

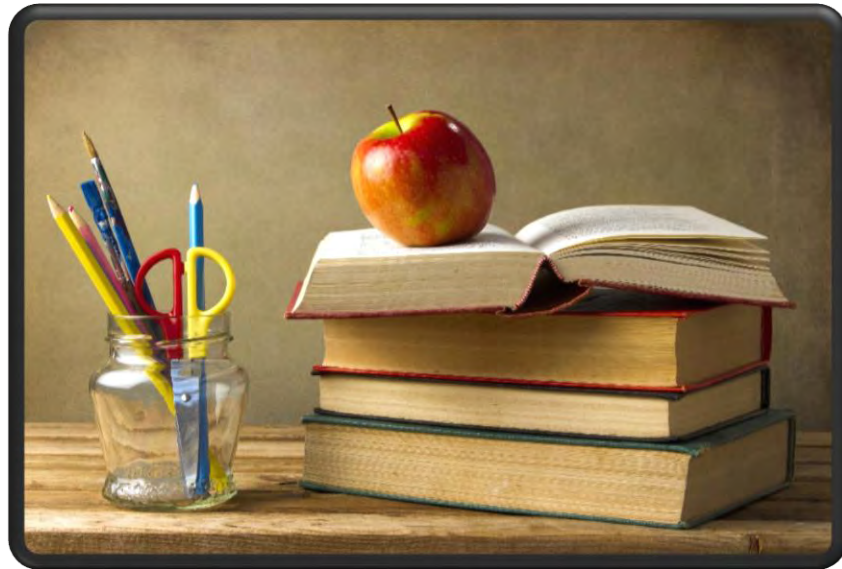
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Approaches to “Grow Your Own” and Dual General and Special
Education Certification



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Table of Contents

Executive Summary	iii
Introduction	1
Prior MEPRI Literature Review: Teacher Credentialing Systems	2
Content knowledge	3
Clinical Preparation	3
Alternative Pathway Teacher Characteristics.....	4
Alternative Pathway Program Content.....	4
Alternative Pathway Outcomes	4
Current Literature Review: Dual Cert and GYO Programs	5
Collaborative Teacher Education.....	5
“Grow Your Own” Teacher Preparation	8
Alternative Teacher Preparation & Residency Models	9
Descriptions.....	9
Outcomes	10
Summary	12
Maine Certification Requirements	12
Components of Teacher Credentialing.....	12
Requirements for K-8 Elementary and K-8 Special Education Certification	13
Special Educator Preparation Approaches in Maine	15
Transcript Analysis.....	16
University of Maine System Approved Programs.....	18
University of Maine.....	19
University of Maine at Farmington.....	20
University of Maine at Machias	21
University of Southern Maine	21
Summary	23

Noteworthy Models for Addressing Teacher Shortages in Special Education	24
Models of Preservice Collaborative Teacher Education Programs	24
Granite State University.....	25
Southern New Hampshire University.....	25
Antioch University of New England.....	25
University of Vermont.....	26
Models of “Grow Your Own” Programs	27
Teach Western Mass	27
Pipeline for Paraprofessionals, Boston, Massachusetts.....	28
Boston Public Schools Teacher Pipeline Programs, Boston, Massachusetts	28
Minneapolis Special Education Teacher Residency, Minnesota	30
Northwest University, Kirkland, Washington.....	30
Grow Your Own Teacher (GYOT) program, Wichita, Kansas	30
Teacher Cadet Program, South Carolina	31
Educators Rising.....	31
Summary	31
Education Policies that Support “Grow Your Own” Programs and Dual Certification	32
California.....	32
Massachusetts.....	33
Colorado	33
New Hampshire.....	33
Washington	34
Summary	34
Discussion and Policy Implications	35
References	37
Appendix A: Executive Summary from “An Examination of Features of Evidence-based Teacher Credentialing Systems” (MEPRI, 2017)	42

Approaches to Dual General and Special Education Certification and “Grow Your Own” Programs

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Executive Summary

The shortage of special education teachers is a persistent problem in Maine. In addition to the shortage of individuals prepared to work as special education teachers, there is also a need to support special education students in the general education classroom. The majority of students who are identified with disabilities spend most of their time in classrooms with general education teachers. Yet, general education teachers' preparation to work with the special education students in their classrooms is limited. In order to address the need for teachers who are prepared and qualified to work with students with disabilities, the purpose of this study was to examine dual general and special education and “Grow Your Own” approaches to teacher certification.

Historically, teacher licensure in special education has been dominated by “a stand-alone certificate” that does not require the awarding of a general education license (Blanton, Boveda, Munoz, & Pugach, 2017). Yet, according to these researchers, “In today’s schools, however, where students with disabilities are included and educated in general education classrooms in an increasingly routine fashion, such a policy raises questions about whether an initial, stand alone license is sufficient for special education teachers in inclusive contexts” (p. 78). Researchers Maureen Pugach and Linda Blanton (2009, 2011) developed the Collaborative Teacher Education Framework that describes the degree of collaboration between general and special education in teacher preparation. Blanton and Pugach (2011) describe three types of programs: discrete, integrated, and merged. Discrete programs are separate, stand-alone programs with distinct traditional knowledge bases and little collaboration between general and special education. Integrated programs are those in which there is coordination between general and special education and curricular overlap designed to strengthen the preparation of general education and special education teachers. Merged programs are designed to prepare all teacher candidates to be dually certified to teach both general and special education.

Currently in Maine, there are five Universities that offer discrete pathways in both general and special teacher education: the University of Maine, the University of Maine at Farmington, the University of Maine at Machias, the University of Southern Maine and St. Joseph’s College. In

addition, the state provides an alternative pathway to certification through its “transcript analysis” system. Through the traditional pathways there are multiple opportunities for teacher candidates to better prepare themselves to work with students with diverse abilities and backgrounds. Two institutions also offer pathways to dual certification, the University of Southern Maine and the University of Maine at Farmington. To increase this number, Maine might consider looking to models for dual certification that are offered in other states.

Maine might also look to “Grow Your Own” teacher preparation models as a way to address the special education teacher shortage. Grow Your Own programs recruit local community members including career changers, paraprofessionals, after-school program staff, and others currently working in schools and help them become teachers (Espinoza, Saunders, Kini, & Darling-Hammond, 2018; Alvarez, 2017). According to Espinoza et. al. (2018), “community members offer a sustainable solution to teacher shortages while also increasing the diversity of the teacher workforce” (p. vii). Grow Your Own programs vary. Common types include paraprofessional teacher training programs, “2 + 2” programs that allow candidates to begin teacher preparation at a community college and then finish at a 4-year institution, and high school pathways (Espinoza et al., 2018). Maine can look to the various “Grow Your Own” programs in other states for models.

Maine can also look to policies in other states that are designed to support dual certification and growing your own teachers. For example, Maine policy makers might consider:

Challenge 1: Underprepared teachers

- Consider requiring demonstration of competency rather than course completion in order to become initially certified as a teacher in Maine. This would promote consistency and rigor in candidate preparation regardless of program or pathway, and would give both traditional and alternative educator preparation programs more flexibility to design merged dual certification programs that integrate the curriculum and clinical experiences for those preparing to be general and special education teachers. Competency-based approaches rely on performance assessments through which all new teachers demonstrate minimum skills, including the ability to work effectively with students of diverse abilities and backgrounds.
- Require all conditionally certified teachers to participate in an appropriate state-approved support system, similar to the current requirement for conditionally-certified special educators.

This would help to assure that they receive high-quality mentoring and supervision. The support system could be offered by the LEA, an IHE, the MDOE, or a partnership.

- Expand induction supports for beginning teachers of any certification level to further develop skills and confidence to work with students with diverse abilities in the general education (or special education) classroom. The framework for this professional development could be shared with the system of supports for conditionally certified teachers.
- Collect data on the number of individuals who are certified via transcript analysis after completing a post-baccalaureate semester of student teaching outside of an approved preparation program. These candidates may be better served by expanding the number of approved post-baccalaureate programs that provide an accelerated pathway to teaching, including paid residency options.

Challenge 2: Supply of new teachers / Access to affordable certification programs

- Consider expanded support of paid residency models, which balance the needs to lower financial barriers to teacher preparation while still allowing significant supervised practice before becoming a full-time teacher of record. Funds from Title II, Part A of ESSA could be leveraged to support the development of GYO pathways. Options could be expanded to include partnerships between LEAs and state-approved educator preparation programs. Additional competitive federal funds may be available through Teacher Quality Partnership grants, State Personnel Development Grants for special education, or Noyce fellowship programs; other funding programs have been proposed and may offer opportunities for Maine.
- Consider expanding the eligibility of the types of institutions or entities that can seek and earn state approval to offer an educator preparation program. For example, Local Education Agencies (LEAs) or Regional Service Centers could be empowered to grow their own teachers by developing state-approved pathways that support education technicians and high school students to develop competencies required for teacher certification, either independently or in partnership with institutions of higher education.
- Strengthen recruitment for GYO and/or collaborative preparation programs by offering service-based scholarships to participants. In addition to local funds, existing state programs (Educators for Maine and state loan forgiveness programs) and/or federal sources (Title II,

State Personnel Development Grants, AmeriCorps, 21st Century Community Learning Centers or competitive grant programs) could be modified or expanded for teachers in these programs.

- Promote the use of the Carl D. Perkins Grant to fund the development of Career and Technical Education pathways for high school students interesting in becoming teachers.

In summary, addressing the shortage of special education teachers and assuring that all beginning teachers are prepared to meet the needs of learners with diverse abilities and backgrounds requires a multi-pronged approach. Assuring beginning teacher competency to work with students of diverse abilities and backgrounds needs to be at the center of any approach. Thus, education policies that promote the development of dual certification and grow your own programs should include the funding and provisions for assuring that these pathways are producing high quality teachers who are prepared to meet the demands of teaching diverse learners.

Approaches to “Grow Your Own” and Dual General and Special Education Certification

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Introduction

Teacher shortages in the State of Maine have been well documented. As part of a federal requirement, the Maine Department of Education (MDOE) submits the Maine teacher shortage areas each year to the United States Department of Education (U.S. DOE). For the 2018-2019 school year, the MDOE proposed the following K-12 teacher shortage areas for the entire State of Maine for the grades listed:

Classroom Teachers:

- Computer Technology (K-12)
- Early Childhood (Ages Birth to 5 years)
- Early Elementary Education (K-3)
- English as a Second Language (K-12)
- Gifted Education (K-12)
- Health Science (K-12)
- Mathematics (7-12)
- Science (7-12)
- Social Studies (7-12)
- Spanish (K-12)
- Physical Education (K-12)

Career and Technical Education (9-12):

- Child Care and Guidance
- Computer Education
- Electrical Occupations
- Food Production Manager
- Public Safety/Protective Services
- Small Engine Repair

Specialist Teacher Roles (K-12):

- Literacy (K-12)
- Special Education (K-12)

(Maine Department of Education, 2018)

While the teacher shortage in each of these areas is of concern, the need for special education teachers is especially acute. According to the National Center for Teacher Quality (2017), “...we continue to face finite shortages of teachers in specific subjects -- especially special education and STEM fields. And our rural schools continue to struggle to keep filling their leaky buckets, as do most schools serving challenging populations.” In Maine, special education is the only teacher certification area that has been continuously listed as a shortage area since 1990 (Cross, 2017). A 2016 *Portland Press Herald* article reported that school officials stated that hiring special educators was “harder than ever and fixing to get harder” (Gallagher, 2016). As a result, districts must hire special education teachers who are not fully certified. Approximately 9% of special education teachers in Maine in 2015-2016, the most recent data available, were not “highly qualified” (U.S. DOE, 2018).

In addition to the shortage of individuals prepared to work as special education teachers, there is a need to support special education students in the general education classroom. In 2016-2017, the most recent data available, just over 85% of the Maine students identified with disabilities spent 40% or more of their time in a regular education classroom, with 57% spending more than 80% of their day in a regular education classroom (U.S. DOE, 2018). These data suggest that the majority of students who are identified with disabilities spend most of their time in classrooms with general education teachers. Yet, general education teachers' preparation to work with the special education students in their classrooms is limited. At a national level, 80% of teachers report that they feel ill-equipped to teach diverse populations (Futrell, Gomez, & Bedden, 2003). This is largely due to lack of preparation. In Maine, general educators are currently only required to have one course in special education in order to be certified.

In order to address the need for teachers who are prepared and qualified to work with students with disabilities, the Joint Standing Committee on Education and Cultural Affairs commissioned this study by the Maine Education Policy Research Institute as part of its 2018-2019 work plan. The purpose of this study is to examine dual general and special education and "Grow Your Own" approaches to teacher certification. To that end, this report begins by providing a review of relevant published research, followed by an overview of the components of teacher credentialing, requirements for general and special education teacher certification in Maine, and information about the current teacher certification pathways and programs in Maine. This is followed by descriptions of new approaches to teacher preparation that Maine might consider in order to address the need for certified special educators and general educators who are better prepared to work with students with disabilities. This background information is followed by profiles of dual certification and Grow Your Own teacher preparation models and education policies and programs in other states that are designed to address the shortage of qualified teachers who are prepared to meet the needs of students with disabilities. In conclusion, we identify possible education policy implications for Maine.

Prior MEPRI Literature Review: Teacher Credentialing Systems

In January 2017, MEPRI completed a report for the Joint Standing Committee on Education and Cultural Affairs providing a summary of the existing research base related to teacher certification; the executive summary is included in this report as Appendix A. Three categories of research summarized in the prior report are particularly pertinent for the current topic: the importance of

teacher content knowledge, the evidence on pedagogical and clinical preparation, and the research on traditional vs. alternative preparation pathways. Key excerpts are included below.

Content knowledge

(MEPRI, 2017, p. 9):

- The presence of teachers with at least a major in their subject area is the most reliable predictor of student achievement scores in math and science (Goldhaber & Brewer, 1996).
- Students who have subject matter certified teachers make higher gains in social studies and mathematics (Dee & Cohodes, 2008).
- Content learning—as proxied by disciplinary coursework requirements—is positively associated with student learning in the teachers’ second year. Content knowledge may not distinguish more and less effective teachers until their second year, when teachers are more comfortable with the basic practices of teaching (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009).
- Teachers’ knowledge of the content they teach is a consistently strong predictor of student performance (Center for Public Education, 2005).

Clinical Preparation

(MEPRI, 2017, p. 11)

- Teachers surveyed about their preparation report a desire for more, longer, earlier, and better-integrated fieldwork experiences (Levine, 2006).
- Novices need structured opportunities to gain experience in settings of actual teaching practice and the value of clinical experience depends at least as much on the quality of the experience as on the quantity. Specifically, research suggests placement in a partnership school benefits prospective teachers. Co-teaching models, where student and cooperating teachers are jointly responsible for the classroom, lead to gains in teaching ability and the academic achievement of students improves as well (Grossman, 2010).
- Teacher preparation that focuses more on the work of the classroom, is grounded in the practices of teaching, and provides opportunities for teachers to study what they will be doing as first-year teachers, is associated positively with student achievement gains in the first year of teaching; a lack of student teaching experience is negatively related to student achievement (Boyd et al., 2009).

- Prospective teachers benefit from cooperating teachers who provide both instructional guidance and opportunities for independent teaching (Fives, Hamman, & Olivarez, 2007).
- Clinical supervisors provide a critical link between the university and the school, and both the quality of feedback provided by a supervisor and the frequency of supervision are associated with better outcomes for both prospective teachers and their students (Boyd et al., 2009).

Alternative Pathway Teacher Characteristics

MEPRI, 2017, p. 13:

- Alternatively certified teachers resemble those prepared through traditional preparation programs as well as the labor market within a particular geographic location (Humphrey & Wechsler, 2007).
- Alternatively certified teachers are more likely than traditionally certified teachers to be male, be part of an underrepresented racial or ethnic minority group, be 30 years old or over, have attended a most selective undergraduate institution, and teach in-demand subjects; they are less likely to have an education degree (Redding & Smith, 2016).

Alternative Pathway Program Content

MEPRI, 2017, p. 14:

- Coursework in alternative teacher preparation programs generally mirrors that of traditional routes (Humphrey & Wechsler, 2007; Boyd et al., 2008; Redding & Smith, 2016).
- Alternatively certified teachers are less likely to have had practice teaching or a course in teaching methods (Redding & Smith, 2016).
- Alternative teacher preparation programs do not offer full certification more quickly than traditional programs, but they truncate pre-service clinical practice, quickly moving participants into classrooms. Candidates serve as the teacher of record and receive training and support of mentor teachers (Humphrey & Wechsler, 2007).

Alternative Pathway Outcomes

MEPRI, 2017, p. 14:

- Those who have more teacher training appear to do better in influencing student achievement (Darling-Hammond, Berry, & Thoreson, 2001).
- Certified teachers consistently produce stronger student achievement gains than uncertified teachers (Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005).

- Teachers who enter teaching through Teach For America (TFA), one of the nation’s largest and most well known alternative teacher preparation program, are “no worse than average traditional teachers” (Xu, Hannaway, & Taylor, 2011, p. 460). For example, in high school mathematics and science, the net effect of a TFA teacher was insignificant in math but positive in science (Xu, Hannaway, & Taylor, 2011); TFA teachers had a positive impact upon students in mathematics but no impact in reading (Glazerman, Mayer, & Decker, 2006). TFA teachers’ impact was greater than traditionally prepared teachers as well as teachers in New York City Teaching Fellows Program in middle school math (Boyd et al., 2012).
- Teachers who were certified through an alternative route are more likely to leave their positions. Alternatively certified teachers’ predicted turnover rates were 10 percentage points greater than traditionally certified teachers. Reasons cited include a lack of preparation and support (Redding & Smith, 2016).

Current Literature Review: Dual Cert and GYO Programs

Nationally, various efforts have been made to address the special education teacher shortage and better prepare teachers to work with students of diverse abilities. Two types of approaches are collaborative teacher education and Grow Your Own (GYO) teacher preparation programs. The following provides a brief overview of each approach and the current research on each.

Collaborative Teacher Education

Historically, teacher licensure in special education has been dominated by “a stand-alone certificate” that does not require the awarding of a general education license (Blanton, Boveda, Munoz, & Pugach, 2017). Yet, according to these researchers, “In today’s schools, however, where students with disabilities are included and educated in general education classrooms in an increasingly routine fashion, such a policy raises questions about whether an initial, stand alone license is sufficient for special education teachers in inclusive contexts” (p. 78). The growing expectation for students with disabilities to succeed alongside their peers has led to changing roles for both general and special education teachers (Brownell, Sindelar, Kiely, & Danielson, 2010; Youngs, Jones, & Low, 2011). Therefore, in order to address the shortage of special education teachers and better prepare general education teachers to work with students with disabilities in their classrooms, there has been increased attention to collaboration in general and special education.

Researchers Maureen Pugach and Linda Blanton (2009, 2011) developed a classification system that describes the degree of collaboration between general and special education in teacher preparation programs. The Collaborative Teacher Education framework establishes a common language for three types of programs: discrete, integrated, and merged (Blanton & Pugach, 2011).

- **Discrete** programs are separate, stand-alone programs with distinct traditional knowledge bases and little faculty collaboration between general and special education. Discrete programs are not set up to systematically relate the curriculum of one program to the other. Students who seek both licenses often complete two long programs, one in general education and one in special education, with little, if any, overlap.
- **Integrated** programs are those in which general and special education faculty engage in intentional and coordinated program-level efforts to provide a significant degree of curricular overlap in order to strengthen the preparation of both general education and special education teachers. The goal of the integrated program is to instill the knowledge and skills every teacher needs to know and be able to do to teach the diverse range of students in the classroom. However, there is no intention for every graduate to earn dual licenses upon graduation. Integrated programs can be structured in multiple ways. Some programs run parallel yet complementary general and special education programs with substantial integration in coursework and field experiences. Candidates choose to obtain either a general or special education license by specializing in one area or the other for some portion of their program. Programs may also engage prospective general and special education teachers in a shared, integrated preservice program during which they all earn a general education license, and only those who wish to earn a special education license complete additional coursework toward a master's degree and special education licensure. In this way, individuals receive preparation to serve the needs of special education students in their chosen context, and those that wish to seek dual certification have a shorter path between their first and second credential.
- **Merged** programs are designed to prepare all students to teach both general and special education. All teacher candidates in a merged program earn both general and special education licenses. Faculty collaborate in delivering a single curriculum of completely integrated courses and fieldwork.

Collaboration between general and special education through integrated and merged teacher preparation programs is an increasingly common strategy to enable all teachers to be prepared to work with students who have disabilities (Pugach & Blanton, 2009). According to Mary Brownell, Director of the Collaboration for Effective Educator Development, Accountability and Reform Center (CEEDAR) and Professor of Special Education at the University of Florida, "The ideal would be that a lot of this information is so well-integrated into your coursework, and you have multiple opportunities to practice what you're learning" (Will, 2018).

Research on collaborative teacher education programs is limited, but findings from the studies that have been completed indicate positive outcomes for general educators. For example, one study (Kent & Giles, 2016) found that a collaborative teacher education program is challenging to implement, but beneficial to the preparation of new content area teachers. The field experiences in a variety of classroom settings provided better preparation for preservice teachers to face the challenges of working with a diverse population of students in general education classrooms. In particular, preparation in classroom management and in differentiating instruction emerged as two strong areas of the program. These are common areas of weakness in preparing general educators through traditional teacher preparation programs. This was also true for a different merged secondary program in which graduates reported that they felt successful as first-year content-area teachers in diverse inclusive classrooms. They developed competency in differentiated planning, assessment, and instruction in content area classrooms and were able to embed the provision of accommodations into their planning process and collaboratively engage with colleagues (Fullerton, Ruben, McBride, & Bert, 2011). In another study, teacher candidates in an integrated teacher education program, in which elementary, secondary and special education preservice teachers took a shared set of courses, were able to implement professional practices that promoted not only access to, but also progress in, the general education curriculum for the students with disabilities (Utley, 2009). Finally, Kim (2011) found that preservice teachers who graduated from teacher preparation programs in which both general education and special education teacher preparation curricula were infused had significantly more positive attitudes toward inclusion than preservice teachers who graduated from discrete programs.

In addition to benefits for general educators, collaborative programs are also intended to improve preparation of special education teachers. By providing special educators with a better understanding of the general education curriculum and what students with special needs experience during their time in the general classroom, special education teachers may be better able to design and implement supports that can help students throughout the day. In addition, it is thought that dual preparation might encourage some general educators to pursue special education careers, thus increasing the pipeline for this shortage area. However, there is not yet an established research base to affirm that either of these positive impacts can be clearly attributed to collaborative programs; additional research is needed in this area.

“Grow Your Own” Teacher Preparation

Educational research indicates that teachers have a preference for working close to where they grew up (Reininger, 2011). More than 60 percent of America’s teachers work within 20 miles of where they went to high school (Brown, 2016). With an understanding of these data, a number of “Grow Your Own” (GYO) teacher preparation programs have been developed to address teacher shortages and boost teacher recruitment and retention. GYO programs recruit local community members such as career changers, paraprofessionals, after-school program staff, or others currently working in schools and prepare them to become teachers (Espinoza et al., 2018; Alvarez, 2017). According to Espinoza et. al. (2018), “community members offer a sustainable solution to teacher shortages while also increasing the diversity of the teacher workforce” (p. vii).

Like collaborative preparation programs, GYO programs take different forms and have different foci. Common types of GYO programs include paraprofessional teacher training programs, “2 + 2” programs that allow candidates to begin teacher preparation at a community college and then finish at a 4-year institution, and high school teaching academies or cadet programs to interest secondary school students in teaching (Espinoza et. al., 2018). In GYO programs operated by school districts, district needs drive shifts in teacher preparation programs’ pipelines, structures and systems (Education First, 2016). For example, some GYO programs have focused on addressing the need for special education teachers and have supported prospective teachers to earn dual certification. Additionally, GYO programs are also a strategy for recruiting and retaining teachers of color (Valenzuela, 2017).

Most GYO programs have been created in urban or rural areas to specifically address their school staffing challenges. GYO programs tackle the problem of recruiting and retaining teachers from away. In urban areas, traditionally trained teachers tend to leave within a few years. GYO programs confront this trend by actively recruiting teachers of color and those from the neighborhoods that have teacher shortages and thus have already demonstrated an affinity for the locality (Martin, 2016). Similarly, in rural GYO programs an underlying assumption is that individuals who grow up and have positive experiences in a rural community are more likely to stay to teach in a rural school (Gagnon & Mattingly, 2015).

Research on outcomes of GYO programs is in its infancy (Valenzuela, 2017). However, the growing body of scholarship underscores the value of recruiting people who could successfully transition to teaching in the community from which they come (Gist, Bianco, & Lynn, 2019; Skinner,

Garreton, & Schultz, 2011; Valenzuela, 2016). Research also supports growing your own teachers as a viable means of creating a continuous supply of quality, prospective candidates who are reflective of the diverse teacher workforce needs in rural areas (Sutton, Bausmith, O'Connor, Pae, & Payne, 2014) and within a local school community (Missouri Office of Educator Quality, 2016). With respect to the local school and community teacher pool, retention has been found to be high for paraprofessionals (Abramovitz & D'Amico, 2011). GYO programs have also served to diversify the teacher workforce in particular areas (Valenzuela, 2016; Perona, LaSota, & Haeffele, 2015).

Recent research on implementation of GYO programs also points to challenges they have faced. Initial start up may be costly. Additionally, recruitment practices in these programs produce mixed results (Martin, 2016). For example, in an evaluation study of the Illinois Grow Your Own Teacher Education Initiative, Perona et al., (2015) found that recruitment of qualified candidates who have the academic skills to be successful may be a challenge. They also found attrition rates at the preparation stage of approximately 50%.

Alternative Teacher Preparation & Residency Models

Descriptions

When describing teacher preparation, two other terms are important to define: “alternative” programs and “residency” programs. These models are not distinct from collaborative and GYO programs; a program can be both GYO and alternative, for example. However, the two terms are important to define as they are frequently used in descriptions of teacher preparation approaches.

Every state has alternative pathways to teacher certification, but the pathways vary. A common attribute is that they allow individuals who have already have bachelor's degree to bypass the time and expense involved in attaining a teaching degree or completing a graduate program (Woods, 2016). In many alternative pathways individuals serve as the teacher of record before having completed all of the requirements for full initial certification in their state. The beginning teacher typically pursues coursework and receives additional mentoring in addition to their teaching duties. In theory, alternative programs could also be considered collaborative if the teacher pursues both general and special education certification while serving as a teacher, and an alternative program can also be considered GYO it targets a specific geographic population in its recruitment efforts and/or program design, for example, the New York City Teaching Fellows program.

“Residency” programs are a more recent arrival on the teacher preparation landscape. Building on the model used in medical fields, a teacher residency program is defined in the Every Student Succeeds Act as “a school-based teacher preparation program in which a prospective teacher, for not less than one academic year, teaches alongside an effective teacher, as determined by the state or local educational agency, who is the teacher of record for the classroom, receives concurrent instruction during the year, through courses that may be taught by local educational agency personnel or by faculty of the teacher preparation program; and in the teaching of the content area in which the teacher will become certified or licensed; and acquires effective teaching skills, as demonstrated through completion of a residency program, or other measure determined by the state, which may include a teacher performance assessment” (ESEA, Sec. 2002(5)). In other words, the pre-service teacher resident works as an apprentice in the classroom of an experienced mentor teacher for at least a full academic year while also taking courses required for certification. Unlike alternative programs, the candidate is not the teacher of record, although he or she is expected to take on increasing classroom responsibilities as the year progresses. In most models the residents are also paid a stipend for their contributions in the classroom.

Paid residencies are most common in teacher shortage areas such as special education, math, or science. If the local school district pays for the teacher candidate’s stipend (and possibly benefits) it will typically require the recipient to commit to teaching in the district after completing certification requirements. The candidate will also have job expectations to fulfill for the district in exchange for the stipend, typically in a paraprofessional role. This arrangement requires careful planning to allow the resident with time to fulfill their paid duties and also have opportunities to practice classroom teaching. In other paid models, the teacher residents receive a stipend that is paid by another source such as a state or federal grant or scholarship, which allows their time in schools to be more like a traditional student teaching experience (i.e. without competing job expectations). Federally-funded residents must repay the scholarship if they do not complete a minimum number of years of teaching in a qualifying school setting after program completion.

Effectiveness

The available research evidence on alternatively-prepared teachers is mixed, as depicted in the prior MEPRI literature review summarized above. On the whole, those completing alternative pathways are not significantly better or worse teachers than those completing traditional programs when assessed by their students’ test scores. They are, however, more likely to leave the teaching

profession than those prepared through traditional routes.

Residency models blur the lines between traditional and alternative programs. They are like traditional programs because the participants are not teachers of record with full classroom responsibilities. But they are like alternative programs in the intensity and duration of immersion in clinical practice, and also in that they are typically paid, thus attracting a similar pool of candidates, including career-changers. Research does not yet exist to directly compare residency models to either traditional programs with a one-semester student teaching experience or to alternative models such as Teach for America. However, there is emerging research on some of the underlying characteristics of residency models that suggest potential benefits.

Boyd, Grossman, Lankford, Loeb, and Wyckoff (2009) conducted a large-scale quantitative analysis of student achievement data from teachers prepared through different programs in greater New York City. They found that although there was wide variation in teacher impacts within graduates of the same program, there were also discernible differences between the average impacts of each program. While effects were arguably small, analysis found that graduates from programs with performance-based assessments, strong oversight of student teaching, and course requirements related to the content being taught produced teachers that were more effective in their first year of teaching. Most of these differences diminished or disappeared in the second year of teaching. Separate studies have found that teacher effectiveness increases with experience, and that this increase is largest in the beginning years of teaching (Clotfelter et. al., 2006; Hanushek et. al., 2005; Boyd et. al, 2006). Residency programs emphasize clinical preparation, provide the most pre-service clinical experience of all preparation pathways, and incorporate most of these elements in their design. Taken together, these findings suggest that the residency model is well positioned to prepare effective teachers. However, the same logic could apply to traditional and alternative programs that similarly emphasize clinical preparation through strong mentoring, performance assessment, and an emphasis on practical experience.

More qualitatively, the National Center for Teacher Residencies, a non-profit that advocates and supports establishment of new residency programs, has collected data on its network of 36 programs. While not experimental or comparative, NCTR reports survey data from employers indicating that graduates from its residency programs “outperformed new teachers prepared from other programs” and “improved student achievement and student learning at their school” (NCTE, 2019).

Summary

Research evidence related to the efficacy of collaborative teacher education and Grow Your Own programs is limited. Additionally, the design of collaborative teacher education programs and Grow Your Own programs vary widely. Thus, it is difficult to make generalizations about either type of program. However, the existing research suggests that both Grow Your Own and collaborative teacher education programs show promise for addressing the special education teacher shortage and better preparing teachers to work with students of diverse abilities. The challenge may be recruiting qualified candidates and supporting them to become teachers.

Alternative pathways and paid residency programs have become increasingly popular approaches because they help recruit teachers into shortage areas by alleviating some of the financial barriers to completing a traditional student teaching experience. Available research suggests that residency models, in which the candidates have a full year of experience in schools *prior* to becoming a teacher of record, have more likely to have positive outcomes than alternative programs.

Maine Certification Requirements

Components of Teacher Credentialing

Like most states, the Maine Department of Education (MDOE) reviews all individuals to assure that they have met certain basic requirements before they can be hired as public school teachers. Maine's current credentialing process establishes entry-level requirements for a three year "conditional" certificate, and more robust requirements for a five-year "professional" certificate. Within each certificate type, specific requirements vary depending on the grade level and subject that the prospective educator will teach. Because of the variety of pathways into teaching via traditional and alternative routes, credentialing systems must operate within both the pre-service teacher preparation and in-service teacher evaluation spheres. To help ensure that all teachers are qualified to work with children, Maine's system includes the following components:

- A criminal background check to screen out individuals whose prior history suggests they may pose a risk to children;
- A basic skills test (Praxis I) to assure competency in the core foundational areas of reading, writing, and mathematics;

- Review of the individual’s knowledge of the content area(s) to be taught, as measured by successful completion of relevant college coursework and achieving passing score(s) on a subject-specific standardized content assessment (Praxis II);
- Review of general and subject-specific pedagogical knowledge as measured by passing grades in selected methods courses;
- Demonstration of adequate teaching skill during a hands-on clinical experience. This can be met through a college transcript with a passing grade in a student teaching (or internship) course completed during a pre-service program, or through employer verification that an individual successfully completed one year of full-time teaching under a conditional certificate.

In combination, these components are intended to assess the degree to which a prospective Maine teacher has the necessary content knowledge, pedagogical knowledge, and experience to be effective.

Requirements for K-8 Elementary and K-8 Special Education Certification

Tables 1 and 2 summarize the specific requirements in Maine for entry level (conditional) and full initial (professional) certification for elementary and elementary special education certification based on the requirements to be in effect in July 2019. Changes to some of these requirements have been proposed and are denoted with an asterisk (*).

Table 1: Requirements for Elementary (Grades K-8*) Certification (Endorsement 020)

	Minimum requirements for Conditional Certificate	Additional Requirements for Professional Certificate
Basic	Criminal History Records Check	No additional requirement
Academic Content Knowledge	Bachelor’s degree from an accredited institution, including 6 semester hours each in English, mathematics, science, and social studies	<ul style="list-style-type: none"> • Composite score of 468 on Praxis I test of reading, writing, and mathematics; • Passing scores on Praxis II “Elementary School Content Knowledge multiple-subject tests (5031) in English, math, science, and social studies
Pedagogical Content Knowledge	None	<ul style="list-style-type: none"> • 3 semester hours each in the following areas: literacy methods with emphasis on reading instruction, reading methods, writing instruction methods**; elementary mathematics methods; elementary science methods, elementary social studies methods; and teaching exceptional students in the regular classroom. • Pathway 1 only: Additional program-required courses, performance assessments, and clinical experiences through which they demonstrate proficiency in the Maine Initial Teacher Certification Standards delineated in rule Ch 114 • Pathway 2 only: Principles of Learning and Teaching Exam, or completion of an approved alternative professional studies program
Clinical	None	<ul style="list-style-type: none"> • One semester (minimum of 15 weeks full-time) of student teaching [Pathway 1 or 2], OR • Completion of one full year of successful teaching under a conditional certificate at the specified grade level [Pathway 2]

* Until 7/1/19, the Elementary certificate includes grades K-8. Effective 7/1/19, recently enacted rule changes will narrow the grade span to grades K-6. Proposed rules would revert the definition back to grades K-8.

** Before 7/1/19, existing rules require only 6 credits in literacy methods (reading methods plus an elective). Table 1 reflects requirements in effect on 7/1/19 to add 3 credits in writing methods. Proposed rule changes would further amend the language describing the content of the 9 required credits in literacy.

Table 2: Requirements for Special Education Certification (Teacher of Children with Disabilities, Grades K-8, Endorsement 282)

	Minimum requirements for Conditional Certificate	Additional Requirements for Professional Certificate
Basic	Criminal History Records Check	No additional requirement
Academic	Bachelor’s degree from an accredited institution	Composite score of 468 on Praxis I test of reading, writing, and mathematics;
Pedagogical Content Knowledge	9 semester hours in special education	<ul style="list-style-type: none"> • Additional 15 semester hours in special education (24 credits total). Courses must include special education law, instructional planning, assessment, classroom management, and transition planning • Passing scores on Praxis II - Special Education: Core Knowledge and Applications • Pathway 1 only: Additional program-required courses, performance assessments and clinical experiences through which they demonstrate proficiency in the Maine Initial Teacher Certification Standards delineated in rule Ch 114 • Pathway 2 only: Principles of Learning and Teaching Exam, or completion of an approved alternative professional studies program
Clinical	None	<ul style="list-style-type: none"> • One semester (minimum of 15 weeks full-time) of student teaching [Pathway 1 or 2], OR • Completion of one full year of successful teaching under a conditional certificate at the specified grade level [Pathway 2]

Special Educator Preparation Approaches in Maine

Currently in Maine, there are five state-approved programs for initial special education certification at the following institutions: University of Maine, University of Maine at Farmington, University of Southern Maine, University of Maine at Machias, and St. Joseph’s College. All institutions that provide special education preparation also have general education programs. In addition, the state provides an alternative pathway to certification through its “transcript analysis” system, which is a common route to initial special education certification. Table 3 presents the number of individuals completing Maine-based programs for elementary or special education in the most recent reporting year by program (MDOE Title II Report, 2018).

Table 3: Graduates of Maine General and Special Education Preparation Programs

Institution	Number of Initial Program Completers in 2016-17			
	K-8 Elementary	K-8 Special Education	7-12 Special Education	All Content Areas
University of Maine	39	0	0	88
University of Maine at Farmington	54	7	1	112
University of Southern Maine	40	7	5	98
University of Maine at Machias	6	0	0	8
St. Joseph’s College	10	1	0	16
Transcript Analysis Pathway (MDOE)*	31	20	1	110
Total	180	35	7	432

Source: Maine Title II Data, <http://title2.ed.gov>

**Includes individuals receiving their first initial provisional teaching certificate; those previously certified in another endorsement area, prepared in another state, or receiving a renewal are excluded.*

Transcript Analysis

As Table 3 illustrates, the largest single pathway to special education certification is transcript analysis. Transcript analysis serves those who seek teacher certification without going through a state-approved teacher preparation program offered through an institution of higher education. Known as Pathway 2 in MDOE Rule Chapter 115, transcript analysis requirements differ from the approved teacher certification programs offered by institutions of higher education (Pathway 1). It is Maine’s de facto “alternative” pathway to teacher certification; however, it does not function as a “program” in that it does not recruit, prepare, or evaluate candidates’ skills. Individuals become certified through transcript analysis after demonstrating completion of the minimum coursework, standardized tests, and clinical experiences delineated in the rule chapter.

The most notable differences between approved programs and transcript analysis are 1) that student teaching can be waived for individuals pursuing transcript analysis upon completion of one year of successful teaching, 2) transcript analysis completers must pass the Principles of Learning and Teaching (PLT) exam, whereas individuals completing a state-approved program receive an institutional recommendation to verify that the candidate has demonstrated competency in all of

Maine’s initial teaching standards, and 3) transcript analysis typically requires fewer pedagogical courses than completion of an approved program. The academic requirements and standardized test requirements other than the PLT are the same for Pathway 1 and Pathway 2. In addition, approved programs must undergo a comprehensive review every five to seven years to ensure that they are preparing candidates that meet the ten Core Teaching Standards of the Interstate Teacher Assessment and Support Consortium (InTASC) plus the National Educational Technology Standards for Teachers (NETS-T). Transcript analysis is not subject to regularly-scheduled State Board of Education review or approval.

The fact that transcript analysis is the largest pipeline to special education certification indicates that it merits attention as an important part of Maine’s educator preparation system.

Transcript analysis serves four distinct categories of prospective teachers:

1. Individuals without prior teacher preparation who are hired to teach under a conditional certificate because a school district was unable to find a suitable certified candidate. These teachers are upgraded from conditional to full certification status after one year of successful teaching and completion of the required Pathway 2 courses and exams.
2. Individuals who completed teacher preparation in another state and are not otherwise eligible for interstate reciprocity. Because reciprocity agreements vary from state to state, individuals trained elsewhere may need additional courses or tests to meet Maine’s expectations, and transcript analysis will identify any gaps.
3. Existing certified Maine teachers who seek to earn a credential in an additional subject area(s) or grade level(s) also use the same process of transcript analysis to identify the courses and tests they must complete. However, they are not generally considered transcript analysis “program completers” because the spirit of the term applies only to the initial teaching certificate in Maine.
4. Individuals who do not have ready access to a teacher preparation program that meets their needs and/or preferences, and seek a more self-designed route to certification. They can take state-approved courses at one or more accredited institution, including a student teaching experience, and submit their transcripts for Pathway 2 certification.

The first three groups of individuals can teach under a conditional certificate while they complete any missing requirements for initial certification. The fourth category completes all requirements (including a traditional student teaching experience) prior to receiving certification. All four categories of teachers certified through transcript analysis can be characterized as “GYO” candidates depending on their circumstances, but only the first and fourth categories are in keeping with the spirit of “alternative” pathways to initial teacher certification.

Those who enter teaching as Conditionally certified teachers typically have less pedagogical content knowledge and no prior supervised clinical experience. Beginning this year, new conditionally certified special educators participate in Maine’s Alternative Certification Mentoring Program, a partnership between the Maine Department of Education and the University of Maine. The program offers intensive, structured mentoring and coursework through the University of Maine, University of Maine at Farmington or the University of Southern Maine for new conditionally-certified special educators to work toward professional certification. The program increases the support of conditionally-certified teachers who lack pre-service teacher preparation, and can thus be classified as an “alternative” preparation route. As described in the literature review above, there are tradeoffs between alternative approaches and pre-service preparation pathways that fully prepare teachers to work with students with diverse abilities *prior* to becoming a teacher of record.

University of Maine System Approved Programs

As required by MDOE Rule Chapter 114, an educator preparation program must meet the state adopted standards and be authorized as an accredited degree-granting unit to recommend its graduates for certification. Programs that are nationally accredited undergo review and reauthorization every seven years, and those approved only by the state are reviewed every five years. As noted above, four of the five campuses that are approved to offer initial special education certification are within the University of Maine System (UMS): the University of Maine, the University of Maine at Farmington, the University of Maine at Machias and the University of Southern Maine. These campuses have the vast majority of special education program completers. They all are also approved to offer general education. Documents were analyzed and teacher educators from each of these campuses were interviewed to collect data on the extent of collaboration between general and special teacher education pathways at each institution. Through an analysis of these data, we found several opportunities for teacher candidates within the UMS to better prepare themselves to work with students who have disabilities.

The following profiles provide a synthesis of each campus' current pathways as described using the Collaborative Teacher Education Framework (Blanton & Pugach, 2011). Each campus' description includes an overview of how a K-8 or 7-12 Teacher of Children with Disabilities (282) certificate may be added to a K-3 (029) Early Elementary Teacher, K-8 (020) Elementary Teacher, or 7-12 Secondary Teacher (in English/language arts (100), life science (395), mathematics (300), physical science (350), or social studies (200)). As this report's primary focus is K-12 education, pathways for Birth-5 (081) Early Childhood Teacher certification and Birth-5 (282) Teacher of Children with Disabilities are not included in the discussion unless the student may earn one of the certifications in conjunction with K-3 or K-8 general or special education.

University of Maine

The University of Maine (UM) offers **discrete** pathways for special education at the graduate level and for general education at the undergraduate and graduate levels. Their teacher certification pathways are nationally accredited and state approved. The University of Maine does not have a state approved pathway for dual certification. However, undergraduates who major in Elementary (K-8) Education, Secondary (7-12) Education or Child Development and Family Relations with a concentration in Early Childhood Education (K-3 and Birth-age 5) at the University of Maine may complete the requirements for the special education credential (K-8 or 7-12) through the graduate M.Ed. in Special Education. Additionally, prospective secondary teachers who already have a bachelor's degree in a content area but no prior certification may complete dual certification online through the University's Master of Arts in Teaching program plus the M.Ed. in Special Education. The special education coursework is available online so students may complete their special education certification coursework at a distance and while they are employed. Because of this flexibility, the M.S.Ed. also serves individuals who are already teaching Special Education under a conditional certificate. Referring to the initial teacher certification in special education pathway Associate Dean and Professor Jim Artesani states, "Most of our students achieve certification prior to graduation, but not all of them. Most students come into the program on a conditional certification and they take the track that will lead to certification." These candidates subsequently obtain certification through Maine's transcript analysis route and are thus considered alternative program completers; they are not reported as UMaine program completers because they do not complete a student teaching experience that is supervised by the institution.

University of Maine at Farmington

On its campus, the University of Maine at Farmington (UMF) offers **discrete, integrated** and **merged** pathways for general and special education teacher certification that are nationally accredited and state approved. Through their discrete pathways, UMF students may earn bachelor's degrees and teacher certification in Early Childhood Special Education (Birth-age 5), Early Childhood (Birth-age 5 or K-3) Education, Elementary (K-8) Education, Secondary (7-12) Education, or Special Education (K-8 or 7-12). In their merged program, Early Childhood Special Education majors can opt for additional fieldwork and coursework for the Birth-5 and general K-3 certification. Students who opt for the additional Birth-5 teacher certification can graduate in 4 years. Students who opt for general K-3 teacher certification in addition to the coursework for the Birth-5 and Special Education teacher certification require 4 years plus one additional semester for student teaching to obtain all three endorsements.

The Early Childhood (Birth-age 5 or K-3) Education, Elementary (K-8) Education or Secondary (7-12) Education major may also be integrated with special education through the completion of the Special Education minor. The minor in Special Education does not result in dual certification as it does not include a clinical experience (i.e. student teaching). As the University of Maine at Farmington 2018-2019 catalog states “The purpose of the Special Education Minor is to respond to the growing need for all teachers to provide appropriate educational services to students with disabilities.” Education majors preparing to be general educators who complete the minor in Special Education and want to add special education certification need to complete a year of teaching as a special educator under a conditional teaching certificate and then go through transcript analysis in order to become fully certified.

Elementary Education or Secondary Education graduates who do not complete the minor in Special Education but would like to earn dual certification may participate in the Special Education Alternate Route to Certification (SPARC) program after they graduate. The SPARC special education courses are offered online so they accommodate the schedules of those who are working or who live at a distance. Students who complete the SPARC program courses also need to complete a year of teaching as a special educator and go through transcript analysis in order to become certified as a special educator.

University of Maine at Machias

Presently, the University of Maine at Machias (UMM) offers **discrete** and **integrated** teacher education programs in general and special education. In their discrete programs, undergraduate students may earn general education certification through a B.S. in Elementary (K-8) or Secondary (7-12) Education. They may integrate special education preparation through a concentration in Special Education with an additional student teaching experience, for a total of a full year of student teaching. Post-baccalaureates may earn certification in Elementary (K-8), Secondary (7-12) or Special Education (K-8 or 7-12). Each of their discrete pathways is state approved. Courses in elementary and secondary education are offered face-to-face and the special education coursework is offered online. As with UMaine and UMF, individuals who are working as conditionally-certified special education teachers may pursue courses from the UMM special education concentration to fulfill requirements and earn certification through the state transcript analysis pathway.

University of Southern Maine

The University of Southern Maine offers **discrete** and **merged** programs for general and special education teacher certification that are nationally accredited and state approved. Undergraduates who complete general K-8 or 7-12 certification may add special education teacher certification through the Masters of Science in Special Education. As with the other UMS institutions offering special education certification, courses for the M.S. in Special Education are also open to conditionally-certified teachers, who then obtain initial special education certification through the alternative transcript analysis pathway.

Additionally, the Master of Science in Special Education with a concentration in Integrated General Education and Special Education is a merged program designed for those seeking K-8 or 7-12 dual initial teacher certification in general education and special education. According to the Program Overview, the design is based upon the principle that “a teacher, regardless of appointment as general educator or special educator, is better able to serve students with or without disabilities when their preparation includes the knowledge and skills requisite for teaching students with diverse abilities and backgrounds.”¹ The program supports districts in the recruitment of well-qualified special education and general education teachers, and can also be considered a “Grow Your Own” approach as it is designed for those working as educational technicians, and is online so that it can accommodate the

¹ <https://usm.maine.edu/special-education/integrated-general-and-special-education-teacher-certification>

teacher candidate’s employment and other responsibilities. It is the only paid residency model in Maine. Table 4 provides a summary of the above described collaborative teacher education pathways at each campus.

Table 4: Collaborative Teacher Education Pathways within the University of Maine System

Model	Degree(s)	Certification Areas
University of Maine		
Discrete	B.S. in Elementary or Secondary Education plus M.Ed. Special Education with a concentration in High Incidence Disabilities	K-8 (020) or 7-12 (100 English/language arts, 395 life science, 300 mathematics, 350 physical science, or 200 social studies) and K-8 or 7-12 (282)
Discrete	B.S. in Elementary or Secondary Education plus M.Ed. Special Education with a concentration in Dual Low Incidence and High Incidence Disabilities	K-8 (020) or 7-12 (100 English/language arts, 395 life science, 300 mathematics, 350 physical science, or 200 social studies), K-8 or 7-12 (282) and K-12 (286)
Discrete	B. S. Child Development and Family Relations with a concentration in Early Childhood Education and a concentration in High Incidence Disabilities Teacher of Students with Disabilities	Birth-5 (081), K-3 (029) and K-8 (282)
Discrete	M.A.T. plus M.Ed. Special Education with a concentration in High Incidence Disabilities	7-12 (100 English/language arts, 395 life science, 300 mathematics, 350 physical science, or 200 social studies) and 7-12 (282)
University of Maine at Farmington		
Merged	B.S. in Early Childhood Special Education with Birth to 5 and K-3 certification option	Birth -5 (282), Birth-5 (081) and K-3 (029)
Integrated	B.S. in Elementary Education plus a Minor in Special Education plus 1 year of teacher special education	K-8 (020 and 282)
Discrete	B.S. in Special Education	K-8 or 7-12 (282)
Discrete	B.S. in Elementary or Secondary Education plus SPARC plus 1 year of teacher special education	K-8 (020) or 7-12 (100 English/language arts, 395 life science, 300 mathematics, 350 physical science, or 200 social studies) and K-8 or 7-12 (282)

Table 4, Cont.

University of Maine at Machias		
Integrated	B.S. in Elementary or Secondary Education with a concentration in Special Education plus student teaching in special education.	K-8 (020) or 7-12 (100 English/language arts, 395 life science, 300 mathematics, 350 physical science, or 200 social studies) and K-8 or 7-12 (282)
Discrete	Post-baccalaureate certification in Elementary or Secondary Education and Special Education.	K-8 (020) or 7-12 (100 English/language arts, 395 life science, 300 mathematics, 350 physical science, or 200 social studies) and K-8 or 7-12 (282)
University of Southern Maine		
Merged	M.S. Special Education with Integrated General and Special Education Initial Teacher Certification	K-8 (020) or 7-12 (100 English/language arts, 395 life science, 300 mathematics, 350 physical science, or 200 social studies) and K-8 or 7-12 (282)
Discrete	Elementary or Secondary Teacher Certification (Bachelors level) plus M.S. Special Education	K-8 (020) or 7-12 (100 English/language arts, 395 life science, 300 mathematics, 350 physical science, or 200 social studies) and K-8 or 7-12 (282)

Summary

There are multiple opportunities for general education teacher candidates within the University of Maine System to better prepare themselves to work with students who have disabilities. Only two institutions, the University of Maine at Farmington and the University of Southern Maine, have articulated collaborative pathways for dual general and special education. Each pathway has limitations with respect to its ability to support teacher candidates to earn dual general and special education teacher certification. Limitations of the dual B.S. in Early Childhood Special Education with the option for Birth-5 and general Early Elementary certification at the University of Maine at Farmington are that the program takes more than four years to complete all the certification requirements, and candidates are only prepared as a Teacher of Students with Disabilities from Birth-age 5. To be certified in K-8 or 7-12 special education, students would need to complete the major in Special Education or pursue the transcript analysis pathway. A limitation of the Integrated program at the University of Southern Maine is the amount of coursework beyond the bachelor's degree to complete the graduate degree in special education and dual certification, with a minimum of 36 credits

for those who earned secondary teacher certification as an undergraduate to 51 credits for those seeking both K-8 general and special education certification at the graduate level. The discrete and integrated pathways at the UMS institutions support teacher candidates to complete special education courses as a part of a minor, concentration or a graduate degree in special education but do not include student teaching in special education and are not state approved, and thus, are limited by the fact that they do not result in a recommendation for special education teacher certification.

The Transcript Analysis pathway serves a variety of individuals with bachelor's degrees who seek certification without completing an entire state-approved pre-service teacher preparation program. The primary benefit of this pathway is a shortened route to earning the credential, with fewer pedagogical course requirements and the potential to substitute a year of teaching for an unpaid student teaching experience. One limitation is that students receive less advising and oversight from higher education institutions as they complete their requirements, leaving the Maine Department of Education to provide guidance to individuals on how to meet the qualifications. Because the individuals are not formally enrolled in a program there is no overarching review of their specific strengths and needs unless they are employed in a school and subject to performance evaluation. This may lead to gaps in preparation.

Noteworthy Models for Addressing Teacher Shortages in Special Education

The above pathways for special and dual certification in Maine are limited in number and opportunities. To expand pathways, we can look beyond Maine for dual certification and Grow Your Own models. We can also look to education policies in other states for models to address the need for qualified teachers to work with students with disabilities.

Models of Preservice Collaborative Teacher Education Programs

A number of higher education institutions across the country have designed and implemented collaborative teacher education programs that lead to dual certification. These programs are offered at both the graduate and undergraduate levels. The Collaboration for Effective Educator Development, Accountability and Reform Center (CEEDAR) has worked with more than 20 states to help them enhance their teacher education programs and ensure that general education teacher preparation programs are training teachers to serve all learners, especially those with disabilities (Will, 2018). Among the CEEDAR Center's outcomes is a policy snapshot of Dual Certification Programs. What

follows in this section are profiles of four dual certification programs in New England that may serve as models from which Maine can learn.

Granite State University

Granite State University offers two post-baccalaureate dual certification teacher education programs. The first is Early Childhood Special Education and Early Childhood Education, and the second is General Special Education and Elementary Education. Each program is 45 credit hours. Dual certification candidates are required to log 440 clinical hours participating in inclusive and special education settings as well as in specific content areas such as math, reading/English language arts, social studies and STEM. This may be categorized as an merged approach; it is not specifically GYO, and is not an alternative nor a residency model.

Southern New Hampshire University

On their campus, Southern New Hampshire University (SNHU) offers programs leading to dual elementary teaching certification for grades K-8 and general special education teaching certification for grades K-12 at the undergraduate and graduate levels. At the undergraduate level, SNHU offers a B.A. in Elementary Education with General Special Education (K-12). The degree is a total of 120 credit hours with 78 of those in the major. At the graduate level, there are two 36-credit masters of education dual certification degree programs: 1) Early Childhood and Special Education and 2) Elementary and Special Education. Each of the programs are 15 months in length. Coursework in each of the dual certification courses include education courses designed for general education, courses that explicitly note the integration of general and special education and four special education courses, making this a merged approach. Candidates also spend a full year working in public schools as well as in an SNHU sponsored summer learning program for which candidates develop summer Project Based Learning activities; thus it is also considered a residency model (unpaid).

Antioch University of New England

Antioch University of New England offers an M.Ed. in Dual Elementary General/Special Education. The program is a special education concentration within the elementary teacher certificate. Students are required to take 42 credits plus six courses specific to the special education concentration. The program also includes two 3 credit hour internships: 1) lead teaching in a self-contained classroom conducting “integrated curriculum” in elementary school grades K-6; and 2) teaching with a special education teacher in an approved school or an alternative special education setting. The

integrated program for teacher certification offers three different internship options: Resident Intern, Working Intern, and Classroom Intern. Resident interns have the opportunity to work alongside model teachers in paid, part-time resident intern positions. Working interns have the opportunity to work as a teacher or assistant teacher as they work toward teacher certification; this pathway would be considered an “alternative” program. Like the other interns, Classroom interns placed in schools are immersed in classroom settings where they can apply their learning, but they do not need employed.

University of Vermont

The University of Vermont offers K-8 or 7-12 dual certification to its education majors. The 21-credit special education minor allows Education majors to complete dual licensure in their chosen area of teacher education as well as special education. Students complete courses in assessment, applied behavior analysis, early or adolescent literacy, and research-based instructional methods for including students with disabilities in general education classrooms. One full year of student teaching with mentors from both special and general education is required, making it a residency model; students complete a six credit special education internship, generally in the same school where they are student teaching. This qualifies as a merged model.

Table 5: Dual Certification Programs Snapshot provides an overview of each of the above described dual certification programs. As this snapshot illustrates, dual certification are offered at the undergraduate and graduate levels. Most of the dual certification programs are offered at the elementary level. Additionally, the dual certification programs in the snapshot range in credit hours from a 36 credit hour master’s degree to 78 credit hour undergraduate majors.

Table 5: Dual Certification Programs Snapshot

Institution	Program/Degree(s)	Certification Areas	Credit Hours
Granite State University	Post-Baccalaureate General Special and Elementary Education	K-8 General & K-12 Special Education	Program=45
Southern New Hampshire University	M.Ed. in Elementary and Special Education	K-8 General & K-12 Special Education	M.Ed.=36
	B.A. in Elementary and General Special Education	K-8 General & K-12 Special Education	Major=78 B.A.=120
Antioch University of New England	M.Ed. Elementary and Special Ed	K-8 General & K-12 Special Education	M.Ed.=42
University of Vermont	B.S. in (Elementary) Education with a minor in Special Education	K-6 General & Special Education	Pre/Professional Ed. Requirements=57 Minor= 21 B.S.=120
	B.S. in (Middle Grades) Education with a minor in Special Education	5-9 General & Special Education	Pre/Professional Ed. Requirements=48 Minor= 21 B.S.=120
	B.S. in (Secondary) Education with a minor in Special Education	7-12 General & Special Education	Pre/Professional Ed. Requirements=45 Minor= 21 B.S.=120

Models of “Grow Your Own” Programs

As noted above, GYO teacher pathways vary. They can have different foci and target different audiences. GYO programs are underway in many states and are offered by different organizations including higher education institutions (IHEs), local education agencies (LEAs), or partnerships between the two. The following examples represent this variety, but each was selected because it may specifically serve as a model for addressing the special education teacher shortage in Maine.

Teach Western Mass

Teach Western Mass (TWM) is a partnership founded by Holyoke Public Schools, the Springfield Empowerment Zone Partnership, and UP Education Network, with support from the Irene E. and George A. Davis Family Foundation and the Massachusetts Department of Elementary and Secondary Education. The partnership is building a pipeline of dedicated and diverse educators who

reflect the makeup of the region and who possess the content knowledge and skills to teach subjects where great teachers are in short supply (e.g., math, science, special education, and English as a Second Language). TWM has three pathways. The first is the TWM Residency, a one-year accelerated state-accredited teacher preparation program whereby candidates are employed full-time as teachers as they spend the year developing foundational teaching techniques in a classroom with personalized training and expert coaches to guide them along the way. Despite the “residency” title, it meets the criteria to be considered an alternative program. The second is the Urban Education Pathway (UEP). UEP is a multi-year unpaid experience that gives undergraduate students, called UEP Scholars, the opportunity to intern in urban schools and build professional skills. They work directly with children in classrooms alongside teachers and learn from experienced educators in seminars and workshops. The third is the TWM Graduate Fellowship for students enrolled in the Smith College or Mount Holyoke College Master of Arts in Teaching (M.A.T.) degree programs, or the University of Massachusetts-Amherst's TEACH 180 Days in Springfield M.Ed. program. In addition to a \$10,000 living stipend, TWM Fellows have learning opportunities through one-on-one mentorships and monthly professional development sessions, and have continued access to TWM resources as they progress in their careers. This is best characterized as a residency model as they are not teachers of record.

Pipeline for Paraprofessionals, Boston, Massachusetts

Pipeline for Paraprofessionals in Boston is a partnership between Boston University and Boston Public Schools (BPS) and partially funded by the Massachusetts Department of Elementary and Secondary Education’s Elevate Preparation: Impact Children (EPIC) Partnership Innovation Grant Program. The program recruits paraprofessionals currently working with students with severe disabilities in Boston Public Schools and supports their path to special education teacher licensure. In order to increase accessibility for non-traditional college students who are working full-time, courses are offered as monthly, day-long sessions, on-site within BPS. Thus, it meets criteria for a paid residency program.

Boston Public Schools Teacher Pipeline Programs, Boston, Massachusetts

The Boston Public Schools (BPS) Office of Human Capital runs three GYO pipelines to recruit a racially, ethnically, and linguistically diverse group of highly effective and culturally proficient teachers. The first two are the BPS Accelerated Community to Teacher (ACTT) program and the BPS

Teaching Fellowship (BPSTF) program. Each of these programs have been designed to intensively prepare Boston residents including BPS paraprofessionals and substitutes to become K-12 classroom teachers in BPS.

The first program, BPS ACTT, is based upon the principle that “that the next generation of BPS teachers are in our classrooms or are in the homes and in community organizations in the City of Boston right now” (<http://www.teachboston.org/become-a-teacher/accelerated-community-to-teacher-program/>). It is a twelve-month part-time program that prepares community members with a bachelor’s degree to become teachers for Boston Public Schools. Each year, the program recruits for specific certification areas. For example, 2019-2020, they are recruiting candidates for early childhood education, elementary education, and middle and high school content areas. Upon completion, candidates receive a “preliminary” license to teach. They then apply for positions and complete full initial certification requirements while serving as a teacher of record.

The second program, the BPS Teaching Fellowship, recruits candidates to be certified to teach the following: English as a Second Language, Dual English as a Second Language and Elementary, Special Education (Moderate Disabilities), and Dual Special Education (Moderate Disabilities) and Elementary certification. Upon completion of an intensive summer program, Fellows enter the classroom as a full-time, salaried teacher of record with a provisional license. Through the fellowship, they complete licensure coursework and have support from an expert coach. At the end of the fellowship they are eligible to apply for their full initial teaching license. The BPS Teaching Fellowship has been approved by the Massachusetts Department of Education to endorse candidates for Special Education (Moderate Disabilities), English as a Second Language, and Elementary initial teaching licenses. It meets criteria for an alternative program.

The third program, the BPS High School to Teacher Program, is a pipeline development program that identifies, cultivates, and supports a cohort of high school students who reflect the cultural, linguistic, and racial diversity of BPS students. The goal of the program is for the selected students to successfully navigate high school, matriculate and graduate from college, and return to BPS as teachers. The BPS HSTT Program engages high schools students from grade 9 through college graduation in monthly meetings, college visits and conferences, and a curriculum focused on teacher education, college access, and leadership development. It is GYO in spirit, but is not by itself a preparation program leading to licensure.

Minneapolis Special Education Teacher Residency, Minnesota

The mission of GYO efforts in the Minneapolis Public Schools is to create a pipeline to teaching for its students and employees. The Minneapolis Special Education Teacher Residency is one of Minneapolis Public Schools' GYO pathways to licensure. Its goal is to prepare highly effective and diverse special education teachers who will create increased opportunities for students receiving special education services in Minneapolis Public Schools. This rigorous and accelerated teacher preparation program is open to unlicensed MPS employees and employees of community partners who work in MPS schools. Applicants must hold a bachelor's degree and be interested in becoming a special education teacher. The program also seeks to recruit diverse and bilingual candidates. During the program candidates co-teach with a special education teacher and earn a stipend. Upon completing this program, residents earn their master's degree and teaching license in Special Education- Academic and Behavioral Strategist (ABS).

Northwest University, Kirkland, Washington

The Northwest University GYO alternative route program offers online academics with field experiences in GYO partner school districts in geographic areas that are thirty or more miles from the nearest on-ground teacher preparation program. The program is aimed at paraeducators or those with conditional certifications employed within the partner districts. The program offers pathways at both the undergraduate and graduate levels. The program prepares candidates for four dual-endorsement, high workforce need areas: Elementary Education with Special Education, Elementary Education with English Language Learning, Secondary Mathematics with Middle-level Mathematics, or Secondary Biology with Middle-level Science.

Grow Your Own Teacher (GYOT) program, Wichita, Kansas

The purpose of the Wichita GYOT program is to combat the chronic teacher shortage by developing a continuous pipeline of quality teachers who share the culture, language, and community of Wichita Public School students. The GYOT program is district funded. It is designed to provide financial assistance in the form of forgivable loans to outstanding Wichita Public Schools employees to encourage and enable them to pursue full-time teaching careers in a hard to fill certified teacher position. Preference is given to those seeking special education teacher certification. It is a support mechanism, and not in itself a preparation program.

Teacher Cadet Program, South Carolina

The Teacher Cadet Program is operated by the Center for Educator Recruitment, Retention, and Advancement. The Center's mission is to provide collaborative leadership in the recruitment, retention, and advancement of outstanding educators for all children in South Carolina. The primary goal of the Teacher Cadet Program is to encourage academically talented, high-achieving, high school students with exemplary interpersonal and leadership skills to consider teaching as a career. The Program which is offered in 170 South Carolina high schools seeks to provide high school students with insight into the nature of teaching, the problems of schooling, and the critical issues affecting the quality of education in America's schools. The program has 22 partner colleges and universities that validate the rigor of the coursework and provide the opportunity for high school juniors and seniors in the Teacher Cadet Program to receive college credit. As with the BPS High School to Teacher program, it is a pipeline development and recruitment initiative rather than a preparation program.

Educators Rising

Educators Rising is a free national membership organization that helps young people explore teaching. While not a teacher preparation program, Educators Rising offers resources and opportunities that integrate directly into the academic programs of "teacher academy" career and technical education courses at the high school level. Twenty-five states are affiliates that provide additional support and programming for members within their state or region. For example, Alaska recently rebranded its Future Educators of Alaska (FEA) program as Educators Rising Alaska. In 2012, the Alaska Department of Education and Early Development supported FEA's expansion by awarding it a Carl Perkins Career and Technical Education grant to build education career pathways for students. Moving forward, Educators Rising Alaska will also pilot the "Aspiring to Teach" microcredentials program. These microcredentials are a series of performance-based assessments in such topics as classroom culture, collaboration, and anti-bias instruction that allow rising educators to showcase their growing skills.

Summary

The collaborative preparation and GYO programs outlined in this section represent a variety of approaches that have been developed to meet local and state workforce needs. While each has been selected as a useful or noteworthy exemplar, any new approaches developed for Maine would need to consider the state's specific context with respect to shortage areas, enrollment trends, existing resources, and capacity.

Education Policies that Support “Grow Your Own” Programs and Dual Certification

In order for each of the above GYO and dual certification programs to achieve their mission, they must align with and be supported by state and federal policy. The following is a snapshot of some state policies that support the success of GYO and dual certification programs within their states. Although evidence as to whether these policies have impact of these policies is limited, aspects of these models may be worthy of further investigation for their potential transferability to Maine.

California

In California, those pursuing teacher certification must complete a program approved by the California Commission on Teacher Credentialing. Approved programs include traditional teacher preparation programs offered through public and private institutions of higher education (IHE) and local education agencies (LEA). Regardless of whether an IHE or LEA offers the program, the educator preparation program must assure that their graduates meet the beginning Teacher Performance Expectations (TPEs) articulated in the California Preliminary Multiple Subject and Single Subject Credential Program Standards (California Commission on Teacher Credentialing, 2017). For example, under TPE #1 all beginning general educators in California are expected to be able to use “ability-appropriate instructional strategies, resources, and assistive technology, including principles of Universal Design of Learning (UDL) and Multi-Tiered System of Supports (MTSS) to support access to the curriculum for a wide range of learners within the general education classroom and environment” (California Commission on Teacher Credentialing, 2017, p. 4). Under TPE #2 beginning teachers are expected “to use principles of positive behavior intervention and support processes” (California Commission on Teacher Credentialing, 2017, p. 6). Additionally, program standards specify that those pursuing dual certification must complete 600 hours of clinical practice (the same amount required for a single general education endorsement), but they “are required to have substantive experiences in general education, inclusive, and special education settings within the 600 hours, and are encouraged to extend clinical practice for an additional 150 hours” (California Commission on Teacher Credentialing, 2017, p. iv). California requires a state-approved performance-based assessment to ensure that all teachers demonstrate certain basic skills regardless of the preparation pathway. Several different assessments have been developed and approved for this use. The California Teacher Performance Assessment (CalTPA), developed by a consortium of universities, and the edTPA exam, developed by Stanford University, are the most widely used.

Massachusetts

Like California, one of the requirements for obtaining an Initial Teaching License in the State of Massachusetts is the completion of an approved educator preparation program. The Massachusetts Department of Education has granted the flexibility for districts and nonprofits to endorse candidates for licensure so this requirement can be met in a number of settings. These settings include the completion of a program from a specified College, University, or Alternative/Practice-Based Licensure Program, or through the performance review program. The performance review program is an alternative pathway that allows individuals teaching under a conditional certificate (called a “preliminary” or “provisional” license in Massachusetts) to receive an initial teaching certificate after demonstrating their skill through the Candidate Assessment of Performance (CAP), consisting of a portfolio review and classroom observations.

The Massachusetts Department of Elementary and Secondary Education also has the Elevate Preparation: Impact Children (EPIC) Partnership Innovation Grant program. The program aims to “support partnerships between educator preparation organizations and school districts designed to improve the recruitment, development, and placement of high quality teachers in K-12 employment.”

Colorado

In Colorado, HB 18-1002, the Rural Colorado Grow Your Own Educator Act, created a rural teacher fellowship program that allows rural districts and preparation programs to partner in an effort to recruit students entering their fourth year of an approved educator preparation program. Students participate in a personalized yearlong teaching fellowship, earn a \$10,000 stipend, and commit to teaching for 2 years in a rural school upon completion of the fellowship year. The state has appropriated \$530,448 for fiscal year 2019 and plans to provide 50% of up to 100 fellowship stipends each year.

New Hampshire

In New Hampshire, Chapter Ed 500 describes the Certification Standards for Educational Personnel. The standards articulate a competency rather than course requirement system for teacher certification. In the Approval of Professional Educator Preparation Programs, Chapter Ed 600, each Professional Educator Preparation Program (PEPP) in New Hampshire must require every graduate of the PEPP to demonstrate evidence of the relevant competencies at the level determined for a beginning educator within each endorsement area. Alternatively, there is a “rigorous portfolio and oral

examination process for candidates who have gained the necessary competencies, skills and knowledge required for certification.²”

Washington

Washington State provides financial assistance to support the current and future teacher workforce. Currently, the Washington Student Achievement Council (WSAC) administers three conditional scholarship programs for teachers: the Alternative Routes Conditional Scholarship, the Pipeline for Paraeducators Conditional Scholarship, and the Educator Retooling Conditional Scholarship.

Summary

Each of the above state policies are designed to address teacher shortages while also assuring quality. For example, some states have expanded eligibility to offer a state approved educator preparation program to include school districts and in some cases, other non-profit organizations. This policy supports particularly urban and rural school districts in addressing their teacher shortage by growing their own teachers from their communities. In many states, the expansion of entities that may offer a state approved educator preparation program is coupled with the requirement that all educator preparation programs be approved by the state. This requirement provides a level of state oversight of program quality while relieving the need for the state to directly manage individuals pursuing alternative routes to certification (as Maine currently does through the transcript analysis pathway). States have also supported the development of programs by leveraging federal funding sources including Title II, State Personnel Development Grants and the Carl D. Perkins Grant. In addition, states have strengthened the recruitment of candidates for Grow Your Own and/or collaborative preparation programs by offering service-based scholarships and state loan forgiveness programs to participants who complete the programs and teach for a minimum period of time.

² <https://www.education.nh.gov/certification/documents/alt3memo.pdf> alternative teacher certification

Discussion and Policy Implications

Pathways to dual certification or for communities to grow their own special education teachers are limited in Maine. Yet, Maine data points to a persistent shortage of new special education teachers, and students identified with disabilities spend the majority of their time in general education classrooms. Thus there is a need for more ways to address the preparation of all teachers to work with students with diverse abilities. The following are potential policy considerations in order to assure that all Maine's students have high quality teachers who are prepared to meet their needs.

Challenge 1: Underprepared teachers

- Consider requiring demonstration of competency rather than course completion in order to become initially certified as a teacher in Maine. This would promote consistency and rigor in candidate preparation regardless of program or pathway, and would give both traditional and alternative educator preparation programs more flexibility to design merged dual certification programs that integrate the curriculum and clinical experiences for those preparing to be general and special education teachers. Competency-based approaches rely on performance assessments through which all new teachers demonstrate minimum skills, including the ability to work effectively with students of diverse abilities and backgrounds.
- Require all conditionally certified teachers to participate in an appropriate state-approved support system, similar to the current requirement for conditionally-certified special educators. This would help to assure that they receive high-quality mentoring and supervision. The support system could be offered by the LEA, an IHE, the MDOE, or a partnership.
- Expand induction supports for beginning teachers of any certification level to further develop skills and confidence to work with students with diverse abilities in the general education (or special education) classroom. The framework for this professional development could be shared with the system of supports for conditionally certified teachers.
- Collect data on the number of individuals who are certified via transcript analysis after completing a post-baccalaureate semester of student teaching outside of an approved preparation program. These candidates may be better served by expanding the number of approved post-baccalaureate options programs that provide an accelerated pathway to teaching, such as paid residency programs.

Challenge 2: Supply of new teachers / Access to affordable certification programs

- Consider expanded support of paid residency models, which balance the needs to lower financial barriers to teacher preparation while still allowing significant supervised practice before becoming a full-time teacher of record. Funds from Title II, Part A of ESSA could be leveraged to support the development of GYO pathways. Options could be expanded to include partnerships between LEAs and state-approved educator preparation programs. Additional competitive federal funds may be available through Teacher Quality Partnership grants, State Personnel Development Grants for special education, or Noyce fellowship programs; other funding programs have been proposed and may offer opportunities for Maine.
- Consider expanding the eligibility of the types of institutions or entities that can seek and earn state approval to offer an educator preparation program. For example, Local Education Agencies (LEAs) or Regional Service Centers could be empowered to grow their own teachers by developing state-approved pathways that support education technicians and high school students to develop competencies required for teacher certification, either independently or in partnership with institutions of higher education.
- Strengthen recruitment for GYO and/or collaborative preparation programs by offering service-based scholarships to participants. In addition to local funds, existing state programs (Educators for Maine and state loan forgiveness programs) and/or federal sources (Title II, State Personnel Development Grants, AmeriCorps, 21st Century Community Learning Centers or competitive grant programs) could be modified or expanded for teachers in these programs.
- Promote the use of the Carl D. Perkins Grant to fund the development of Career and Technical Education pathways for high school students interesting in becoming teachers.

In summary, addressing the shortage of special education teachers and assuring that all beginning teachers are prepared to meet the needs of learners with diverse abilities and backgrounds requires a multi-pronged approach. Assuring beginning teacher competency to work with students of diverse abilities and backgrounds needs to be at the center of any approach. Thus, education policies that promote the development of dual certification and grow your own programs should include the funding and provisions for assuring that these pathways are producing high quality teachers who are prepared to meet the demands of teaching diverse learners.

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Appendix A: Executive Summary from “An Examination of Features of Evidence-based Teacher Credentialing Systems” (MEPRI, 2017)

(Full report available at <http://mepri.maine.edu/posts>)

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Executive Summary

As requested by the Maine Legislature's Joint Standing Committee on Education and Cultural Affairs, the Maine Education Policy Research Institute (MEPRI) has conducted a study with the purpose of examining current research and policies related to further developing an evidence-based teacher credentialing system in Maine. This work takes place in a context of new federal reporting requirements under Title II of the Higher Education Opportunity Act and new standards for national accreditation for teacher preparation programs. In addition, Maine has proposed major substantive changes to the Department of Education rule Chapter 115 regarding Certification, Authorization and Approval of Education Personnel, which are under review at the time of writing.

Currently Maine is not well positioned to meet the Title II reporting requirements as the state's program approval requirements do not require teacher preparation programs to report on many of the measures; this means the programs may not currently collect the data that they will soon be required to report. Questions that are looming for the state-approved teacher preparation programs with regard to how they will meet the Title II reporting requirements include: how to gather data on teacher placement, retention, and evaluation results; how to validly measure teacher preparation program effectiveness from the perspective of graduates and employers; and how to assess learning outcomes of the students of beginning teachers. As Maine policymakers determine how the State will meet these new reporting requirements, they may wish to consider whether the state program approval requirements for teacher preparation programs articulated in education rule Chapter 114: Purpose, Standards and Procedures for the Review and Approval of Preparation Programs for Education Personnel remain adequate.

Based upon a review of the research, findings suggest that an evidence-based teacher credentialing system needs:

- To recruit and select candidates to teaching who have strong content knowledge backgrounds in the subject areas they will teach;
- To provide quality clinical experiences with strong mentoring and supervision; and
- To assess teacher candidates on their performance.

Toward these ends, policy makers may want to consider whether the content requirements as well as the grade spans for teacher certification in the current and proposed requirements in Ch. 115: Certification, Authorization and Approval of Education Personnel are satisfactory. In light of this evidence and the evidence base specifically related to alternative teacher certification, policy makers may also want to consider whether the current alternative teacher certification pathway through transcript analysis is serving the needs of Maine with respect to preparing effective teachers, addressing teacher shortage areas and diversifying the workforce to be reflective of the communities in which they teach.

Key stakeholders would work together to assure that the policies relating to teacher quality in Maine serve to develop the profession of teaching and result in increased opportunities for the children of Maine to learn from well and highly qualified teachers.