Supplementary Material

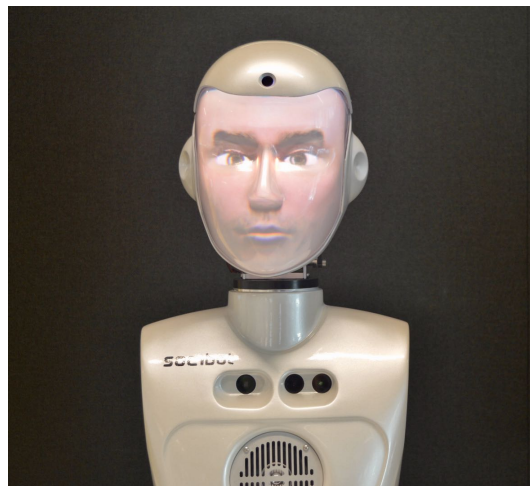## 1 SUPPLEMENTARY FIGURES AND TABLES

Figure S1. The SocibotMini Robot Used in the Current Study.
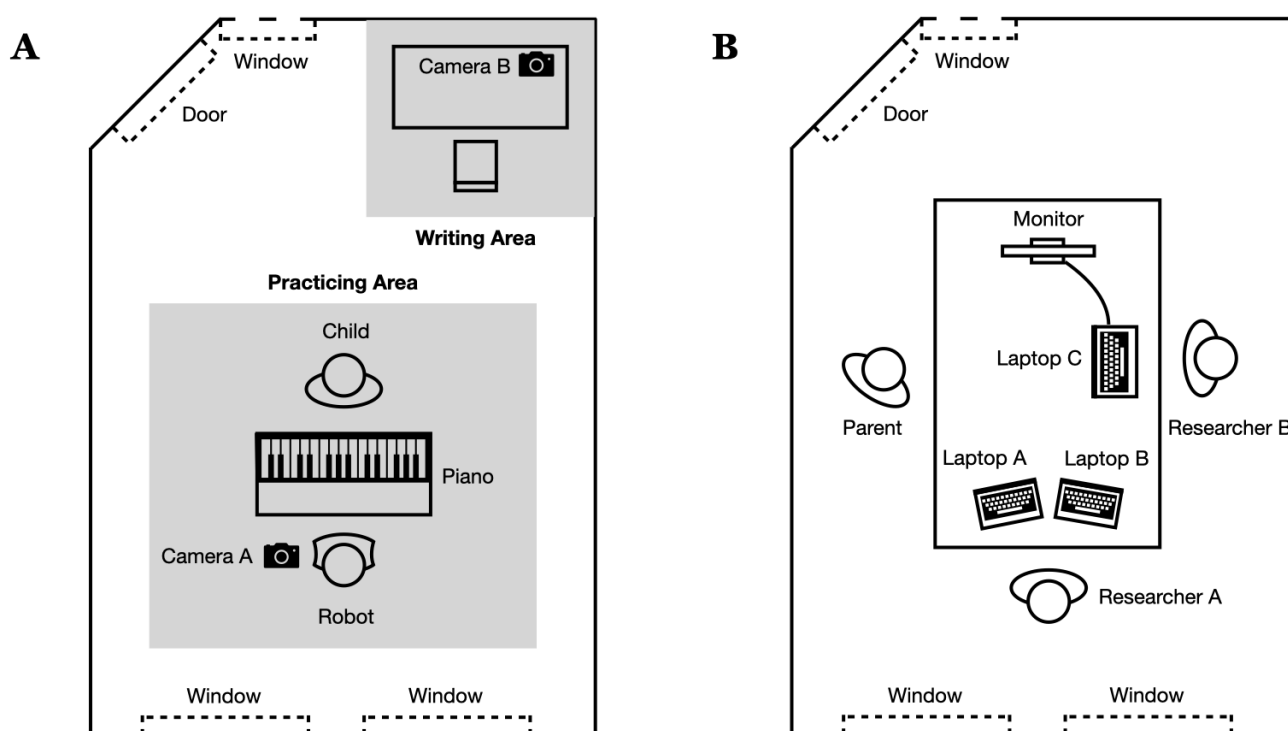

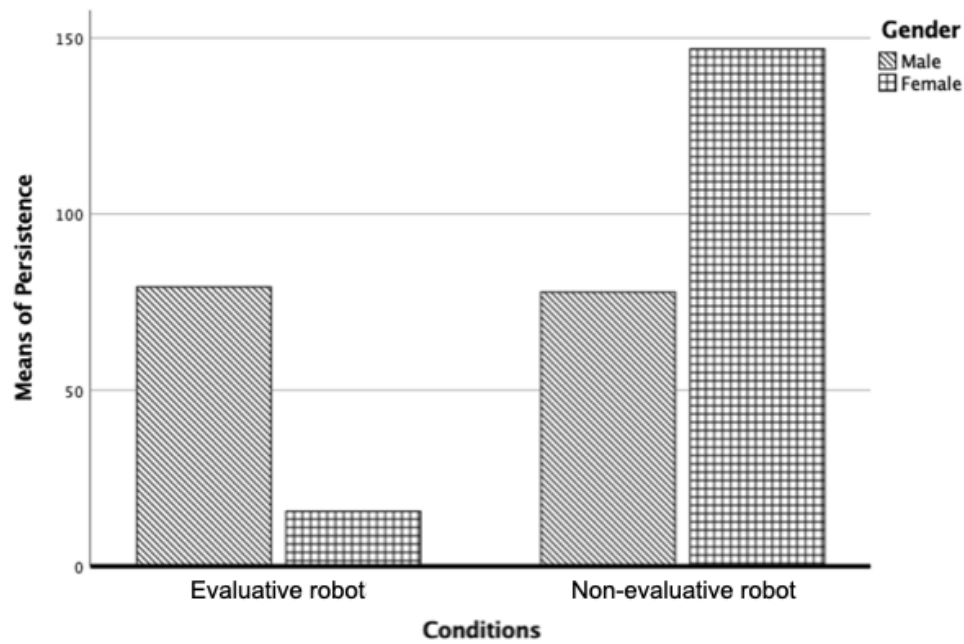**Figure S2.** Top View Illustration of the Experiment Room (**A**) and the Control Room (**B**).

Figure S3. Means of persistence of children in different learning stages in the evaluative robot condition and the non-evaluative robot condition.

Context	Tasks	Evaluative robot	Non-evaluative robot
Robot introduction	Robot self-introduction	1	1
	Greeting	2	2
	General task introduction	3	3
Practice Session	General task introduction	1	1
	Melody order guide	2	2
	Verbal feedback for praise	3	3
	Verbal feedback for stop	1	1
	Verbal feedback for playing wrong melody	1	1
	Verbal feedback for questions	3	3
	Conclusion of the practice	1	1
Filling in questionnaire	Ask to fill in	2	2
	Ask to take a break	1	1

Table S1. Numbers of Robot Behaviors for Evaluative Role and Non-evaluative Role in Different Tasks.

Source	Dimension	Question
FunQ	Autonomy	I knew what to do.
		I did this activity because I had to. (r)
		I did this activity because I wanted to.
FunQ	Delight	I was happy.
		I had fun.
		I want to do something like this again.
FunQ	Stress	I felt angry. (r)
		I felt sad. (r)
		I felt bad. (r)
SIMS	Interest	I could focus easily.
		I think this practice is important.
		I did this activity because I wanted to.

r: reversed items

Table S2. Motivation questionnaire questions.

Category	Positive codes and indicators	Negative codes and indicators
Emotional expressions	**Happiness**	**Sadness**
	*Laughs/giggles	*Sad Expression
	*Grins/ smiles	*Self-frustration
	-*Pride	**Anxiety**
		*Anxious expression
		*Shame/gaze avoidance/face hidden
		*Confusion/frozen expression
Task-related behaviors	**Persistence**	**Hostility/Reluctance**
	-Visual focus point on task	*Stop playing
	*Showing initiative	*Lean away from piano/leave
	*Application of personal strategies	*Shortcuts
		*Frustrated verbal remarks
	Help-seeking	**Off-task**
	*Verbally, directly and explicitly ask for help	*Signs of boredom
		-Visual focus off task
Robot-related behaviors	**Interest**	**Hostility/Reluctance**
	-Visual focus on robot	*Refuses/hesitates/ignore to follow ro
	*Engaged with robot	*Verbal remarks "must I really"
	*Curiosity towards robot	
	*Reply to the robot positively	
	*Follows instructions	
	Help-seeking	**Socializing**
	*Chats with the robot about the task	*Chats about other topics but the task

Table S3. Descriptions for Emotion and Task Behavior Codes.

* Dichotomous nominal code

* Continuous code

	Alone			Non-evaluative robot			Evaluative robot		
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Beginners	11	4.40	0.40	11	4.50	0.42	11	4.43	0.29
Developing players	10	4.56	0.39	10	4.63	0.33	10	4.53	0.43
Advanced players	10	4.07	0.97	10	4.53	0.39	10	4.65	0.56
Total	31	4.34	0.65	31	4.55	0.37	31	4.53	0.77

Table S4. Mean and standard deviation of motivation collected by the questionnaire in the alone, non-evaluative robot, and evaluative robot conditions.

	Alone			Non-evaluative robot			Evaluative robot		
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Beginners	7	4.71	2.43	7	3.00	2.94	7	3.57	1.51
Developing players	9	3.67	3.57	9	2.11	2.57	9	2.33	3.24
Advanced players	10	2.80	2.39	10	1.90	1.60	10	0.90	1.10
Total	26	3.62	2.86	26	2.27	2.31	26	2.12	2.36

Table S5. Mean and standard deviation of motivation measured as persistence collected by the behavior data in the alone, non-evaluative robot, and evaluative robot conditions. Videos with bad quality were not analysed (e.g., incomplete, too much noise, etc.).