

Using the ADDIE Model to Create an Online Strength Training  
Program: An Exploration

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Dissertation submitted to the faculty of the Virginia Polytechnic Institute  
and State University in partial fulfillment of the requirements for the degree  
of

Doctor of Philosophy  
In  
Curriculum and Instruction  
(Instructional Design and Technology)

John K. Burton, Chair  
Brett Jones  
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March 26, 2014  
Blacksburg, VA

Keywords: ADDIE model, instructional design, psychomotor skills, online  
learning, online strength training

**MEMORANDUM**

**DATE:** October 22, 2013  
**TO:** John K Burton, Rebekah Lyn Brook  
**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)  
**PROTOCOL TITLE:** Viability of Safely and Effectively Teaching Strength Training with Free Weights Using Online Methods  
**IRB NUMBER:** 13-885

Effective October 22, 2013, the Virginia Tech Institutional Review Board (IRB) Chair, David M Moore, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

**PROTOCOL INFORMATION:**

Approved As: **Expedited, under 45 CFR 46.110 category(ies) 6,7**  
Protocol Approval Date: **October 22, 2013**  
Protocol Expiration Date: **October 21, 2014**  
Continuing Review Due Date\*: **October 7, 2014**

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

**FEDERALLY FUNDED RESEARCH REQUIREMENTS:**

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Date*	OSP Number	Sponsor	Grant Comparison Conducted?

\* Date this proposal number was compared, assessed as not requiring comparison, or comparison information was revised.

If this IRB protocol is to cover any other grant proposals, please contact the IRB office (irbadmin@vt.edu) immediately.

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## RE: Use of Resistance Training Manual Videos

1 message

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**Keith Cinea** <keith.cinea@nsca.com>  
To: "brore652@vt.edu" <brore652@vt.edu>

Tue, Sep 24, 2013 at 2:09 PM

Bebekah,

Thank you for your email. The NSCA grants you permission to use the video exercises requested from the Exercise Technique Manual with modifications for the purposes of your requested study.

If you have any further needs, please contact me.

Keith

**Keith E. Cinea, MA, CSCS,\*D, NSCA-CPT,\*D**

**Publications Director**

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**From:** Rebekah Brook [<mailto:brore652@vt.edu>]  
**Sent:** Tuesday, September 24, 2013 2:16 PM  
**To:** Receptionist  
**Subject:** Use of Resistance Training Manual Videos

Hello,

My name is Rebekah Brook. I'm a Phd student at Virginia Tech and I am currently working on a research study developing online instruction for four free weight movements (back squat, flat barbell bench press, barbell dumbbell curl, lying barbell tricep extension). The premise of my study is to look at the viability of teaching safe

and effective movements without a strength coach present.

I have been using resources from the NSCA to develop the online instruction and to create assessment rubrics for the study. In developing the instruction an important part is the video of the correct movements.

Is it possible for me to use the video footage on the DVD of "Exercise Technique Manual for Resistance Training" in the instruction? If this is possible, is it okay for me to alter the video to include lines etc. to show correct body positions?

The video will only be used for the instruction that will be seen only by the researchers and the participants for this study. Obviously, the video will clearly be credited as coming from the NSCA.

I greatly appreciate the resources you have available that have helped me so far with my study and I would be extremely grateful if I could directly use the videos from the manual.

Thank you so much for your time. I look forward to hearing from you.

Rebekah Brook

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Rebekah Brook

Instructional Design and Technology PhD Candidate