



Figure 7: Comparison of the effect of providing the  $z$  representation to the classifier. ACC and BWT are reported on split Fashion MNIST using a different number of replayed samples for each task.

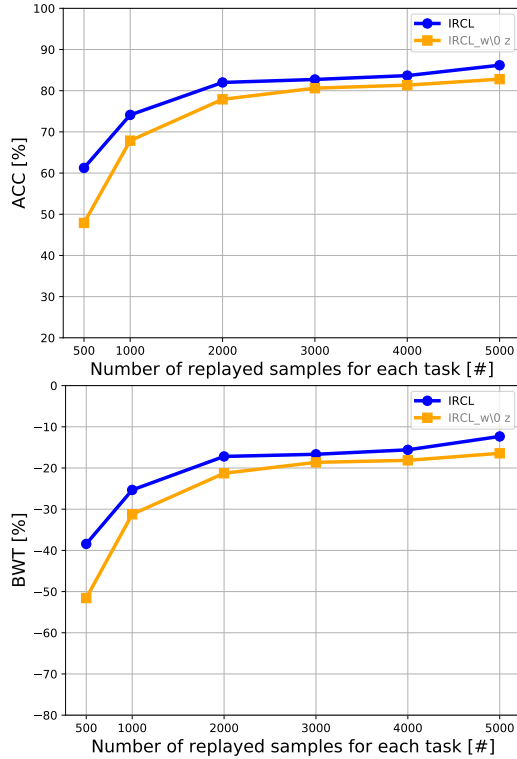


Figure 6: Comparison of the effect of providing the  $z$  representation to the classifier. ACC and BWT are reported on split MNIST using a different number of replayed samples for each task.

Moreover, we show that shared learned representation by the cVAE helps in mitigate forgetting especially when the number of replayed samples from previous tasks is small.

In the future, it would be interesting to analyze the effect of adding more constraints to guarantee that the shared representation does not appear in the class-specific representation. Another interesting extension to the work would be to generate a different number of samples for each task based on how much learning a new task affects its performance. The conditional generation module of our proposed method gives the facility to control the number of generated images for a specific task.

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