

Online Resource 1

Adjacent-Room Dual-Console Remote Surgical Training (ReST) with Takeover Capability on the da Vinci Xi: A Porcine-Model Feasibility Study

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This file contains the tutor, trainee, and specialist trainer/supervisor post-session questionnaires; item-level perception tables; satisfaction counts; and a grayscale-safe redraw of the satisfaction figure.

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Article title	Adjacent-Room Dual-Console Remote Surgical Training (ReST) with Takeover Capability on the da Vinci Xi: A Porcine-Model Feasibility Study
Supplement caption	Online Resource 1. Tutor, trainee, and specialist trainer/supervisor post-session questionnaires; item-level perception tables; satisfaction counts; revised satisfaction figure.

Questionnaire 1 - Tutor

Post-session form completed by the tutor.

Session ID: _____	Date: _____	Specialty: _____
Group (Control / ReST): _____	Tutor code: _____	Trainee code: _____
Trainer code: _____		

Section A. Perception items (4-point Likert scale)

No.	Statement	Strongly disagree	Disagree	Agree	Strongly agree
1	The session made surgical teaching easy.	☐	☐	☐	☐
2	I could adequately follow the trainee during the console tasks.	☐	☐	☐	☐
3	The quality of interaction with the trainee was good.	☐	☐	☐	☐
4	The trainee applied my instructions promptly.	☐	☐	☐	☐
5	My function was effective in achieving the trainee's learning objectives.	☐	☐	☐	☐
6	I felt comfortable during the interaction.	☐	☐	☐	☐
7	I felt the need to have the trainee physically close by.	☐	☐	☐	☐
8	I could take over the commands at the right moment when needed.	☐	☐	☐	☐
9	This format could be replicated safely on real patients.	☐	☐	☐	☐

Section B. Priority ranking (1 = most important; 5 = least important)

Item	Rank (1-5)
The trainee can follow my instructions carefully	_____
I can take over the commands at the right moment	_____
I have feeling with the trainee	_____
I feel comfortable	_____
The trainee stands close to me	_____

Section C. Overall satisfaction

The overall satisfaction of my experience with surgical tutoring was:

Very low ☐ Low ☐ High ☐ Very high ☐

Questionnaire 2 - Trainee

Post-session form completed by the trainee.

Session ID: _____	Date: _____	Specialty: _____
Group (Control / ReST): _____	Trainee code: _____	Tutor code: _____
Trainer code: _____		

Section A. Perception items (4-point Likert scale)

No.	Statement	Strongly disagree	Disagree	Agree	Strongly agree
1	The session made surgical training easy.	☐	☐	☐	☐
2	I felt adequately followed by the tutor in my tasks.	☐	☐	☐	☐
3	The quality of interaction with the tutor was good.	☐	☐	☐	☐
4	The instructions given by the tutor were clear and understandable.	☐	☐	☐	☐
5	This session was effective in achieving my learning objectives.	☐	☐	☐	☐
6	I felt comfortable and autonomous during the interaction.	☐	☐	☐	☐
7	I felt the need to have the tutor physically close by.	☐	☐	☐	☐
8	The tutor took over the commands at the right moment when needed.	☐	☐	☐	☐
9	This format could be replicated safely on real patients.	☐	☐	☐	☐

Section B. Priority ranking (1 = most important; 5 = least important)

Item	Rank (1-5)
The instructions of the tutor are clear and understandable	_____
The tutor follows me in my tasks	_____
I feel comfortable and autonomous	_____
The tutor takes over the commands at the right moment	_____
The tutor stands close to me	_____

Section C. Overall satisfaction

The overall satisfaction of my experience with surgical training was:

Very low ☐ Low ☐ High ☐ Very high ☐

Questionnaire 3 - Specialist trainer / supervisor

Post-session form completed by the in-room specialist trainer/supervisor.

Session ID: _____	Date: _____	Specialty: _____
Group (Control / ReST): _____	Trainer code: _____	

Section A. Perception items (4-point Likert scale)

No.	Statement	Strongly disagree	Disagree	Agree	Strongly agree
1	The atmosphere for learning was adequate.	☐	☐	☐	☐
2	The quality of interaction between tutor and trainee was good.	☐	☐	☐	☐
3	The tutor could adequately follow the trainee during console tasks.	☐	☐	☐	☐
4	The trainee appeared to receive instructions promptly and clearly.	☐	☐	☐	☐
5	Tutor takeover, when required, occurred at the appropriate moment.	☐	☐	☐	☐
6	This format could be replicated safely on real patients.	☐	☐	☐	☐
7	Overall, the session was well organized.	☐	☐	☐	☐

Section B. Priority ranking (1 = most important; 5 = least important)

Item	Rank (1-5)
Clarity of tutor-to-trainee communication	_____
Adequacy of tutor takeover timing	_____
Atmosphere for learning	_____
Overall interaction quality	_____
Practical feasibility of the session set-up	_____

Section C. Overall satisfaction

The overall satisfaction of my experience with this training session was:

Very low ☐ Low ☐ High ☐ Very high ☐

Supplementary Table S1 - Shared tutor/trainee perception items

Item-level frequencies for the shared tutor/trainee perception items across the 30 paired tutor-trainee sessions.

Item pair (N = 30 paired sessions)	Tutor distribution	Trainee distribution	Weighted kappa	p-value
Session made teaching/training easy	SD 0; D 3; A 15; SA 12	SD 0; D 3; A 17; SA 10	0.47	0.004
Tutor could follow trainee / trainee felt followed	SD 0; D 3; A 16; SA 11	SD 0; D 4; A 17; SA 9	0.42	0.011
Quality of interaction was good	SD 0; D 2; A 15; SA 13	SD 0; D 3; A 15; SA 12	0.39	0.014
Promptness / clarity of instruction	SD 0; D 0; A 17; SA 13	SD 0; D 0; A 12; SA 18	0.18	0.170
Learning objectives achieved	SD 0; D 2; A 18; SA 10	SD 0; D 3; A 19; SA 8	0.13	0.290
Need for physical closeness	SD 16; D 10; A 3; SA 1	SD 5; D 9; A 10; SA 6	0.05	0.680

Supplementary Table S1. Shared tutor/trainee perception items by paired session.

Supplementary Table S2 - Specialist trainer/supervisor distributions by group

Distributions of selected specialist trainer/supervisor ratings in control and ReST sessions.

Trainer item	Control (n = 15)	ReST (n = 15)
Atmosphere for learning was adequate	SD 0; D 0; A 5; SA 10	SD 0; D 0; A 4; SA 11
Quality of interaction between tutor and trainee was good	SD 0; D 1; A 5; SA 9	SD 0; D 0; A 3; SA 12
Format could be replicated safely on real patients	SD 0; D 1; A 5; SA 9	SD 0; D 1; A 4; SA 10

Supplementary Table S2. Specialist trainer/supervisor distributions by group.

Supplementary Table S3 - Satisfaction counts by participant role and study group

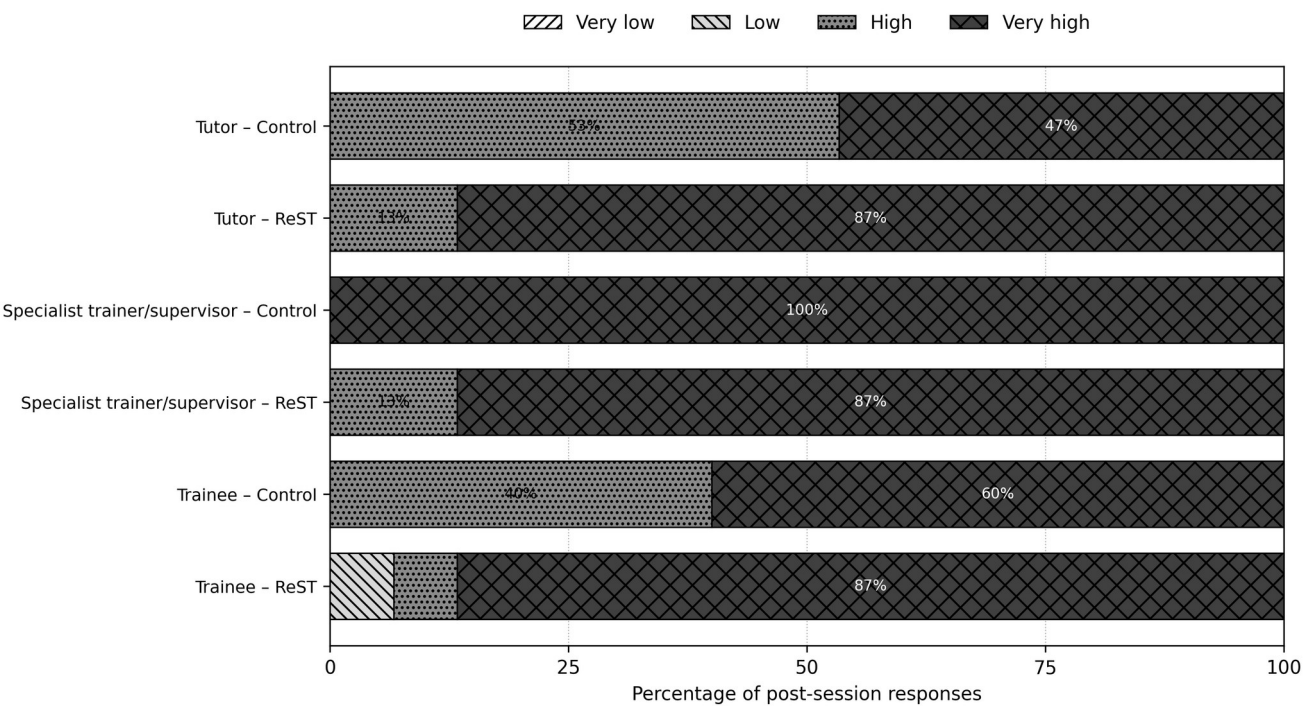
Counts used for the satisfaction figure in the main manuscript and in Supplementary Figure S1.

Role / group	Very low	Low	High	Very high
Tutor - Control	0	0	8	7
Tutor - ReST	0	0	2	13
Specialist trainer/supervisor - Control	0	0	0	15
Specialist trainer/supervisor - ReST	0	0	2	13
Trainee - Control	0	0	6	9
Trainee - ReST	0	1	1	13

Supplementary Table S3. Satisfaction counts by participant role and study group.

Supplementary Figure S1 - Revised satisfaction figure

Grayscale-safe redraw of the post-session satisfaction figure using the counts reported in Supplementary Table S3.



Supplementary Figure S1. Grayscale-safe redraw of the satisfaction figure.