Chapter 6
Professional Development

Leadership

Policy

Professional Development

Research & Evaluation

Student Success

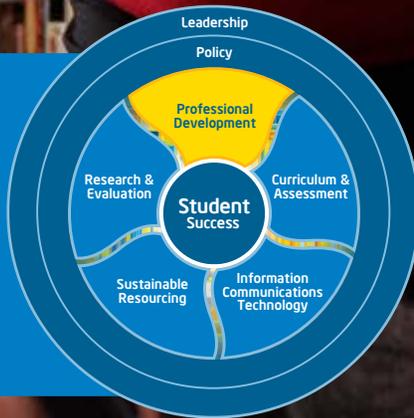**Curriculum & Assessment**

Sustainable Resourcing

Information Communications Technology

Project RED Professional Learning Findings

School leaders and teachers will need a tremendous amount of support to transform their instructional practice. Professional learning for both teachers and school leaders, therefore, is one of the most essential elements to improving the quality of a school system.

Project RED ultimately found that creating successful 1:1 programs and raising achievement comes down to improving the learning experience of students in their classrooms. Using traditional textbooks and a direct instruction pedagogy (lecture and testing) is not a very effective method of maximizing the potential of every student.

"The quality of an educational system cannot exceed the quality of its teachers"

(McKinsey 2007).

Key Implementation Factor #2 states that school leaders must provide time for teacher professional learning and collaboration at least monthly. KIF #9 states that school level leaders must be trained in facilitating second-order change and the best practices that lead to technology-transformed learning.

Several models can guide teacher practice and help education leaders create metrics to measure the levels of transformation. These include:

All of the stakeholders involved in the initiative should become members of the free online Project RED Community (www.projectred.org). The web site provides resources around leadership, project planning, transformational change, inquiry-based instruction, as well as acting as a professional learning community through participation in RED Hub and the Project RED forums.

- The LoTi* model is a conceptual framework that measures levels of technology implementation. The data gleaned from the LoTi assessments and walk-throughs can assist districts in restructuring their staff's curricula to include concept/process-based instruction, authentic uses of technology, and qualitative assessment. More information can be found at www.loticonnection.com.

- Ruben R. Puentedura's Substitution Augmentation Modification Redefinition (SAMR) Model offers a method of seeing how computer technology might affect teaching and learning. It also shows a progression that adopters of educational technology often follow as they progress through teaching and learning with technology. More information about the model can be found at SAMR Model Explained for Teachers.

East Noble School Corporation (Indiana, U.S.) incorporated the SAMR Model within their teacher evaluation process. Principals use the rubric shown on the next page to observe and provide support and feedback to teachers regarding their use of technology for learning and teaching.

The following quotes show principals in East Noble Schools find great value in employing the rubric for setting expectations and providing guidance regarding specific learning and teaching behaviors:

To download this global toolkit, resources, and learn more about Intel's support of the Project RED work, please visit intel.com/projectred

"The RISE rubric illustrates to teachers what's important and how to improve their performance, much the same way as a classroom rubric helps students. Having technology standards as part of the teaching rubric demonstrates a high level of commitment, and sets a common expectation."

—*Steve Peterson, Principal , East Noble*

"The technology indicators in RISE clearly define the level at which we wish for students ...and teachers to be using technology. Teachers can use that information to help plan lessons that integrate technology at the higher levels of SAMR which in turn increases the rigor and relevance in what we ask students to do to demonstrate their learning."

—*Karen Gandy, Principal, East Noble*

East Noble School Corporation (Indiana, United States) RISE Rubric

COMPETENCY	HIGHLY EFFECTIVE (4)	EFFECTIVE (3)	IMPROVEMENT NECESSARY (2)	INEFFECTIVE (1)
Competency 2.10 Using Technology in Instruction	The teacher serves as a guide, mentor, and model in the use of technology. The teacher encourages and supports the active engagement of students with technology resources. The teacher facilitates lessons in which students are engaged in higher order learning activities that may not have been possible without the use of technology. The teacher helps students locate appropriate resources to support student choices. The teacher's personal technology skills level exceeds the levels needed to support the grade level tech curriculum.	The teacher guides, informs, and provides a setting for student choice of technology activities and is flexible and open to student ideas. Lessons are structured so that students use of technology is self-directed. Teacher encourages students to use technology collaboratively. The teacher provides a context in which technology is seamlessly integrated into a lesson. The teacher's personal technology skills level does support the grade level tech curriculum.	The use of technology is completely teacher driven. The teacher chooses which technology activities to use and when to use them. The teacher may be pacing the students through a project, making sure that they each complete each step in the same sequence with the same tool. The teacher may be the only one actively using technology. This may include using presentation software to support delivery of a lecture. The teacher may also have the students complete "drill and practice" activities on computers to practice basic skills, such as typing. The teacher directs students in a conventional use of technology for working with others. The teacher's technology skills level supports some of the grade level tech curriculum.	The teacher rarely or never uses technology to deliver information to students. The teacher's technology skills level does not support the grade level tech curriculum.
Competency 2.11 Technology Integrated into Learning Environment	Students are empowered to extend the use of technology and have greater ownership and responsibility for learning Students regularly use technology activities to set goals, plan activities, monitor progress, and evaluate results. Students have the freedom to choose. Students regularly use technology for collaboration, to work with peers and experts irrespective of time zone or physical distances. Activities are at the redefinition level the computer allows for the creation of new tasks that would otherwise be inconceivable without the use of technology, i.e., collaborative writing.	Students regularly use technology, and are comfortable in choosing and using the tool(s) in the most meaningful way for each activity. The students know how to use, and have access to, a variety of technology resources. Students are given guided choices in use. Technology use for collaboration by students is regular and normal in this setting. Activities are the modification level— the computer enables the redesign of significant portions of a task, i.e., a writing task is enhanced by sound, video, etc.	The setting allows for the possibility of group work, and at least some collaborative technology activities are available. Students are using technology in simple ways and the teacher is in control of its use. Activities are at the augmentation level— the computer replaces another activity, with significant functionality increase, i.e., the assignment is not changed, but perhaps some of the built in tools such as the thesaurus, word count, or spell check might be used.	The setting is arranged for direct instruction and individual seat work. The students may have very limited and regulated access to the technology resources. Activities are at the substitution level— the computer stands in for another activity without a significant change in the activity, i.e., typing instead of handwriting.

Professional Learning vs. Training

The most effective professional learning is ongoing, collaborative, integrated with job-related practice, and provided in an environment of continued support. The collaborative aspect of this type of professional learning is based on peer communities of practice, where participants work from a shared vision and common goals, while still meeting their individual learning needs. Effective programs include a cycle of improvement in which school leaders and teachers have an opportunity to learn something new, discuss with colleagues effective ways to implement the new learning, try it in their school or classroom, collect data, and then review the experience with colleagues and make adjustments for further implementation. An ongoing cycle like this is one of the most effective ways to achieve continuous improvement.

This is very different from traditional, isolated training experiences. Most professional organizations now delineate between training and professional learning. Teacher training refers to one-time or short-term training that is intended to develop specific technical skills. It is important, for example, for the teachers in a 1:1 laptop program to understand how to use the technology. A teacher doesn't need ongoing training to understand how to use the functions of the computer, but the fact that the training is short-term doesn't diminish its importance.

Professional learning, or professional development, refers to a more systematized, continuous, coherent process of teacher development. The focus of these programs may vary depending on the needs of teachers and school leaders, but must be administered in the context of a shared vision and common goals. These professional learning experiences can take place face-to-face, be facilitated online, or be provided through an assortment of blended methods.

CASE STUDY

Connected Student Project: Pernambuco, Brazil

Get students **excited** about science

Enable even non-science-trained teachers to **engage** students in rigorous experiments

Government **cost-effectively enhances** science education

In 2012, the state of Pernambuco became the first in Brazil to implement 1:1 eLearning to enhance the knowledge and the performance of its students through the alignment of pedagogy and technology. Their Connected Student project is integrating technology into students' daily school and home life, changing teachers' attitudes and pedagogy, and creating a new student-centered dynamic in education across the state.

"In this joint effort with Intel we are training teachers not only on how to use the tools, but also on the new methods that are already at work in other countries. Teachers make a major difference in the use of computers, and we are training them to use them better," said Ricardo Dantas, Pernambuco State Secretary of Education.

This is part of a bigger purpose, which is to improve the state of Pernambuco's Basic Education Development Index (IDEB), which should reach 4.5 by 2020. Education leaders and policy makers took a centralized approach to professional learning. They realize that the education transformation they desire could not come about without transforming teacher practices.

"In this joint effort with Intel, we are training teachers not only on how to use the tools, but also the on the new methods that are already at work in other countries," said Dantas. The training mentioned by Dantas is seeing fast results. For the English teacher Klenie Synara Ramos da Silva, the technology constitutes a powerful teaching tool that allows for the constant use of interactive activities.

"We work on a certain topic and then we pass to an interactive activity in order to practice that topic. Students can then follow their scores in the activities they have just completed," Ramos de Silva said. She believes that computers are becoming an important foothold for students to explore the world. As she puts it, the technology "represents the students' insertion in a globalized world."

Download this Case Study

Watch the Video

Regardless of the delivery method, quality professional learning must go beyond software and hardware training. Professional learning must provide ongoing opportunities to learn, experiment, and collaborate, as well as to collect and use data to make decisions. It is only when this approach is made systemic that incremental and continuous improvement to the educational system can be guaranteed.

Turning Research Into Practice Recommendations: Professional Development

Professional Development Recommendations for Centralized Education Systems

1. Create a national comprehensive professional learning project plan.
2. Train key Ministry of Education staff on the following items:
   – Project RED Design
   – Second-order change leadership
   – All hardware and software solutions that will be implemented
   – Individualized and personalized instruction
3. Map out a train-the-trainer model that develops enough regional trainers to train and support all the teachers.
4. Identify and train trainers well in advance of the technology implementation in schools. Continue to identify high-quality teachers that can be developed as trainers as the program expands.
5. Train school leaders in the Project RED Design, second-order change, transformational leadership, and the best practices surrounding 1:1 implementation.
6. Roll out devices to teachers and provide basic hardware and software training several months before the student technology rollout.

7. Begin ongoing professional learning for teachers that revolves around the creation of inquiry-based lesson plans that are based on the system's content standards and effectively integrate technology.
8. Provide training and professional learning opportunities for school leaders and teachers through a variety of face-to-face, online, and blended delivery methods.

Beyond the professional learning model outlined above, there are a few other policies and laws that centralized systems can enact for quality assurance purposes:
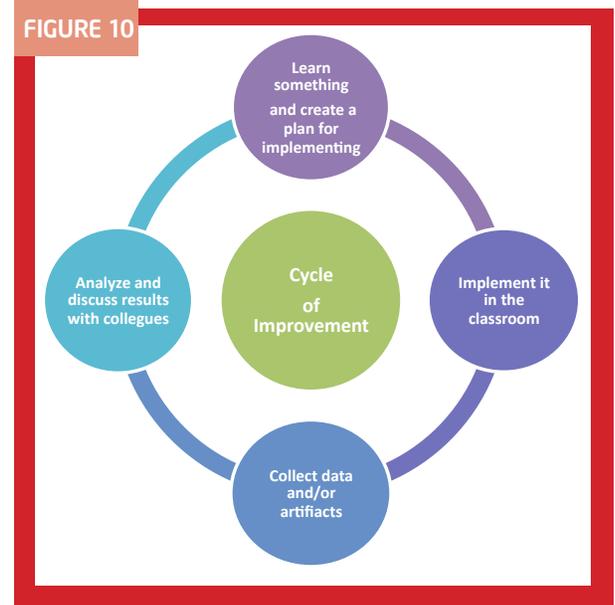
- Create teaching standards and associated accountability measures.
- Create teacher certification/accreditation, and mandate that all teachers must be certified.
- Mandate that a portion of a teacher's work time be used to collaborate in a professional learning community (See the Cycle of Improvement Figure 10).

Mandates for ongoing professional learning for teachers and school leaders are important. Expectations for continued growth and improvement of practice should be monitored, recorded, debriefed, and built upon each year.

Professional Development Recommendations for Decentralized Education Systems

1. Central government should provide school leaders with a professional learning model and recommendations that include the components of the Project RED Design.
2. Provide school leaders with Project RED's data about the importance of principal training and transformational leadership.
3. Provide conditional funding to schools for professional learning. These conditions should include recommendations 3-8 listed above for centralized systems.
4. Create a nationwide virtual network for the delivery of professional learning.
5. Create a national virtual library to house the curriculum, lesson plan samples, and other resources.

FIGURE 10

Learn something and create a plan for implementing

Implement it in the classroom

Cycle of Improvement

Collect data and/or artifacts

Analyze and discuss results with collegues

Professional Development Recommendations for Centralized and Decentralized Systems

- Use data and research to drive the design of professional learning programs, as well as to ascertain the effect of such programs on the system goals. Then, use that information to inform continuous improvement of the professional learning offerings.
- Provide time, resources, incentives, and requirements, which engage all educators/teachers in formal and informal professional learning that meets high-quality, established standards, and is aligned to system goals.
- Provide options in the type, duration, pedagogy, location, medium, and formality of professional learning, and differentiate within professional learning offerings to meet the participants' needs.
- Establish and support teacher engagement in both local and global professional learning communities.