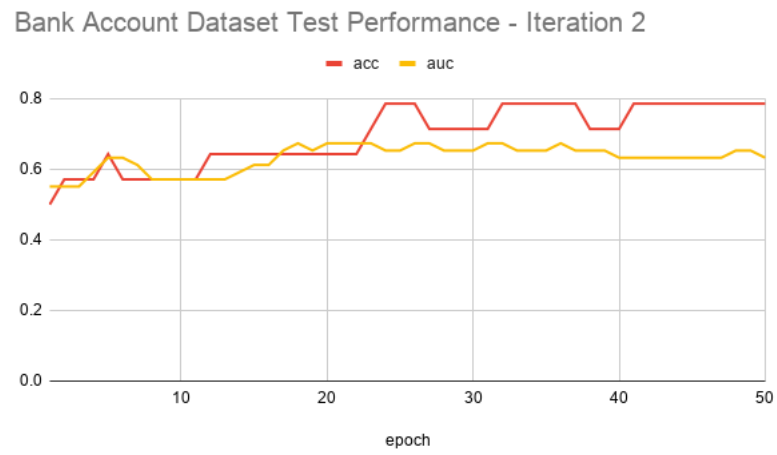Figure A.5. SEAL – Bank Account Dataset – Validation – Iteration.2

Figure A.6. SEAL – Bank Account Dataset – Test – Iteration.2

Table A.3. SEAL-ESG Email Dataset Iteration Best Results

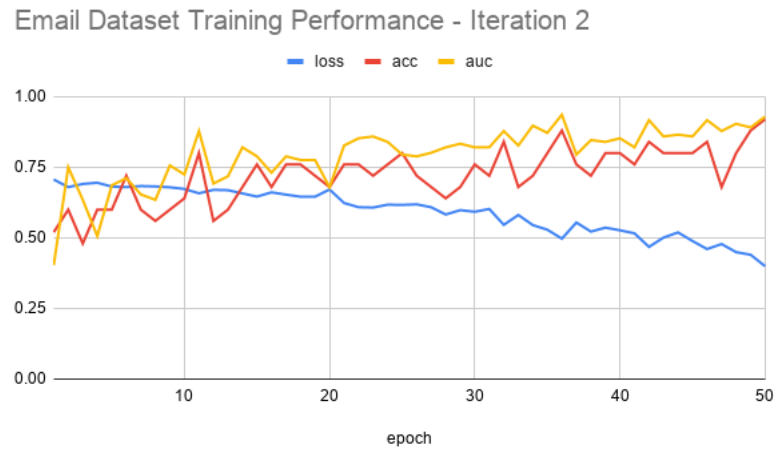| Iteration	SEAL-ESG – Email Dataset								
	Training			Validation			Test		
	loss	acc	auc	loss	acc	auc	loss	acc	auc
1	*0.454*	*0.825*	*0.877*	*0.326*	*NaN*	*NaN*	*0.588*	*0.600*	*0.880*
2	***0.400***	***0.920***	***0.936***	***0.371***	***NaN***	***NaN***	***0.573***	***0.900***	***0.800***
3	*0.150*	*0.975*	*0.997*	*0.074*	*NaN*	*NaN*	*0.454*	*0.700*	*0.880*
4	*0.085*	*0.977*	*NaN*	*0.085*	*NaN*	*NaN*	*0.378*	*0.900*	*0.920*
5	*0.588*	*0.775*	*0.827*	*0.541*	*0.750*	*NaN*	*0.659*	*0.600*	*0.880*
6	*0.560*	*0.840*	*0.929*	*0.565*	*0.750*	*NaN*	*0.631*	*0.700*	*0.800*
7	*0.369*	*0.900*	*0.947*	*0.270*	*NaN*	*NaN*	*0.608*	*0.700*	*0.800*
8	*0.146*	*0.955*	*0.998*	*0.022*	*NaN*	*NaN*	*0.470*	*0.700*	*0.920*
9	*0.676*	*0.725*	*0.764*	*0.674*	*0.500*	*NaN*	*0.682*	*0.600*	*0.880*
10	*0.668*	*0.720*	*0.865*	*0.671*	*0.500*	*NaN*	*0.678*	*0.600*	*0.840*
11	*0.658*	*0.750*	*0.835*	*0.647*	*0.750*	*NaN*	*0.675*	*0.600*	*0.800*
12	*0.523*	*0.795*	*0.835*	*0.391*	*NaN*	*NaN*	*0.638*	*0.600*	*0.800*
13	*0.627*	*0.775*	*0.754*	*0.690*	*0.750*	*0.750*	*0.679*	*0.700*	*0.600*
14	*0.617*	*0.760*	*0.821*	*0.673*	*0.750*	*0.750*	*0.675*	*0.700*	*0.600*
15	*0.468*	*0.875*	*0.880*	*0.371*	*0.750*	*NaN*	*0.666*	*0.700*	*0.640*
16	*0.487*	*0.818*	*0.837*	*0.559*	*0.750*	*NaN*	*0.599*	*0.700*	*0.920*
17	*0.650*	*0.750*	*0.777*	*0.688*	*0.750*	*0.750*	*0.683*	*0.700*	*0.600*
18	*0.652*	*0.840*	*0.885*	*0.680*	*0.750*	*0.750*	*0.690*	*0.700*	*0.560*
19	*0.599*	*0.800*	*0.815*	*0.650*	*0.750*	*0.750*	*0.666*	*0.700*	*0.800*
20	*0.428*	*0.818*	*0.888*	*0.522*	*0.750*	*NaN*	*0.678*	*0.700*	*0.800*
21	*0.674*	*0.675*	*0.719*	*0.693*	*0.500*	*0.500*	*0.693*	*0.500*	*0.640*
22	*0.664*	*0.720*	*0.827*	*0.691*	*0.500*	*0.500*	*0.695*	*0.500*	*0.640*
23	*0.675*	*0.725*	*0.764*	*0.691*	*0.750*	*0.750*	*0.688*	*0.600*	*0.680*
24	*0.595*	*0.705*	*0.806*	*0.689*	*0.750*	*0.750*	*0.689*	*0.500*	*0.760*
25	*0.661*	*0.725*	*0.749*	*0.690*	*0.750*	*0.750*	*0.684*	*0.700*	*0.840*
26	*0.648*	*0.760*	*0.821*	*0.689*	*0.750*	*0.750*	*0.689*	*0.700*	*0.760*
27	*0.622*	*0.700*	*0.782*	*0.621*	*0.750*	*0.750*	*0.689*	*0.700*	*0.760*
28	*0.606*	*0.773*	*0.769*	*0.657*	*0.750*	*0.750*	*0.635*	*0.700*	*0.840*
29	*0.673*	*0.675*	*0.682*	*0.689*	*0.750*	*0.750*	*0.692*	*0.700*	*0.600*
30	*0.665*	*0.720*	*0.827*	*0.689*	*0.750*	*0.500*	*0.693*	*0.700*	*0.560*
31	*0.671*	*0.675*	*0.704*	*0.689*	*0.750*	*0.750*	*0.691*	*0.700*	*0.600*
32	*0.630*	*0.750*	*0.754*	*0.689*	*0.750*	*0.750*	*0.688*	*0.600*	*0.880*

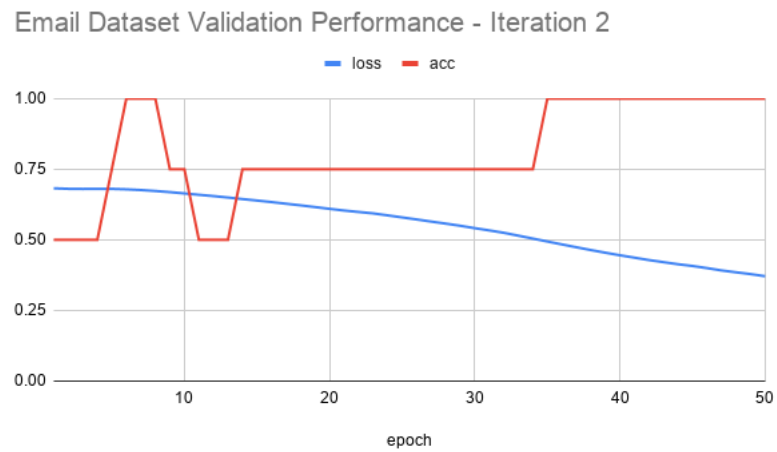Figure A.7. SEAL – Email Dataset – Training – Iteration.2

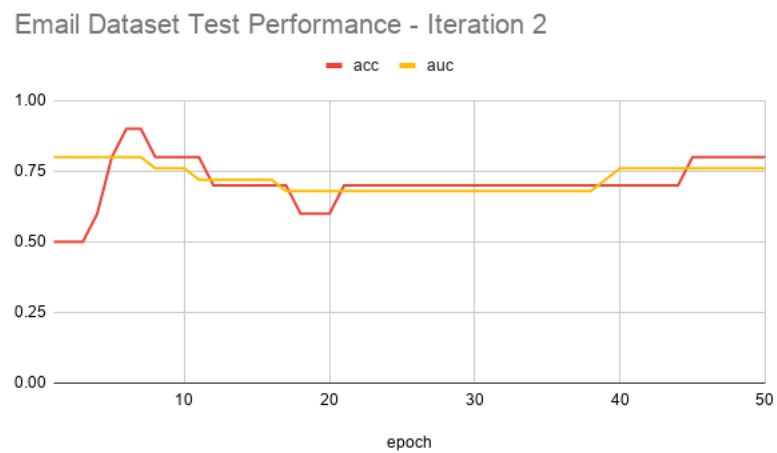Figure A.8. SEAL – Email Dataset – Validation – Iteration.2

Figure A.9. SEAL – Email Dataset – Test – Iteration.2

Table A.4. SEAL-ESG Student Attendance Dataset Iteration Best Results

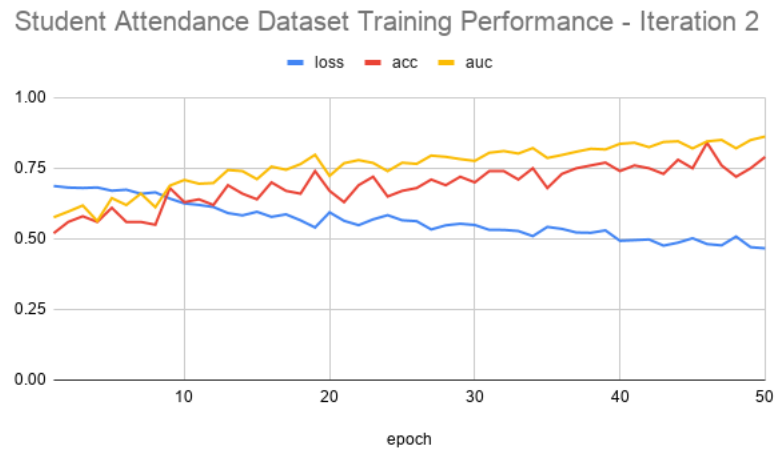| Iteration	SEAL-ESG – Student Attendance Dataset								
	Training			Validation			Test		
	loss	acc	auc	loss	acc	auc	loss	acc	auc
1	*0.451*	*0.800*	*0.875*	*0.564*	*0.667*	*0.844*	*0.680*	*0.656*	*0.709*
2	***0.467***	***0.840***	***0.862***	***0.721***	***0.667***	***0.500***	***0.613***	***0.719***	***0.740***
3	*0.241*	*0.909*	*0.968*	*0.473*	*0.833*	*0.906*	*0.674*	*0.719*	*0.764*
4	*0.319*	*0.862*	*0.935*	*0.416*	*0.917*	*0.906*	*0.665*	*0.719*	*0.803*
5	*0.553*	*0.720*	*0.788*	*0.719*	*0.583*	*0.719*	*0.676*	*0.688*	*0.689*
6	*0.563*	*0.720*	*0.779*	*0.708*	*0.583*	*0.625*	*0.683*	*0.625*	*0.824*
7	*0.508*	*0.764*	*0.830*	*0.702*	*0.583*	*0.813*	*0.684*	*0.688*	*0.773*
8	*0.321*	*0.879*	*0.937*	*0.408*	*1.000*	*1.000*	*0.682*	*0.688*	*0.826*
9	*0.660*	*0.600*	*0.747*	*0.721*	*0.333*	*0.563*	*0.687*	*0.563*	*0.686*
10	*0.644*	*0.670*	*0.761*	*0.721*	*0.417*	*0.594*	*0.683*	*0.656*	*0.697*
11	*0.573*	*0.736*	*0.790*	*0.716*	*0.667*	*0.563*	*0.661*	*0.750*	*0.732*
12	*0.510*	*0.776*	*0.849*	*0.537*	*0.750*	*0.813*	*0.652*	*0.656*	*0.717*
13	*0.261*	*0.910*	*0.968*	*0.498*	*0.833*	*0.875*	*0.689*	*0.656*	*0.658*
14	*0.119*	*0.970*	*0.996*	*0.507*	*0.833*	*0.844*	*0.691*	*0.688*	*0.695*
15	*0.174*	*0.936*	*0.985*	*0.389*	*0.833*	*0.938*	*0.690*	*0.719*	*0.734*
16	*0.382*	*0.836*	*0.913*	*0.605*	*0.833*	*0.906*	*0.689*	*0.594*	*0.623*
17	*0.519*	*0.770*	*0.847*	*0.520*	*0.750*	*0.781*	*0.687*	*0.656*	*0.660*
18	*0.404*	*0.830*	*0.901*	*0.558*	*0.833*	*0.750*	*0.687*	*0.594*	*0.682*
19	*0.155*	*0.955*	*0.993*	*0.289*	*0.917*	*1.000*	*0.689*	*0.719*	*0.715*
20	*0.110*	*0.966*	*0.991*	*0.371*	*0.917*	*0.938*	*0.660*	*0.719*	*0.709*
21	*0.645*	*0.680*	*0.739*	*0.683*	*0.583*	*0.719*	*0.693*	*0.531*	*0.605*
22	*0.625*	*0.690*	*0.770*	*0.665*	*0.667*	*0.688*	*0.692*	*0.500*	*0.607*
23	*0.600*	*0.691*	*0.770*	*0.603*	*0.750*	*0.750*	*0.690*	*0.563*	*0.639*
24	*0.350*	*0.853*	*0.934*	*0.545*	*0.833*	*0.781*	*0.691*	*0.656*	*0.684*
25	*0.567*	*0.720*	*0.800*	*0.613*	*0.667*	*0.719*	*0.684*	*0.594*	*0.645*
26	*0.456*	*0.820*	*0.882*	*0.621*	*0.833*	*0.719*	*0.691*	*0.594*	*0.619*
27	*0.257*	*0.909*	*0.969*	*0.388*	*0.917*	*0.938*	*0.650*	*0.688*	*0.725*
28	*0.289*	*0.888*	*0.950*	*0.456*	*0.833*	*0.844*	*0.653*	*0.688*	*0.740*
29	*0.649*	*0.680*	*0.729*	*0.705*	*0.500*	*0.750*	*0.694*	*0.500*	*0.588*
30	*0.649*	*0.690*	*0.718*	*0.686*	*0.500*	*0.750*	*0.692*	*0.500*	*0.602*
31	*0.616*	*0.700*	*0.759*	*0.664*	*0.583*	*0.781*	*0.692*	*0.531*	*0.576*
32	*0.379*	*0.836*	*0.924*	*0.593*	*0.833*	*0.750*	*0.692*	*0.625*	*0.672*

Figure A.10. SEAL – Student Attendance Dataset – Training – Iteration.2
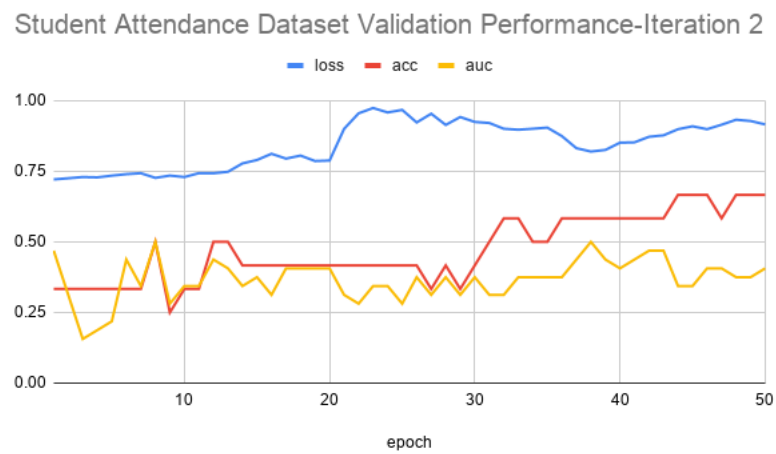

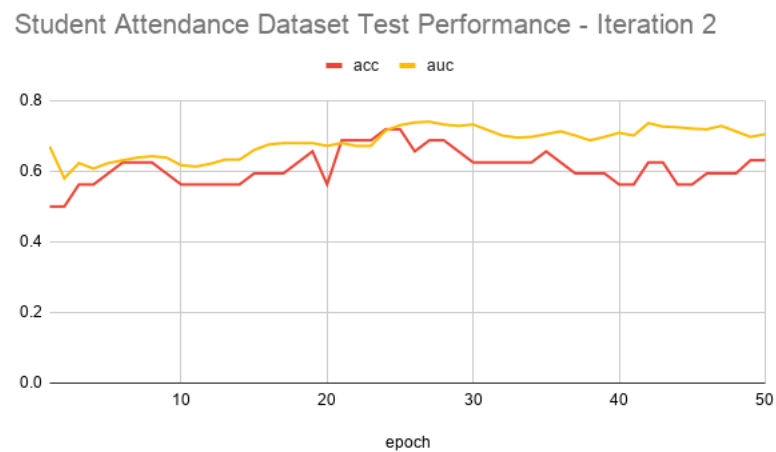Figure A.11. SEAL – Student Attendance Dataset – Validation – Iteration.2

Figure A.12. SEAL – Student Attendance Dataset – Test – Iteration.2