

**From:** Neal Finkelstein <nfinkel@wested.org>  
**Sent:** Monday, June 11, 2012 1:03 PM  
**To:** What Works  
**Cc:** Thomas Hanson; Kevin (Chun-Wei) Huang  
**Subject:** Error in Report: WWC Review of Problem Based Economics

**Importance:** High

Dear WWC team:

Thank you for sending me the embargoed copy of the Problem based Economics Report this morning. It is scheduled for release today.

In the judgment of the authors, it is incorrect and we need your assistance immediately to review the report, and hold the release until we are clear on the WWC approach and conclusions. Admittedly, we've only had a few hours to review the WWC finding; more time is needed before the conclusion is released.

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In any case, we look forward to your acknowledgment of this email request, and information on next steps.

Regards,

Neal Finkelstein  
WestEd

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**From:** "What Works" <whatworks@mathematica-mpr.com>  
**To:** "Neal Finkelstein" <nfinkel@wested.org>  
**Sent:** Monday, June 11, 2012 7:00:39 AM  
**Subject:** WWC Review of Report

Dear Finkelstein:

We are emailing to inform you that a What Works Clearinghouse (WWC) Single Study Review of your report, "Effects of Problem Based Economics on high school economics instruction," will be posted on the WWC website tomorrow, 6/12/2012. As part of this process, we are sharing with you a courtesy copy of the review (attached as a PDF to this e-mail). **This Single Study Review is embargoed until tomorrow, 6/12/2012, at 10am Eastern Time and cannot be circulated until that time.**

To learn more about WWC Single Study Reviews, you can visit the WWC website at:  
<http://ies.ed.gov/ncee/wwc/>.

Because of the volume of correspondence the WWC receives, questions regarding WWC reports and Single Study Reviews should be submitted to the Help Desk at [info@whatworks.ed.gov](mailto:info@whatworks.ed.gov). Your questions will be forwarded to the appropriate staff member on the WWC team and you will receive an e-mail response.

Sincerely,

The What Works Clearinghouse Team

**From:** Neal Finkelstein <nfinkel@wested.org>  
**Sent:** Wednesday, June 13, 2012 1:00 PM  
**To:** WhatWorks  
**Cc:** JConstantine@mathematica-mpr.com; nfilby@wested.org; Tom Hanson  
**Subject:** Re: Error in Report: WWC Review of Problem Based Economics (WWC 3699)

**Importance:** High

Dear What Works Clearinghouse Quality Review team:

Thank you for your ongoing attention to the concerns raised on Monday about the release of the Single Study Review of Study 3699, Problem-based Economics. I was surprised and disappointed to see that the single study review was released on-line, after we agreed on Monday, June 11 (see below) that a Quality Review for the study was required.

I am asking for your help to:

- 1) Immediately take down the posting of the Single Study Review for this study.
- 2) Explain why the author was given just 24 hours before the public release date to work with the Clearinghouse to review a single study release?
- 3) Understand how the published findings of an IES released (SRO reviewed) study could be contradicted on its most fundamental conclusion (that impacts for students are significant) without any explanation for the contradiction?

As we begin to work on the resolution of the problem in the longer term, the following information may be helpful to you:

As indicated in our final report approved by IES in 2011, our impact analyses were based on the most inclusive sample who had non-missing posttest scores. Because of missing data on covariates included in the model, we imputed those missing data using the missing-indicator method. In order to examine the robustness of the impact findings based on the most inclusive sample, we conducted a series of sensitivity analyses in which models were estimated with different combinations of baseline covariates for different analytic samples (samples resulting from listwise deletion method were also included). We summarized and discussed the findings of these sensitivity analyses in Appendix I of the report.

Among the findings, on page 91 we particularly indicated that the results based on a sample of students with no missing data on covariates showed the most variation in impact estimates (both in terms of point estimates and the corresponding standard errors, as reflected in the 95% confidence interval). This observation holds for both student outcome measures. Therefore, given concerns about internal validity and sample selectivity, we do not understand why the WWC Single Study Reviewers would use this substantially smaller sample (about 1000 cases less than the most inclusive sample) to estimate and determine the program impacts.

Of course the judgment on which sample to use and why is neither explained, nor disclosed as in direct contradiction to the review standards in place by IES through the Standards and Review Office.

As it stands, IES has posted two publications that are in direct contradiction on the most fundamental finding: significance on student-level impacts.

I look forward to hearing back from you on next steps.

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WestEd

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**From:** "WhatWorks" <What.Works@icfi.com>  
**To:** nfinkel@wested.org  
**Cc:** JConstantine@mathematica-mpr.com  
**Sent:** Monday, June 11, 2012 2:39:32 PM  
**Subject:** RE: Error in Report: WWC Review of Problem Based Economics (WWC 3699)

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Thank you for contacting the What Works Clearinghouse (WWC).

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**From:** WhatWorks  
**Sent:** Monday, June 11, 2012 5:40 PM  
**To:** 'nfinkel@wested.org'  
**Cc:** JConstantine@mathematica-mpr.com  
**Subject:** RE: Error in Report: WWC Review of Problem Based Economics (WWC 3699)

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**From:** WhatWorks  
**Sent:** Thursday, June 14, 2012 12:28 PM  
**To:** 'Neal Finkelstein'  
**Cc:** JConstantine@mathematica-mpr.com; nfilby@wested.org; Tom Hanson  
**Subject:** RE: Error in Report: WWC Review of Problem Based Economics (WWC 3699)

Dear Dr. Finkelstein,

First, we apologize for not clarifying in our prior response that unless there was a clear error or mischaracterization, it is WWC policy to proceed with posting the report on the web site while it undergoes a Quality Review. If the WWC Quality Review Team determines the report contains errors or needs additional documentation, a revised report will be posted. We have forwarded the additional information in your latest email (dated June 13, 2012 at 12:00pm) to the Quality Review team for their consideration during the review.

It is WWC policy is to send a copy of a report to an author 24 hours before it is released on our website. The report is sent as a courtesy, so that the author is not surprised by the release. The 24-hour period is not designed as a quality assurance check – the report has already been reviewed through a WWC quality assurance process, by IES, and by an independent peer reviewer. However, if the author disagrees with the WWC's findings or characterizations, and submits those concerns in writing, we have the Quality Review Team in place to review the report in light of those concerns. Our goal is for a quick assessment by the Quality Review Team. You will receive a letter with their assessment of the report's quality, specifically addressing the concerns that you raised, and a determination of whether and how the WWC will revise your report.

WWC reports should identify how the WWC's findings differ from the findings stated by the author(s). If the Quality Review Team believes the report should include additional or more prominent discussion of differences, the report will be revised as quickly as possible.

Thank you,

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**From:** Neal Finkelstein <nfinkel@wested.org>  
**Sent:** Wednesday, March 20, 2013 4:00 PM  
**To:** What Works  
**Subject:** Re: What Works Clearinghouse (QR2012011)

Dear What Works team:

Thanks very much for your letter today, and the careful review of the initial SSR. We're pleased to see that the quality review process was implemented carefully, and that the SSR will be updated to reflect the new conclusion of the review team.

We'll continue to review the handbook that the WWC has released to make sure our analyses are consistent with current review standards.

Quick question: will the revised SSR be re-released from the WWC? It seems only fair that the results of a positive finding would be released to broad distribution, as was the original SSR last year.

Regards,

Neal Finkelstein

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**From:** "What Works" <whatworks@mathematica-mpr.com>  
**To:** "nfinkel@wested.org" <nfinkel@wested.org>  
**Sent:** Wednesday, March 20, 2013 6:50:20 AM  
**Subject:** What Works Clearinghouse (QR2012011)

Dear Dr. Finkelstein,

Attached is a response to the questions you raised in your message regarding the What Works Clearinghouse Single Study Review of *Effects of Problem Based Economics on High School Economics Instruction*.

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**From:** WhatWorks  
**Sent:** Thursday, March 21, 2013 10:43 AM  
**To:** 'nfinkel@wested.org'  
**Subject:** RE: What Works Clearinghouse (QR2012011) (WWCPC 3699)

Dear Dr. Finkelstein,

Thank you for your patience. The revised SSR will be included in a monthly email blast.

What Works Clearinghouse

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**Sent:** Tuesday, May 14, 2013 10:17 PM  
**To:** 'nfinkel@wested.org'  
**Subject:** RE: What Works Clearinghouse (QR2012011) (WWCPC 3699)

Dear Dr. Finkelstein,

The revised Problem Based Economics SSR is live and available on our website at <http://ies.ed.gov/ncee/wwc/singlestudyreview.aspx?sid=10006>. This SSR will be announced in the monthly SSR newflash from the WWC that goes out at the end of May.

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**Attachments:** QR2012011.pdf

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Thank you for your inquiry concerning the WWC Single Study Review (SSR) of *Effects of Problem Based Economics on High School Economics Instruction*. In response to your emails, we conducted an independent quality review to address the concerns you've raised. The WWC quality review team responds to concerns raised about WWC reviews published on our website. When a quality review is conducted, a researcher who was not involved in the initial review undertakes an independent assessment of the studies in question. The researcher also investigates the procedures used and decisions made during the original review of the studies. These quality reviews are one of the tools used to ensure that the standards established by the Institute of Education Sciences (IES) are upheld on every review conducted by the WWC.

The quality review found that an error had been made in the characterization of study findings. Specifically, the quality review concluded that the findings from the study should be characterized as a statistically significant positive effect. Regarding the application of multiple comparisons corrections and the use of subsample with non-missing data on all covariates, the quality review found that the procedures used and decisions made for the SSR followed the standards established by IES. The remainder of this letter provides further information on the findings of the quality review. The WWC standards and procedures can be found in the WWC Handbook ([http://ies.ed.gov/ncee/wwc/pdf/reference\\_resources/wwc\\_procedures\\_v3\\_0\\_draft\\_standards\\_handbook.pdf](http://ies.ed.gov/ncee/wwc/pdf/reference_resources/wwc_procedures_v3_0_draft_standards_handbook.pdf)) and in the WWC review protocol for single study reviews ([http://ies.ed.gov/ncee/wwc/pdf/reference\\_resources/ssr\\_protocol\\_v2.pdf](http://ies.ed.gov/ncee/wwc/pdf/reference_resources/ssr_protocol_v2.pdf)).

Regarding the concern expressed in your initial email with respect to the domain structure of the outcomes and authors' corrections for multiple comparisons, the quality review found that the original WWC reviewers followed WWC procedures in using the Benjamini-Hochberg adjustment (see the WWC Handbook, page 23 and Appendix G). Specifically, the quality review concluded that it is appropriate to consider the two outcomes (the test of economic literacy and the performance task assessment score) within the same domain of student knowledge of economics. Thus, the SSR appropriately relied on the adjusted *p*-values. The quality review noted that the SSR is consistent with the study in this regard: the adjustments calculated by the WWC reviewers are consistent with the adjusted values reported in the study and the study emphasizes these adjusted values in reporting the main results.

Regarding your concern that the WWC reported findings from an alternative subsample and not the primary analysis sample used by the study authors, the quality review found that using the alternative subsample is required to meet WWC standards. Specifically, the study had high cluster-

level attrition of teachers: 64 teachers were initially assigned to each condition, but only 35 intervention teachers and 29 comparison teachers had students that were included in the student-level analyses. Under WWC procedures, a study with this level of attrition must establish baseline equivalence of the treatment and control groups in the analysis sample in order to receive a rating of “Meets Standards With Reservations” (see the WWC Handbook, pages 10-14).

In response to a WWC query, the authors provided the original WWC reviewers with information based on a pretest that established baseline equivalence for two subsamples: students with complete pretest information and students with complete covariate information. However, it was not possible to establish baseline equivalence for the primary analysis sample used by the study authors because it included students with incomplete baseline pretest information. Therefore, following WWC procedures, the SSR reports findings from one of the subsamples for which baseline equivalence was established. At this time, the WWC does not accept analyses that include imputation of covariates. Therefore, we used the sample with full covariate information as the focus of the review. Regarding your concern that the SSR does not explain clearly the reason that the WWC reports results from the alternative subsample, the quality review team recommended that the SSR be revised to include this explanation.

Regarding the finding of “no statistically significant effect,” the quality review found that an error had been made in the application of the rules for characterizing study findings. Table IV.2 of the Handbook (page 24) describes the characterization of findings of an effect based on multiple outcome measures. Even though the levels of assignment and analysis are not the same in this study, clustering is accounted for in the analysis. Therefore, the study should be considered to have a properly aligned analysis with multiple outcome measures. The findings can thus be described as fitting the following criteria: univariate statistical tests are reported for each outcome measure and at least half of the effects are positive and statistically significant and no effects are negative and statistically significant. Therefore, the findings from the study should be characterized as a statistically significant positive effect.

Based on the findings and recommendations of the quality review, we will be revising the SSR to change the characterization of study findings and include an explanation for the WWC focus on the alternative subsample rather than the primary analysis sample used by the authors. I hope that this letter has addressed your concerns. If you have other concerns, please do not hesitate to contact the WWC through [info@whatworks.ed.gov](mailto:info@whatworks.ed.gov).

Sincerely,



Jill Constantine  
Director, What Works Clearinghouse

cc: Joy Lesnick, IES



# What Works Clearinghouse **WWC**

A central and trusted source of scientific evidence for what works in education.