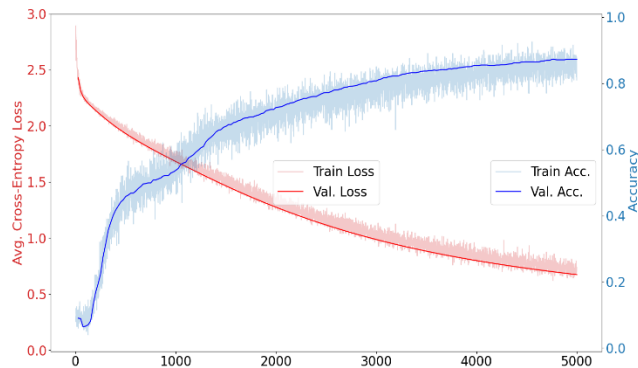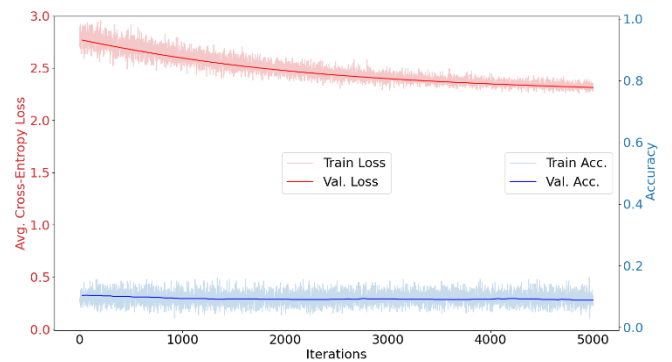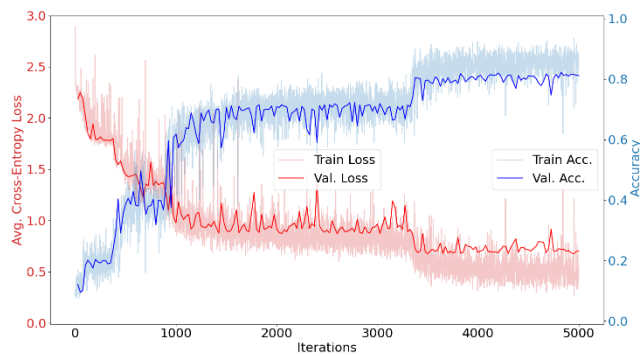4.

Default   Step size: .01
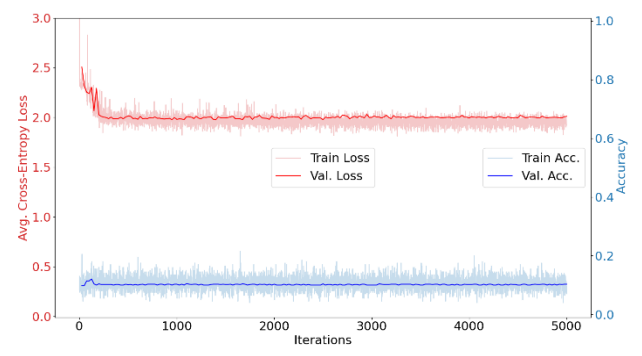


Step size: .0001

Step size: 5

Step size: 10

a) In terms of smoothness, the curves seem much smoother at the extremes. As in when step size is the lowest and when step size is the largest. In terms of shape there is more variation in the middle ranges of step size, especially when step size = 5. There you could see the curves hops up and down quite a lot. The valuation accuracy seems to move with a normal distribution. For example, when step size is .0001 val acc is very low and same with 10. These being the upper and lower bounds. However, in the middle at step size = .01 and step size = 5. Performance goes up with each iteration.

b) If max epochs was increased I'd expect a longer still pretty flat curve towards the end of the graph, as it seems like the performance flattens out towards 200.
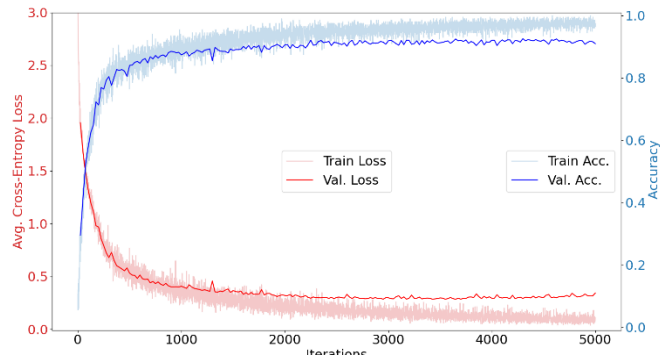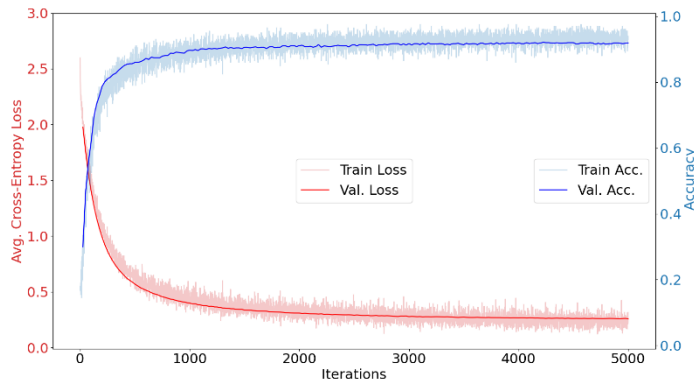
5.

1)
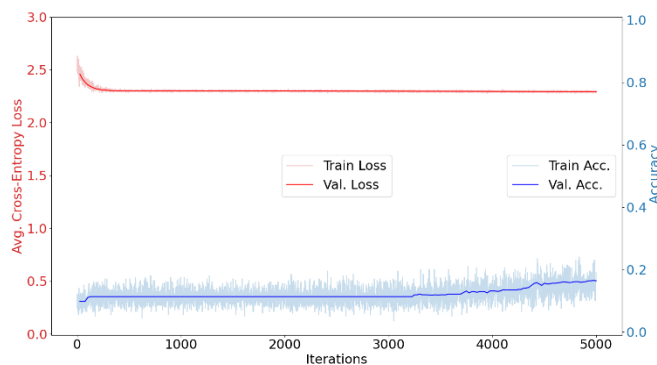
2)
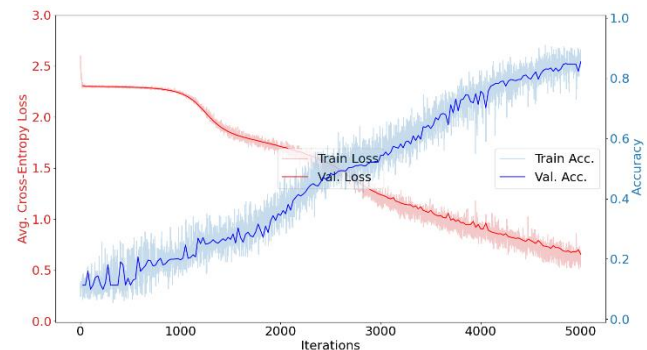
3)

A: This time as the step size increased the val acc also trended up. Also Sigmoid curves seemed to be straight and close to linear, however the ReLU activation showed a curve that looked much more logarithmic.

B: Because the step size rising allows more of a chance of a valid guess.

C: Because ReLU is more compatible with the data we are given compared to sigmoid.

6.

You see a lot more variation as the solid lines stay in the middle of the dimmer lines instead of straying to up or down like it does when the random number argument was 102. The line itself looks pretty similar however the ranges are a lot smaller.