

# PREPARING TOMORROW'S TEACHERS TO USE TECHNOLOGY GRANTS

## TITLE PAGE FORM

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This application should be sent to:  
U.S. Department of Education, No. 84.342A  
Application Control Center  
Room 3633, ROB 3  
Washington, D.C. 20202-4725

**1. Grant No:** P342A010094

**2. Duns Number**

**2a. TINS Number**

**3. Lead Organization Name:**  
**80%**

California County Superintendents Educational  
Services Association (CCSESA)  
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**5. Federal Funds Requested:**

1<sup>st</sup> Year \$498,992  
2<sup>nd</sup> Year \$475,371  
3<sup>rd</sup> Year \$479,741  
TOTAL \$1,452,635

**6a. Consortium Members (other than Lead): Number of Each**

   12 LEA         2 Institution of Higher Education  
   SEA         Other Nonprofit  
   Library         For Profit Firm  
   Museum         Other

**6b. Lead Organization Type:** Other Non-Profit

**7. Type of Grant**

A.  IMPLEMENTATION 84.342A  
B.  CATALYST 84.342B

**8. Are you participating in another application?**

No  Yes Name of Applicant \_\_\_\_\_  
A.  IMPLEMENTATION      B.  CATALYST

**9. Duration of Project:**

Starting Date: 6/1/01 Ending Date: 5/30/04  
Total Number of Months: 36

**10. Target Population: Number of Future Teachers**

**Directly Benefiting from the Project:**  
Year 1        Year 2        Year 3        Total       

**11. Application Title**

**The Teaching and Learning Interchange Project**

**12. Brief Abstract of Application: (Do not leave this blank.)**

The Teaching and Learning Interchange project will develop a research-informed model for supporting Pre-Intern classroom teachers to acquire both subject matter competence and knowledge of teaching pedagogy. The interchange content will be aligned with California's K-12 student academic content and teacher performance standards. The TLI will use web-based technologies and video streaming as the medium for distributing content-based instruction, inquiry into effective classroom practice through case study, and as a medium for facilitating access to new teacher mentoring.

The Teaching and Learning Interchange project will develop an online community of practice to support pre-intern classroom teachers in the acquisition of subject matter competence, knowledge of teaching pedagogy, and classroom management strategies. In collaboration with many of California's 58 county offices of education (who support school district administration of pre-intern programs overseen by the CTC) the TLI program content will be aligned with California's K-12 student academic content and teacher performance standards. The design will be informed by current research into new teacher development and will use web-based technologies and video streaming as the medium for distributing instruction, facilitating inquiry into effective classroom practice through case study, and to provide access to new teacher mentoring.

**13. Certification By Authorizing Official:**

The applicant certifies to the best of his/her knowledge and belief that the data in this application are true and correct and that the filing of the application has been duly authorized by the governing body of the applicant.

Name \_\_\_\_\_ Title \_\_\_\_\_ Telephone \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

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## **ABSTRACT : Teaching and Learning Interchange**

The state of California, along with many other states in the nation, faces a severe and debilitating shortage of qualified teachers to staff K-12 classrooms (the California shortage is projected to 300,000 over the next ten years). To help address this shortage, California has: established an extensive series of state-funded alternative routes to teacher certification and raised teacher preparation and credentialing standards.

Currently, California has more than 30,000 “emergency” permit teachers in classrooms as the teacher of record, with a preponderance of them serving the most challenging student populations – “poor, rural, and ethnic- and language-minority students”. These teachers are the most in need of intensive support in the form of coaching, mentoring, and access to resources on content, pedagogy and the use of technology tools, organized for easy access and immediate applicability.

Because of this tremendous need, the demand for trainings and mentor teachers far exceeds our ability to supply appropriate veteran expert teachers. County and District offices and our IHE partners have found providing duplicative, multiple classes on site severely draining on available resources. Further, the time involved in gathering already overburdened teachers together is prohibitive.

This project will focus, therefore, on developing a research-informed model for using technology as a medium for providing content-based instruction, inquiry into effective classroom practice, and facilitating access to mentoring. We will be piloting the use of web-based technologies and video streaming as a pedagogical tool to help California's “Learn to Teach” candidates meet with their mentors, explore effective methods for teaching, and for infusing technology into the teaching and learning process.

With the California County Superintendents’ Education Services Association (CCESA) providing leadership and the Super Committee providing design and project oversight, the partners will be aligned and focused on the goal of providing extensive support to California’s emergency credentialed teacher

# The Teaching and Learning Interchange Project (TLI)

## I. SIGNIFICANCE OF THE PROJECT

### • **Magnitude or Severity of the Problem to be Addressed:**

The state of California, along with many other states in the nation, faces a severe and debilitating shortage of qualified teachers to staff K-12 classrooms (the California shortage is projected to 300,000 over the next ten years). To help address this shortage, California has established an extensive series of state-funded alternative routes to teacher certification and raised teacher preparation and credentialing standards. In addition the state has:

- fully funded a two-year induction program for all first and second year teachers in the state
- funded a range of "grow your own" Paraprofessional Teacher Training Programs
- funded incentives for teachers to work in low-performing schools and to work towards National Board Certification; and
- funded six statewide teacher recruitment centers.

This still isn't enough, however, to meet the demand for "highly qualified, competent and caring" teachers in every classroom, particularly when so many classrooms are staffed with individuals from alternative routes to certification. **Currently, California has more than 30,000 of these "emergency" permit teachers in classrooms as the teacher of record with a preponderance of them serving the most challenging student populations – "poor, rural, and ethnic- and language-minority students".** The same students who are most in need of well-prepared teachers to help to meet California's ambitious standards for student learning.

California's teachers need both content preparation and pedagogical preparation in order to earn a teaching credential. **A formidable hurdle for most alternative certification teachers is obtaining and demonstrating sufficient content knowledge, especially related to our state's adopted K-12 academic content standards, to pass a required initial licensure exam (known as the "MSAT", or Multiple Subjects Assessment for Teachers, for elementary teachers, and "SSAT," or Single Subjects Assessment for Teachers, or PRAXIS, for secondary teachers).** Because these underqualified teachers are responsible for the education of

K-12 students right now, before they have acquired the requisite knowledge and pedagogy skills, we have an urgent need to provide them with high quality and intensive subject matter preparation so that they can address with competence their K-12 students' learning and achievement needs.

Once emergency permit teachers have passed this hurdle, they may enter a program to obtain a preliminary teaching credential. As part of this program, the alternative certification teacher needs to meet California's newly-adopted Technology Standards for teachers which requires them to demonstrate competency with technology tools and facility with designing, teaching and assessing technology infused lessons. Completion of a California Commission on Teacher Credentialing (CCTC) approved preliminary teaching credential program entitles these individuals to continue their professional development towards a professional level credential through the state's fully funded two-year induction program, the Beginning Teacher Support and Assessment Program (BTSA).

Supporting individuals through California's *Learn to Teach* continuum (see illustration in Appendix 9) described above has tended to be labor-intensive, requiring countless hours of effort from personnel working with teachers at each level of the process on a one to one basis at each of California's 1,024 local school districts. Our approach has heretofore has included providing locally-available classes, and assigning specially trained mentors or coaches to each "mentee" where possible. However, **the demand for mentor teachers far exceeds our ability to supply appropriate veteran expert teachers. County and District offices and our IHE partners have found providing duplicative, multiple classes on site severely draining on available resources.**

The innovative alternative delivery credential program CalTeach - the California Center for Teaching Careers, was established by the California state legislature to recruit qualified individuals to the teaching. It has taught us that through wise and well-thought out uses of technology, we *can* expand the ability of mentor teachers to work with larger numbers of

alternative certification teachers and we can increase the capacity of the system to reach alternative certification teachers with appropriate training.

To assure the state of our ability to successfully prepare the numbers of teacher required to meet the demand in the next 10 years, California needs to develop a systemic, scalable alternative delivery process for teacher professional development across the “Learn to Teach” continuum that is accessible to teachers when and where they are available to learn, provides effective mentoring of teacher candidates and delivers standards-based curriculum and pedagogy instruction.

This project will focus, therefore, on developing a research-informed model for using technology as a medium for providing content-based instruction, inquiry into effective classroom practice, and facilitating access to mentoring. We will begin with supporting the most needy population of new teachers in our system, California's alternative certification candidates in accordance with our adopted K-12 student academic content standards, so that these candidates are able to pass the state's licensure exam in the area of content knowledge.

At the same time, we will be piloting the use of web-based technologies and video streaming as a pedagogical tool both to help California's “Learn to Teach” candidates explore first-hand effective methods for infusing technology into the teaching and learning process. They will have ample opportunities to apply this knowledge in their own classrooms as they work with K-12 students helping them achieve California's adopted student academic content standards. These units and lessons will help them develop the knowledge and skills necessary to meet California's adopted Technology Standards for teachers. Over time, we will collect these lessons, correlate them to both content and teaching standards and make them available via the project for viewing.

This project has national significance, as it can serve as a model for many other states that are also facing the challenge of supporting alternative certification candidates measure up to ever-higher state licensure and certification standards. California has statewide, technology-

based online teacher preparation coursework available for teacher candidates Alternative certification candidates who lack subject matter knowledge and technology application knowledge need access to the same type of statewide quality instruction and training. Through this grant, we will build a parallel, technology-based online system to help alternative certification candidates gain crucial subject matter and technology applications knowledge and develop their pedagogical abilities to infuse technology into their K-12 lesson plans for the benefit of all of California's students.

- *Specific Gaps or Weaknesses in Services, Infrastructure, or Opportunities*

**(a) Lack of coherent, standardized approach to meeting the subject matter competency needs of alternative certification candidates statewide, along with**

**(b) Lack of sufficient local capacity, and/or duplicative efforts to meet the subject matter competency development of alternative certification candidates:** California's local school districts and County Offices of Education (regional entities that serve local school districts with technical assistance, budgeting and finance assistance, professional development opportunities, and other large-scale organizational initiatives) have been charged with the responsibilities of supporting the needs of alternative certification teachers with their subject matter training, while at the same time helping these teachers to survive as the teacher of record in the classroom. These districts and County Offices have been working diligently, but mostly in isolation, to develop materials to support all of the various new teacher programs in their jurisdiction, not only the alternative certification program. Across the state, teacher development professionals have been creating materials, videos and interactive courses to encourage and support teachers to reach high levels of subject matter expertise and instructional skill. And, although some of these highly localized new teacher resources have been put online, these products tend to be limited to use in the local, smaller demographic area, thus resulting in much duplication of effort.

Further complicating the process have been the efforts of several of California's current online resources, developed through California Department of Education funds, to extend their reach on a statewide basis. Instead of being user friendly, these resources each utilize differing user interfaces and database design structures across the content area(s) covered. This inconsistency creates the need for an alternative certification teacher who requires assistance with content knowledge to learn how to use at least four different search engines in order to locate and access State K-12 Framework and student academic content standards-based lessons and support materials.

Local universities also have been working with the districts and County Offices of Education to offer appropriate coursework. However, there has not been any cohesive or coherent effort to date to correlate and evaluate effective practices for delivery of content knowledge. Nor is there a coalition dedicated to utilizing innovative means to scale up access to these resources throughout the State. Although there have been several Title II HEA grants within in the state to develop video-based products to use for inquiry into effective practice and highlight exemplary practice, there currently is no effective, distributed delivery system for these resources. We need to come to a common agreement about the content of the subject matter training for alternative certification teachers, and reduce the duplication of effort for providing coursework and other professional development opportunities to alternative certification candidates, and the most effective way to do this in our geographically large state is through technology. TLI project will offer an opportunity for disparate and isolated efforts to be easily accessed through one central platform, the California Learning Interchange, begun under a prior implementation project.

**(c) Lack of sufficient mentor teacher capacity:** California has internalized the mounting research documenting the effectiveness of mentoring, and has institutionalized the practice of providing one to one mentoring for every new teacher in the state in each of its new teacher support programs, including the alternative certification program. Unfortunately, this

strongly supportive, research-based approach is highly dependent on having a sufficient cadre of trained and willing mentor teachers to meet the demand. California does not have enough of these veterans available for all our needs. One way to extend the ability of a given mentor teacher to work with more alternative certification teachers is through the use of distance technology, providing face to face contact for small groups of alternative certification teachers located in particularly distant or geographically isolated areas of the state, or in areas where the numbers of underqualified teachers are overwhelming. This feature will be an integral part of the TLI project.

**(d) Lack of technology training for alternative certification candidates to qualify to meet new state technology standards for teachers:** California's new Technology Standards for teachers are just beginning to be incorporated into the state's 82 university-based teacher preparation programs, as well as into the alternative certification programs. To date, no local program has tackled the integration of technology training into the subject matter or pedagogical preparation of the alternative certification candidates. This project will provide that training, along with the integration of technology training into the alternative teacher candidate's pedagogical preparation, so that each alternative teacher candidate will be capable of meeting the state's Technology Standards for teachers as well as providing high quality, technology-enhanced lessons for K-12 students in accordance with California's adopted student academic content standards., using Apple's research-based Unit of Practice.

In order to address and remedy the gaps and weaknesses in our support and preparation system for alternative certification candidates, we have formed a powerful and effective statewide collaborative of partners. These are:

•*The California County Superintendents' Education Services Association (CCSESA)* is the lead non-profit agency for TLI and represents County Offices of Education statewide. CCSESA will serve as fiscal agent. Six individual partner county offices have signed letters of

intent to participate in TLI: Alameda, Santa Cruz, San Joaquin, Kings, Ventura and Los Angeles.

They will provide essential services key to the success of TLI:

- Selection of K-12 district partners
- Ensuring that standards for participation in the project, including access to Internet services, computers and other tools can be provided by either the COE or the participating districts.
- Coordinate technology training and implementation activities within their school districts;
- Contribute the services of staff developers well-versed in the issues of alternative certification teachers and in adult learning theory;
- Providing local skills-based and professional development training;
- Providing local and wide-area network infrastructure access, along with technical support
- Housing, maintaining (with the assistance of Apple) and supporting the use of leased video editing stations and equipment to scale up the video streaming gateway for the project participants' activities;
- ***Institutions of Higher Education (IHE)***: California colleges and universities currently

partner with their local school districts and County Offices of Education to provide subject matter and related pedagogical instruction for alternative certification teacher candidates. Their faculty will also participate in training to learn how to better integrate technology into their own instruction and classroom modeling. IHEs will also provide additional facilities, distance learning opportunities, and supplies/materials for technology activities. At least one IHE representative will work with the "Super TEAM" described below. Participating IHEs partnered with our TLI project include: California State University (CSU) campuses at Northridge, Dominguez Hills, Monterey Bay, Hayward, and Sacramento; the University of California campus at Los Angeles, and Chapman University.

CSU Monterey Bay in particular will play an integral part in the consortium. CSU Monterey Bay was a partner in the innovative CalTeach online pedagogy preparation program referred to in the narrative above. Although they lack the resources to undertake the parallel subject matter preparation program that this project will accomplish, they will nonetheless contribute their significant wisdom learned from "growing" and implementing the CalTeach online credential program. CSU Monterey Bay has also agreed to provide training labs and

housing for the planned week- long Summer Immersion Institutes and other meetings of the consortium partners (described more fully in the next section of the proposal).

- **Local School Districts (LEAs):** Local school districts have the primary responsibility for the quality and the work of the alternative certification teachers they employ. The school districts working with the TLI project will: contribute the services of staff developers well-versed in the issues of alternative certification teachers and in adult learning theory; Provide the requisite local internet access, computers and related tools to mentors and mentees. Contribute a representative to work with the "Super TEAM" described below.

- **Super TEAM (Teacher Education And Mentoring):** Under the direction of the California Commission on Teacher Credentialing and the Project Director, a "Super TEAM" will be formed from representatives from each of the partnering entities and other experts in the areas of teacher development, educational technology, learning theory, content knowledge, standards and research and adult learning, distributed education, case study, and video applications. Its mission will be to give advice on access issues, interface design, instructional content, and effective use of technology in support of the project goal and activities. The "Super TEAM" will also consider how each technology pathway included on the project portal adheres to state and national standards for teachers and core content materials. Policy for ensuring privacy and security for the project and standards of conduct will also be developed.

- **Apple** has a long and highly respected history of research into the use of technology to support and enhance education. We apply the principles of the Apple Classroom of Tomorrow "Evolution of Thought and Practice" continuum as a guide for training design (Entry, Adoption, Adaptation, Appropriation, Innovation..) Apple has made a strong commitment to this project by contributing a team of system engineers commissioned with facilitating seamless integration of the wide-area Akamai server array with the technologies used by our project partners LessonLab and EducationTalk. Apple has supported the development of many innovative learning resources, among them is the pilot project entitled **California Learning Interchange (CLI)**

currently housed on the UC Irvine campus. The current inception of the CLI will undergo a major refocusing under the guidance of the TLI project. It will become the portal for our work and will provide the engine for wide distribution of the video streaming and standards indexed databases for the content and pedagogy materials, Units of Practice, and other digital objects and courses our project may produce as it grows through the years.

Apple will make available the hardware and software and technical support needed to host this statewide-accessible online development system for alternative certification teacher candidates. Apple Staff Developers will be contracted to conduct the Summer Immersion Institutes at CSU Monterey Bay to provide project participants with training in producing technology-based resources

- ***LessonLab***, an additional contracted agency working with the project, grew out of the research of Jim Stigler at UCLA. Its mission is to understand and improve classroom teaching and learning through research, mentoring, video-based program development, and the application of online community-building principles and technologies. The LessonLab web-based engine includes online community tools and an integrated video time-coding system. It is an ideal platform upon which to base the subject matter preparation content for the alternative certification teacher candidates because it provides for interactive learning, follows a set organizational structure that allows alternative certification teachers to model their own lesson plans on this structure, and allows for on-line interactive assessments of progress through the curriculum.

- ***EducationTalk***, will be contributing the use of their advanced interactive Internet communications technology, making quality academic assistance and enrichment services available to participants everywhere. EducationTalk's web environment incorporates live, real-time video, audio, and data collaboration elements. These services include point-to-point (person-to-person) encounters or multi-point (more than one person) conferences. These

technologies allow for study sessions, Staff Development Seminars, Specialized Lecture Programs, and a Digital Video Library.

*•inResonance* will be a contracted agency working with the project to provide professional development and in-service programs for K-12 administrators and educators based on the best practices of teaching, learning and management in a technology enriched environment, and based on a technology-integration model lesson plan known as the "Unit of Practice." (see description below). InResonance is experienced in supporting the use of web-based communities, and will be providing additional onsite support to the County Offices of Education and school districts involved in the project and via online and other conferencing services implemented in the grant project.

*Gold Label Video* will be a contracted agency and will provide training in the use of video equipment for the purpose of observations and reflections of teaching practice. Gold Label will videotape its own training session for videostreaming on the CLI to eliminate the need for duplicated trainings and will act as video technical consultant to the project. This agency has created content, mentoring, project videos for education and has produced all of the training videos for Pacific Bell Telephone for over 15 years.

*WestEd* projects support teachers' career-long growth and development, beginning with preservice education and continuing with induction, inservice, and mentoring programs. Professional development efforts also address the learning needs of child-care professionals and professional developers themselves. A sampling of their work includes: Assessment and Standards Development Services Learning Innovations, National Center for Improving Science Education, Teacher Professional Development Program, Western Regional Educational Laboratory, and the Use of Case Study for Teacher Professional Development. With regard to technology, WestEd helps educators and students make full use of new technology in many aspects: From database design to creating online communities, from interactive textbooks to distance learning curricula. Among their largest efforts are projects that promote the power of

educational networks and that focus on improving technology use by disadvantaged schools and students.

*The California Council on the Education of Teachers (CCET)* is the professional organization for teacher educators in California. CCET holds semi-annual conferences and publishes journals and newsletters on teacher education. By offering these resources to help disseminate the activities and outcomes of TLI project, the CCET Board of Directors will provide a link to the diverse teacher education community in California and the nation.

## **II. QUALITY OF THE PROJECT DESIGN**

### **• Goals, Objectives and Outcomes are clearly specified and measurable.**

The overall goal of this project is to ensure through the focused and wise use of technology that every one of California's alternative certification candidates achieves the subject matter competency, technology application competency, and pedagogical competency necessary to attain a preliminary teaching credential in the state of California. This goal will allow us to provide a competent, caring, and qualified teacher in all of California's K-12 classrooms, one who can help improve the achievement of California's students in accordance with our state-adopted K-12 academic content standards.

In order to achieve this goal, the following project objectives will be carried out:

***Objective 1: By the end of the second project year, a fully-functional, statewide-accessible, non-duplicative, technology-based system of subject matter preparation will made available to California's alternative certification candidates and CTC endorsed programs for evaluation and piloting.***

**Activity :** Apple and LessonLab will collect subject matter content instructional plans from local education agencies, IHEs and online sources and redesign them into one cohesive system accessible on the California Learning Interchange. The Super Team will consult with the technology partners to review all content for quality and appropriateness based on current research and adult learning theory. This new system will include direct and inquiry-based instruction, models for application to the K-12 classroom, and Units of Practice developed by participants. The first year of the project will be spent collating and completing materials for the

site, creating the instructional design, and designing engineering structures and databases to allow all of the key partners to use the same portal for delivery of content.. The second year will be spent expanding the content materials across the learning curriculum and refining the user interfaces. Our third year will be spent developing connections to other statewide infrastructure initiatives currently in development transferring the project

**Measurement:** The California Learning Interchange (CLI) will house the alternative certification teacher development system which will be accessible to all TLI participants through individual licenses. EducationTalk and LessonLab will utilize the CLI system as a portal for delivery.

***Objective 2: By the end of the third project year, a minimum of 80% of participating alternative certification teacher candidates will have participated in technology-based subject matter preparation and will successfully pass the requisite subject matter competency exam(s) for teacher licensure purposes.***

**Activity:** Alternative certification teachers will log-on to the California Learning Interchange to extend their subject matter and pedagogical knowledge and to receive mentoring. They will complete periodic assessments as they move through the levels of content knowledge and keep reflective electronic journals of their teaching progress. They will participate in online study groups and web-based video cases.

**Measurement:** The success of the site will be measured by tests submitted by pre-interns who visit the site and complete the instruction and by the online imbedded assessment. The project evaluator will review the online embedded assessments. Local programs will measure improvements in teaching competencies through live observations of the alternative certification teachers as part of the employment review process each year and report the numbers of alternative certification teachers who have progressed to preliminary certification.

***Objective 3: By the end of the third project year, a minimum of 80% of participating alternative certification teacher candidates will have met the state's recently-adopted Technology Standards for teachers for licensure purposes.***

**Activity:** Apple and InResonance will train alternative certification mentors and candidates in effective and appropriate methods for integration of technology into the teaching and learning process using a research-based model called the "Unit of Practice" . The alternative certification instructors and mentors will implement their training with the "Unit of Practice" to serve as a model for alternative certification teachers to use in their own K-12 classrooms. Their mentors will then assist their trainees with implementing units of their own design.. This transfer of knowledge will provide the K-12 teachers with the practice they need to acquire the necessary preliminary technology skills for teacher certification.

**Measurement:** Alternative certification teachers will be observed for employment review annually by their school administrators. Demonstration of their technology skills will be measured in the observation and reported to CTC along with their other teaching progress. Units of Practice and samples of student work will be collected and disseminated via the CLI network.

***Objective 4: By the end of the second project year, each of the participating alternative certification candidates will have access through technology to an individual, experienced mentor teacher.***

**Activity:** The county office of education partners will match each alternative certification teacher with a mentor with regard to teaching environment but not location. The novice teacher will dialogue and observe with the mentor online through the use of text-based community building tools, video and video conferencing.

**Measurement:** The project evaluator will collect samples of these conferences from mentor-trainee pairs at different points along the project to discern the types of activities and dialogue taking place. A bi-yearly, pre and post-project survey regarding attitudes and

satisfaction with the mentoring activities will be collected from both alternative certification teachers and their mentors regarding the effectiveness, frequency and nature of the mentoring to improve the technical support and mechanisms and to determine the effectiveness and satisfaction of the participants with online mentoring..

***Objective 5: By the end of the third project year, a minimum of 80% of TLI Project participants ( alternative certification teacher candidates and their mentors) will demonstrate the ability to design and implement technology-enhanced K-12 student lessons in the classroom.***

**Activity:** Alternative certification instructors will assist the teachers and mentors with integrating technology into their lessons as they (a) learn how to apply subject matter content knowledge and (b) learn basic teaching practices. The "Unit of Practice" will provide the model for integration of technology.

**Measurement:** TLI participants will complete an online needs assessment before they begin progressive technology training sessions. The training sessions will be graduated for skill levels so that participants enter the training program at the appropriate level based on the Apple Classrooms of Tomorrow Initiative: Entry, Adoption, Adaptation, Appropriation and Invention. Even though the target population is novice teachers, they may already have technology skills that the program can build upon empowering them to be technology leaders at their school sites.

Instructors will observe Mentors in the first year and Mentors will observe the novice teachers four times each year to determine their progress in teaching effectiveness. Alternative certification teachers will also be monitored by their school administrators annually for their ability to use technology in their teaching practices. All Units of Practice and samples of student work will be collected. Some of these will be posted to the CLI so serve as exemplars for future work.

**III. ADEQUACY OF RESOURCES**

The consortium will provide all necessary support to the project in terms of facilities, equipment, and most supplies. The electronic portions of the project will be housed by the project partners in years one and two. In year three, the TLI hopes to move to a California infrastructure currently in development called CENIC, utilizing Internet 2 technology. Each of the commercial partners have been carefully chosen for their commitment to the research-base of this project and for their prior proven success in efforts of a similar nature. Each of our California educational partners have written strong letters of endorsement to the project; this includes the Superintendent of each County Office of Education on behalf of themselves and the districts they service, CSU Monterey Bay and the California Council on the Education of Teachers.

<b>PARTNER</b>	<b>PROJECT RELEVANCE</b>	<b>COMMITMENT / IMPLEMENTATION ASSISTANCE</b>
CCSESA California County Superintendents' Education Services Association	Statewide network of Superintendents providing leadership to County Offices of Education	Lead Organization Fiscal Oversight Member of SuperTEAM

<p>County Offices of Education:</p> <ul style="list-style-type: none"> <li>• Los Angeles</li> <li>• Ventura,</li> <li>• Kings,</li> <li>• San Joaquin,</li> <li>• Alameda,</li> <li>• Santa Cruz</li> </ul>	<p>Lead agencies for local implementation of alternative certification programs in conjunction with their IHE partners</p>	<p>Local fiscal agents for project implementation  Selection of partner LEAs for participation  Provide instructors, facilities, technical support and use of hardware to the project  Coordinate technology training and implementation activities within their school districts;  Contribute the services of staff developers well-versed in the issues of alternative certification teachers and in adult learning theory;  Providing local skills-based and professional development training;  Providing local and wide-area network infrastructure access, along with technical support  Housing, maintaining (with the assistance of Apple) and supporting the use of leased video editing stations and equipment to scale up the video streaming gateway for the project participants' activities  Representatives will be members of the SuperTEAM</p>
<p>LEAs</p>	<p>K-12 School Districts with primary responsibility for the quality and the work of the alternative certification teachers they employ</p>	<p>Contribute the services of staff developers well-versed in the issues of alternative certification teachers and in adult learning theory;  Provide the requisite local internet access, computers and related tools to mentors and mentees  Contribute a representative to work with the "Super TEAM" described below.</p>
<p>CSU Monterey Bay</p>	<p>CCTC accredited Institution of Teacher Education and designer of alternative delivery program CalTeach.</p>	<p>contribute significant learning from CalTeach implementation  Summer Immersion Institute host, providing training labs and housing for this week-long program delivered by Apple.  Provide access to online courses to support credential candidates in the project  Member of SuperTEAM.</p>

<p>Apple</p>	<ul style="list-style-type: none"> <li>•Technology company in the forefront of educational technology applications and services widely applicable to California school districts</li> </ul>	<p>Contracted to provide multilevel training to IHE and master/mentor teachers based on Unit of Practice and Evolution of Thought and Practice at Summer Immersion Institutes</p> <p>Contracted to provide system engineers dedicated to the CLI interface design and implementation</p> <p>Provides future-oriented training opportunities through ACOT program</p> <p>Technology planning Assistance including trouble-shooting, engineering, presentations, consultation and hosting seminars</p> <p>Costshare on leasing video streaming stations for each county office, Apple Learning Kits (software) and Apple Online Staff Development workshops.</p> <p>Grant Director workshops</p> <p>Locally hosted forums/chats</p> <p>Use of the California Learning Interchange engine/servers and the Akami video streaming network</p> <p>Two members on the SuperTEAM</p>
<p>LessonLab</p>	<ul style="list-style-type: none"> <li>• Teacher Development resource directed by UCLA Faculty member.</li> </ul>	<ul style="list-style-type: none"> <li>• Complete video production services for at least 2 classroom-based studies per year, including setup, filming, time-coding, transcribing and transfer to LessonLab video conferencing server</li> <li>• These production sequences themselves will be captured on video and transferred into online courses.</li> <li>• Four to six additional video studies will be time-coded, transcribed and transferred to LessonLab video conferencing server</li> <li>• Licenses for 75 users and 16 mentors for the LessonLab interface</li> <li>• Training and ongoing support for using the system in person and online</li> <li>• collaboration with Apple to seamlessly interface their system with the CLI</li> <li>• Member on the SuperTeam</li> </ul>

EducationTalk	<ul style="list-style-type: none"> <li>• Technology company in the forefront of video conferencing for educational applications</li> </ul>	<ul style="list-style-type: none"> <li>• Provides all video conferencing tools including cameras, mics, software licenses.</li> <li>• Technical support and engineering support</li> <li>• Use of online “pubs” where video conferences occur privately and in larger groups</li> </ul>
inResonance	<ul style="list-style-type: none"> <li>• Technology training for educators company</li> </ul>	<ul style="list-style-type: none"> <li>• Provides "basic" and "Common Core" level technology training to IHE faculty and master/mentor teachers</li> </ul>
California Council on Teacher Education	<ul style="list-style-type: none"> <li>• Disseminate the activities and outcomes of TLI project</li> <li>• Connect TLI with the teacher education community</li> </ul>	<ul style="list-style-type: none"> <li>• Assists with dissemination of project results and project replication</li> <li>• The CCET Board of Directors will provide a link to the diverse teacher education community in California and the nation</li> </ul>

#### **IV. QUALITY OF THE PROJECT EVALUATION**

The methods of evaluation will provide performance feedback and permit periodic assessment of progress toward project objectives. The design includes both formative and summative evaluation processes.

A Planning and Evaluation Committee will be formed to monitor project implementation and provide feedback to improve the project as it develops. This committee will consist of the project director, Apple Computer, Inc., LessonLab, a representative the fiscal agent, at least two representatives of other Consortium partners and the external evaluator. The committee will meet quarterly and as needed to review project progress toward the following criteria: 1) Implementation of project activities according to the specified timeline; 2) Yearly achievement benchmarks and objectives; 3) coordination of federal and Consortium resources; 4) capacity to maintain the program after federal funding; 5) effectiveness of Consortium management involving all partners; 6) dissemination of project objectives throughout the state and nation.

Based on Planning and Evaluation committee reviews of evidence supporting the above criteria, suggestions for project improvement and implementation modifications will be made. All modifications and assessment data will be reviewed in committee meetings. Regular reports will be made to all Consortium partners and an archive of reports and committee minutes will be maintained on the project web site accessible to all partners. Formal reports will be made at the end of each project year including assessment results and data analysis and description.

A modified cohort evaluation design will be used to assess the overall effectiveness of the project and the achievement of project objectives. Using this design, initial assessment data will be collected from each new group of candidates (cohort) as a baseline to measure post assessments in each subsequent year. Assessments will be based on enrollments, retention rates, completion rates, certification rates, and demonstration of skills required by project objectives.

### **Evaluation Management Plan**

Each Project Year, an Annual Report will be issued containing analysis and description of pertinent data on the activities of the Project and the progress toward meeting the objectives. Person Responsible: Outside Evaluator.

***Objective 1: By the end of the second project year, a fully-functional, statewide-accessible, non-duplicative, technology-based system of subject matter preparation will made available to California's alternative certification candidates and CTC endorsed programs for evaluation and piloting.***

**Activity :** Apple Computer and LessonLab will collect subject matter content instructional plans from local education agencies, IHEs and online sources and redesign them into one cohesive system accessible on the California Learning Interchange. The Super Team will consult with the technology partners to review all content for quality and appropriateness based on current research and adult learning theory. This new system will include direct and inquiry-based instruction, models for application to the K-12 classroom, and Units of Practice developed by

participants. The first year of the project will be spent collating and completing materials for the site, creating the instructional design, and designing engineering structures and databases to allow all of the key partners to use the same portal for delivery of content.. The second year will be spent expanding the content materials across the learning curriculum and refining the user interfaces. Our third year will be spent developing connections to other statewide infrastructure initiatives currently in development transferring the project

**Measurement:** The California Learning Interchange will house the alternative certification teacher development system which will be accessible to all TLI participants through individual licenses. EducationTalk and LessonLab will utilize the CLI system as a portal for delivery.

### **Evaluation Data for Objective 1**

Qualitative data on how non-duplicative, technology-based system of subject matter preparation including pedagogy and mentoring will be collected and described, including but not limited to candidate and Consortium partner interviews, online surveys and analysis of data from technology-based resources. Quantitative data on the extent of statewide accessibility will be collected and described, including but not limited to Consortium partner reports, online surveys and analysis of data from technology-based resources. Persons responsible: the SuperTeam, representatives of Apple Computer, LessonLab, EducationTalk, WestEd, CLI and the Outside Evaluator.

***Objective 2: By the end of the third project year, a minimum of 80% of participating alternative certification teacher candidates will have participated in technology-based subject matter preparation and will successfully pass the requisite subject matter competency exam(s) for teacher licensure purposes.***

**Activity:** The subject matter training and instructional resources and interface described in Objective 1 will be developed in Years 1 and 2 and fully operationalized in Year 3. Alternative certification teachers will log-on to the California Learning Interchange to extend their subject matter and pedagogical knowledge and to receive mentoring. They will complete periodic

assessments as they move through the levels of content knowledge and keep reflective electronic journals of their teaching progress. They will participate in online study groups and web-based video cases.

**Measurement:** The success of the site will be measured by tests submitted by pre-interns who visit the site and complete the instruction and by the online imbedded assessment. The project evaluator will review the online embedded assessments. Local programs will measure improvements in teaching competencies through live observations of the alternative certification teachers as part of the employment review process each year and report the numbers of alternative certification teachers who have progressed to preliminary certification.

### **Evaluation Data for Objective 2**

Qualitative data on the process of passing subject matter competency exams will be collected by interviews with candidates and Consortium partners. Quantitative data on the percentage of alternative credential candidates passing subject matter competency exams will be collected and reported. Persons Responsible: the Outside Evaluator.

***Objective 3: By the end of the third project year, a minimum of 80% of participating alternative certification teacher candidates will have met the state's recently-adopted Technology Standard for teachers for licensure purposes.***

**Activity:** Apple and InResonance will train alternative certification mentors and candidates in effective and appropriate methods for integration of technology into the teaching and learning process using a research-based model called the "Unit of Practice" The alternative certification instructors and mentors will implement their training with the "Unit of Practice" to serve as a model for alternative certification teachers to use in their own K-12 classrooms. Their mentors will then assist their trainees with implementing units of their own design.. This transfer of knowledge will provide the K-12 teachers with the practice they need to acquire the necessary preliminary technology skills for teacher certification

**Measurement:** Alternative certification teachers will be observed for employment review annually by their school administrators. Demonstration of their technology skills will be measured in the observation and reported to CTC along with their other teaching progress. Information on the number of candidates meeting Level 1 of Standard 20.5 will be reported by local administrators. Units of Practice and samples of student work will be collected and disseminated via the CLI network.

### **Evaluation Data for Objective 3**

Qualitative data on the process of meeting Level 1 of Standard 20.5 will be collected by interviews with candidates and Consortium partners. Quantitative data on the percentage of alternative credential candidates meeting Level 1 of Standard 20.5 will be collected and reported.

Persons Responsible: Representatives of Apple, InResonance, local administrators and the Outside Evaluator.

***Objective 4: By the end of the second project year, each of the participating alternative certification candidates will have access through technology to an individual, experienced mentor teacher.***

**Activity:** The county office of education partners will match each alternative certification teacher with a mentor with regard to teaching environment but not location. The novice teacher will dialogue and observe with the mentor online through the use of text-based community building tools, video and video conferencing. Administrators will do live observations of the candidates in their classrooms. Candidates will share videos of their best practices with Mentors and will keep electronic journals of their professional development progress.

**Measurement:** The project evaluator will collect samples of these conferences from mentor-trainee pairs at different points along the project to discern the types of activities and dialogue taking place. A bi-yearly, pre and post-project survey regarding attitudes and satisfaction with

the mentoring activities will be collected from both alternative certification teachers and their mentors regarding the effectiveness, frequency and nature of the mentoring to improve the technical support and mechanisms and to determine the effectiveness and satisfaction of the participants with online mentoring.

#### **Evaluation Data for Objective 4**

Qualitative and quantitative data on the extent to which alternative certification candidates have access through technology to an individual, experienced Mentor teacher will be collected by interviews with candidates and Consortium partners. Reflective electronic journals will be maintained by candidates and referenced for evaluation purposes. Online study groups and web-based video case studies will be reviewed and be part of the content of evaluation interviews and surveys. Reports on live observations will be reviewed and progress charted. Persons

Responsible: Representatives of local schools, and the Outside Evaluator.

*Objective 5: By the end of the third project year, a minimum of 80% of TLI Project participants (alternative certification teacher candidates and their mentors) will demonstrate the ability to design and implement technology-enhanced K-12 student lessons in the classroom.*

**Activity:** Alternative certification instructors will assist the teachers and mentors with integrating technology into their lessons as they (a) learn how to apply subject matter content knowledge and (b) learn basic teaching practices. The "Unit of Practice" will provide the model for integration of technology. Evidence of successful technology-enhanced lessons will be a key consideration in structuring communications among candidates, administrators, Mentors, peers and partner representatives.

**Measurement:** TLI participants will complete an online needs assessment before they begin progressive technology training sessions. The training sessions will be graduated for skill levels so that participants enter the training program at the appropriate level based on the Apple Classrooms of Tomorrow Initiative: Entry, Adoption, Adaptation, Appropriation and Invention.

Even though the target population is novice teachers, they may already have technology skills which the program can build upon empowering them to be technology leaders at their school sites.

Instructors will observe Mentors in the first year and Mentors will observe the novice teachers four times each year to determine their progress in teaching effectiveness. Alternative certification teachers will also be monitored by their school administrators annually for their ability to use technology in their teaching practices. All Units of Practice and samples of student work will be collected. Some of these will be posted to the CLI so serve as exemplars for future work.

**Evaluation Data for Objective 5**

In addition to the material posted on the CLI, surveys, interviews and collection of candidate artifacts like Units Of Practice, portfolios and student work samples will be collected to provide qualitative data about the process of candidates’ ability to design and implement technology-enhanced K-12 student lessons. A rubric will be designed to facilitate the analysis of these data to ascertain the percentage of California's alternative certification teacher candidates that demonstrate the ability to design and implement technology-enhanced K-12 student lessons in the classroom by Project Year 3. Persons responsible: representatives of Apple Computer, LessonLab, WestEd, CLI, local administrators, mentor and the Outside Evaluator.

**Evaluation Plan Timeline**

	<b>Project Year 1</b>	<b>Project Year 2</b>	<b>Project Year 3</b>
<b>Project Activities</b>	<b>Described in tProject Year 1 Report</b>	<b>Described in Project Year 2 Report</b>	<b>Described in tProject Year 3 Report</b>
Objective 1	Preparation system including pedagogy and mentoring under development and described in the Project Year 1 Report	Preparation system including pedagogy and mentoring in place and described in the Project Year 2 Report	Preparation system including pedagogy and mentoring in place and described in the Project Final Report

	<b>Project Year 1</b>	<b>Project Year 2</b>	<b>Project Year 3</b>
Objective 2	Systems for gathering data from Consortium partners on the passage rate on subject matter competency exam (s) will be put in place and described in the Project Year 1 Report	Data on the passage rate on subject matter competency exam (s) will be collected described in the Project Year 2 Report	At least 80% of alternative certification candidates will successfully pass the requisite subject matter competency exam(s) as described in the Project Final Report
Objective 3	Systems for gathering data from Consortium partners on the rate of candidates meeting Standard 20.5 will be put in place and described in the Project Year 1 Report	At least 75% of alternative certification teacher candidates will have met Standard 20.5 Level 1 described in the Project Year 2 Report containing this data from Consortium partners	At least 80% of alternative certification teacher candidates will have met Standard 20.5 Level 1 as described in the Project Final Report containing data from Consortium partners
Objective 4	Systems for reporting candidate access through technology to an individual, experienced mentor will be put in place and described in the Project Year 1 Report	Each of the alternative certification candidates will have access through technology to an individual, experienced Mentor teacher as described in the Project Year 2 Report	Each of the alternative certification candidates will have access through technology to an individual, experienced Mentor teacher as described in the Project Final Report
Objective 5	Systems for reporting candidate ability to design and implement technology-enhanced K-12 student lessons in the classroom will be put in place and described in the Project Year 1 Report	Initial data reporting candidate ability to design and implement technology-enhanced K-12 student lessons in the classroom will be described in the Project Year 2 Report	At least 80% of the alternative teacher candidates will demonstrate the ability to design and implement technology-enhanced K-12 student lessons in the classroom as described in the Project Final Report