

Preliminary Results of a Study of the Institute for Quality Science Teaching's 2018 NGSS Course

Research and Evaluation Executive Summary

Goal

The purpose of this study is to examine changes in teachers' attitudes and behaviors towards three-dimensional instruction after participating in the Foundations of NGSS Curriculum Alignment course offered by MSI's Institute for Quality Science Teaching (IQST).

Why

Teachers need guidance to (re)develop their classroom pedagogy to better align with the Next Generation Science Standards. To address this need, IQST staff has facilitated a course for teachers to (1) gain information about a new type of instruction ("3D learning") that the new science standards demand and (2) develop strategies relevant to the process of 3D unit/lesson planning for a next generation science classroom.

What

Most 3D-focused professional development programs offer resources for use in the classroom. This program gives teachers a process they can use to continually refine/develop their units/lessons using the 3D framework.

Who

The study measures changes of teachers and administrators participating in the Foundations of NGSS Curriculum Alignment course run by the IQST team. This study was funded by the Carnegie Foundation.

How

- Teachers were given pre-surveys prior to the start of the course and will complete a post-survey after the final professional development session.
- IQST staff recorded changes they made to facilitation during and between sessions.
- Research and Evaluation staff observed two professional development sessions and took structured notes using an observation rubric.

When

Data collection is still ongoing. Pre-surveys were collected and analyzed right after the start of the course in 2017 and post-surveys will be collected and analyzed between March and May 2018. Observation notes of the first four professional development sessions have been collected and coded. Observation notes for the fifth and final session will be coded by the end of March 2018. Facilitators' notes will also be coded by the end of March 2018.

Results

Research and Evaluation staff collected pre-surveys from 54 participants, representing 12 schools. Seven were administrators and 47 identified as teachers.

The study is not completed. Thus far, major findings include:

- We found no statistical difference between the administrator and teacher groups on the pre-survey.
- The observation rubrics and field notes helped the IQST team develop a model around the NGSS program (see Fig. 1).

Future Implications

We expect that once we collect post-survey data, findings from this study will show how the IQST process of unpacking 3D standards can promote 3D instruction in the classroom.

These results have been peer-reviewed. They were accepted for presentation at the 2018 International Conference of Learning Sciences and will be presented in June 2018 and published in their Proceedings.

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2/12/18

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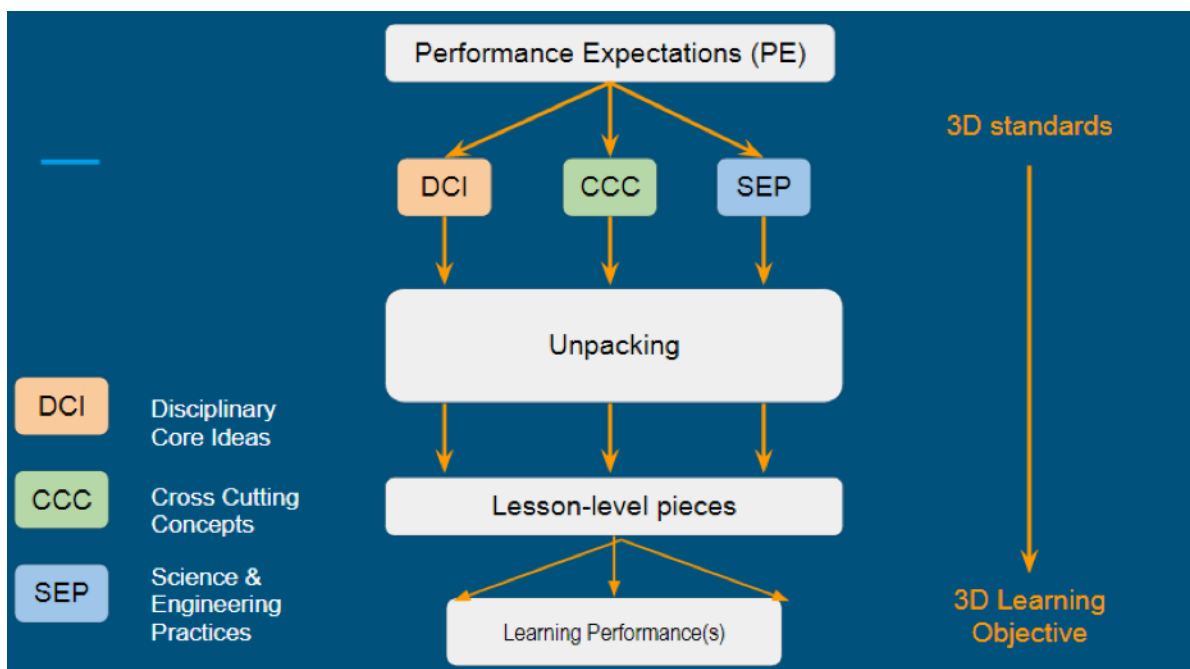


Figure 1. PD model to explain unpacking process. Developed by IQST team with feedback from this study.