The College Enrollment and Completion Patterns of Gateways Credential Holders

IBHE

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ILLINOIS COMMUNITY COLLEGE BOARD

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Purpose/Background

The growing body of knowledge that has established and continues to validate the short- and long-term benefits of high quality early childhood education has coincided with a more recent movement towards the further professionalization of the early childhood workforce. This professionalization involves the standardization of training requirements for both entry and advancement in the early childhood workforce. Formal training typically occurs in the form of professional development or through postsecondary educator preparation programs. The Illinois Gateways to Opportunity® Credentials were developed in a purposeful way to unify the experience, professional development, and formal education of pre-service and in-service early childhood practitioners. The Gateways Credentials serve as an overarching umbrella covering different functional areas and age groups within early childhood education. Each area (described below) has tiered levels that build off of the previous level, all of which point to specific competencies, job functions, and the skills and dispositions required to provide or administer high quality early childhood education. The current study provides a descriptive analysis of Gateways credentialed individuals with one or more of the following credentials: Early Childhood Credential (ECE), the Infant/Toddler Credential (ITC), and the Illinois Director Credential (IDC). The study is limited to individuals with either an ECE credential or an ITC Credential of Level 2 or higher, in addition to individuals with all IDC Credentials, Levels I through III.

The study begins by establishing the overlap, or the lack thereof, for individuals in their attainment of the three aforementioned types of Gateways Credentials and then provides information specific to credential attainment by select demographic characteristics such as age, race, and gender. The study then provides information on the individuals who had earned one or more of the Gateways Credentials and their recent interactions with postsecondary institutions within the higher education landscape in Illinois. Gateways credentialed individuals who were recently enrolled and/or had recently earned a certificate or degree are descriptively compared to those who were not recently enrolled in Illinois, as evidenced by matching to one or more ICCB or IBHE enrollment or completion records. The focus of the report shifts to postsecondary degrees and certificates awarded to the Gateways credentialed individuals and some of the attributes of their enrollment at Illinois community colleges, as well as bachelor's granting institutions, both public and private, within the state of Illinois. Finally, the intersection of enrollment, persistence, and degree completion among the Gateways Credential holders who matched to either IBHE or ICCB completion and/or enrollment records is examined.

This work aligns with and was supported by Illinois' Race to the Top – Early Learning Challenge grant. Findings from the study will help to expand the field's understanding of current education and professional development pathways for early childhood educators, which will help target efforts to increase the number of educators who receive Gateways Credentials from postsecondary institutions. Ultimately, this work will support ongoing efforts to align and increase the quality of the state of Illinois' comprehensive early childhood education system beyond the life of the grant.

Importance of Early Childhood Education

The wide-ranging benefits of early childhood education to children include immediate cognitive and language development, as well as delayed gains in school readiness, behavior skills, general knowledge, and language/literary skills in children (Burchinal, Roberts, Riggins, Zeisel, Neebe, & Bryant, 2000; Peisner-Feinberg, Garwood, & Mokrova, 2016). The individual-level benefits of early childhood education that are specific to human capital, as previously described, eventually transcend the individual children and provide benefits to communities and society at large. Yoshikawa,Weiland, Brooks-Gunn, Burchinal, Espinosa, Gormley, Ludwig, Magnuson, Phillips, and Zaslow (2013) discussed how early childhood education can result in reduced costs to society and greater economic productivity. The reduced costs are the result of the decreased likelihood of the need for more intensive educational interventions later in school, the decreased likelihood of being arrested, jailed, or incarcerated, and the decreased likelihood of the need for social services and other forms of governmental assistance (welfare and public housing) later on in life. Increased economic productivity stems from the directly resulting improvements in educational attainment, which on average, result in better workforce outcomes (higher wages, lower unemployment) and increased rates of self-sufficiency among those who had access to high quality early childhood programs. This in turn results in increased tax revenue and decreased appropriations spent on incarceration and social services. As noted in Dalziel, Halliday, and Segal (2015), the benefit/cost ratios of early childhood programs tend to depend on the intensity of the services provided as well as the comprehensiveness of what is included in the benefit/cost model and the time horizon used for establishing and/or modeling the potential treatment effects, as some of the previously mentioned effects are long-term in nature. In the comprehensive evaluations of early childhood programs that were inclusive of potential societal benefits, the benefit/cost ratios ranged from 2 to 1 to over 16 to 1 (Dalziel et al., 2015). This evidence portrays such early childhood education programs as a necessary and financially responsible societal investment.

Workforce

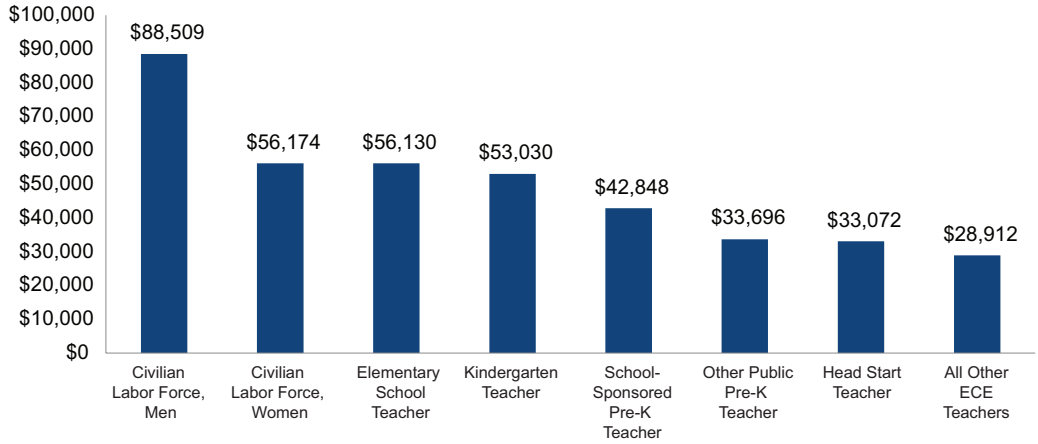
Early childhood educators require proper preparation and support for their pre-service training, in addition to in-service training including both induction and continued professional development. Currently, many early childhood practitioners bring a wealth of knowledge and experience to the field. First, data from multiple sources illustrate the early childhood workforce as ethnically and racially diverse. For example, infant/toddler and preschool teachers are inclusive of a comparatively higher percentage of Spanish speakers than their peers who teach older children (Whitehead, 2016). The importance of this diversity is illustrated in a recent qualitative study, as researchers summarized how "practitioners from diverse communities bring a literal common language, so they can also understand barriers facing the community and resources available" (White, Colaninno, Doll, & Lewandowski, 2017). These practitioners are members of the communities they serve and are knowledgeable of the populations they serve.

Another important theme that is oftentimes used to describe high quality early childhood education is the dedication and responsiveness of the workforce to their communities. A recent mixed-method study on early childhood initiatives reported how centers aimed to elicit input from the community in order to ensure programs were

"relevant and acceptable to the community" (White, Baron, Klostermann, & Duffy, 2016). These centers made a push to "get out of the building" and to build relationships with other stakeholders (i.e., school districts, healthcare clinics, social service agencies, etc.) and parents. Due to these efforts, centers were better able to identify the needs and strengths of their community, as well as common barriers parents may face in enrolling their child, such as misunderstandings on the logistics of enrolling or purpose.

Comparatively low compensation has been a historic problem in the field of early childhood education and while early childhood educators tend to lag behind other educators who teach older children in terms of pay, there is even some variation within the early childhood field itself. These difference are mostly based on the age-group being taught and one's highest level of educational attainment, which at times are related. Not only are early childhood teachers paid less than those who teach older students (See Figure 1), but a wage gap persists within the field between those who teach 0-3 year olds and 3-5 year olds. Further gaps exist in the field of early childhood depending on one's highest education credential in which those with their bachelor's degree earn around $2.00 more per hour than those with an associate's degree (Whitehead, 2016). When annualized, that $2.00 per hour difference is quite robust. It should also be noted that compensation also tends to vary by funding stream and setting type (as is evident in Figure 1).

Figure 1. Mean Annual Salaries for U.S. Labor Force Participants with Bachelor's Degrees or Higher, 2012 (Whitebook, 2014).



In comparison to national rates, Illinois is substantially ahead in the educational attainment of its center-based teachers and caregivers. Table 1 depicts how significantly more of the early childhood practitioners in Illinois for 0-3 year olds and 3-5 year olds have higher levels of degree attainment than the national workforce. The higher levels of educational attainment for Illinois caregivers and teachers is seen at both the associate's and bachelor's degree levels.

Table 1: *Center-Based Teachers and Caregivers*

Center-Based Teachers and Caregivers serving 0-3 years old and 3-5 years old by Educational Attainment				
	0-3 yrs. old		3-5 years old	
	US	IL	US	IL
No Degree	64%	32%	37%	19%
Associate's Degree	17%	27%	17%	21%
Bachelor's Degree	19%	41%	45%	60%

Source: National Survey of Early Care and Education Project Team (2013); Whitehead (2016).

Unifying the Workforce

Job descriptions and responsibilities can vary greatly throughout the early childhood workforce, as early childhood education is offered through many settings, including Head Start, home-based family child care, center-based care, and preschool care (Nelson, Main, & Kushto-Hoban, 2012; Whitebook, 2014). To add further variation, specific child care responsibilities and requirements (licensing, credentials, degree requirements) are different and may fluctuate at each site based on one's role (Whitebook, 2014). The needs of the community each early childhood provider serves may add further variation in terms of how care is provided. Depending on the community, providers may need to respond to the needs of children who have disabilities, are in poverty, have teen parents, and/or are from families whose second language is English (White et al., 2017). Many providers who may be able to respond to the needs of their neighborhoods and communities may also lack the early childhood credentials that signal the mastery of these competencies. These varied requirements for roles and centers, with the addition requirement of being responsive to the context of the local community, represent some of the complex challenges in the field.

Bernoteit, Holt, and Kirchhoff (2017) summarized findings of several reports that, together, reveal how the field of early childhood education lacks a unified set of competencies to guide and align academic training and professional development. The myriad of regulations makes it challenging for pre-service, in-service teachers, and ECE professors who train early childhood educators to decipher the necessary professional development for each role. Whitebook (2014) illustrates the lack of unification and standardization by pointing out how unlike K-12 teachers who are required to have a bachelor's degree and a certificate prior to teaching, there are no such universal education and licensing requirements for early childhood teachers. The National Academy of Medicine (Institute of Medicine and National Research Council, 2015) recognized inconsistent qualifications in early childhood education and recommended that the field take multiple steps to transition toward having a minimum bachelor's degree requirement for lead educators, while other roles might not necessarily require a bachelor's degree. Teacher competency is essential as emotionally supportive teacher-child interactions that facilitate learning are identified as the main catalysts in the efficacy of early childhood education (Mashburn, Pianta, Hambre, Downer, Barbarin, Bryant, Burchinal, Early, & Howes, 2008; Yoshikawa et al., 2013). Providers who had completed a bachelor's degree were identified as most effective (Barnett, 2004). To ensure specialized teacher competency, recommendations have been made for lead teachers to complete a bachelor's degree and continue training through professional development or mentor programs (Institute of Medicine and National Research Council, 2015; Workman & Ullrich, 2017). This was recognized in the way in which the Gateways Credentials were established.

The Gateways Credentials

The Gateways Credentials aligned and validated the skills and knowledge that current and future early childhood practitioners would attain from experience in the field, professional development, and postsecondary education (Bernoteit, Darragh Ernst, & Latham, 2016). Again, while there are several types of Gateways Credentials, each with its own set of levels, this study focuses on three main types: Early Childhood Credential

(ECE); Infant Toddler Credential (ITC); and Illinois Director Credential (IDC). As previously mentioned, the study population is limited to those with either an ECE Credential or an ITC of Level 2 or higher, in addition to all individuals earning an IDC, Levels I through III.

The ECE Credential was developed to provide core background knowledge for practitioners in the field. The ECE Credential has six levels representing various benchmarks for practitioners who work with children from 0-8 years old. Level 1 is designed to supplement health and safety training from high school and can be completed through online or in person trainings (Bernoteit et al., 2017). The remaining levels in the ECE Credential require a combination of in-field experience and secondary and postsecondary education with some of the levels requiring the successful completion of a degree. For example, in addition to field experience and training, Levels 2, 5, and 6 are awarded at specific formal education exit points: high school/GED; bachelor's; and graduate degree, respectively. Conversely, Level 3 has an education requirement of at least 21 total semester hours of college coursework and Level 4 can be attained by either completing an associate's degree or over 60 semester hours of college coursework.

The ITC was developed in an effort to align and validate the competencies of early childhood practitioners, but focusing on the skills and knowledge associated with working with infants and toddlers, aged 0-3 years old. The ITC is aligned with ECE Levels 2-6, with each ITC Level requiring at least an ECE Credential of the same level (or higher) with additional training requirements. Education requirements at each level require specific infant and toddler approved training and the number of hours required for documented field experience increase at each level. For ITC Levels 2-5 the documented field experience can be substituted for supervised field experience.

The Illinois Director Credential (IDC) was developed for current practitioners who have an interest in becoming administrators or directors of an early childhood center. There are three IDC Levels, which align with associate's, bachelor's, and graduate degrees, respectively. As originally conceived, there was not a direct alignment between the IDC and the ECE and ITC. However, the competency development in the field of early childhood described later in the report has addressed the alignment issue. Now, the competencies associated with the ECE credential serve as the "trunk of the tree" such that these competencies must be met before specializing in other areas such as IDC. Additionally, there are also education/training and field experience requirements for administrator content and duties at each IDC Level. For additional information on the how the various ECE Gateways Credentials align with postsecondary competencies/education, degree requirements, and role, see the infographic developed by Bernoteit and Holt (2017).

Overview of the Analytical Approach

The information in the report is derived from an exploratory analysis of all individuals who had attained one or more of the previously described Gateways Credentials at the specified levels in the state of Illinois and their enrollment and degree completion patterns at Illinois colleges and universities, both public and private, from AY 2013-14 through the fall semester of AY 2016-17.

Results

Gateways Credential Holders

There were 10,420 individuals in the Gateways Credential file that was shared with both IBHE and ICCB through a data-sharing agreement. In examining the three main types of Gateways Credentials—Early Childhood Credential, Infant/Toddler Credential, and Illinois Director Credential—there was a significant amount of overlap (see Figure 2). For example, all of the study group members with an ITC had also attained an ECE Credential, due to the ECE Credential being a prerequisite for the ITC of the same level. In other words, with the exception of a limited number of individuals who earned their ITC during a pilot period, all of the individuals with an ITC of Level 2 or higher also had earned an ECE Credential, which is purposeful. There was also a lot of overlap between the study group members who attained an IDC and an ECE Credential. Although until recently the ECE Credential was not required for the IDC, there is sufficient overlap between the content specific requirements between the ECE Credential and the IDC. In fact, over 80% of those who attained an IDC had also gained their ECE Credential. However, around half of the individuals who had attained an ECE Credential had no other Gateways Credential as defined in the study (either ITC Level 2 or higher or any IDC). In other words, there is evidence that the ECE Credential is arguably a stand-alone credential, while also being related to the requisite background knowledge specific to the ITC and IDC.

Figure 2. Total Gateways Credential Holders.

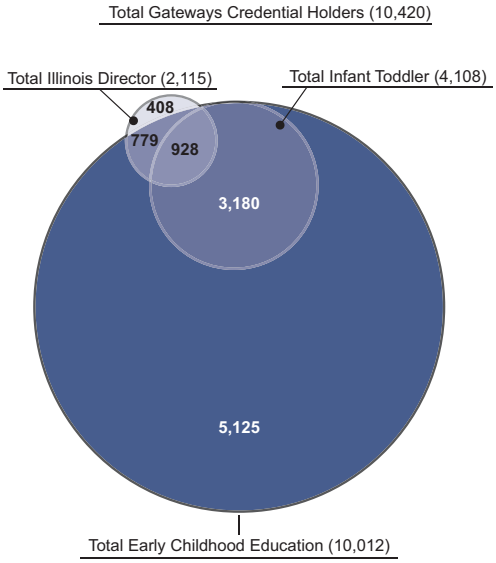


Table 2: *Percent of Gateways Credential Holders*

	n	Percent of All Gateways Credential Holders
Total Early Childhood Education	**10,012**	**96%**
ECE Only	5,125	49%
ECE and ITC Only	3,180	30%
ECE and IDC Only	779	7%
ECE and ITC and IDC	928	9%
Total Infant Toddler	**4,108**	**39%**
ITC and ECE Only	3,180	30%
ITC and ECE and IDC	928	9%
Total Illinois Director	**2,115**	**20%**
IDC Only	408	4%
IDC and ECE Only	779	7%
IDC and ECE and ITC	928	9%
Total	**10,420**	**100%**

Highest Gateways Credential and Award Year

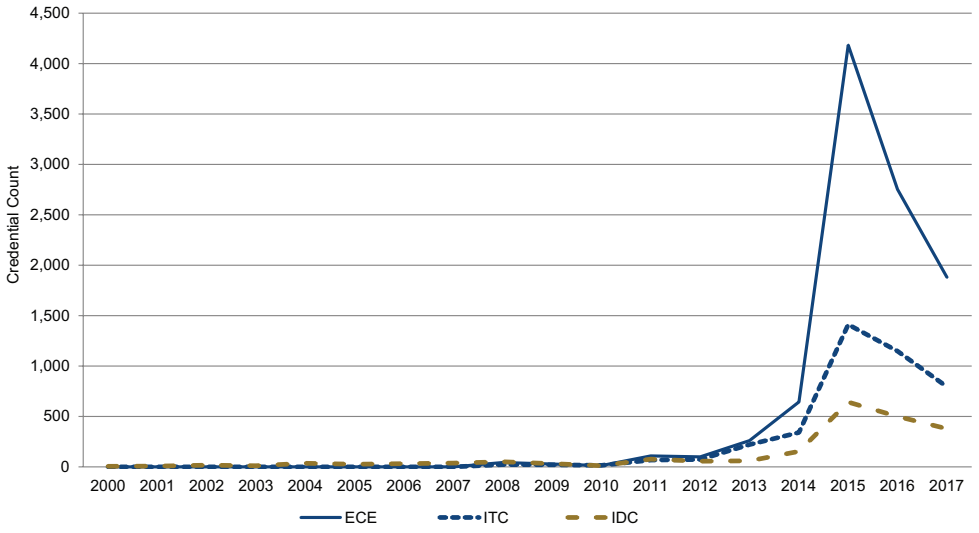
As shown in the Figure 3, Gateways Credential attainment significantly increased in 2015 and even though it declined in both 2016 and 2017, attainment was still higher than what it was during the years leading up to the high water mark in 2015. That peak of Gateways Credential attainment for all three credential types could be explained by

the enactment of the requirements for early childhood providers by ExceleRate® Illinois. ExceleRate is a statewide quality rating and improvement system that designates various levels of quality to early childhood providers based on the credentials of the teaching and administrative staff. For example, by 2016 a provider had to have at least 30% of its teaching staff with an ECE Credential Level 3 in order to attain a Silver Circle of Quality. Additionally, providers with infant toddler classrooms were required to have a Gateways credentialed teacher in such classrooms with an ITC Level 2 in order to achieve the Silver Circle of Quality. Similarly, having a Gateways credentialed administrator with at least a Level I IDC was also required for providers by the Illinois Department of Children and Family Services in July 2017. So in the immediate time period leading up to the ExceleRate rating system, there was rapid growth with all three Gateways credentials types, as providers attempted to meet the ExceleRate requirements.

During a similar timeframe, the existing Gateways Credential requirements were reviewed and two areas that were an impediment to the field were identified: professional contributions and specification of coursework requirements in relation to mathematics. The Professional Development Advisory Council (PDAC) recommended policy changes to mitigate these barriers. Approved by the Illinois Department of Human Services, changes were implemented in 2015 which also resulted in increased credential attainment for the field, as illustrated in Figure 3.

Cost is a third factor that explains the trends illustrated on Figure 3. Prior to 2016, credentials were offered at no cost for those applying for the ECE Credential through coursework at an entitled program and at a reduced cost of $30 for those applying with the combination of previous experience and formal training. The reduced cost was made possible by Race to the Top- Early Learning Challenge funds. An external evaluation of the outcomes of programs implemented through the RTTT-ELC award was conducted in fall 2016 and early childhood stakeholders reported that the reduction of these fees was important in increasing the number of credentialed providers (Schilder, 2017). Further, while the fee had not been raised at the time of this report, stakeholders believed the fee would increase and providers will no longer have an incentive to complete the credential.

Figure 3. Timing of Highest Credential by Gateways Credential Type.



Characteristics of Gateways Credential Holders

As shown in Table 3, the Gateways Credential holders included in the current study were overwhelmingly female (97.9%); this gender distribution was nearly identical to current national numbers on the gender composition of the early childhood workforce (Center for the Study of Child Care Employment, 2016).

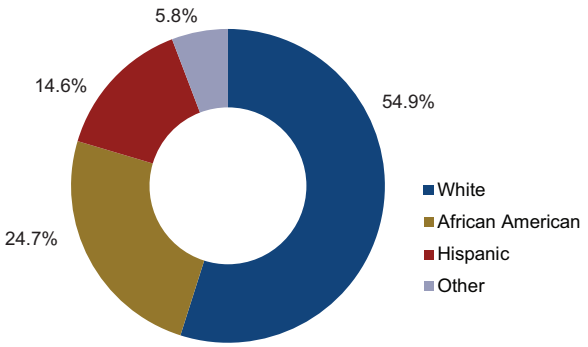
Table 3: *Gender Distribution among Gateways Credential Holders*

Gender	Count	Percent
Female	10,300	97.9%
Male	179	1.7%
Unknown/Not Reported	41	0.4%
Grand Total	**10,420**	**100%**

In comparison to the overall national early childhood workforce (Whitebook, McLean, & Austin, 2016), the current study group members from Illinois were more racially/ethnically diverse, with a smaller percentage of individuals who identified as White (54.9% vs. 63%) and a larger percentage of providers who were African American—24.7% vs. 16.5%. The percentage of Hispanic/Latinos in the national workforce was nearly identical to the Gateways credentialed individuals in the current study; 14.6% and 15%, respectively.

It should also be noted that the racial and ethnic characteristics of Gateways Credential holders were not in proportion to the overall demographic breakdown of the state of Illinois. Gateways Credential holders were more racially/ethnically diverse than the general Illinois population.

Figure 4. Race/Ethnic Distribution of Gateways Credential Holders (N=10,420).



In focusing on the highest level attained within each of the three Gateways Credential types, the distribution across the various levels seems to be related to varying degree requirements. For the most part, higher proportions of individuals have earned Gateways Credentials at levels that correspond to some sort of degree attainment, either high school or postsecondary. For example, a high school diploma or a GED is required for Level 2, an associate's degree (or 60 credit hours) for Level 4, a bachelor's for Level 5, and a graduate degree for Level 6. Also, Level 3, is not tied to a specific educational exit point and requires at least 21 credit hours from credit-bearing college courses, and this may

be the rationale for its relatively low popularity. Perhaps as practitioners complete the minimum requirements of 21 credit hours for a Level 3, which includes early childhood coursework in addition to some general education courses, they are provided with enough positive academic momentum that completing an associate's degree, or 60 hours, seems attainable and they eventually earn a Level 4. Relatedly, if an individual has definitive plans to attain a higher level Gateways Credential, such as an ECE Level 4, there is some cost savings associated with bypassing the ECE Level 3 and not having to pay that specific credential fee. An alternative explanation is that individuals perhaps see more value in the Gateways Credentials that are tied to those more defined educational exit points and only seek out the specific credential as they are reaching those defined educational exit points.

Figure 5. Highest Gateways Credential by Level (ECE Credential and ITC).

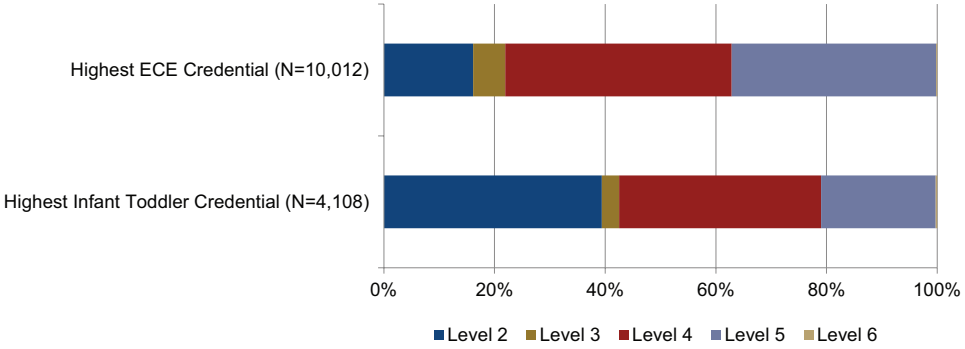
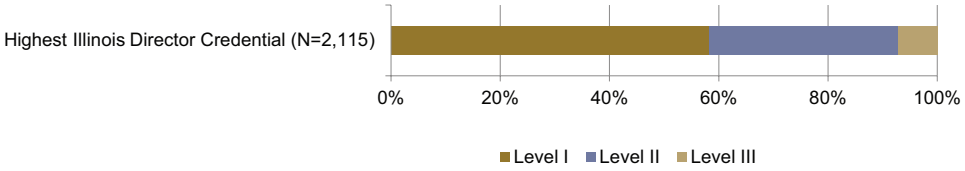


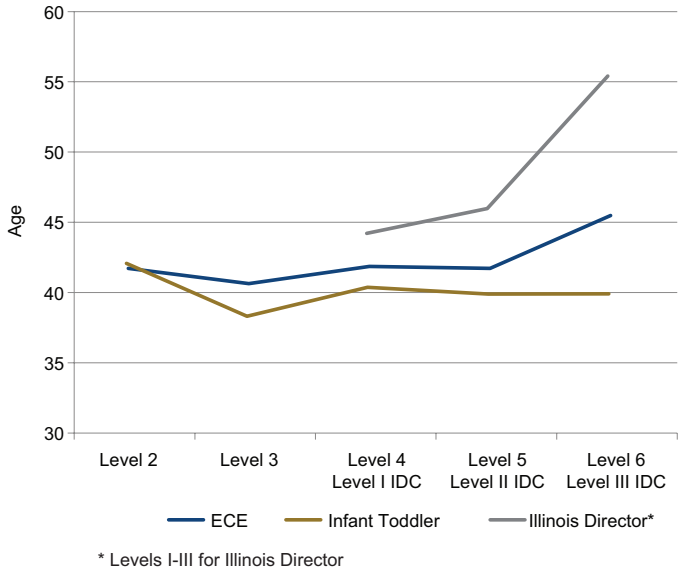
Figure 6. Highest Illinois Director Credential by Level.



Highest ECE Credential Level and Average Age

Figure 7 has each of the three Gateways Credentials aligned based on the educational requirements for each respective credential. For example, there is a master's degree requirement to attain an IDC Level III, an ECE Credential of Level 6, or an ITC of Level 6. On average, those with an IDC were older than their peers with an ECE Credential or an ITC. There was also a noticeably large increase in age for those with an IDC going from Level II to Level III, perhaps related to the master's degree requirement and the experience necessary for the IDC Level III. Gateways credentialed individuals with an ITC were, on average, slightly younger than their peers with an ECE credential. Regardless of level, the average age for Gateways credentialed individuals with an ITC hovered around 40. Those with an ECE demonstrated an increase in average age in moving from a Level 5 to Level 6.

Figure 7. Average Age by Gateways Credential Type and Level Aligned by Educational Requirements.



Which Gateways Credential Holders Matched to IBHE and ICCB Records[1]

Matching to Completions

The Gateways Credential holders who matched to recent IBHE and ICCB completions files (from AY2013-14 through AY2015-16), were significantly younger (on average) than the Gateways Credential holders who did not match. Completions are defined as degrees and other formal awards (certificates) conferred at a postsecondary institution. It should be noted that a non-match does not equate to the lack of a postsecondary certificate or degree. There are many Gateways Credential holders who have earned college degrees outside the time horizon mentioned above, or at institutions that are not required or do not report their student-unit information to IBHE or ICCB (i.e., out-of-state schools). The difference in age between those who matched to a completion record and those who did not, could be a function of younger people being more likely to complete their degrees within the previously mentioned time horizon which was fairly recent.

Table 4: *Completion Match Status by Age (IBHE and ICCB)*

	Average Age
Did not Match to IBHE Completion Records	42.6
IBHE Completion Match	35.5
Did not Match to ICCB Completion Records	43.0
ICCB Completion Match	34.9

[1]For brevity, the terms IBHE and ICCB records and/or files are sometimes used in this report to describe the enrollment and degree completion information collected by those agencies. It should be noted that the individual institutions actually enroll students and confer degrees, not IBHE nor ICCB.

The Gateways credentialed individuals who matched to an IBHE or ICCB record of completion were more racially/ethnically diverse than their counterparts who did not match. For both ICCB and IBHE, the matched individuals included disproportionately more African Americans and disproportionately fewer individuals who identified as white. For ICCB, the matched group also included disproportionately more individuals who identified as Hispanic than the group that did not match to an ICCB record of completion.

Table 5: *Completion Match Status by Race/Ethnicity (IBHE)*

Race/Ethnicity and Completion Match Status				
	Matched to IBHE Completion		Not Matched to IBHE Completion	
Race/Ethnicity	**Total #**	**%**	**Total #**	**%**
African American	255	33%	2,318	24%
Asian	20	3%	240	2%
White	344	44%	5,378	56%
Hispanic	126	16%	1,393	14%
Other	30	4%	316	3%
Total	**775**	**100%**	**9,645**	**100%**

Table 6: *Completion Match Status by Race/Ethnicity (ICCB)*

Race/Ethnicity and Completion Match Status				
	Matched to ICCB Completion		Not Matched to ICCB Completion	
Race/Ethnicity	**Total #**	**%**	**Total #**	**%**
African American	359	30%	2,214	24%
Asian	31	3%	229	2%
White	523	44%	5,199	56%
Hispanic	256	21%	1,263	14%
Other	30	3%	316	3%
Total	**1,199**	**100%**	**9,221**	**100%**

Matching to Enrollment Records

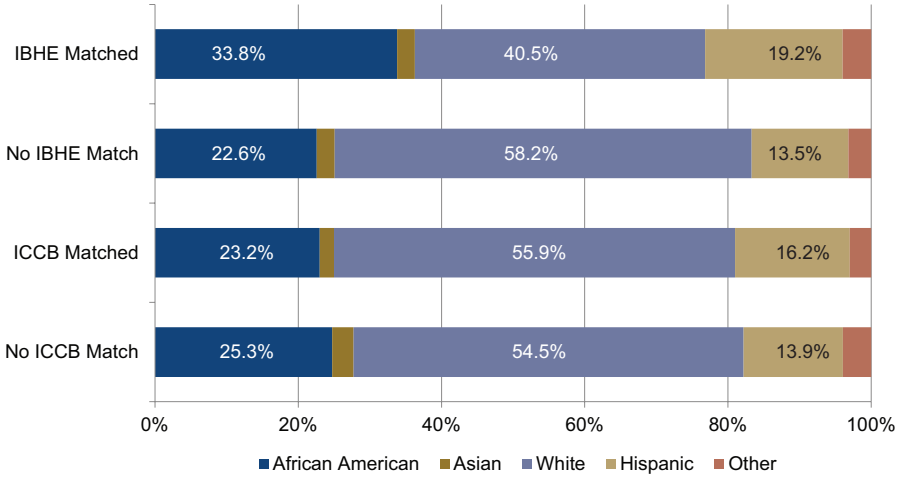
In a similar pattern as was evident with completions, those who matched to one or more IBHE or ICCB enrollment records were noticeably younger than their unmatched counterparts. The difference in the average age between the matched and unmatched Gateways credentialed individuals was over six years specific to IBHE enrollment records and over five years specific to ICCB enrollment records.

Table 7: *Enrollment Match Status by Age (IBHE and ICCB)*

	Average Age
Did not Match to IBHE Enrollment Records	43.2
IBHE Enrollment Match	37.0
Did not Match to ICCB Enrollment Records	43.7
ICCB Enrollment Match	38.1

As was the case with completions, the group that matched to IBHE enrollment records was comprised of disproportionately more African American individuals than the unmatched group. Specific to enrollment, disproportionately more Gateways credentialed individuals identifying as Hispanic were included in the matched group as well, demonstrating more racial/ethnic diversity. However, as shown in Figure 8, the individuals who matched to ICCB enrollment records closely mirrored the individuals who did not match to ICCB enrollment records. So while higher proportions of traditionally underserved students in the matched group had earned a certificate or associate's degree through a community college, the racial/ethnic distribution specific to community college enrollment was the same for the matched and unmatched Gateways Credential holders.

Figure 8. Enrollment Match Status by Race/Ethnicity.



Postsecondary Completions

This next section focuses on the intersection of the Gateways Credentials and postsecondary certificate and degree attainment at higher education institutions authorized to confer degrees within the state of Illinois. At times, the information describes all completions and some characteristics of the completions, such as the conferring institution, and at other times the information is unduplicated and takes a more individual perspective, while focusing on each Gateways Credential holder's highest postsecondary certificate or degree.

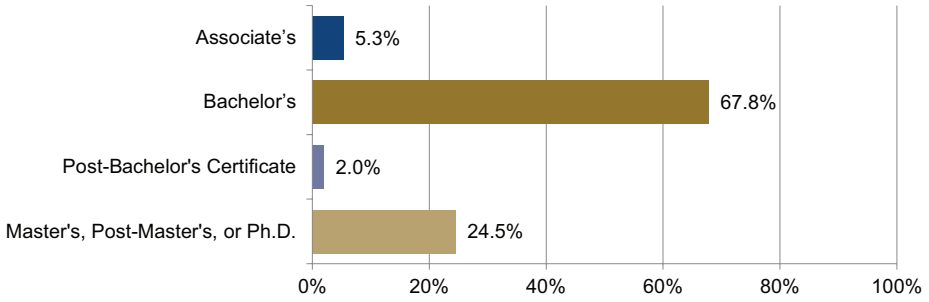
There were 775 Gateways credentialed individuals who had one or more records of completion from the bachelor's degree granting schools that had provided longitudinal data to IBHE as part of the Illinois Higher Education information system or IBHE's component of the Illinois Longitudinal Data System (ILDS). IBHE has the authority to collect longitudinal information from postsecondary institutions that are eligible to receive funding under the Monetary Award Program (MAP) through the Illinois Student Assistance Commission, as well as non-MAP institutions that confer graduate or professional degrees. This equates to 128 colleges; however, there are around 12 to 15 smaller, specialized non-MAP institutions that struggle to comply with the requests for information. Therefore, in a given year, IBHE's institutional enrollment and degree completion coverage is around 115 higher education institutions.

The 775 Gateways credentialed individuals had earned 788 separate degrees with 13 individuals earning multiple degrees, so the stackability of postsecondary awards when examining the bachelor's granting institutions in isolation appeared to be very limited. However, one limitation of the current study is that the IBHE information relative to the Gateways information, and the ICCB information relative to the Gateways information, were analyzed separately. ICCB is the State Education Authority (SEA) responsible for collecting and maintaining enrollment, completion, and student characteristics information on community college students. Future iterations of the study should examine all Illinois higher education enrollment and completion information at the same time to determine how the certificates and degrees attained at community colleges are related to further educational attainment at bachelor's granting institutions.

There were also 1,199 Gateways credentialed individuals who matched to one or more records of completion from an Illinois community college (N=48). However, 2,308 separate community college certificates and degrees were awarded to the 1,199 previously mentioned individuals. This suggests that the attainment of stackable credentials within the community college sector is more prevalent than it is with bachelor's granting institutions, even when the community college sector was examined in isolation. The difference in the number of completions between the community colleges and bachelor's granting institutions could also be explained by the fact that the requirements for bachelor's degree completion include significantly more credit hours than what it required to complete a short- or long-term certificate or even an associate's degree.

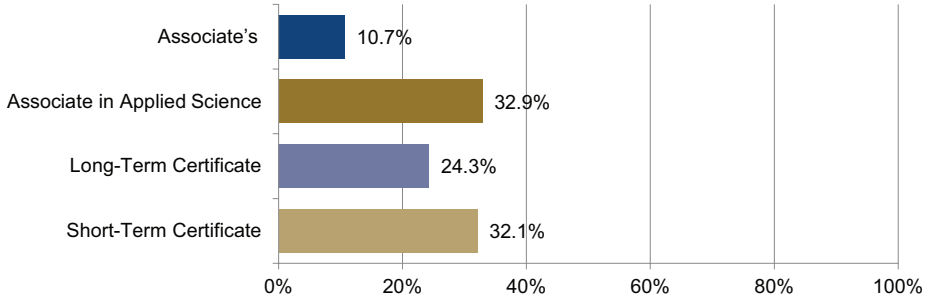
As illustrated in Figure 9, over two-thirds of the awards conferred by the bachelor's granting institutions were bachelor's degrees and roughly a quarter were graduate degrees with the bulk being master's degrees. Around five percent of the completions were associate's degrees, most of which were awarded by Kendall College, a for-profit private institution.

Figure 9. Awards and Degrees Conferred by Bachelor's Granting Institutions by Level (N=788).



As shown in Figure 10, roughly one-third of all of the degrees and credentials awarded by community colleges to the Gateways credentialed individuals were associate degrees in applied science. In combining the two associate's degree categories, nearly 45% of all of credentials awarded to the Gateways credentialed individuals by Illinois community colleges were within that category. Over half of the remaining awards were short- and long-term certificates, with the majority being of the short-term variety.

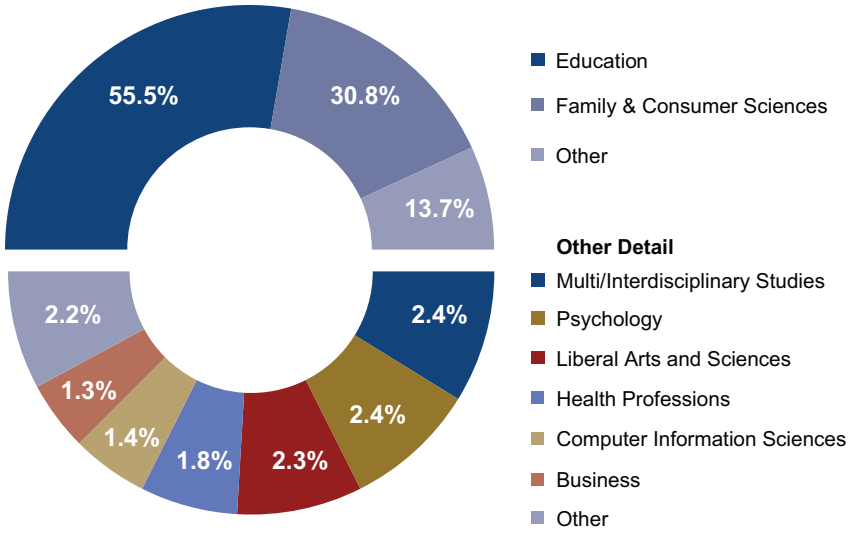
Figure 10. Awards and Degrees Conferred by Illinois Community Colleges by Level (N=2,308).



Degree and Certificate Program Majors

The vast majority of the degrees awarded by bachelor's granting institutions (86%) were within the education (13) and family and consumer sciences (19) instructional areas. As shown in Figure 11, the most popular areas outside of education and FSC were: multi/interdisciplinary studies, psychology, and liberal arts and sciences.

Figure 11. Degrees by 2-digit CIP codes (IBHE).



As demonstrated in Table 8, when focusing on the degrees within the education and family and consumer sciences instructional areas (*n*=680), nearly half were specifically identified as early childhood education and teaching majors. Another third were associated with one of the following majors within family and consumer sciences: child care and support services management; human development and family studies; and child development.

Table 8: *Majors within the Education and FCS Areas (IBHE)*

Major within the Education and FCS Area	Area	Count	Percentage
Early Childhood Education and Teaching	Education	333	49%
Child Care and Support Services Management	FCS	97	14%
Human Development and Family Studies, General	FCS	87	13%
Child Development	FCS	43	6%
Elementary Education and Teaching	Education	25	4%
Curriculum and Instruction	Education	22	3%
Family and Consumer Sciences/Human Sciences, General	FCS	16	2%
Education Teaching of Individuals in Early Childhood Special Education Programs	Education	13	2%
Other Education	Education	44	6%

For Illinois community colleges, there was some variation of majors across the award types. The vast majority of the associate degrees in applied science were for child care provider/ assistant, as were the long-term and short-term certificates. The overwhelming majority of the non-applied associate's degrees were fairly general in nature (86.6%), as they are designed to be; however, a limited number (*n*=33) were tied to specific majors, namely biological and physical sciences and early childhood education and teaching.

Table 9: *Degree Type and Title of CIP Completion (ICCB)*

	Total Awards
Associate's	**246**
Liberal Arts and Sciences/Liberal Studies	146
General Studies	67
Biological and Physical Sciences and Early Childhood Education and Teaching	33
Associate in Applied Science	**760**
Child Care Provider/Assistant	727
Social Work	12
Other	21
Long-Term Certificate	**560**
Child Care Provider/Assistant	534
Child Care and Support Services Management	11
Other	15
Short-Term Certificate	**742**
Child Care Provider/Assistant	674
Child Development	20
Nursing Assistant/Aide and Patient Care Assistant/Aide	12
Other	36
Grand Total	**2,308**

Degree Completions and Sector

As shown in Table 10, in terms of the distribution of completions at the bachelor's granting institutions across the sectors, nearly half of the degrees were awarded by not-for-profit private institutions, while 35.5% were awarded at public universities, and the remaining 14.7% were awarded at for-profit private institutions with the vast majority of those degrees being awarded by a single institution (Kendall College).

Table 10: *Overall Completions by Sector (IBHE)*

	Degree Count	Percentage
For-Profit Private	116	14.7%
Not-For-Profit Private	392	49.7%
Public University	280	35.5%
Total	**788**	

When considered along with the certificates and degrees conferred by Illinois community colleges to the same group of individuals over the same timeframe, it is evident that the community colleges awarded nearly three times as many individual certificates and degrees as the bachelor's granting institutions (2,308 compared to 788).

In terms of the bachelor's granting schools, National-Louis University awarded the greatest number of degrees to Gateways Credential holders (n=197), followed by NIU (n=109), and Kendall College (n=97). Other notable bachelor's granting institutions included: SIUC; St. Augustine College; the Erikson Institute; ISU; SIUE, and DePaul University (see Table 11).

Table 11: *Awards and Degrees by Institution (IBHE)*

Institution Name	Sector	Degree Count
National-Louis University	NFP Private	171
Northern Illinois University	Public University	109
Kendall College	FP Private	97
Southern Illinois University Carbondale	Public University	47
St. Augustine College	NFP Private	40
Erikson Institute	NFP Private	36
Illinois State University	Public University	29
Southern Illinois University Edwardsville	Public University	26
DePaul University	NFP Private	21
Governors State University	Public University	21
Western Illinois University	Public University	19
Concordia University Chicago	NFP Private	17
Dominican University	NFP Private	15
Olivet Nazarene University	NFP Private	13
Northeastern Illinois University	Public University	12
Lincoln Christian University	NFP Private	12
Millikin University	NFP Private	12
All Other Public Universities		17
All Other NFP Privates		55
All Other FP Privates		19
Total		**788**

As shown in Table 12, a sizable proportion of the community college certificates and degrees were awarded by the City Colleges of Chicago (45.8%). Other community colleges awarding a relatively high number of degrees and certificates to Gateways credentialed individuals included: Oakton; Morton; Harper; Southeastern; DuPage; Joliet; Lewis & Clark; and Waubonsee.

Table 12: *Community College Completions*

Community College	Total Completions
Chicago - Truman	233
Chicago - Daley	221
Chicago - Washington	217
Chicago - Olive-Harvey	207
Chicago - Malcolm X	93
Oakton	86
Morton	80
Chicago - Kennedy-King	79
Harper	67
Southeastern	65
Joliet	64
Lewis & Clark	64
DuPage	60
Waubonsee	59
Southwestern	56
Rend Lake	53
Lake Land	46
McHenry	45
Illinois Central	41
Joliet	64
Kankakee	31
Prairie State	38
Moraine Valley	34
Kankakee	31
Lincoln Land	30
South Suburban	30
Elgin	29
Lake County	29
Black Hawk	27
Highland	27
Illinois Valley	23
Rock Valley	21
Triton	21
Sauk Valley	18
Heartland	16
Richland	14
Logan	13
Parkland	13
Kishwaukee	10
Other	48
Grand Total	**2,308**

Unduplicated Completers

As shown in the tables below, there were many Gateways Credential holders earning more than one certificate or degree from an Illinois community college. In unduplicating the records of completion, there were 1,199 individuals, reflecting the 2,308 completions. For comparison purposes, and as previously mentioned, there were only 775 individuals who earned the 788 completions awarded by the bachelor's granting institutions and most of those were individuals earning a bachelor's and going on to earn a master's degree during short timeframe of the study. So although there were substantially more completions at Illinois community colleges than the bachelor's granting institutions (nearly 200% more), the difference in the number of individual completers was smaller (+55%).

Table 13: *Highest Certificate/ Degree at Bachelor's Granting Institutions*

Degree Type	Total # Students	% of Awards
Graduate*	206	26.6%
Bachelor's	528	68.1%
Associate's	41	5.3%
Total	775	100.0%

* includes post-bachelor's certificates, master's degrees, post-master's certificates, and Ph.D.'s.

Table 14: *Highest Certificate/Degree at Community Colleges*

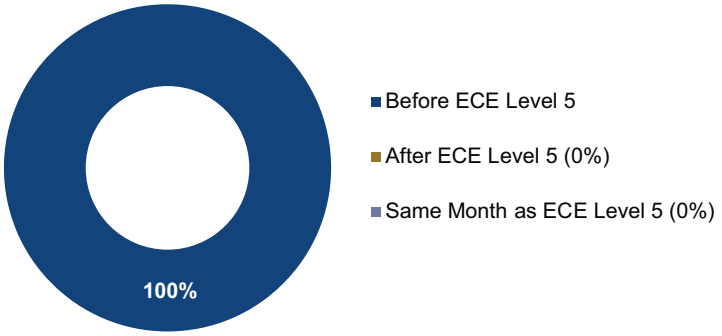
Degree Type	Total # Students	% of Awards
Associate's	227	18.93%
Associate in Applied Science	653	54.46%
Long-Term Certificate	85	7.09%
Short-Term Certificate	234	19.52%
Total	1,199	100.00%

Degree Completion Requirements for Gateways Credentials

Next, the completions data from bachelor's granting institutions were compared to the Gateways Credentials information to determine the extent to which the matched information reflects the degree completion requirements for the different levels of Gateways Credentials. More specifically, the Gateways ECE Credential and ITC Level 5 require a bachelor's degree prior to the given credential being awarded. Also, the IDC Level II requires a bachelor's degree prior to that credential being awarded. To accomplish this, the specific dates for each completion were compared to the dates the given Gateways Credentials were awarded. Similar analyses were not completed with community college degree completion information because the ECE Credential and ITC Gateways credentials at level 4 require an associate's degree or 60 credit hours. In other words, the associate's degree is not necessarily required.

A bachelor's degree (or higher) is required prior to an individual being awarded a Level 5 ECE Credential; so there should not be anyone with that credential at that level whose degree was awarded after the credential. There were 405 individuals with a bachelor's degree as their highest degree (based on IBHE records) and had obtained a Level 5 ECE Credential, as determined by a match between IBHE and Gateways records. In examining the dates in which the degrees were obtained relative to the dates in which the Gateways Level 5 ECE Credentials were awarded, it was established that all 405 of the previously mentioned individuals had earned their bachelor's degree prior to that ECE Credential. In other words, all of the matched records conformed to the degree requirements established by Gateways.

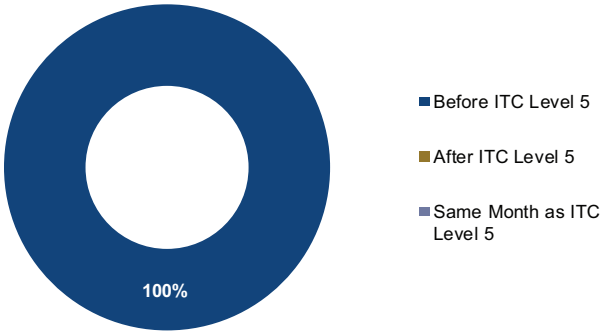
Figure 12. Level 5 ECE Credential Attainment and Timing of Bachelor's Degree Completion (*n*=405).



Infant/Toddler Credential

There were 182 bachelor's degree completers with an ITC Credential of Level 5, all of which were earned prior to that specific Gateways Credential, as specified by the Gateways requirements (see Figure 13). This followed the same pattern as the ECE and demonstrates that the matched information conforms to the Gateways degree requirements.

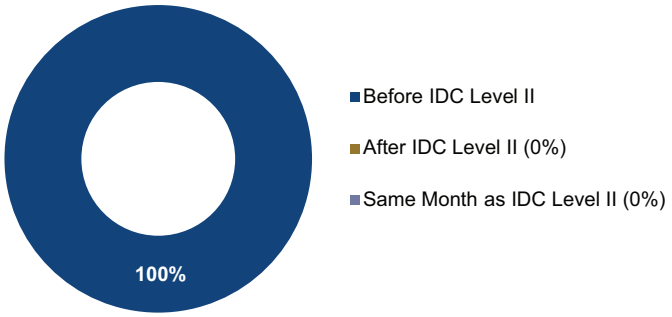
Figure 13. Level 5 ITC Attainment and Timing of Bachelor's Degree Completion (*n*=182).



Illinois Director Credential

A bachelor's degree (or higher) is also required for an IDC Level II credential. There were 43 individuals with an Illinois Director Credential of Level II or higher who had matched to a completion record from a bachelor's degree granting institution. As illustrated on Figure 14, all had earned their bachelor's degree prior to being awarded their IDC Level II, once again demonstrating that information from the bachelor's granting institutions could be used to verify the degree completion requirements for the higher level Gateways Credentials that are tied to specific degrees.

Figure 14. Level II IDC Attainment and Timing of Bachelor's Degree Completion (*n*=43).

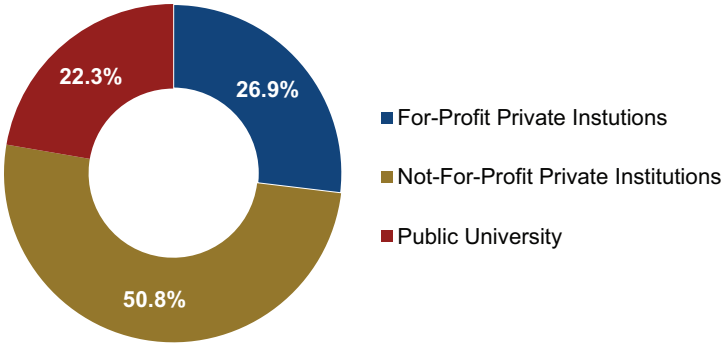


Postsecondary Enrollment

Baccalaureate Granting Institutions

1,945 individuals within the Gateways file matched to 8,208 semester specific records of enrollment during the relatively short time horizon of the study (fall of AY 2013-14 through fall of AY 2016-17). As illustrated in Figure 15, roughly half of the enrollment records (51%) were from not-for-profit private institutions, slightly more than a quarter were from for-profit private institutions, and 22% were from public universities. There were an additional 3,466 semester specific records of enrollment at the 48 Illinois community colleges during that same timeframe. So, differently from the completions sector analysis, the bachelor's degree granting institutions had over twice the number of enrollment records as the community colleges. This could also be related to the degree programs at bachelor's granting institutions requiring more credit hours and consequently more semesters to complete relative to the certificate and degree programs at community colleges, some of which were short-term and may be completed in a semester.

Figure 15. Enrollment at Bachelor's Granting Institutions by Sector (IBHE).



As illustrated in the Table 15, the overwhelming majority of enrollments within the for-profit private sector were at Kendall College. In fact, across all institutions, Kendall College had the second greatest number of enrollments (*n*=1,972). It should be noted that Kendall College offers its early childhood degree programs entirely online, which is a format highly desirable to working adults in early childhood. Staffing requirements in these settings frequently preclude staff from leaving the center during the day attend college courses. Within the not-for-profit private sector, National-Louis University had the highest number of enrollments(*n*=2,557), which was over ten times the number of semester enrollments at the Erikson Institute (*n*=249), which ranked second within the not-for-profit private sector. It should also be noted that National-Louis University had the highest number of enrollments across all sectors. For public universities, NIU had the greatest number of semester enrollments (n=564), which was more than twice the number of enrollments at the second ranked public university, Governors State (*n*=239).

Table 15: *Enrollment by Bachelor's Granting Institution (IBHE)*

	Enrollment
For Profit Private Institutions	
Kendall College	1,972
DeVry University-Illinois	94
Chamberlain College of Nursing-Illinois	59
American College of Education	28
Midstate College	24
All Other FP Private	35
Not For Profit Private Institutions	
National Louis University	2,557
Erikson Institute	249
Concordia University-Chicago	223
Dominican University	160
DePaul University	149
Saint Augustine College	97
Rockford University	84
Loyola University-Chicago	79
Olivet Nazarene University	76
Roosevelt University	70
Lewis University	63
Bradley University	62
Aurora University	56
Saint Xavier University	43
Millikin University	37
University of St. Francis	31
All Other NFP Privates	131
Public Universities	
Northern Illinois University	564
Governors State University	239
Southern Illinois University Carbondale	199
Eastern Illinois University	183
Southern Illinois University Edwardsville	156
Western Illinois University	140
Illinois State University	118
Northeastern Illinois University	88
University of Illinois at Chicago	66
University of Illinois at Urbana-Champaign	39
University of Illinois at Springfield	20
Chicago State University	17

Community Colleges

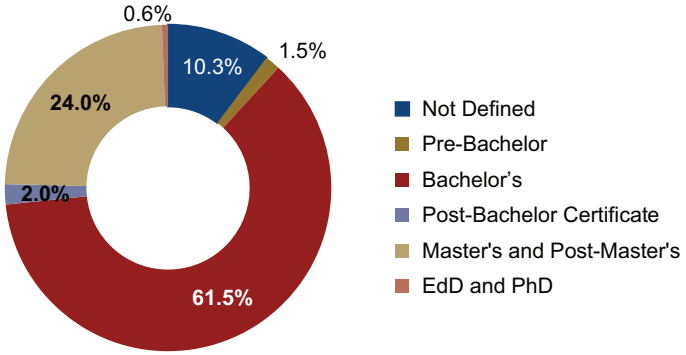
Community college enrollment differed somewhat from the completions, in that John A. Logan had the highest number of semester enrollment records, but it only had 13 completions. This demonstrates a successful training pathway at Logan resulting in Gateways Credentials but not necessarily postsecondary completions. By linking data through this project we are able to understand a higher education institution's impact on training individuals in the early childhood field beyond a postsecondary completion. As shown in Table 16, three of the City Colleges of Chicago—Washington, Daley, and Truman—were in the top five which was not surprising based on completions. Rend Lake rounded out the top five with 140 semester specific records of enrollment among the matched Gateways credential holders.

Table 16: *Community College Total Enrollments*

Community College	Total Enrollments	Community College	Total Enrollments
Logan	202	Chicago - Kennedy-King	71
Chicago - Washington	184	Lake Land	71
Chicago - Daley	169	Lincoln Land	68
Chicago - Truman	154	Chicago - Malcolm X	66
Rend Lake	140	Elgin	64
Chicago - Olive-Harvey	136	McHenry	61
Harper	109	South Suburban	58
Oakton	102	Lewis & Clark	56
Kaskaskia	101	Sauk Valley	52
Southwestern	100	Heartland	49
Joliet	99	Parkland	49
Illinois Eastern - Wabash Valley	98	Prairie State	49
Kankakee	97	Rock Valley	45
Triton	88	Illinois Eastern - Frontier	44
Waubonsee	85	Shawnee	42
Black Hawk	84	Illinois Valley	39
Lake County	81	Kishwaukee	34
Moraine Valley	81	Spoon River	25
Southeastern	81	Chicago - Wright	24
Morton	79	Highland	24
DuPage	77	Richland	22
Illinois Central	76	Other	30
		Grand Total	**3,466**

As illustrated in Figure 16, the majority of the enrollments at bachelor's granting institutions (61%) were for degree programs at the bachelor's level and slightly less than a quarter of the enrollments (24%) were at the master's or post-master's levels. This more or less paralleled the distribution of completions when examining the bachelor's granting institutions.

Figure 16. Enrollment by Program Level at Bachelor's Granting Institutions.



In examining the 8,208 enrollment records from the bachelor's granting institutions, 7,817 (over 95%) were associated with an actual major that included a six digit classification of instructional program (CIP) code. However, as shown on Figure 17, many of the enrollment records that lacked a CIP code (n=391) included a literal description of the enrollment outside of what one would normally consider a 'major' for a degree-seeking student. There were 109 enrollment records that included a literal description of a "pre" program, or a series of courses designed to provide the requisite knowledge base to allow entry into the degree program. The vast majority of the "pre" major enrollment records were described as ECE, Pre-FCS, Pre-Elementary Ed, or Pre-Nursing. As illustrated on Figure 18, 87 of the enrollment records were described as non-degree and more than half of those records had a literal program referencing ECE in some fashion. An additional 15 enrollment records that lacked a CIP code had a literal description that specifically mentioned certification in ECE (which would be non-degree and non-certificate).

Figure 17. Enrollment records from Bachelor's Granting Institutions lacking an associated CIP code (*n*=391).

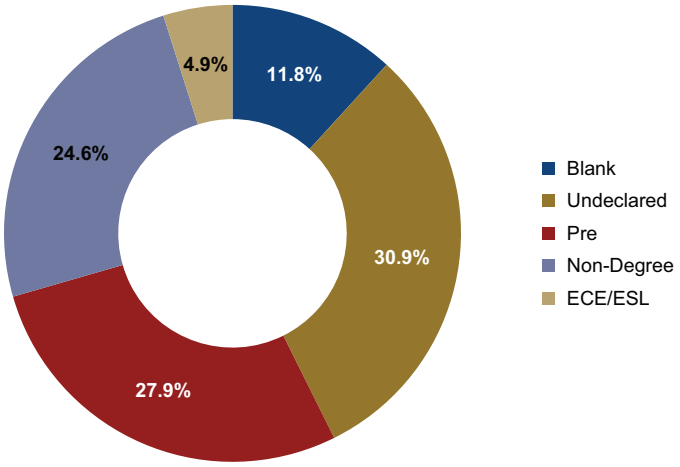
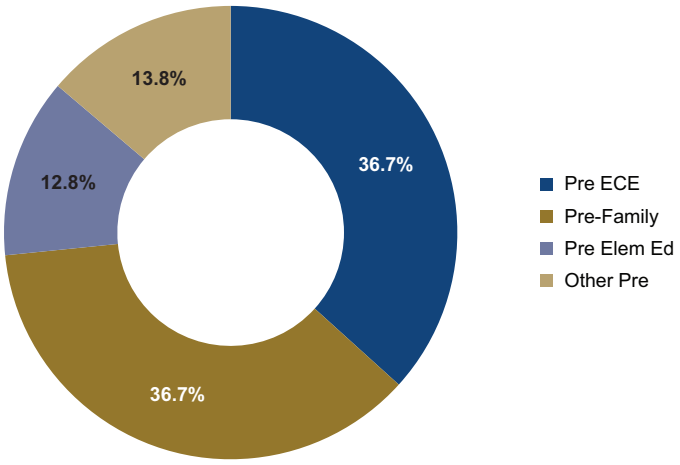


Figure 18. "Pre" enrollment records from Bachelor's Granting Institutions (*n*=109).



Among the enrollment records associated with a degree program, more than half were in education and nearly one-quarter were in family and consumer sciences; therefore eight out of every ten enrollment records from the bachelor's granting institutions were either in the education or FCS instructional areas. The remaining 20% fell into the other area category and additional detail is provided in the bottom half of Figure 19. Eight percent of the records were within the liberal arts and sciences, which is sometimes used to categorize student who have not yet selected a major. None of the other instruction program categories based on 2-digit CIP code were greater than 2%.

Figure 19. Enrollment by degree program area (IBHE).

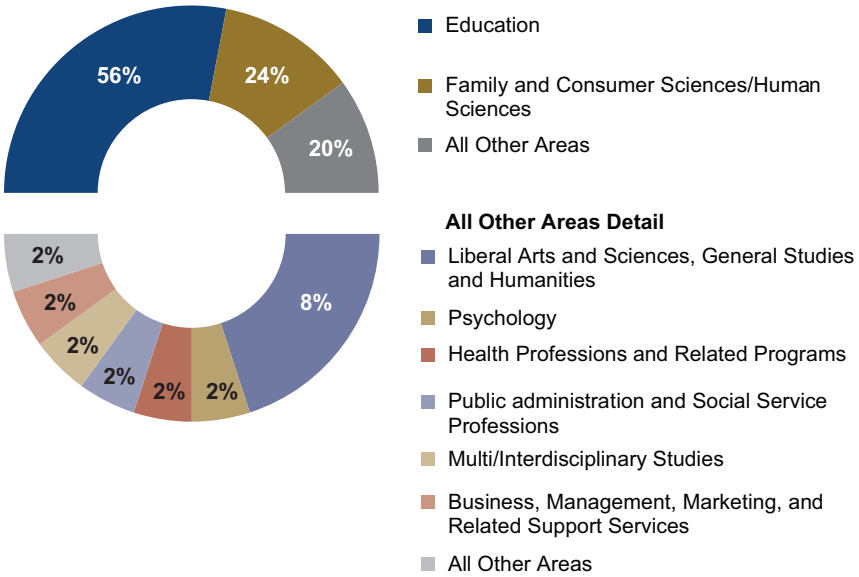


Table 17 provides information on the more detailed majors using the 6-digit classification of instructional program (CIP) code. The highest percentage of enrollment records from the bachelor's granting institutions were within the early childhood education and teaching major (42%), followed by child care and support services management (within FCS). General studies (6%) and human development and family studies (4%) were the next two most popular majors.

Table 17: *Enrollment at Bachelor's Granting Institutions by Detailed Major (IBHE)*

Major	Enrollment	Percentage
Early Childhood Education and Teaching	3,263	42%
Child Care and Support Services Management	1,191	15%
General Studies	463	6%
Human Development and Family Studies, General	319	4%
Child Development	266	3%
Elementary Education and Teaching	254	3%
Curriculum and Instruction	248	3%
Teacher Education and Professional Development, Specific Subject Areas, Other	170	2%
Liberal Arts and Sciences/Liberal Studies	146	2%
Multi-/Interdisciplinary Studies, Other	127	2%
Family and Consumer Sciences/Human Sciences, General.	114	1%
Psychology, General	110	1%
Social Work	108	1%
All Other Majors	1,038	13%

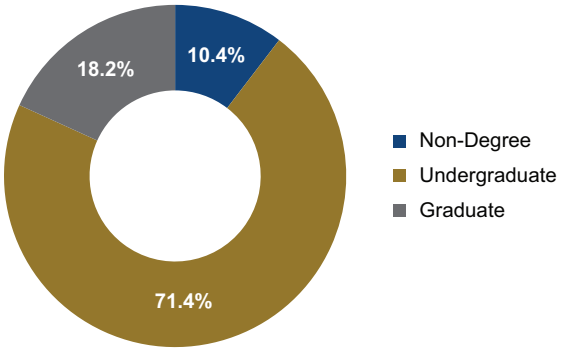
From the Individual Perspective

Baccalaureate Granting Institutions (IBHE)

There were 1,945 individuals within the Gateways Credentials file who matched to one or more enrollment records from AY2013-14 through fall semester of AY2016-17. Once again, it should be noted that the time horizon for enrollment is somewhat limited, so not being matched to a record of enrollment should in no way be considered a lack of enrollment. Also, the time horizon limited our ability to fully analyze enrollment patterns as one would do with cohorts of full-time/first-time students. In fact, only a limited number of matched Gateways Credential holders were first-time undergraduate students in AY2013-14. There were 694 individuals who had an undergraduate record of enrollment during the fall semester of AY2013-14. Of the group, only 35 were reported as being a part of the AY2013 full-time first-time freshmen cohort at their respective school during the fall semester of AY2013-14. Along with the short time horizon of the study, the limited number of first-time full-time freshmen in the study could also be due to the relatively high average age of the matched Gateways credentialed individuals, which overall, was 10 years higher than the threshold for being a non-traditional college student based on age (24). Non-traditional students oftentimes bring previously earned transfer credit hours with them and/or enroll part-time and therefore would not be included in traditional first-time/ full-time cohorts. The limited number of freshmen could also be due to the exclusion of the individuals with Level I ECE and ITC Credentials from the analysis.

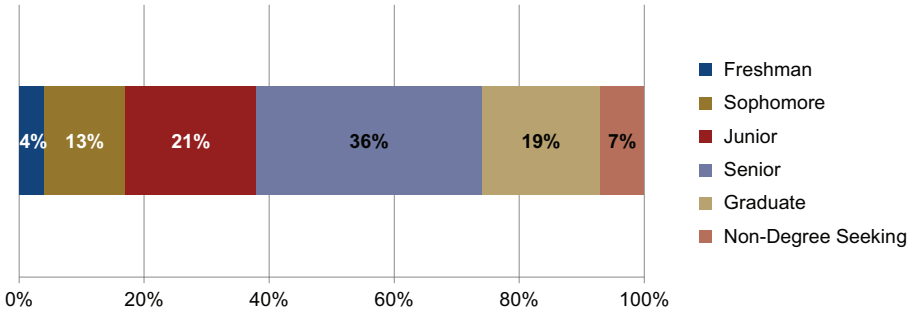
963 of the 1,945 individuals with a Gateways Credential who matched to an enrollment record from a bachelor's granting institution were enrolled during the fall semester of AY2013-14. As shown in Figure 20, among the 963 individuals with a record of enrollment for the fall semester of 2013-14, most were at the undergraduate level (72%), 18% were at the graduate level, and 10% were unclassified. The overwhelming majority of the enrollments at the undergraduate level were at the bachelor's degree level and nearly all of the enrollments at the graduate level were master's level students.

Figure 20. Fall semester 2013-14 enrollment at bachelor's granting institutions by degree level (*n*=963).



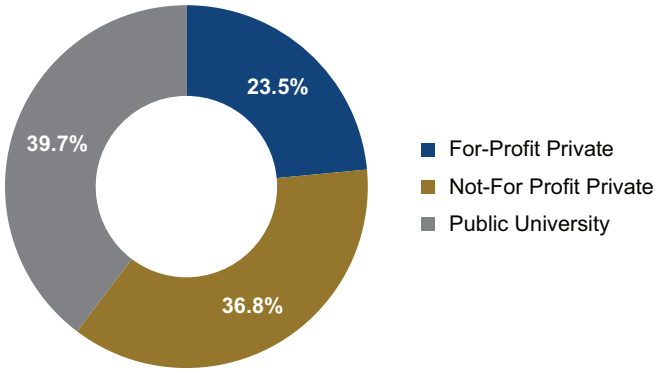
As illustrated in Figure 21, among the individuals with a class level associated with their record of enrollment during fall of AY2013-14, the highest proportion were seniors, followed by juniors and graduate students. In essence, the enrollments from the individual perspective skewed toward upper division and graduate level enrollment and as previously mentioned, there were only a limited number of freshmen-level students in the matched IBHE enrollment file.

Figure 21. Enrollment by Class Level at Bachelor's Granting Institutions (N=873).



As depicted in Figure 22, specific to IBHE enrollment records, public universities had the largest number of Gateways credentialed students (*n*= 382) enrolled at the beginning of the time horizon of the study, followed by private non-profit institutions (*n*=354), and private for-profit institutions (*n*=227).

Figure 22. Distribution of Fall 2013-14 Student-level Enrollment at Bachelor's Granting Institutions by Sector (N=963).

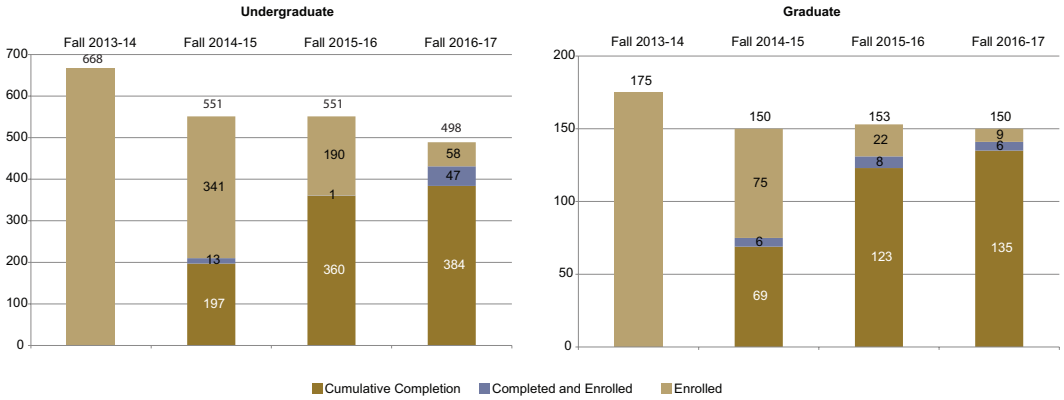


Tracking the Fall Semester 2013-14 Degree Seeking Students

To begin the enrollment analysis of the individual Gateways Credential holders, we examined subsequent enrollment and completion during the fall semester of AY 2013-14 and tracked the academic progress of that group moving forward until the end of the time horizon of the study. As noted above, 963 Gateways credentialed students were enrolled during the fall semester of AY2013-14, 863 of which were degree-seeking. Focusing on the degree-seeking students only, most of which were continuing students, we tracked their persistence and degree completion patterns for the remainder of the study period (through the fall semester of AY 2016-17).

We established that 74% of the students, both graduate and undergraduate, were either enrolled at the end of the study, or more importantly had earned a degree. Keep in mind, the majority of the undergraduate students enrolled in AY2013-14 were upperclassmen, so although this high rate of persistence and completion should be noted, many of the students were well into their academic careers during the fall semester of AY 2013-14. As shown in Figure 23, at the undergraduate level, nearly two-thirds had completed their bachelor's degree by the end of the study (431 out of 668) and nearly three-quarters had either completed or were still enrolled (489 out of 668). At the graduate level, 141 of the 175 Gateways credential holders had completed and 150 had either completed their graduate degree or were still enrolled.

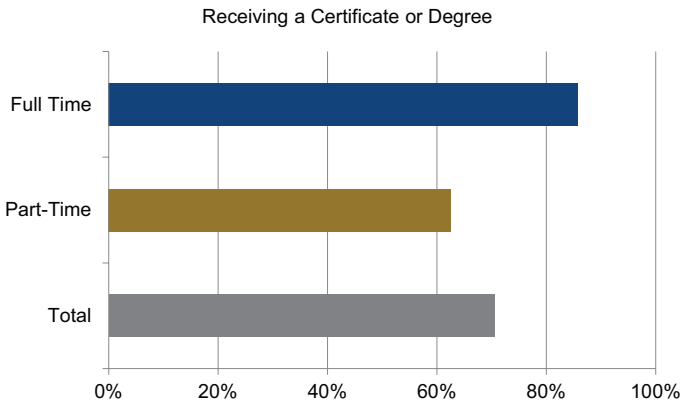
Figure 23: Tracking Fall Semester 2013-14 Enrollees Based on Completion and Enrollment Status.



Community Colleges (ICCB)

Among degree seeking community college students who were enrolled both full-time (*n*=381) and part-time (*n*=738), the rate of certificate or degree completion was also fairly high. Nearly 86% of Gateways credentialed students enrolled full-time in 2013-14 had earned some sort of credential (short- or long-term) or degree by the end of the study (see Figure 24). Over 60% of the Gateways credentialed students in the cohort enrolled part-time in 2013-14 had earned some sort of credential of degree by the end of the study. This rate of certificate and/or degree completion among part-time community college students is considerably high. As was the case with persistence and completion information with students enrolled at bachelor's granting institutions, these outcomes take into consideration both new and continuing students. Because of the inclusion of continuing students in the metrics, it could be argued that the rates of degree completion are being artificially increased.

Figure 24. Certificate/Degree Outcomes for Degree Seeking Students from Fall of AY2013-14 (ICCB).



Rates of Retention

The next section uses ICCB's entire fall 2013-14 enrollment cohort and examines the year two retention rates (retained in fall of AY2014-15) for the Gateways credential holders relative to all other students enrolled at Illinois community colleges with the same enrollment status. In other words, this approach improves upon some of the limitations that were identified in the previous sections specific to examining the completion outcomes of continuing students and provides comparison groups for context. As shown in Table 18, it is evident that relative to all other community college students, the Gateways credentialed individuals had higher rates of retention among: full-time, continuing degree/certificate seeking students (55% to 44%); part-time continuing students (49% to 38%); and part-time, non-degree seeking students it was more pronounced (42% to 28%).

Also, nearly all of the first-time, full-time students were retained from fall of 2013 to fall of 2014, but due to cell size restrictions specific to the non-retained individuals, we were not able to report it in Table 18. For reference, 59% of the non-matched individuals in the full-time first-time degree-seeking cohort were retained (defined as still enrolled at the same institution). In essence, the Gateways Credential holders had higher retention rates than the general student body at Illinois community colleges.

Table 18: *Retention among 2013 Community College Enrollees by Gateways Credential Status*

Fall 2013 (E1 2014 Cohort		Retained in Fall15 (FY15)			
Student Level	**Gateways - 1st Hours in FY14**	**No**	**Yes**	**Total**	**% Retained**
Full-Time, Continuing Degree/Certificate Seeking	No	45,279	35,490	80,769	44%
	Yes	150	184	334	55%
Part-Time, Continuing Degree/Certificate Seeking	No	69,608	43,124	112,732	38%
	Yes	356	344	700	49%
Part-Time, Non Degree/Certificate Seeking	No	60,604	23,856	84,460	28%
	Yes	76	55	131	42%

Counting Credentials

This next section highlights how the intersection of information on higher education and Gateways Credential attainment could be used to pinpoint individuals operating within the early childhood space with some college and no degree but who have a Gateways Credential that is employer recognized and requires college coursework. More specifically, this section explores the degree completion patterns for the Gateways credentialed individuals with an ECE of Level 3 or Level 4 who matched to records from a community college or a bachelor's granting institution. This was done in an effort to estimate how many of the Gateways credentialed individuals had some college and no degree, but also had attained one of the Gateways Credentials requiring a specified number of college credit hours.

In examining the college enrollment and degree completion patterns among the Gateways credentialed individuals, it was evident that because most of the credentials have degree completion requirements, a fair proportion of the study group members would have already been counted in traditional metrics that focus on degree attainment. Such metrics often include all individuals with an associate's degree or higher as their highest educational attainment level. However, the ECE Level 3 Credential, along with the ITC Level 3, do not require a certificate or degree, and the ECE Level 4 credential does not necessarily require an associate's degree, as 60 credit hours could be used instead. The ECE is highlighted since it serves a prerequisite for the parallel ITC credentials, and the IDC requires an associate degree or higher, therefore all individuals with an IDC would have met the general definition of having a high quality degree (associate degree or higher).

We first examine the degree completion patterns of matched study group members with an ECE Level 4 as their highest credential in that area. As shown in Table 20, specific to community college records, 1,408 study group members met that criteria and slightly more than half (53%) had earned their ECE Level 4 (as their highest ECE level) by sake of the credit hours, instead of the associate's degree.

As shown in Table 19, when examining the records from the bachelor's granting institutions, there were 693 individuals who had earned their ECE Level 4 and only 129 had earned an associate degree or higher during the timeframe of the study. Therefore, an additional 564 Gateways credentialed individuals were lacking a degree, had attended college, and met the criteria for an ECE Level 4 (which is an employer recognized credential). This equated to 81.4% of the Gateways credentialed individuals with an ECE of Level 4 matching to a record from a bachelor's granting institution. ICCB and IBHE support and promote the alignment of curricula and associate's degree completion with the ECE level 4 credential. Still, the ECE Level 4 arguably provides insurance in the event that a degree is never attained but 60 hours are accumulated. ICCB, IBHE, and

Table 19: *Degree Attainment Status for those with a Level 4 ECE Credential*

	Earned Associate's Degree or Higher		
ECE Credential Level 4 (Highest)	No	Yes	Grand Total
ICCB	750	658	1,408
IBHE	564	129	693

INCCRRA should continue to examine the intersection of the credentials as it relates to outcomes within the early childhood workforce.

The ECE Credential of Level 3 requires at least 21 college-level credit hours, which if part of an approved program of study, could meet the threshold for being a short-term certificate of less than one year. As demonstrated in Table 20, 134 of the 214 individuals with an ECE of Level 3 who matched to community college records lacked a record of certificate or degree attainment. Therefore, 62.6% of that group had an employer recognized credential (ECE Level 3), had enrolled in college, but lacked a certificate or degree from a community college. None of the individuals with an ECE Level 3 who had matched to a record from a bachelor's granting institution had attained a degree or award. Like the ECE level 4 Credential, ICCB, IBHE, and INCCRRA should continue to examine the intersection of the credentials and training for the early childhood workforce.

Table 20: *Award/Degree Attainment Status for those with a Level 3 ECE Credential*

	Earned a Credential or Degree		
ECE Credential Level 3 (Highest)	No	Yes	Grand Total
ICCB	134	80	214
IBHE	76	0	76

Overall Enrollment and Completions in Early Childhood Programs

To provide additional context regarding the postsecondary early childhood education landscape in Illinois, recent enrollment and degree completion trends are provided by sector at both the baccalaureate and master's levels, and completion trends are provided at the sub-baccalaureate levels (short- and long-term certificates and associate degrees combined) by sector. Due to fluctuations in the CIP codes (majors) specific to enrollment for students from year to year within the community college sector, information on majors tied to enrollment is not provided for the sub-baccalaureate certificates and degrees. It should be noted that although some of the enrollments and completions addressed earlier in the study would be captured with the following information, the following section does not provide anything specific to Gateways credentialed individuals.

Pre-Baccalaureate Programs (short- and long-term certificates and associate degrees)

There was significant variation across the two sectors conferring pre-baccalaureate awards and degrees in early childhood education specific to the change in completions from 2010 to 2016. As shown in Table 21, the community college sector experienced robust growth in early childhood education certificates and awards (+74%) during that time frame and the growth tapered off slightly from 2015 to 2016. The not-for-profit private sector experienced a significant decline in completions (-94%) from 2010 to 2016. Within the not-for-profit private sector, there was a noticeably large decline in completions in going from 2010 to 2011, as 1353 pre-baccalaureate awards and degrees were conferred in 2010, while only 244 were conferred the following year (2011). This was primarily due to the pre-baccalaureate early childhood education program being eliminated at Ellis University in 2011 as they went through a change in ownership. In 2010, Ellis University accounted for 1,180 pre-baccalaureate awards in early childhood education and teaching.

Table 21: *Pre-Baccalaureate Early Childhood Completions*

Sector	Completions 2010	2011	2012	2013	2014	2015	2016	Percent Change from 2010 to 2016
Community Colleges	1,022	1,185	1,316	1,366	1,387	1,982	1,774	+74%
Independent NFP Institutions	1,353	244	313	340	225	137	86	-94%
Out-of-State	0	3	0	0	0	0	30	N/A
Grand Total	**2,375**	**1,432**	**1,629**	**1,706**	**1,612**	**2,119**	**1,890**	**-20%**

Bachelor's Level

Since 2010, enrollments in bachelor's level early childhood programs have decreased by over a third (-39%) and all sectors experienced overall declines. However, there was some variation in the size of the decrease by sector (see Table 22). The not-for-profit private institutions experienced a decline of 27% and the public universities experienced an overall decline of -37%; while enrollment at the single for-profit private institution, Kendall College, declined by over 50%. Fortunately, and as shown in Table 23, the decline in completions at the bachelor's level was not quite as robust as the decline in enrollments. There was a -19% decline in bachelor's completions overall. The public universities experienced the smallest decline (-14%), while the NFP and FP private institutions both experienced declines of around one third. There is usually a lag between enrollments and completions, so in the next few years one could expect the decline in completions to perhaps better reflect the larger and more recent declines in enrollments.

Table 22: *Bachelor's Level Early Childhood Enrollments*

Sector	Enrollments 2010	2011	2012	2014	2015	2016	Percent Change from 2010 to 2016
Public Universities	3,147	3,068	2,922	2,411	2,490	1,996	-37%
Independent NFP Institutions	934	755	730	715	699	680	-27%
Independent For-Profit Institutions	1,051	942	802	595	476	467	-56%
Grand Total	**5,132**	**4,765**	**4,454**	**3,721**	**3,665**	**3,143**	**-39%**

Table 23: *Bachelor's Level Early Childhood Completions*

Sector	Completions 2010	2011	2012	2013	2014	2015	2016	Percent Change from 2010 to 2016
Public Universities	876	878	869	842	830	803	755	-14%
Independent NFP Institutions	217	206	191	187	143	183	155	-29%
Independent For-Profit Institutions	133	180	189	176	150	120	88	-34%
Grand Total	**1,226**	**1,264**	**1,249**	**1,205**	**1,123**	**1,106**	**998**	**-19%**

Master's Level

Since 2010, enrollments in master's level early childhood programs have decreased by 15% overall and there was not much variation across the two sectors with such programs. As shown in Table 24, public universities as a whole experienced a -16% decline in enrollments, while independent not-for-profit private institutions experienced a decline of -14%. However, the decline in master's level completions was significantly higher than the decline in enrollment (see Table 25). Overall, early childhood completions at the master's level declined by 36% from 2010 to 2016, with public universities experiencing a somewhat larger decline (-41%) than the not-for-profit private institutions (-33%).

Table 24: *Master's Level Early Childhood Enrollments*

	Enrollments						Percent Change from 2010 to 2016
Sector	**2010**	**2011**	**2012**	**2014**	**2015**	**2016**	
Public Universities	288	275	248	241	250	241	-16%
Independent NFP Institutions	537	498	515	491	450	460	-14%
Grand Total	**825**	**773**	**763**	**732**	**700**	**701**	**-15%**

Table 25: *Master's Level Early Childhood Completions*

	Completions							Percent Change from 2010 to 2016
Sector	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	
Public Universities	157	129	81	75	107	99	93	-41%
Independent NFP Institutions	258	195	213	186	207	214	172	-33%
Grand Total	**415**	**324**	**294**	**261**	**314**	**313**	**265**	**-36%**

Major Findings

Diversity of the Matched Gateways Credentialed Individuals. Some of the results from this study point to promising trends in terms of the how Gateways credentialed individuals add to the overall diversity of the early childhood workforce in Illinois. Gateways credentialed individuals were not only more diverse than the overall early childhood workforce in Illinois, but the Gateways Credential holders who matched to a record of completion were even more diverse than the larger study group of all Gateways credentialed individuals.

Degree Completion, Retention, and Persistence. Although many of the study group members who matched to a record of enrollment were continuing students and specific to the bachelor's granting institutions, many had upper division class status, a high proportion had earned awards and degrees, or were still enrolled at the end of the study. Also, when the degree and certificate seeking students were examined separately from non-degree seeking students among Gateways Credential holders matching to community college records, the rates of certificate and degree completion were also quite high. However, none of those previous findings are offered in the context of other similar students. Yet, in the case of Illinois community colleges, the rates of year two retention among matched Gateways Credential holders were comparatively higher than other community college students from that same timeframe with a similar enrollment status at the beginning of the study. This arguably contradicts commonly held perceptions about the "persistence" of individuals in early childhood working toward certificates and degrees.

Some College, No Degree with a Gateways Credential. The current study demonstrates how the Gateways Credentials could be used to better establish progress towards the 60% by 2025 goal. For example, less than half of the individuals with a Gateways ECE Credential of Level 4 who matched to a community college record had earned an associate's degree, suggesting that the other half were utilizing the requirement of 60 credit hours. With current reporting mechanisms, such individuals would get counted as having some college, but no degree. However, the continued integration of the Gateways Registry into the Illinois Longitudinal Data System (ILDS) will help to ensure more of individuals with some college and no degree who also have obtained an employer recognized credential (such as the ECE Credential Level 4) are counted in the future. Also important, it can help ICCB, IBHE, and INCCRRA better understand course-taking patterns of students to better align ECE Credentials with degrees and certificates.

The Matched Records Reflected the Degree Completion Requirements Associated with the Gateways Credentials. In comparing the dates of degree completion at bachelor's granting institutions to when the Gateways Credentials requiring such degree were attained, 100% of the matched records were aligned with the timing requirements. For example, bachelor's degree attainment is required prior to an individual being awarded an ECE Credential Level 4, an ITC Level 4, or an IDC Level II. It was established that in all matched cases, the proper degree completion requirements were clearly met, as based on records from the bachelor's granting institutions.

Enrollments and Completions in ECE Programs have been Declining Across Most Sectors. A supplementary analysis revealed that since at least 2010, early childhood enrollments and degree completions have been significantly declining across all sector and levels, with the exception of community college completions at the sub-baccalaureate levels. This decline in early childhood enrollments and completions could be related to a recent Illinois Workforce Hiring Survey that found over the course of a 12-month time period, 37% of early childhood positions overseen by the hiring managers responding to the survey turned over or went unfilled (Main, Yarbrough, & Patten, 2017). Also, the average time to fill a lead teacher position ranged from 11 weeks for pre-school to 13 weeks for infant toddler, and hiring manager reported the most difficulty in filling such positions.

Recommendations

Practice

Continued Use of the Illinois Longitudinal Data System. The current study was one of the first projects, if not the first, that employed the Illinois Longitudinal Data System's unique identifier—the master client index (MCI) ID—as a way to match across different agencies' respective datasets (IBHE to DHS/INCCRRA & ICCB to DHS/ INCCRRA). As the MCI is used in future projects, the ILDS agencies should continue to work with the Common Demographic Dataset Administrator (CDDA) at Northern Illinois University to determine best practices for streamlining the integration of the MCI into local data systems. Although the entities involved in the current project were eventually able to successfully integrate the MCI into their respective datasets, doing so involved some creative solutions, at least in the case of IBHE. Fortunately, the team at the CDDA provided excellent technical support as the entities involved in the project successfully navigated their way through the use of the master client index ID.

Once the MCI was integrated into IBHE's Higher Education Information System, the matching process to the Gateways file was fairly smooth. From a risk reduction perspective, IBHE, ICCB, and INCCRRA did not have to share any personally identifiable information with each other during the study. The MCI was integrated into the Gateways Credentials file, the Gateways Credentials information was de-identified, and the file was shared with both IBHE and ICCB. This arguably facilitated the processing of the data licensing agreements and virtually eliminated the risk associated with the disclosure of another agency's/ entity's personally identifiable information.

Systematizing Enrollment Information on Non-Degree Seeking Students. IBHE should consider systematically capturing additional information on non-degree seeking students in their enrollment collection. Traditionally, IBHE's information systems have focused mostly on individuals who have a defined major and who are also degree seeking. Despite this limitation, many institutions utilized their local descriptions of the given program major as a way to provide information on non-degree seeking students, even though they were not required to do so. The related information from the current study could be used to establish an operational definition, as well as categories specific to enrollment for non-degree seeking students for future IBHE data collections.

This work could be accomplished in conjunction with a larger effort to standardize the ways in which the degree-granting institutions utilize the classification of instructional programs (CIP) codes specifically for their early childhood education programs.

Gateways Credentials as Part of the Completion Agenda. As previously demonstrated, using the Gateways Credentials in conjunction with higher education enrollment and degree completion records could point to additional individuals who would fall into the some college, no degree category with a high quality/ employer recognized credential; however, more work would be needed to ensure that such individuals are not being counted twice as completion goals are tracked. It would also be necessary to demonstrate a labor market return or value add, over a lower level credential (ECE Level

4 to ECE Level 3, all else being equal). This could be accomplished if some of the further research suggested in the next section is conducted.

Making the Case for Social Utility. Current operational definitions of 'high quality' credentials rely heavily on labor-market returns, but there have been efforts to integrate another construct into the discussion by taking into consideration the social utility associated with the given credential. Social utility includes the value that the credential has to the good of the state, as well as the value that it adds to the life of the credential holder. Some of the work done by the Kentucky Community and Technical College System (KCTCS) has informed current discussions on the social utility of degrees and credentials. The KCTCS developed an internal review mechanism which gave additional weight to programs which provided credentials deemed to have social utility. Their social utility index was developed by combining data elements and qualitative survey responses. In order to narrow down which programs should be given weight for social utility, KCTCS identified 3 O*Net Career clusters (mainly those focused on caring professions). The qualitative element included responses to specific questions on the PayScale survey. This question was "does your work make the world a better place?" This initial work in Kentucky, though never fully implemented, provides a valuable framework to meaningfully measure non-economic returns on investment outside of traditional labor-market returns. The area of ECE is one that would feature prominently in the assessment of social utility because of its importance to state and regional priorities and its universal acceptance as one of the caring professions.

Further Investigation

Stackability of Credentials and Degrees. We recommend merging the IBHE, ICCB, and INCCRRA information into a unified dataset, as a way to better establish how Gateways Credential holders engage with both community colleges and other degree-granting entities falling under the purview of IBHE. Unfortunately, the scope and timing of the current project did not allow such a unification of data to occur. The resulting analysis of such a dataset could shine a better light on the stackability of credentials and degrees within early childhood and verify if the enrollments at bachelor's granting institutions that skewed toward upper division coursework were an anomaly or an artifact of the strong partnerships that exist between community colleges and bachelor's granting institutions specific to early childhood education. In other words, as most of the enrollment records from the bachelor's granting institutions were at the upper division and graduate levels, and by default all of the community college enrollment records were lower division, it would be interesting to determine the extent to which Gateways credentialed individuals are using the traditional community college to bachelor's granting institution transfer pathway in their higher education pursuits.

This could also point to the potential impact of another recent project funded through Race to the Top Early Learning Challenge monies, namely the Early Childhood Education Preparation Program Innovation (EPPI) sub-awards that were provided to higher education partnerships. EPPI was intended to align curriculum and promote articulation between community college and baccalaureate early childhood programs in Illinois. While establishing formal agreements was identified as challenging in terms of time and institutional bureaucracy, community college early childhood faculty were motivated to

help students complete a bachelor's and early childhood faculty from bachelor's granting institutions were motivated to boost enrollment and increase diversity in their programs (Lichtenberger, Klostermann, & Duffy; 2015; White et al., 2016).

The EPPI grant program generated work of statewide importance in that one partnership focused its efforts on defining their mutually shared expectations of early childhood candidates for the purposes of sharing assessment data related to candidate attainment of these expectations. The group of faculty from one four-year institution and several community colleges used the Gateways ECE Credential as their common point of reference and began a deliberative process of translating the ECE Credential benchmarks into a series of competencies leveled by employment responsibilities. State leaders in the field of early childhood quickly recognized the work of this EPPI grant partnership had implications for the field as a whole (Sanden, Darragh Ernst, Hamann, Quesenberry, Latham, Christianson, & Smyrniotis, 2016). The competency development process was expanded to include a similar analysis across all Gateways Credentials with specific plans to further improve the overall stackability of the credentials as well as a more transparent and seamless career pathway (Bernoteit et al., 2017). State leaders are currently working to engage institutions of higher education, statewide, in the design of assessments of the competencies, as well as alignment of the state's early childhood professional development system to the competencies. Such systemic coordination holds important potential for the overall effort to increase the knowledge, skills, and qualifications of the state's early childhood workforce by, for example, creating a more viable approach to evaluating professional learning that occurs in state professional development settings for potential college credit. This framework and alignment should help to create a system of stackable credentials, degrees, and licenses that will serve to unify the field and support a streamlined pathway of career development for educators.

Building cohorts and tracking them longitudinally. As IBHE's student information system matures, it would be beneficial to establish actual cohorts, as was done by ICCB, and provide parallel information on retention outcomes to provide better context. This would also allow the outcomes of Gateways credentialed individuals who matched to enrollment records at bachelor's granting institutions to be compared to similar students without such a credential.

Such information could point to the potentially motivational / mechanical relationship between Gateways Credentials attainment and degree completion. In other words, do the Gateways Credential requirements for employment in certain settings lead to increased program retention and/or degree completion or are the individuals who desire to work in those settings merely attaining the required Gateways Credential in an ex post facto sort of way after they already have the necessary credit hours or degrees.

Do Employer Recognized Credentials Provide a Value-Add? As this line of inquiry is advanced in the future, it would be interesting to determine if Gateways credentialed individuals with degrees are provided with a labor market premium relative to similar individuals with only a degree. A similar line of inquiry could focus on individuals with Gateways Credentials who do not require degrees, namely ECE and ITC Levels 2 through 4. Both lines of inquiry could point to the value of having attained an employer recognized

credential both with and without a college degree. This could potentially be accomplished by extending the current project to include career outcomes information from the Illinois Department of Employment Security.

Further inquiry could also attempt to determine if the racial and ethnic diversity of the Gateways Credential holders matching to degree completion records translates into diversifying the early childhood workforce. It remains possible that some of this increased diversity is due to educator supports provided through RTT-ELC, and the early childhood field now needs to determine whether there is a need for additional supports as these individuals transition into the field.

Analyzing the Broader Spectrum of Gateways Credentials. As the current study was limited to Gateways Credential holders with ECE and ITC Credentials of Level 2 or higher, it would be beneficial to expand the scope of future studies to include individuals with the ECE Credential Level 1. Also, as more individuals attain some of the newer Gateways Credential types, such as Family Child Care (FCC) Credential, School-Age and Youth Development (SAYD) Credential, or the Family Specialist Credential, it would be extremely useful to integrate that information into additional analyses on the intersection of Gateways Credential attainment and college enrollment and degree completion.

It would also be useful to determine the interaction of teacher licensure (through the Illinois State Board of Education), Gateways Credential attainment, and degree/certificate attainment in early childhood education teacher preparation programs in future studies.

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