4) Provide effective professional development

One cannot assume that our K–12 teachers have either the 21st century skills or the natural capacity to change their teaching methods simply upon demand. Only through professional development and with the support of school leadership can these changes in the classroom occur. Professional development provides educators with the skills and knowledge necessary to cross the bridge to the 21st century. Leadership at the district and school level must provide the motivation for change.

Technology implementation is enhanced when teachers are trained by "seeing, demonstrating, and practicing" methods. Effective models are promoted teacher to teacher and in small clusters of professional educators who come together as communities of learners connecting with trained facilitators. ("State of Maine," 2001, p 23).

A well-planned, ongoing professional development program that is tied to the school's curriculum goals, designed with built-in evaluation, and sustained by adequate financial and staff support is essential if teachers are to use technology appropriately to promote learning for all students ("Critical Issue," n.d.). Online staff development, courses, models, expectations and best practices for teachers and administrators should be a part of this plan.

"At the heart of our laptop program is a firm commitment to teacher training. Embracing the concept of a learning community means giving teachers the skills and tools they need to be effective."

Mark A. Edwards,
Superintendent of Schools,
Henrico County, Virginia

Individual tutoring, peer coaching, collaboration, networking, and mentoring have been used successfully over extended periods to help teachers at all levels of technology implementation develop technology applications that promote engaged learning. Teachers at the novice stage who need to develop basic computer skills will require more individual attention and should be given ample time to practice their skills. If learning by doing is important for students, it is crucial for teachers. As teachers begin to regard technology as a tool to accomplish instructional goals, they will learn best when engaged in meaningful projects that relate to their own classrooms. Appropriate individualized support from peers as well as experts encourages teachers to experiment with new strategies for technology use. Teachers should have the option to participate in the type of workshops, seminars, and online professional communities that will help them use technology effectively. Time for independent study, experimentation, and curriculum development is also important.

❑ **Guiding principle:** Successful professional development:

- must be held on a continuous basis
- provides mentors, coaches, or peer teammates to model appropriate integration strategies in actual classrooms
- gives teachers feedback on their own performance
- holds teachers accountable for implementing instructional strategies and student learning