

1 We thank the reviewers for their positive comments. In the text below we address specific concerns  
2 raised by the reviewers – we apologize for conciseness; we will address all issues raised by the  
3 reviewers, including fixing typos, adding citations.

#### 4 **Reviewer 1**

- 5 • **I think the main theoretical contribution is that it has proved the connection between  
6 sequential-foolability and a finite Littlestone dimension, which is kind of intuitive.**

7 The main contribution is the equivalence between DP PAC learning, DP Fooling, and Sequential-  
8 Fooling. Perhaps the main technical milestone in the derivation of this equivalence is to prove  
9 that Littlestone dimension implies sequential foolability (without dependence on the domain-size).  
10 While this implication may be intuitive, its proof does not follow immediately from existing results  
11 (that exhibited domain-size dependent bounds). We discuss this between lines 36-57. (While we  
12 promised a more detailed discussion on the technical difficulties in the full version, due to some  
13 technical error this was neglected from the submitted supplementary – this will be corrected and a  
14 more detailed discussion will be added).

#### 15 **Reviewer 2**

- 16 • **the "equivalence" shown here can be quite different from equivalent in practice, due to pro-  
17 hibitively large constant factors**

18 True, but a first step in understanding the sample complexity of many practical tasks is to provide  
19 some non-trivial bounds, and understand existing theoretical limitations.

#### 20 **Reviewer 3**

- 21 • **The generator and discriminators are assumed to be omnipotent in terms of computational  
22 power.**

23 Yes, in this work we study only the sample complexity in disregard of computational issues. Clearly,  
24 computational issues change the picture, nevertheless analysing the sample complexity in this  
25 simplistic setting is an important first step.

26 •

- 27 **1. a bit more discussion on the (cited) recent works on the connection of Littlestone dimen-  
28 sion...**

29 **2. a statement of the best known bounds for finite classes.**

- 30 **3. the related work on practical constructions of SDGs that are in the Discussion...**

31 These are good comments, and we will add these important details. We will also follow the rest  
32 of the suggestions made by the reviewer- explicit sample complexity, discussion on computational  
33 pitfalls, take care of formatting issues and restatements, as well as relate to the citations suggested.

#### 34 **Reviewer 4**

- 35 • **Most of the equivalences are known (the authors themselves note that).**

36 Many of the derivations we discuss are due to previous work (and we appropriately cite). Neverthe-  
37 less this paper contains several new contributions. Particularly, that Littlestone dimension implies  
38 sequential foolability was not derived in previous work (without dependence on the domain-size)..

#### 39 **Reviewer 5**

- 40 • **The framework in this paper seems to apply only to binary classes**

41 This is true. Extending the results to other domains does seem like an interesting direction for future  
42 research.

- 43 • **The lower bound of theorem 2 seems very weak. The upper bound applies to all epsilon, but  
44 the lower bound to epsilon less than 1/2**

45  $\epsilon \leq 1/2$  is indeed tight and we can (will) provide an example where  $\epsilon \geq 1/2$  is achieved trivially.  
46 Regarding the gap between the sample complexities, this is indeed open and we will discuss this-  
47 thanks for pointing that out.