

2. Cost considerations of online programs

Five broad categories of costs exist for online programs:

1. **Management**—includes administrative personnel, travel, supplies, office furniture and equipment, facilities, insurance, legal, postage, marketing, public relations, recruitment, and strategic planning.
2. **Instruction**—includes instructional personnel, professional development, travel, instructional supplies and materials, assessment/test preparation, contracted services, and software licensing.
3. **Course Development**—includes costs associated with developing or purchasing new courses and maintaining or redoing existing courses.
4. **Technology Set Up**—includes computers and office set-ups for all staff members, computers and connectivity for students, the Learning Management and Student Information Systems, and networking hardware, software, and connectivity.
5. **Technology Personnel**—includes all non-management personnel dedicated to technology, software licenses for all non-instructional staff, and contracted services.

Major cost variables

The cost of operating online programs vary based on numerous factors. Some of these apply primarily to one type of program, while others apply equally to both types. Key variables include:

- **Program governance:** Where the program is housed and how it is governed affects cost. State-led programs can be housed within the state education agency and district programs within the district office either physically, administratively, or both. This can reduce duplication of resources and expense across the state, and allow the online program to take advantage of agency offices and services, such as general counsel, public relations, and office space, often at reduced or no cost to the program.
- **Teacher salaries:** Salaries make up a large percentage of overall program costs; therefore, relatively small changes in salary levels can have large impacts on total costs.
- **Student-teacher ratio:** Because instruction costs are a large percentage of total costs, the student-teacher ratio is a key driver of overall costs—the more teachers you employ per student the larger your budget.
- **Student population:** Costs change significantly as the percentage of students needing special services increases. A school serving a higher percentage of special education, English as a Second Language, or at-risk students is going to cost more per pupil than one that serves fewer students that require such services.
- **Degree of at-home vs. on-site computing:** Costs vary based on whether the students are taking courses within a brick-and-mortar classroom, at home, or from some other location, because additional staff members are needed to support students taking a course at a physical

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school. Whether to offer courses at a physical location such as the local school is a key consideration for equity of access in many states where many students do not have Internet access at home. However, in increasing access you also increase costs.

- **Course completion rates:** Course completion rates vary by program, and many programs have a non-completion rate of 25% or more. A per-student funding model based on the number of course completions must take into account the cost of support and instruction to students who do not complete their courses.
- **Quality assurance, research and development:** Programs have different types and levels of quality assurance, research into effective online pedagogy, and development of course content and other resources. All of these can be costly factors for a program that chooses to put significant resources into them.
- **Program size and economies of scale:** As virtual schools increase enrollment, the percentage of total expenditures spent on instruction and technology equipment increases while the percentage of total expenditures in other areas decreases (management, technology personnel, curriculum development and maintenance). Economies of scale are not as significant as one might imagine, however, because such a large percentage of overall costs are tied to instruction, and per-pupil instruction costs remain constant. Large programs that have achieved some economies of scale can choose to invest in further research, new courses, and technology that benefit students and online education as a whole.
- **Program growth:** A growing program will tend to have higher costs than a non-growing program, if other variables are constant. This is because growing programs will typically be investing in new courses, new technologies, teacher recruitment, professional development, and other costs.

Cost estimate for online programs

Costs fall into two categories, start-up costs and ongoing costs. Results from the PJ panels suggest that a new state-led supplemental program, designed to serve approximately 500 students full time equivalents, or provide 3,000 units of instruction in year one, will require about \$1.6 million to adequately fund start-up activities before providing instruction. This first year is used by the program to develop its educational program and infrastructure, and nearly 80% of start-up costs are in management and course development.

Post-startup operating costs are heavily dependent on the variables discussed above. The most significant variation in costs depend on where students take online courses (from home or school) and the characteristics of the students served (number of special needs students and the level of responsibility the school has for serving such students). As such, weighted funding to accommodate these variances is an area that should be considered by policymakers and is discussed in further detail in the section that follows on funding.

PJ panelists helped APA think through the resources required to adequately serve regular and special needs students. The cost for serving regular edu-