Intel Teach® Essentials 10 Unit Plan Assessment and Classroom Implementation Study

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EXECUTIVE SUMMARY

This report presents findings from evaluation research on the Intel® Teach Program's Essentials Course, version 10 (hereafter referred to as "Essentials 10"), conducted by the Education Development Center's Center for Children and Technology (EDC/CCT). Version 10 of the Essentials course has been updated to include Web 2.0 tools and places a larger focus on formative and summative forms of student assessment. Essentials 10 may be offered to participating teachers in one of two formats: face-to-face or hybrid formats. This evaluation investigated how teachers are incorporating the pedagogical concepts and tools from Essentials 10 into their unit plans and how they are implementing each version into their classrooms.

This study used two evaluation strategies: (1) an analysis of 42 unit plans produced in the Essentials 10 training; and (2) 12 participant teacher interviews about the implementation of their units in the classroom. EDC researchers assessed all 42 unit plans on six core aspects that Essentials 10 emphasizes: project approach; 21st century skills; unit question (curriculum faming questions); technology integration; assessment; and comprehensiveness of the unit plan. EDC researchers also developed an artifact-based interview protocol to gain further information from participant teachers on their unit plan and its implementation in the classroom. The interviews were performed face-to-face when possible or over the telephone.

Our research goal was to investigate how well the core aspects of the course were integrated in the unit plan and how teachers used their unit plan following course completion. Findings from this study suggest that the new Essentials 10 course was an effective professional development experience that successfully influenced teachers in promoting the use of new ICT tools and pedagogical practices. This evaluation found that Participant Teachers from Essentials 10 were using Web 2.0 tools to enter a new on-line environment to promote new interactions with students and to create interaction among students. Participant Teachers were also incorporating certain pedagogical concepts from the training into their unit plans and even more strongly in their classroom implementation. The unit plans showed a strong use of both formative and summative assessments and the interviews with Participant Teachers revealed a shift to include a greater variety of assessments, especially formative assessments and those aimed at 21st century skills. The impact found was consistent across the hybrid and face-to-face versions of the program as well as all grade levels.

Promoting the use of innovative and exciting new tools in education

Essentials 10 is an introduction to the social networked world that is emerging on the Internet which teachers report finding both exciting and challenging. About half of the participants are incorporating Web 2.0 tools into their lesson plans.

The fact that Essentials 10 is many teachers' first encounter with the novel world of social networking was a crucial factor that shaped much of the program's impact on educators. As an initial experience in a multi-lineal, interconnected, online environment, the experience was both exciting and confusing for participants. A number of the participants interviewed talked about the program creating new, innovative learning experiences for teachers themselves, one that

immersed them in the world of their students. These participants felt that the "web-infused" and "social networked" nature of the course was pushing teachers to learn in new ways. One participant in the face-to-face training commented "the course really is an experience that forces teachers to shift their learning process/learning styles to be similar to those of the kids."

The evaluation suggests that the course was an opportunity for teachers to become familiar with an aspect of their students' lives that they may have found alien and to think about how it can support learning. For example, another teacher realized that having her students post comments on a wiki "was like breathing [to them], even though it was still out of my comfort zone." For these teachers, the course helped them create activities that aligned with at least one aspect of students' lives outside of school. Essentials 10 did not require that teachers use Web 2.0 tools in their unit plans, but nearly half of the unit plans we evaluated attempted to incorporate some of the four tools presented in the course (i.e., wikis, blogs, googledocs, social bookmarking). Given that the Web 2.0 tools and the socially networked world they support were so new, even small uses of Web 2.0 tools in the classroom may lead to additional use and increased excitement around them.

When used effectively, the Web 2.0 tools promote positive shifts in the class environment, peer relationships, and student-teacher relationships.

From the interviews with teachers who were using the new Web 2.0 tools, it was evident their use of the tools helped break down the classroom walls and extend the students' and teacher's relations and conversations outside the class. These teachers had created wiki sites and blogs that supported many different student activities, not just a single lesson plan or unit. Teachers were using wikis for students to post work, organize activities or to undertake activities extending throughout the entire semester. In some of the examples we saw, the wiki was not the end of a process or a "final product," but information that supported an on-going learning process.

Teachers also commented that the wikis facilitated student group work on projects because it reduced the amount of face-to-face meeting time students needed and allowed students to share work on the project asynchronously. By using the wiki to post and share evolving project work, student teams were able to monitor and support each other's progress without needing to constantly meet face-to-face. It was also easier to view the work of other groups and communicate and share ideas to support others.

Promoting pedagogical change

Teachers are integrating many of the assessment strategies and ideas discussed during the Essentials 10 course.

The new version of Essentials received positive responses regarding the pedagogical content, the strongest being an increased focus on issues of assessment. In addition to encouraging teachers to incorporate pre-assessments, formative assessments and summative assessments, the course also offers a tool for teachers to create their own assessment rubrics. The evaluation suggests that teachers responded well to the assessment resources; of 42 unit plans, formative assessments for monitoring student progress were included in 83% of the units and 95% of the units included

content-based summative assessments. In interviews, participants reported experimenting with new assessment strategies they learned about in the training. Participants often made comments like the following: "I found the assessment aspects very useful. As I was looking back at what I had done previously I started rethinking all my assessments – the ones I used really did not assess what I thought I was assessing."

Hallmarks of effective professional development

The unit plan design process is an effective professional development strategy.

The evaluation findings suggest that the professional development strategy of asking teachers to create a unit plan in training is effective in deepening teacher competency because it extends teachers; reflections on the course content into their classrooms. Comparisons of the quality of the unit plans created in the training and the quality of the actual implementation in the classroom found that the quality of the unit was higher in the implementation suggesting that the learning process continues after the training itself through the use of the unit plan. Indeed, participants specifically discussed how the unit plan they developed in the training was a way to bridge the gap between the theory presented in the training and the applied world of their classrooms. Participants reported that the training introduced them to new concepts and technologies; that the unit-plan design process helped them think through the pedagogical uses; and the unit plan guided them through actual experimentation in the classroom.

The hybrid format and the face-to-face format produced unit plans of similar quality.

The evaluation did not find significant differences between unit plans from eithet format. The unit plan scoring process resulted in an average Kappa value (for inter-rater reliability) of 0.884, indicating strong reliability and accurate scoring. The analysis of those scores comparing unit plans from the hybrid versus the face-to-face version did not find statistically significant differences in the overall scores. Only one sub-item, activities to support media and technology skills, was significantly higher for the face-to-face version over the hybrid version. These findings suggest that teachers who complete either format are likely to produce quality units. The high quality units were also consistent across all grade levels.