

OBSTETRICS & GYNECOLOGY



NOTICE: This document contains correspondence generated during peer review and subsequent revisions but before transmittal to production for composition and copyediting:

- Comments from the reviewers and editors (email to author requesting revisions)
- Response from the author (cover letter submitted with revised manuscript)*

**The corresponding author has opted to make this information publicly available.*

Personal or nonessential information may be redacted at the editor's discretion.

Questions about these materials may be directed to the *Obstetrics & Gynecology* editorial office:
obgyn@greenjournal.org.

Date: Mar 11, 2020
To: "Veronica Lerner" [REDACTED]
From: "The Green Journal" em@greenjournal.org
Subject: Your Submission ONG-20-178

RE: Manuscript Number ONG-20-178

A Novel Low-Cost Platform for Laparoscopic Simulation Training

Dear Dr. Lerner:

Your manuscript has been reviewed by the Editorial Board and by special expert referees. Although it is judged not acceptable for publication in Obstetrics & Gynecology in its present form, we would be willing to give further consideration to a revised version.

If you wish to consider revising your manuscript, you will first need to study carefully the enclosed reports submitted by the referees and editors. Each point raised requires a response, by either revising your manuscript or making a clear and convincing argument as to why no revision is needed. To facilitate our review, we prefer that the cover letter include the comments made by the reviewers and the editor followed by your response. The revised manuscript should indicate the position of all changes made. We suggest that you use the "track changes" feature in your word processing software to do so (rather than strikethrough or underline formatting).

Your paper will be maintained in active status for 21 days from the date of this letter. If we have not heard from you by Apr 01, 2020, we will assume you wish to withdraw the manuscript from further consideration.

REVIEWER COMMENTS:

Reviewer #1: This is a model description and usability/acceptability survey study of a low-cost laparoscopic simulator in Ob/Gyn training. The method for building the model was extensively described, and the authors found that trainees and faculty responded favorably to the model. I applaud the authors for their interest and work in this area.

My comments are as follows:

1. There are low-cost, self-made laparoscopic trainer instructions available, including box versions like the one on the ACOG website under simulation (<https://www.acog.org/-/media/Departments/Simulations-Consortium/3Box-Trainer.pdf>). This version is novel in its wooden construction and therefore better durability. You have shown in your July 2019 Green Journal publication that trainees and faculty responded favorably to the colpotomy model. The assessment method is the same in this manuscript. I would suggest that this be taken a step further with the laparoscopic trainer to determine if it has a positive impact on residents' achieving competencies (for example as Dorian et al assessed in "A Comparative Assessment of Novel Mini-Laparoscopic Tools," 2016; Yang et al "Transferability of laparoscopic skills using the virtual reality simulator," 2018; Roedner et al "Simulating Vaginal Cuff Closure for Ob/Gyn Residents Learning Laparoscopic Hysterectomy," 2015), and specifically how it rates as compared to the FLS trainer for the examination. This would give us information regarding whether this low-cost, homemade laparoscopic trainer is just as valuable as the commercially available models, one of which (FLS trainer box, <https://fls-products.com/fls>) has been validated to prepare residents for FLS by the Committee overseeing the FLS program including the American College of Surgeons (ACS) and Society of American Gastrointestinal and Endoscopic Surgeons (SAGES). It may also be reasonable to note this as a weakness and plan future studies to assess this.
2. The grammar needs to be extensively reviewed and corrected throughout the manuscript and abstract. Some examples are lines 52, 68, and 70.
3. In line 76 you state that the "total number of minimally invasive hysterectomies required for graduation has increased, with the hopes of addressing this deficit." Please either cite a reference that refers to this being the reason that the ACGME changed their requirements (your current citations do not) or remove this line, as there are other reasons for this change such as change in practice patterns.
4. Please define "partial task trainer" for those who are not familiar (line 80).
5. Lines 95-97 essentially repeat the information in lines 84-87. Please condense/combine.
6. Lines 114-115 repeat information given earlier in the manuscript. Please condense.

7. In line 159 you group all who experienced the trainer into one percentage, whereas everywhere else you divide them individually (e.g. line 156). Please change to one convention for ease of understanding.
8. The discussion could be considerably condensed for efficient reading. Also, several things are unnecessarily repeated (e.g. line 187-189).
9. Consider word choice in line 204 ("tinker") and perhaps choose a more formal term.
10. The photographs and supplements are very useful but would need to be condensed for a Green Journal publication.

Reviewer #2: Dear Dr. Ulrich et al.,

Thank you for your contribution to the literature and to this journal. A few comments:

The main concern about this manuscript is that although the authors spend the majority of the paper demonstrating and explaining the set up of the model in detail, they fail to address the important and clinically relevant aspect of this model, which would be to assess its impact on resident training. For example, after this model was implemented, were FLS pass rates improved? Was there decreased resident/attending operating room time? Another use could be to assess the long-term practice models for residents who graduate from the program and to determine whether or not they would be able to independently perform laparoscopic procedures with the use of this model.

There are few grammatical and spelling errors throughout the manuscript.

Line 148 - describe the usability and acceptability survey more in depth. Is this a validated survey? Perhaps it would be helpful to provide a sample of what the questions were.

Lines 151-163 - Adding pre and post scores for feedback would be beneficial. Younger learners (i.e. first year residents) can also project and track their progress throughout residency.

Line 189 - what is the purpose of using the instruments with the naked eye? It does not simulate the use of laparoscopy and may "tempt" the learner to look down and may diminish the full effect of laparoscopic training.

Overall, this paper provides an interesting model for laparoscopic training, however without validation studies or following a pre and post education survey, it has limited utility in area of laparoscopic simulation training. The video summary of the simulation training is helpful in showing how to set up this trainer, however, the setup with gathering of all the supplies seems cumbersome. While there are other low-fidelity models using cardboard boxes that are easier to assemble, I question how this model adds to the learner's training experience.

Reviewer #3: Thank you for your interesting article.

Comments:

Over all the idea and implementation are very good. Any method of getting more accessible skills training is good. Did you consider submitting part of this separately as a video as I think real time use of the model would be best demonstrated that way?

Introduction: Can you detail briefly the skills tested in the FLS curriculum? Many of us out more than 5 years and not in academic or teaching practice may not be aware of this curric.

Did you use ideas from these previously describes systems to create yours?

Methods:

You can shrink the description significantly by referring to the photos included and using a table of materials.

Can you describe how you designed your acceptability survey? Did you validate it? What parameter or research were used to determine how to ask the questions?

Did you consider looking at before and after scores or time to train for FLS test as a quantitative measure of the trainer's success?

Experience:

First paragraph belongs in methods.

Your results do not represent a 5 point likert scale, was there a distribution across the 5 points? You present these results as if they were Y/N. A figure or graph might better represent your results. Did you consider any comparative statistics?

Discussion:

Over all you address points well, I would spend more time on how you would assess mastery of laparoscopic skills. I think the descriptions of other homemade systems could be done in a table or addendum

EDITORIAL OFFICE COMMENTS:

1. The Editors of Obstetrics & Gynecology are seeking to increase transparency around its peer-review process, in line with efforts to do so in international biomedical peer review publishing. If your article is accepted, we will be posting this revision letter as supplemental digital content to the published article online. Additionally, unless you choose to opt out, we will also be including your point-by-point response to the revision letter. If you opt out of including your response, only the revision letter will be posted. Please reply to this letter with one of two responses:

- A. OPT-IN: Yes, please publish my point-by-point response letter.
- B. OPT-OUT: No, please do not publish my point-by-point response letter.

2. As of December 17, 2018, Obstetrics & Gynecology has implemented an "electronic Copyright Transfer Agreement" (eCTA) and will no longer be collecting author agreement forms. When you are ready to revise your manuscript, you will be prompted in Editorial Manager (EM) to click on "Revise Submission." Doing so will launch the resubmission process, and you will be walked through the various questions that comprise the eCTA. Each of your coauthors will receive an email from the system requesting that they review and electronically sign the eCTA.

Please check with your coauthors to confirm that the disclosures listed in their eCTA forms are correctly disclosed on the manuscript's title page.

3. Our journal requires that all evidence-based research submissions be accompanied by a transparency declaration statement from the manuscript's lead author. The statement is as follows: "The lead author* affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained."

*The manuscript's guarantor.

If you are the lead author, please include this statement in your cover letter. If the lead author is a different person, please ask him/her to submit the signed transparency declaration to you. This document may be uploaded with your submission in Editorial Manager.

4. All submissions that are considered for potential publication are run through CrossCheck for originality. The following lines of text match too closely to previously published works. Variance is needed in the following sections:

- a. Was this study presented at AAGL? If so, please disclose the name, date/s, and location of the meeting on the title page of your manuscript.
- b. Please rewrite the last sentence of the conclusion. It is verbatim from a previous paper published in our journal.

5. Standard obstetric and gynecology data definitions have been developed through the reVITALize initiative, which was convened by the American College of Obstetricians and Gynecologists and the members of the Women's Health Registry Alliance. Obstetrics & Gynecology has adopted the use of the reVITALize definitions. Please access the obstetric and gynecology data definitions at <https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize>. If use of the reVITALize definitions is problematic, please discuss this in your point-by-point response to this letter.

6. Because of space limitations, it is important that your revised manuscript adhere to the following length restrictions by manuscript type: Procedures and Instruments articles should not exceed 8 typed, double-spaced pages (2,000 words). Stated page limits include all numbered pages in a manuscript (i.e., title page, précis, abstract, text, references, tables, boxes, figure legends, and print appendixes) but exclude references.

7. Specific rules govern the use of acknowledgments in the journal. Please note the following guidelines:

* All financial support of the study must be acknowledged.

* Any and all manuscript preparation assistance, including but not limited to topic development, data collection, analysis, writing, or editorial assistance, must be disclosed in the acknowledgments. Such acknowledgments must identify the entities that provided and paid for this assistance, whether directly or indirectly.

* All persons who contributed to the work reported in the manuscript, but not sufficiently to be authors, must be acknowledged. Written permission must be obtained from all individuals named in the acknowledgments, as readers may infer their endorsement of the data and conclusions. Please note that your response in the journal's electronic author form

verifies that permission has been obtained from all named persons.

* If all or part of the paper was presented at the Annual Clinical and Scientific Meeting of the American College of Obstetricians and Gynecologists or at any other organizational meeting, that presentation should be noted (include the exact dates and location of the meeting).

8. The most common deficiency in revised manuscripts involves the abstract. Be sure there are no inconsistencies between the Abstract and the manuscript, and that the Abstract has a clear conclusion statement based on the results found in the paper. Make sure that the abstract does not contain information that does not appear in the body text. If you submit a revision, please check the abstract carefully.

In addition, the abstract length should follow journal guidelines. The word limits for different article types are as follows: Procedures and Instruments, 200 words. Please provide a word count.

9. Only standard abbreviations and acronyms are allowed. A selected list is available online at <http://edmgr.ovid.com/ong/accounts/abbreviations.pdf>. Abbreviations and acronyms cannot be used in the title or précis. Abbreviations and acronyms must be spelled out the first time they are used in the abstract and again in the body of the manuscript.

10. The journal does not use the virgule symbol (/) in sentences with words. Please rephrase your text to avoid using "and/or," or similar constructions throughout the text. You may retain this symbol if you are using it to express data or a measurement.

11. In your Abstract, manuscript Results sections, and tables, the preferred citation should be in terms of an effect size, such as odds ratio or relative risk or the mean difference of a variable between two groups, expressed with appropriate confidence intervals. When such syntax is used, the P value has only secondary importance and often can be omitted or noted as footnotes in a Table format. Putting the results in the form of an effect size makes the result of the statistical test more clinically relevant and gives better context than citing P values alone.

If appropriate, please include number needed to treat for benefits (NNTb) or harm (NNTh). When comparing two procedures, please express the outcome of the comparison in U.S. dollar amounts.

Please standardize the presentation of your data throughout the manuscript submission. For P values, do not exceed three decimal places (for example, "P = .001"). For percentages, do not exceed one decimal place (for example, 11.1%).

12. The Journal's Production Editor had the following comments about the figures in your manuscript:

"Figures: Figure 10 is missing from Editorial Manager. Please remove the A, B, and C labels from the images. These will be added back per journal style."

When you submit your revision, art saved in a digital format should accompany it. If your figure was created in Microsoft Word, Microsoft Excel, or Microsoft PowerPoint formats, please submit your original source file. Image files should not be copied and pasted into Microsoft Word or Microsoft PowerPoint.

When you submit your revision, art saved in a digital format should accompany it. Please upload each figure as a separate file to Editorial Manager (do not embed the figure in your manuscript file).

If the figures were created using a statistical program (eg, STATA, SPSS, SAS), please submit PDF or EPS files generated directly from the statistical program.

Figures should be saved as high-resolution TIFF files. The minimum requirements for resolution are 300 dpi for color or black and white photographs, and 600 dpi for images containing a photograph with text labeling or thin lines.

Art that is low resolution, digitized, adapted from slides, or downloaded from the Internet may not reproduce.

13. Authors whose manuscripts have been accepted for publication have the option to pay an article processing charge and publish open access. With this choice, articles are made freely available online immediately upon publication. An information sheet is available at <http://links.lww.com/LWW-ES/A48>. The cost for publishing an article as open access can be found at <http://edmgr.ovid.com/acd/accounts/ifaauth.htm>.

Please note that if your article is accepted, you will receive an email from the editorial office asking you to choose a publication route (traditional or open access). Please keep an eye out for that future email and be sure to respond to it promptly.

If you choose to revise your manuscript, please submit your revision through Editorial Manager at <http://ong.editorialmanager.com>. Your manuscript should be uploaded in a word processing format such as Microsoft Word. Your revision's cover letter should include the following:

* A confirmation that you have read the Instructions for Authors (<http://edmgr.ovid.com/ong/accounts/authors.pdf>),

and

- * A point-by-point response to each of the received comments in this letter.

If you submit a revision, we will assume that it has been developed in consultation with your co-authors and that each author has given approval to the final form of the revision.

Again, your paper will be maintained in active status for 21 days from the date of this letter. If we have not heard from you by Apr 01, 2020, we will assume you wish to withdraw the manuscript from further consideration.

Sincerely,

The Editors of Obstetrics & Gynecology

2018 IMPACT FACTOR: 4.965

2018 IMPACT FACTOR RANKING: 7th out of 83 ob/gyn journals

In compliance with data protection regulations, you may request that we remove your personal registration details at any time. (Use the following URL: <https://www.editorialmanager.com/ong/login.asp?a=r>). Please contact the publication office if you have any questions.

RE: Manuscript Number ONG-20-178

Title: A Novel Low-Cost Platform for Laparoscopic Simulation Training

Dear editors and reviewers:

Thank you for the thorough review of our manuscript and the insightful and useful comments and queries, which we hope was instrumental to improving quality of our work. We have incorporated the feedback and are resubmitting the manuscript for your consideration. Below we respond point-by point to the reviewer comments as you have requested. We appreciate the feedback and believe the paper is stronger as a result of your suggestions and questions.

We look forward to hearing back from you,

Dr. Veronica Lerner

Editor and Reviewer Comments	Author's response indicating (using line numbers) where/how the manuscript has been revised to address the comment (if relevant).
Reviewer #1	
1. There are low-cost, self-made laparoscopic trainer instructions available, including box versions like the one on the ACOG website under simulation (https://www.acog.org/-/media/Departments/Simulations-Consortium/3Box-Trainer.pdf).	We thank reviewer#1 for their thoughtful and detailed comments and suggestions. 1. With regard to this specific box trainer, should we add it to the paper as a reference? As you pointed out, there are a few publications of cardboard box trainers. I am very well familiar with this specific cardboard box model as is described on the ACOG sim consortium toolkit. If you think it differs significantly from what I have in the manuscript and adding it will help promote the working group, I would be delighted to add it.

<p>This version is novel in its wooden construction and therefore better durability.</p> <p>You have shown in your July 2019 Green Journal publication that trainees and faculty responded favorably to the colpotomy model. The assessment method is the same in this manuscript. I would suggest that this be taken a step further with the laparoscopic trainer to determine if it has a positive impact on residents' achieving competencies (for example as Dorian et al assessed in "A Comparative Assessment of Novel Mini-Laparoscopic Tools," 2016; Yang et al "Transferability of laparoscopic skills using the virtual reality simulator," 2018; Roedner et al "Simulating Vaginal Cuff Closure for Ob/Gyn Residents Learning Laparoscopic Hysterectomy," 2015), and specifically, how it rates as compared to the FLS trainer for the examination.</p>	<p>Thank you for recognizing novelty of this model. In our opinion, however, it is not the material (wood vs. cardboard) that differentiates our model from the one above, it is the versatility. Cardboard box is limited to one very narrow type of training. Our model fits into many different settings. It also is easy to store, set up and transfer between learners.</p> <p>Thank you for sharing Yang (Surgical Endoscopy) and Roedner (AAGL abstract, not a peer reviewed published work) references with us. From our understanding of how simulation research is conducted, there is a flow to the progression of events that generally happens. Firstly, there is a proof of concept (how and why), the initial work (category into which this publication fits). Secondly, there is the validation work of assessment tools if none exist or testing of how existing validation tools apply to the novel trainer. Finally, we then study performance in simulated and clinical setting and do research on outcomes. The process is long and a lot of work goes into each step. In our opinion, an attempt to combine all steps into one would be close to impossible to achieve. Moreover, it may not be desirable to do it all in one step given that you have to re-evaluate and make modifications as you go along. Finally, this project fits into the Instruments and Procedures format, while if we were to design a study like Yang's, it would fit into original research category.</p> <p>Please see a few examples below of Instruments and Procedures publications of similar proof of concept studies:</p>
--	--

<p>This would give us information regarding whether this low-cost, homemade laparoscopic trainer is just as valuable as the commercially available models, one of which (FLS trainer box, https://fls-products.com/fls) has been validated to prepare residents for FLS by the Committee overseeing the FLS program including the American College of Surgeons (ACS) and Society of American Gastrointestinal and Endoscopic Surgeons (SAGES).</p>	<p>1.Modified Beef Tongue Model for Fourth-Degree Laceration Repair Simulation. Illston JD, Ballard AC, Ellington DR, Richter HE. Obstet Gynecol. 2017 Mar;129(3):491-496. doi: 10.1097/AOG.0000000000001908.</p> <p>2.Obstet Gynecol. 2017 Oct;130(4):873-877. doi: 10.1097/AOG.0000000000002241.</p> <p>Interactive Pelvic Anatomy Model: A Tool for Teaching Basic Pelvic Anatomy. Advolodkina P¹, Chahine EB.</p> <p>We very much appreciate your suggestion to compare our trainer to FLS trainer in terms of performance on FLS tasks. In terms of comparing our platform to FLS trainer, our team had debated about that idea when we designed this project. Here are our thoughts. At the time that our model was actually created (which was just prior to FLS mandate), our goal was to only use it for whatever laparoscopic training our program needed. For example, colpotomy and cuff closure were two tasks of high priority and we used the laparoscopic tower in our sim center along with a portable simulated scope and monitor for those training along with others. Shortly after that, came the FLS mandate and then we decided to use our model to teach FLS tasks. Unfortunately, as many programs who have been doing FLS for a while have done, we realized the limitations of FLS as it pertains to training OBGYN residents (as outlined in key references below) and as a result, we made a decision to not take this turn as a next step in this project. We made a decision to keep using our platform for complex task breakdown (as described in the manuscript) and then once achieved, conducted most practice sessions on actual</p>
---	--

<p>it may also be reasonable to note this as a weakness and plan future studies to assess this.</p>	<p>FLS trainer, mostly because it is available to our trainees and our program paid for it. Instead, we decided to focus our efforts on other types of laparoscopic training which we think is more transferable in terms of OR skills than FLS. We now require our second-year residents to pass FLS to get it out of the way and we focus on more useful simulations to get residents ready for the OR with the task trainer. As a result, this idea of replacing the FLS box with our platform became less of a priority.</p> <p>References for limitations and lack of quality validity evidence for FLS:</p> <p>Zendejas B, Ruparel RK, Cook DA. Validity evidence for the Fundamentals of Laparoscopic Surgery (FLS) program as an assessment tool: a systematic review. <i>Surg Endosc</i>. 2016;30(2):512-520</p> <p>Crochet P, Agostini A, Knight S, Resseguier N, Berdah S, Aggarwal R. The Performance Gap for Residents in Transfer of Intracorporeal Suturing Skills From Box Trainer to Operating Room. <i>J Surg Educ</i>. 2017;74(6):1019-1027.</p> <p>Given that this work is a proof of concept study, we do respectfully disagree with the statement that it is a weakness not to do a comparative study. However, we agree with your very useful suggestion for future work with regard to not only box trainers in general but with a FLS box trainer more specifically, as FLS equipment production is monopolized by Limbs and Things and is expensive as a result. We also think that low-cost home-made trainers that are tested and found to be compatible to official FLS box would be of use to our community. We added the following sentence to the discussion:</p>
---	---

	<p>“Comparative effectiveness studies of low-cost trainers such as ours to the official FLS box trainer would be of particular interest due to cost considerations and lack of commercially available compatible products.”</p>
<p>2. The grammar needs to be extensively reviewed and corrected throughout the manuscript and abstract. Some examples are lines 52, 68, and 70.</p>	<p>Thank you for taking time to review. We reviewed this draft again and made fixes, including those below.</p> <p>Line 52: A rectangular piece of sheet wood purchased a in hardware store was used as a base.</p> <p>Sheet wood is a technical term (which may not be common knowledge), but we replaced it with another term such as pine wood</p> <p>Line 52 replaced with: A rectangular piece of pine wood purchased in a hardware store was used as a base.</p> <p>Line 68 Minimally invasive approach has become the standard route in gynecologic surgery in over the last few decades</p> <p>Replaced with: A minimally invasive approach has become the standard route in gynecologic surgery over the last few decades</p> <p>Line 70 With decreasing surgical volume and new work-hour restrictions, concern with laparoscopic surgical skillset of graduating OBGYN (obstetrics and gynecology)</p>

	<p>residents have been raised and a survey of program directors showed that OBGYN residency graduates are not prepared to perform laparoscopic procedures independently</p> <p>Replaced with:</p> <p>With decreasing surgical volume and new work-hour restrictions, concerns with the laparoscopic surgical skillset of graduating OBGYN (obstetrics and gynecology) residents have been raised. A survey of program directors showed that OBGYN residency graduates are not prepared to perform laparoscopic procedures independently.</p>
<p>3. In line 76 you state that the "total number of minimally invasive hysterectomies required for graduation has increased, with the hopes of addressing this deficit." Please either cite a reference that refers to this being the reason that the ACGME changed their requirements (your current citations do not) or remove this line, as there are other reasons for this change such as change in practice patterns.</p>	<p>3. Thank you for pointing this out. This sentence has been changed to: “in addition, total number of minimally invasive hysterectomies required for graduation has increased.”</p>
<p>4. Please define "partial task trainer" for those who are not familiar (line 80).</p>	<p>4. Thank you for your suggestions. Change has been made as below: “partial task training (subordinate skills training that resembles portions or sub-tasks of an entire procedure)”</p>
<p>5. Lines 95-97 essentially repeat the information in lines 84-87. Please condense/combine.</p>	<p>Lines 84-87</p> <p>Cost of official FLS box trainers ranges from \$1,164 in its basic form to \$6,510 as an all-inclusive package.¹² In addition to significant costs, FLS trainers and cameras are relatively fragile, bulky, heavy and difficult to transport. Furthermore, these</p>

	<p>models are not versatile because they are limited to one type of simulation training.</p> <p>Lines 95-97 Multiple commercial laparoscopic box trainers exist with varying specifications, benefits, and limitations. Unfortunately, they are often cost-prohibitive and limited to one type of simulation training.</p> <p>The reason why we separated FLS from other commercial box trainers is because there are several differences between them. We are trying to make the point that both FLS and commercial trainers have limitations, but they are different limitations. We did not have space to expand on limitations of various non-FLS box trainers. Would you still suggest condensing those 2 different ideas into one?</p>
6. Lines 114-115 repeat information given earlier in the manuscript. Please condense.	<p>6. We apologize, but we are only able to find information given earlier in the abstract.</p> <p>Lines 114-115: “All materials can be purchased at a local hardware store or on online marketplace.”</p>
7. In line 159 you group all who experienced the trainer into one percentage, whereas everywhere else you divide them individually (e.g. line 156). Please change to one convention for ease of understanding.	<p>7. Thank you for pointing this out.</p> <p>Line 156 “Six residents (100%), four fellows (100%) and seven attendings (100%) agreed the laparoscopic platform is useful for improving and practicing laparoscopic skills”</p> <p>Has been changed to</p> <p>“All participants agreed that the laparoscopic platform is useful for improving and practicing laparoscopic skills”</p>

	<p>Line 159 “All of the residents, fellows and the attendings (100%) felt that if available they would use it. “ and “All of the residents, fellows and the attendings (100%) felt that if available they would use it. “</p> <p>Has been changed to</p> <p>“All participants agreed that the laparoscopic platform is useful for improving and practicing laparoscopic skills and felt that if available they would use it.”</p> <p>And similar stylistic changes were made to that paragraph.</p>
8. The discussion could be considerably condensed for efficient reading. Also, several things are unnecessarily repeated (e.g. line 187-189).	8. Thank you for your suggestion. Changes made.
9. Consider word choice in line 204 ("tinker") and perhaps choose a more formal term.	9. Thank you for your suggestion. Changed “tinker with” to “work with”.
10. The photographs and supplements are very useful but would need to be condensed for a Green Journal publication.	10. We are not familiar with rules about photographs and supplements in terms of amount of information presented and could not find such information in “Information for Authors document.” Please educate us and provide with suggestions on how to improve. We are happy to consolidate and revise accordingly.
Reviewer #2	
<p>Thank you for your contribution to the literature and to this journal. A few comments:</p> <p>The main concern about this manuscript is that although the authors spend the</p>	<p>Thank you so much for your encouragement, time and effort in reviewing our work.</p> <p>From our understanding of how simulation research is conducted, there is a flow to the</p>

<p>majority of the paper demonstrating and explaining the set-up of the model in detail, they fail to address the important and clinically relevant aspect of this model, which would be to assess its impact on resident training. For example, after this model was implemented, were FLS pass rates improved? Was there decreased resident/attending operating room time? Another use could be to assess the long-term practice models for residents who graduate from the program and to determine whether or not they would be able to independently perform laparoscopic procedures with the use of this model.</p>	<p>progression of events that generally happens. Firstly, there is a proof of concept (how and why), the initial work (category into which this publication fits). Secondly, there is the validation work of assessment tools if none exist or testing of how existing validation tools apply to the novel trainer. Finally, we then study performance in simulated and clinical setting and do research on outcomes. The process is long and a lot of work goes into each step. In our opinion, an attempt to combine all steps into one would be close to impossible to achieve. Moreover, it may not be desirable to do it all in one step given that you have to re-evaluate and make modifications as you go along. Finally, this project fits into the Instruments and Procedures format, while if we were to design a study like Yang's, it would fit into original research category.</p> <p>Please see a few examples below of Instruments and Procedures publications of similar proof of concept studies:</p> <p>1. Modified Beef Tongue Model for Fourth-Degree Laceration Repair Simulation. Illston JD, Ballard AC, Ellington DR, Richter HE. Obstet Gynecol. 2017 Mar;129(3):491-496. doi: 10.1097/AOG.0000000000001908.</p> <p>2. Obstet Gynecol. 2017 Oct;130(4):873-877. doi: 10.1097/AOG.0000000000002241.</p> <p>Interactive Pelvic Anatomy Model: A Tool for Teaching Basic Pelvic Anatomy. Advolodkina P¹, Chahine EB.</p>
<p>There are few grammatical and spelling errors throughout the manuscript.</p>	<p>Reviewed and corrected</p>
<p>Line 148 - describe the usability and acceptability survey more in depth. Is</p>	<p>Survey was created by the authors and has not been studied in the past.</p>

<p>this a validated survey? Perhaps it would be helpful to provide a sample of what the questions were.</p>	<p>For more clarity, sentence “A usability and acceptability survey was administered to a sample of faculty and trainees” Has been changed to “ A usability and acceptability survey created by the authors was administered to a sample of faculty and trainees.”</p>
<p>Lines 151-163 - Adding pre and post scores for feedback would be beneficial. Younger learners (i.e. first year residents) can also project and track their progress throughout residency.</p>	<p>Please clarify what you mean by “pre- and post-scores” as there are several ways to conduct this: confidence and usability surveys, performance scores in simulation, etc. We could mention this as research ideas for future study if you think it will add to the paper.</p>
<p>Line 189 - what is the purpose of using the instruments with the naked eye?</p> <p>It does not simulate the use of laparoscopy and may "tempt" the learner to look down</p>	<p>Rationale is described in depth in discussion:</p> <p>“First, it can be used with a laparoscopic tower to learn camera driving and targeting and it allows for further task breakdown to learn skills without having to look at the monitor while learning them. Such simplification allows the learner to work on tasks without the struggle of learning to interpret 2-dimensional screen image from a 3-dimensional surgical field, one of the major challenges of laparoscopy. Once proficiency is reached on a task by looking at the target object with the naked eye, the next step would be to do the same in the trainer with the use of the camera and monitor. After mastery of the tasks without the use of the camera, the platform can then be used to practice the FLS skills with the camera. We found this approach to be especially useful for FLS manual skills tasks 3, 4, and 5.”</p> <p>“Temptation” concern is addressed in discussion:</p> <p>“One of the limitations of this platform is that the open nature may cause learners to</p>

<p>and may diminish the full effect of laparoscopic training.</p>	<p>look down at the working space and surgical field rather than at the monitor since there is no cover to simulate the abdominal wall. In order to address this issue any drape, sheet, or cover can be used to simulate an abdomen dome to make sure the trainees are not inadvertently looking at the platform and not the screen. In our experience, we found this cover unnecessary because all trainees were looking at the monitor after initial orientation to the model when instructed to do so.”</p> <p>This is a valid concern, but we found that because it is used to break down complex tasks into simpler ones, it actually helps residents learn faster and shortens their learning curve. This might be a subject of future work.</p>
<p>Overall, this paper provides an interesting model for laparoscopic training, however without validation studies or following a pre and post education survey, it has limited utility in area of laparoscopic simulation training.</p>	<p>Thank you so much for your encouragement!</p> <p>We agree with the reviewer that further validation work is needed to understand how best to utilize our platform, but that type of work is not appropriate for pilot proof of concept work which is what we think this paper is.</p> <p>Thank you for sharing Yang (Surgical Endoscopy) and Roedner (AAGL abstract, not a peer reviewed published work) references with us.</p> <p>From our understanding of how simulation research is conducted, there is a flow to the progression of events that generally happens. Firstly, there is a proof of concept (how and why), the initial work (category into which this publication fits). Secondly, there is the validation work of assessment tools if none exist or testing of how existing validation tools apply to the novel trainer. Finally, we then study performance in simulated and clinical setting and do</p>

	<p>research on outcomes. The process is long and a lot of work goes into each step. In our opinion, an attempt to combine all steps into one would be close to impossible to achieve. Moreover, it may not be desirable to do it all in one step given that you have to re-evaluate and make modifications as you go along. Finally, this project fits into the Instruments and Procedures format, while if we were to design a study like Yang's, it would fit into original research category.</p> <p>Please see a few examples below of Instruments and Procedures publications of similar proof of concept studies:</p> <p>1. Modified Beef Tongue Model for Fourth-Degree Laceration Repair Simulation. Illston JD, Ballard AC, Ellington DR, Richter HE. Obstet Gynecol. 2017 Mar;129(3):491-496. doi: 10.1097/AOG.0000000000001908.</p> <p>2. Obstet Gynecol. 2017 Oct;130(4):873-877. doi: 10.1097/AOG.0000000000002241.</p> <p>Interactive Pelvic Anatomy Model: A Tool for Teaching Basic Pelvic Anatomy. Advolodkina P¹, Chahine EB.</p>
The video summary of the simulation training is helpful in showing how to set up this trainer, however, the setup with gathering of all the supplies seems cumbersome.	Too “cumbersome” to “tinker” is a number one complaint with low-cost simulation, esp. for those who can either afford expensive trainers or hire someone to pay for assembly or to modify trainers to fit their needs. In our opinion, one size does not fit all, so this platform offers options to those who need them.
While there are other low-fidelity models using cardboard boxes that are easier to assemble, I question how this	In our opinion, our model is very different from cardboard box due to its versatility. Cardboard box is limited to one very narrow

model adds to the learner's training experience.	type of training. Our model fits into many different settings. Our paper describes this versatility in detail. The model also allows multiple learners to practice at the same time increasing access and time on the simulator as well as easy ability to move the board and transfer between training sites.
Reviewer #3	
Over all the idea and implementation are very good. Any method of getting more accessible skills training is good. Did you consider submitting part of this separately as a video as I think real time use of the model would be best demonstrated that way?	Thank you for taking time to review our work. Please clarify what you mean by submitting it separately as a video. We included a video in our submission. We have also presented the video at AAGL annual meeting during an educational video presentation session.
Introduction: Can you detail briefly the skills tested in the FLS curriculum? Many of us out more than 5 years and not in academic or teaching practice may not be aware of this curric.	Unfortunately, there is not enough space due to word count to do so. Would it be of help to refer the reader to the official FLS website which describes them in detail? We could include a reference to this if you think it would be helpful.
Did you use ideas from these previously describes systems to create yours?	Our ideas for this model did not come directly from the studies that were referenced in the paper but they certainly paved the way. To put simply, our commercial box trainer broke down and our hospital could not pay to replace/repair it, so we started to brainstorm on what to do and realized that we don't like being confined to the box dimensions to begin with and would simply want something to support instruments in 3D space, in places that could be modified for surgeon style and procedures. Eye hooks were a random hardware store find and worked out great. The rest of the process was looking for durable, replicable, cheap and easy to assemble parts.
Methods:	We considered getting rid of the description all together given photos and supplement

You can shrink the description significantly by referring to the photos included and using a table of materials.	but decided against it due to concern that reader would be disoriented to the rest of the points we made without that brief portion.
Can you describe how you designed your acceptability survey? Did you validate it? What parameter or research were used to determine how to ask the questions?	Survey was created by the authors and has not been studied in the past. For more clarity, sentence “A usability and acceptability survey was administered to a convenience sample of faculty and trainees” Has been changed to “ A usability and acceptability survey created by the authors was administered to a sample of faculty and trainees.”
Did you consider looking at before and after scores or time to train for FLS test as a quantitative measure of the trainer's success?	Please clarify what you mean by before and after scores. We plan to conduct further study of how this trainer shortens the learning curve of FLS tasks. However, given that there is no data on what actual learning curves are for FLS in gyn residents, we ended up deciding to conduct a separate learning curve study for FLS for GYN residents first. This study is currently in progress and beyond the scope of this paper. We added the following sentence to the discussion to try to address this point. “Comparative effectiveness studies of low-cost trainers such as ours to official FLS box trainer would be of particular interest due to cost considerations and lack of commercially available compatible products.”
Experience: First paragraph belongs in methods.	Thank you for catching this mistake, moved to methods as suggested.
Your results do not represent a 5 point likert scale, was there a distribution across the 5 points? You present these results as if they were Y/N. A figure or graph might better represent your results. Did you consider any comparative statistics?	We considered presenting this data in more detail, including the graphical configurations you mention, however, we decided against it. Given that the overall response was positive, the authors and the statistician felt that it did not add any more

	useful information to what was already presented and would take up space.
Discussion: Over all you address points well, I would spend more time on how you would assess mastery of laparoscopic skills.	Assessment of laparoscopic skills is a very hot topic and controversial topic in surgical education and is beyond the scope of this work.
I think the descriptions of other homemade systems could be done in a table or addendum	We did discuss this but decided that a summary of existing models is not the focus of our paper and felt it would detract from our main aim. It would belong more to a review article on a topic of simulation.
EDITORIAL OFFICE COMMENTS:	
1. OPT-IN: Yes, please publish my response letter and subsequent email correspondence related to author queries. 2. OPT-OUT: No, please do not publish my response letter and subsequent email correspondence related to author queries.	1. OPT-IN: Yes, please publish my response letter and subsequent email correspondence related to author queries.
12. The Journal's Production Editor had the following to say about the figures in your manuscript: "Figures: Figure 10 is missing from Editorial Manager. Please remove the A, B, and C labels from the images. These will be added back per journal style."	Figure 10 is uploaded. Done