State Certification of PK-12 Computer Teachers

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INTRODUCTION

Nearly all 50 states acknowledge severe shortages of teachers in most academic content areas. The need for teachers is particularly great in math, science, special education, foreign languages, bilingual education, and technology (Kronholz, 1997). Perhaps the hardest content area to secure qualified classroom teachers is technology (Volk, 1997). Professional education preparation programs are taking on renewed vigor as state departments of education clamor to certify their PK-12 (Preschool/Kindergarten to Grade 12) classroom computer teachers.

Educator proficiencies and standards are typically adopted by a board of education that has been given responsibility for educator preparation programs and specific certification areas meant to address a relevant knowledge base and skills set. Preparation programs provide relevant field-based experiences in a variety of educational settings with diverse student populations, including observation, modeling, and demonstration of promising practices to improve student learning.

The certification process promotes professional development and guarantees a certain level of performance with respect to classroom computer instruction. Certification also strengthens technical skills by: (a) providing for the sharing and exchanging of ideas, instructional techniques, lesson materials, and classroom procedures for use in educational computing; (b) promoting general recognition of the vital professional role played by computer technology professionals and high level of competence required for this role; and, (c) promoting and encouraging appropriate use of technology for the improvement of instruction and educational technology management.

CLASSIFICATIONS OF TECHNOLOGY CERTIFICATION

At issue, the 50 states do not agree on how to certify classroom computer teachers. In fact, there are at least seven different certification areas approved for classroom instruction in technology. Some states require only an elementary or secondary instructional certificate to teach computers. Others certify their teachers in:

- Computer Science
- Management Information Systems
- Instructional Technology
- Computer Literacy
- Business Technology
- Business Education

STATEMENT OF THE PROBLEM AND METHODOLOGY

The purpose of this study was to determine current certification procedures for classroom computer teachers as approved and administered by the 50 state departments of education. Specifically, the study sought to answer the following question. What is the predominant certification area for the PK-12 classroom computer teacher in the United States?

A short survey (Figure 1) was sent via electronic mail to each of the 50 state departments of education in an attempt to contact a representative from the credentialing, licensing, certification division. Email addresses were chosen from the Council of Chief State School Officers web site seeking a state official responsible for teacher certification. Addressees were requested to complete the survey by replying to the email. If they were unable to complete the survey or if they were not the appropriate office for the response, they were requested to forward the survey to the proper certification office.

Dear State Teacher Certification Officer,

Below you will find 3 questions. We are in the data gathering phase of our research. All respondents will remain anonymous; replies with be identified only by state in the report. Copies of the final research paper will be available to all respondents upon request.

At this time, we are not interested in any other technology professionals category; only classroom computer teachers.

Initial Preparation Programs for K-12 Classroom Computer Teachers

1. The State of _____ certifies its K-12 (elementary and secondary) classroom computer teachers in …

___ a. Elementary or Secondary Education
___ b. Business Education
___ c. Computer/Information Technology
___ d. Instructional/Educational Technology
___ e. Other (please specify) _____

2. What skills/competencies/standards serve as the basis for developing the certification criteria for K-12 classroom computer teachers? If possible, please identify a link or attach a document file containing these criteria. You may select more than one alternative.

___ State standards   (URL: ___or File Attached Y N)
___ National standards (NCATE)(URL: _____or File Attached Y N)

___ International standards (ISTE) (URL: ____ or File Attached Y N)
___ Nat'l Bus Education Assc (NBEA)(URL: ___ or File Attached Y N)

___ Other:_____ (URL: _____or File Attached Y N)

3. If you would like a copy of the final research paper, please provide your email address here: _____ .

Thank you for your participation in this research study.

Of the 50 states contacted, 49 responded with a completed survey. Additional research was conducted for the remaining state using their department of education web sites to determine certification requirements. The results of the survey are presented in Figure 2.

FINDINGS

Certification Areas for Classroom Computer Teachers in the US (Figure 2). By far, most states rely on traditional teacher preparation programs to groom their classroom computer teachers. Others recognize multiple certification areas as suitable for classroom computers teachers. Some states certify teachers in one or more content areas. As a result, the numbers shown in Figure 1 do not necessarily total 50 states.

Well over half of the states (38 elementary and 33 secondary) do not recognize computer technology as a discrete area of concentration. For them, any certified elementary or secondary teacher in the majority of states can teach computers.

In other states, distinct certifications are required before entering the PK-12 computer classroom. Several states call for preparation in Computer Science, Management Information Systems, Instructional Technology, Computer Literacy, or Business Technology. Three states insist exclusively on a Business Education experience for both elementary and secondary computer teachers.

CONCLUSIONS

This study determined that the predominant certification area for the classroom computer teacher in the United States remains the traditional elementary or secondary certification. For well over half of the states, computer technology is not its own area of certification. It was also later determined that there exists at this time no accepted teacher examination in technology (at least not from the Educational Testing Service, publishers of the widely accepted Praxis examinations). In 38 of the 50 states, elementary-certified teachers teach computers; in 33 states, secondary teachers take on this responsibility. In other states, Computer Science, Management Information Systems, Instructional Technology, Computer Literacy, or Business Technology certifications prepare the classroom computer teacher.

FINAL REMARKS

The classroom computer teacher has taken on a host of new responsibilities since the advent of the multimedia computer, integrated productivity tools, and the World Wide Web. Many states address the increased skills set required of the successful computer teacher. While certification offers the most consistent and professional means of ensuring adequate teacher preparation, much effort lies ahead in the search for an acceptable and mutual set of skills and competencies. This study recommends future research, especially with respect to certification, standards, teacher preparation programs, and teacher and student assessment.

Figure 2. Results of Certification Areas By Elementary and Secondary Classification

Certification Areas Applicable to Computer Teachers	Elementary Education	Secondary Education
Elementary Certificate Only	38	
Secondary Certificate Only		33
Computer Science	10	16
Management Information Systems	8	12
Instructional Technology	6	6
Computer Literacy	7	7
Business Technology	6	11
Business Education	3	3

Note: Some states recognize multiple certification areas as suitable for classroom computers teachers. As a result, the numbers shown in the figure exceed 50 states.

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