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Karl M. Lorenz

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Historical Trends and Emerging Issues in Teacher Education Programs in the United States

The teaching profession in the United States is undergoing change. While National and State educational polices advocate for more teacher accountability with respect to student performance, accrediting agencies are requiring more evidence of teachers' mastery of subject area knowledge and professional skills. These demands are made in the context of numerous factors such as changing demographics, emerging technologies and the knowledge explosion. Educational and societal trends such as these are also influencing university programs that prepare elementary and secondary school teachers. Recognizing the necessity for higher education institutions to adjust to these realities, the Federal Government is currently developing a system for evaluating and rating teacher preparation programs throughout the country. This paper examines some of the significant educational and social issues currently facing basic education and teacher preparation programs in the United States. It addresses numerous topics and focuses on five general issues that confront K-12 education and either directly or indirectly Teacher Preparation Programs. While the discussion will be general the paper will recount some of the experiences facing our university, Sacred Heart University.

Sacred Heart University

Sacred Heart University, a co-educational, independent, comprehensive institution of higher learning rooted in the liberal arts and the Catholic Intellectual Tradition, was founded in 1963 in Fairfield, Connecticut. The University was the first institution of Catholic higher education in the United States to be led and staffed by the laity. It is the second-largest Catholic university in New England with six colleges: the College of Arts & Sciences, the Isabelle Farrington College of Education, the College of Nursing, the College of Health Professions, and the John F. Welch College of Business, and University College. The prestigious magazine, *U.S. News & World Report*, ranks SHU among the best regional universities in the North Eastern states.

Sacred Heart University (SHU) offers more than 50 undergraduate and graduate programs and an array of degrees from bachelors to doctoral programs combining online, blended and face-to-face

learning modalities. In the 2014-2015 academic year the student body was made up of 7,781 total students: 4,232 full-time undergraduate students, 765 part-time undergraduate students, 2,784 graduate students; 67% female, 53% out of state; 19% minority students, 50 states including District of Columbia and one military base (AE) and 27 countries represented.

The Isabelle Farrington College of Education consists of two departments: the Department of Teacher Education and the Department of Leadership and Literacy with a total yearly enrollment of 600 candidates. The college offers initial and advanced degrees in Teacher Preparation and Initial Certification in Elementary and Secondary (Biology, Chemistry, English, General Science, Mathematics, Social Studies, and Spanish) and an advanced Masters degree in Education. The Department of Leadership and Literacy offers advanced graduate programs in as such: Intermediate Administration and Supervision, Remedial Reading/Language Arts, Reading & Language Arts Consultant, 6th Year CAS Leadership, 6th Year CAS Literacy and 6th Year CAS Teaching. Three hundred fifty candidates are certified each year as such: One hundred seventy five in educational administration and literacy specialist and one hundred seventy five as certified in Initial teacher certification in Elementary and Secondary education.

Historical Influences

Two federal initiatives in the area of education have had profound effects on the manner in which the educational process is perceived and students and teachers evaluated. The legislation has affected private and public school teaching practices, teacher evaluation, and teacher preparation programs.

In 2002 the *No Child Left Behind Act* (NCLB) was passed by the Congress of the United States. The law was an education reform proposed setting high standards and establishing measurable goals in order to improve student achievement in the schools. NCLB required the individual states to develop assessments of basic skills in K-12 schools. To receive federal school funding, the states were required to administer a state-wide standardized test annually to all students in grades 3 to 8. This means that, nationally, all students in these grades would take the same test under the same conditions. Furthermore, NCLB stipulated that schools that receive federal funding through the *Elementary and Secondary Education Act* of 1965 must demonstrate that

their students' test scores improve from one year to the next and that they demonstrate they are "proficient" in their studies. Schools that failed to raise test scores would face increasing sanctions, the ultimate being the dismissal of staffs and the closing of the schools.

In 2008, the Obama administration proposed its own signature program called *Race to the Top*. In response to the economic crisis of 2008, Congress gave the U.S. Department of Education five billion dollars to promote a "reform" that would incentivize the states to more rigorously pursue the goals of NCLB. The Department of Education launched a competition among the states called *Race to the Top*. If states wanted any part of that money, they had to agree to numerous conditions: (1) evaluate teachers, to a significant degree, according to the rise or fall of their students' test scores; (2) increase the number of privately managed charter schools; (3) adopt content standards that would make students ready for college or careers (which were understood to be the not-yet-finished *Common Core Standards*, which we will address later); (4) improve low-performing schools by such tactics as firing the principal and part or all of the school staff, and (5) collect an unprecedented amount of personal information about every student and store this in a data bank. Fundamental to the legislation was the widely-accepted proposition in Washington and in state capitols that if students had low scores, it was the fault of bad teachers.

These two federal initiatives complimented each other and deeply affected the way states approached K-12 education. These and other legislative acts were the culmination of several education trends that were prompted and expressed by educational leaders in government and academia. These trends, as evidenced in the reforms, addressed, among others issues such as accountability, data-driven decision-making, a renewed focus on academic content, a response to changing demographics in the school, and finally, technology. These trends, which also deeply affect teacher preparation programs, merit a brief examination.

Standards-Based Accountability

Richard F. Elmore, a professor at Harvard University's Graduate School of Education, states that "Accountability for student performance is one of the two or three -if not the most- prominent issues in policy at the state and local levels right now." This can be seen in NCLB and *Race to the Top*, and other pieces of legislation, which are based on the belief held by local, state and federal educational authorities and practitioners that teachers are responsible for the success and

failure of their students. The premise is that the prime influence on student achievement is the well-prepared teacher. In this scenario intervening variables such as socioeconomic status, family relationship and dynamics, student characteristics and motivation are minimally relevant. The accountability paradigm encourages policymakers to reward achievement and punish failure in schools to ensure that children are getting a good education and that tax dollars aren't being wasted. (Quality Counts, 1999)

The notion that schools and teachers are responsible for student academic performance originates in a commonly-shared perception that while states have traditionally monitored the "inputs" in public education—such as the number of books in the school library or the number of computers in the classroom—they have paid little attention to school and student performance. This was recognized as early as the 1980s when the nation's governors agreed to provide more flexibility in how schools operated, as well as more money for schools, if educators agreed to be held more accountable for student achievement. In the mid-1990s and early 2000s there was a growing emphasis on accountability in federal legislation such as that of the *No Child Left Behind* Act of 2001 required schools in each state to evaluate students' academic performance and demonstrate that there has been continuous improvement in student achievement. Under NCLB, each state was required to submit an accountability plan to the U.S. Department of Education. By 2005, all 50 states and the District of Columbia had submitted and received approval for their accountability plans and all published "report cards" based on student test scores.

Basic to the accountability movement is the creation of standards and the measurement of school and student performance. At the national level, since 2001-2002, standards-based accountability provisions of the NCLB have redefined the work of public school teachers and administrators in the United States. NCLB requires each state to (1) develop content and achievement standards in several subjects, (2) administer tests to measure students' progress toward these standards, (3) develop targets for performance on these tests, and (4) impose a series of interventions for those schools and districts that do not meet the targets.

While the Standards-Based Accountability movement is affecting elementary and secondary schools, it also is affecting teacher preparation programs, but in a different way. The accreditation of teacher preparation programs is regulated either by individual states educational

department and/or by national accreditation agencies, the most important being the National Council on American Teacher Preparation (NCATE), which is now titled CAEP. Institutions are expected to demonstrate that comply with state standards or national standards of excellence in order to receive full accreditation.

As an example, NCATE, which is the accrediting agency of Sacred Heart University, requires that teacher preparation institutions comply with six sets of standards: *Curriculum, Assessment, Clinical Experience, Diversity, Faculty* and *Governance*. With respect to *Curriculum* and *Assessment*, institutions are expected to demonstrate that their pre-service teachers have achieved satisfactory levels of performance on these two standards. Also, the standards require that graduates of these institutions have a positive impact on student performance once they are employed. Hence, teacher preparation institutions are being held accountable for the success of their candidates both in their training and in their employment.

National standards for teacher preparation programs are also proposed by specialized professional associations in content areas such as mathematics, science, English, Foreign languages, social studies, etc. these professional organizations have established content and pedagogical standards that they have determined should be met in teacher preparations. Typically the standards of these organizations address knowledge, both pedagogical and content-based, and pedagogical skills, and dispositions. In the case of CT institutions, such as SHU, these national content-area standards must be met in order to achieve both state and national accreditation through NCATE/CAEP.

It should be mentioned that there is a currently a movement to grade or rate teacher preparation programs across the nation by the federal government and by quasi-official organizations, such as the National Council on Teacher Quality (NCTQ). The end result would be a “report card” that indicates the degree to which an individual institution meets the standards of excellence established by the federal government or organizations such as NCTQ.

Data-Driven Decisions Making

The Standards-Based Accountability movement is concurrent with a movement that emphasizes the analysis of educational data in order to assist administrators and teachers make decisions at

the classroom, school, and district levels. Essential to this activity is the generation of data on how schools and teachers meet content and pedagogical standards, and how well they evaluate the data make appropriate interventions, if necessary. As articulated by Margaret Spellings, the U. S. Secretary of Education, "Information is the key to holding schools accountable for improved performance every year among every student group. Data is our best management tool. I often say that what gets measured, gets done. If we know the contours of the problem, and who is affected, we can put forward a solution. Teachers can adjust lesson plans. Administrators can evaluate curricula. Data can inform decision-making. Thanks to No Child Left Behind, we're no longer flying blind."

Clearly, the need for better decision making in our nation's schools has grown together with the rise in standards-based reforms and performance accountability systems. Under the requirements of the *No Child Left Behind* legislation, school districts are required to test students, collect performance data and use that data to identify strengths and weaknesses in their educational system. Schools that do not demonstrate adequate yearly progress (AYP) are identified as needing improvement and subject to interventions or sanctions by the districts. For some educators, this may be characterized as the punitive uses of data to improve instruction.

The underlying premise of Data-Drive Decision Making is that it can assist educators in gathering data to help them determine if they are meeting their goals. By analyzing and interpreting data, schools are able to identify and solve problems that need attention, identify appropriate interventions to solve those problems, and determine how they are progressing toward achievement of their goals. As explained by the by the National Education Association, Data-Driven Decision Making is "using data that are gathered on a regular basis (and additional information, as needed) to inform planning, decision making, and reporting activities." School leaders would therefore be able to make critical decisions affecting student learning and achievement and communicate the meaning of data to students, teachers, board members, and parents.

The Data-Driven Decision Making paradigm suggests various types of data that can be collected. There is *Demographic Data* that describe students, the school's staff, the school, and the surrounding community. By dis-aggregating demographical information (for example, by gender

or ethnicity), the impact the education system is having on diverse groups of students can be gauged. There is *Student Achievement Data*, acquired through a variety of measurements—norm-referenced tests, criterion-referenced tests, standards assessments, teacher-assigned grades, and authentic assessments—that can show demonstrate the impact of teachers on students. There is also data on *School Processes Data*, such as school programs, instructional strategies, assessment strategies, and classroom practices.

The Data-Driven Decision Making movement also affects teacher preparation programs. Both the Connecticut State Department of Education and the NCATE/CAEP accrediting body require that Sacred Heart University, for example, generate and review quantitative data on candidates' performance in their teacher preparation programs, and based on this evaluation, establish a protocol for making decisions about how to gauge or improve the effectiveness of the programs. In the case of NCATE/CAEP accreditation, teacher preparation programs are required to use six to eight assessments that track candidate performance in the program and demonstrate how the data collected was used to make decisions on improving the programs, if necessary.

One result of this shift to Data-Driven Decision Making is that faculties in teacher preparation programs are required to become increasingly familiar with the development and administration of assessment instruments in their programs and the processes of analyzing and interpreting the data that is generated. This is often a big challenge for faculties that have traditionally judged the success of their programs on qualitative rather than quantitative measures. Additionally, there is the challenge of ensuring that teacher preparation programs provide their candidates with the background knowledge in the intricacies of standardized and classroom testing in schools and classrooms and how meaning can be extracted from the data to improve instruction.

Focus on Content

As part of the trend towards establishing educational standards and creating assessment systems to evaluate teachers and students using these standards, there has been an increase in the importance given to the mastery of content knowledge by students and teachers. In fact, the Standards Based Assessment movement in education at the K-12 levels focuses on subject matter mastery, both in terms of knowledge and skills. While the focus on content has always been a

concern of educational reforms in the United States, recently, however, the Standards-based Accountability movement has not only led to the creation and assessment of standards, it has also led to systematic efforts to update and clearly identify the subject matter content that K-12 students were expected to learn -- at each grade level -- in the elementary and secondary schools. This, it was reasoned, would strengthen the curriculum and better prepare students for challenges they would face after graduating from high school.

In 2009, the National Governors Association convened a work group to write content standards in the areas of mathematics and literacy that would be applied nationally. The initiative intended to provide clear guidelines on what students in elementary and secondary schools are expected to learn. This would facilitate the assessment of student performance at each grade level in the schools, and permit not only a composite view of how K-12 students were mastering subject area content at each grade level, but also allow for comparison among states and among schools in terms of the achievement metric. The criterion used by the work group to identify the content was that it should reflect the knowledge and skills that young people need for success in college and their careers. This criterion addressed a national concern for better preparing American students to compete in a global economy.

The concern with K-12 subject matter content resulted in the federal initiative called *Common Core Standards (CCS)*. The CCS were developed to guarantee consistency in what was taught in K-12 schools throughout the country. The *Common Core Standards* were developed in 2009 and released in 2010 with the support of the National Governors Association, the Council of Chief State School Officers, and an organization called Student Achievement Partners. Because the U.S. Department of Education is legally prohibited from exercising any influence or control over curriculum or instruction in the schools, it did not contribute funding for the creation of the CCS. The Gates Foundation assumed that responsibility by contributing nearly \$200 million for the development, evaluation, implementation, and promotion of the standards. Within months, 45 states and the District of Columbia endorsed the standards. At present, publishers are aligning their materials with the Common Core, technology companies are creating software and curriculum aligned with the standards, and two federally-funded consortia have created online

tests of the Common Core. As can be seen the expectation that the Common Core would be tested on computers using online standardized exams.

The implications for practicing teachers was that they are now required to become familiar with the CCS content they are expected to teach, and adopt new approaches to teaching them. States have therefore initiated in-service training courses and task forces to more clearly define the CCS-based content and methods to be taught in the schools. Some states, such as Connecticut, have adopted the view that practicing teachers need to be better prepared in the subject matter they are teaching. In Connecticut, legislation is being considered that would require that, as a teacher moves up the career ladder, and be granted the final professional educator certificate, he/she would be required to complete a master's degree program in his/her content. This proposal is based on a widely-held belief that teachers who are better prepared in their subject areas will be more successful in improving the achievement of their students.

The emphasis on establishing and assessing content standards is also evidenced in teacher preparation programs. First, and most obvious, teacher preparation programs have been compelled to adjust their programs to ensure that their candidates understand the new Common Core Standards and what will be expected of them once they are working in the schools. This is requiring teacher preparation programs to address the CCS in their curriculum and methods courses. Faculty such as that of Sacred Heart University has had to become familiar with the standards and work to develop the curricula to incorporate the standards in its courses.

Another development regarding the trend towards subject matter mastery is the importance attributed to content knowledge in teacher preparation programs by the state and national accrediting bodies. These entities require that pre-service teachers demonstrate sufficient background knowledge of the subject they are expected to teach. What constitutes the background knowledge is determined by publishing companies who in conjunction with state departments of education identify the content that will constitute the licensure tests taken by candidates at the end of their programs. Students must pass the state licensure tests in order to receive their teaching certificate.

Additionally, as a condition for state and national accreditation, teacher preparation programs must demonstrate that pre-service teachers have an adequate foundation in the subject matter they are going to teach. This background knowledge is defined by national learned societies in the different subject areas. In the case of Sacred Heart University, for example, students preparing to be elementary school teachers must demonstrate knowledge of science, language arts, mathematics, and social studies, as defined by *the Association for Childhood Education International* – ACEI, a national organization consisting of eminent professionals in the field of elementary education. Similar learned societies exist for science (the *National Science Teachers Association* - NSTA); for English (the *National Council on Teacher Education* - NCTE); for social studies (the *National Council for the on Social Studies* - NCSS); for mathematics (the *National Council of Teachers of Mathematics* - NCTM); and foreign languages (the *American Council on the Teaching of Foreign Languages* - ACTFL). Each of these professional organizations dictates the content that is to be mastered by candidates preparing to be teachers. They ensure that candidates are well grounded in the subject area knowledge of their fields and that they demonstrate and apply pedagogical practices to effectively teach their content area.

Demographics and Diversity

The changing demographics of the K-12 school going population have markedly affected teacher preparation programs, which are expected to sensitize pre-service teachers to the needs of diverse student populations. National data provides a perspective on the nature of this demographic shift.

Over the years there has been a significant increase in students classified as belonging to a minority group. According to the National Education Association (NEA, 2014), the racial/ethnic composition of school-going population in the United States is the following: 49.8 percent of students are considered non-Hispanic white, 25 percent are Hispanic students, followed by 15 percent black students; 5 percent Asian and Pacific Islanders, and finally biracial and native Americans make less than 5 percent of the student population. When all minority students are clustered together, they comprise almost half of the K-12 student body. As the student population becomes more diverse, schools are becoming more segregated following U.S. housing patterns.

In addition to greater diversity, the student population has also become poorer: one in five children live below the poverty line representing 21.9 percent or 16.1 million children. Societal issues related to outside-of-school factors such as poverty, living conditions, violence, access to healthcare as well as after-school activities all play a pivotal role on students' success in life. This is despite the fact that teachers are the most important influence on students' school achievement. This shift in demographics and societal issues represent new challenges for the community as a whole, the education field and the teaching profession. To ensure the right to public education for every student in the United States, the federal and state governments expect that there is equal access opportunities to childhood education, equal access to resources including technology and instructional materials, and the availability of highly prepared and effective teachers as well as qualified professional teacher preparation organizations nation-wide.

Because of the changing demographics, K-12 schools are challenged with (1) incorporating English language support programs and curriculum, (2) fostering multi-cultural understanding and sensitivity, (3) develop programs and use novel ideas about community and parental outreach, (4) and deploy strategies to differentiate instruction as well as to deal with issues regarding diversity, equity, poverty, safety and health. To close the gap between an increasingly diverse student body and a lack of teacher diversity representation, school districts nation-wide are recruiting more minority teachers so that students can have a variety of diverse role figures. Minority teachers in public education remain under-represented with 7.8 percent Hispanics, 6.4 percent Blacks, 1.8 percent Asians, 0.4 percent American Indians, 0.1 percent Native Pacific Islanders in contrast with 82.7 percent of white teachers.

In 1997, Connecticut passed legislation that was called *An Act Enhancing Educational Choices and Opportunities*. The legislative act empowered the State Board of Education to require school districts to, "provide educational opportunities for their students to interact with students and teachers from other racial, ethnic, and economic backgrounds in order to reduce racial, ethnic, and economic isolation and allow them to provide for such opportunities with those from other communities." To strengthen the overall diversity in public education the state has undertaken a series of measures and programs including: (1) the development of inter-district public school choice programs, (2) increased charter and magnet school programs, (3) sponsoring of inter-district cooperative grant programs for reducing racial, ethnic and economic isolation, (4)

providing staff development for teachers on diversity issues. The state, through its five Regional Educational Service Centers (RESCs), has created a program titled *The Minority Teacher Recruiting Program* (MTR) to recruit, hire and retain minority teachers and administrators to reduce the lack of minority representation in the educational field. The state places high importance on providing students with good role models from diverse backgrounds and races so that students can interact, communicate and work effectively in an increasingly more global society. By 2008, the Connecticut teacher population was quite homogeneous with 92.3 percent white teachers (69% percent female and 23.3% percent male teachers), 3.2 percent of Hispanic teachers, 3.6 percent of Black teachers and 0.2 percent of American Indian and Asians while a third of Connecticut's students are considered minorities.

In Connecticut, teacher preparation programs also support a diverse and equitable public education system for all students and school staff. This is in accordance with NCATE (2010) Unit Standard 4: Diversity, which requires that Connecticut teacher preparation programs put in place, assess and collect data on teacher candidates' knowledge, skills, and dispositions on how pre-service teachers help all students in a diverse society learn.

The significant change in demographics, an increase of a diverse student body population in K-12 schools, and regulations from state and national accrediting agencies of teacher preparation programs have raise several important considerations:

- a) The term “diversity” is a much more inclusive term encompassing an array of students’ characteristics such as: students with disabilities or exceptionalities, students who are gifted, students who represent diversity based on ethnicity, race, socioeconomic status, gender, language, religion, sexual identification, and/or geographic origin.
- b) Diversity must be a pervasive characteristic of any quality teacher preparation program.
- c) Teacher preparation programs must ensure that candidates develop proficiencies in specific aspects of diversity including in special education legislation and students with disabilities, English-language learning,
- d) Teacher preparation curriculum must systematically embed diversity issues throughout all aspects of preparation courses and experiences

- e) Teacher candidates must experience field placements, internships in diverse P-12 settings, in which they interact with P-12 students with differing needs, as well where teacher candidates can engage with diverse family backgrounds.
- f) Teacher preparation programs must make all efforts to recruit minority teacher candidates

Technology Integration

Governmental mandates and policies, innovations, a global economy, and societal forces influence how technology is used in today's society. Proponents of public education stress that, the use of technology, needs to be inclusive for all students and provide equal access opportunity for all learners. To support this vision, the United States government has also developed policies such as a National Education Technology Plan (NETP) in which technology is viewed as a transformational tool in five key areas: (1) learning, (2) assessment, (3) teaching, (4) infrastructure, and (5) productivity.

Mandates have implications at the state and local levels, including (a) how states are establishing plans to further these federal rulings; (b) how delivery systems will be designed to ensure student learning; (c) how robust tracking and data systems and reporting mechanisms will work, (d) how states are articulating and presenting these mandates to other stakeholders. These mandates have consequences for institutions of higher education on how teacher candidates will be prepared to develop students' knowledge, skills and dispositions. As a result, there is the need to prepare a cadre of teachers and administrators who understand, plan, implement and report on these mandates.

In 2010, the Massachusetts State Department of Elementary & Secondary Education (2012) passed legislation requiring from all teacher preparation programs, specializing in special education, to demonstrate programmatic curriculum in instruction on the appropriate use of augmentative and alternative communication and other assistive technologies. As a result, teacher preparation institutions will be held accountable and will need to prove that their graduates have knowledge, skills and disposition about the understanding, implementation, and assessment of assistive technologies and accessibility, instructional approaches to a variety of

disabilities; creation of Individualized Education Program (IEP) for students, demonstrate knowledge about state and school district resources.

Modeling technology strategies and building candidates' technology capacity are essential for educators to strive in the 21st century. Graduates from teacher preparation programs, in which embedded technology based assignments are modeled and required, have higher chances to incorporate technology within their own instruction. Sacred Heart University, supports teacher candidates' development of educational technology skills and knowledge by requiring them to complete course work, in various modalities: online or blended. Candidates develop hands-on products that will allow them to flip the classroom, to deal with integration of mobile technology such as iPhones, iPads, Chromebooks within the curriculum, and generate digital media tools for diverse students. Technology can also help teachers customize learning to each student's needs, adapt to various learning styles and performance levels. Customization can transfer to online learning environments, gaming applications and adaptive learning tools such as Dreambox Learning Math. This standard-based tool, for the K-8 math curriculum, is based on gaming principles, which adapts: (a) in real time to learners' responses, (b) adjusts level of difficulty, (c) scaffolds content and pace as appropriate to the specific learner. The system keeps track of learner's mastery and progress, proficiency achievement levels set against standards and an entire group. The use of such tools allow teachers to create flexible learning environments in which they can provide better one- on-one attention to individualized instruction.

Technology-enabled assessment systems can be used for diagnostic, mastery or formative purposes. These systems can allow for customization to each individual student's needs and to provide teachers with immediate data results. Systems such as Pearson Progress Assessment Series and Pinnacle Plus are based on a mastery learning approach in which the system identifies students' proficiency levels obtained on standards. Progress monitoring assessment systems such as Renaissance's Accelerated Math programs are created with the intention of been used frequently during the school year. A third set of technology-enabled assessment systems, such as Diagnoser, are based on formative assessment approaches which are designed to provide understandings on how student's think and reason in content areas. National agencies for accreditation of teacher preparation also stress the importance of using technology assessment-driven decision-making systems for program improvement.

Implications for teacher preparation programs include (a) the development of technology rich curriculum activities in which candidates have hands-on experiences with a variety of technology tools including online learning tools, robotics, virtual environments, gaming, mobile technology applications, web-based tools, social media tools, and programming; (b) the development of pedagogical frameworks for technology integration into the K-12 classroom; (c) assessment and evaluation of technology integration; (d) professional development opportunities.

Teacher preparation programs also face the challenge of having a cadre of faculty who possesses widely differing digital experiences. Faculty will need to develop the know-how, flexibility and ability to change and adapt curriculum, faster than ever, to be able to keep up with new emerging technologies. Furthermore faculty will need to implement instructional methodologies to guide teacher candidates in the application of such tools so that students can achieve specific learning goals. To ensure that candidates develop proficiencies in technology, teacher preparation programs will need to design technology-rich learning opportunities throughout all aspects of preparation courses and experiences.

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