

# The 2020 Arizona Teacher Workforce



JULY 2021

The Arizona Department of Education collects a great deal of information about teachers. However, that data has never been compiled so that policymakers and the public have a clear idea of who is teaching, which students they are teaching, and where they are teaching.

Through a partnership with ASU's Mary Lou Fulton Teachers College and the ASU Helios Decision Center for Educational Excellence, the Arizona Department of Education (ADE) analyzed data from the Teacher Input Application (TIA) database maintained by ADE. This analysis compiles the first comprehensive picture of Arizona's teacher and certificated staff workforce. Although some teachers are not included in this database, 96% of local education agencies participate – making it the best available information on Arizona's teacher workforce.

*Are teachers in Title-I eligible schools young and inexperienced? Are international teachers filling rural classrooms? How many individuals have teaching certificates but are not teaching?*

This research brief examines demographic information about educators during the 2019-2020 school year. A companion document examines the changes in the teacher workforce during the COVID-19 pandemic.

## MAJOR FINDINGS

58,293  
active teachers  
IN ARIZONA

34,661  
certified teachers  
INACTIVE IN ARIZONA

47  
avg. teacher age  
OVERALL

- *Almost 60,000 teachers are working in Arizona classrooms, with most working in traditional school districts.* In 2019-20 there were 58,293 active teachers in Arizona public schools. Most were located in urban and suburban schools (87%), school districts (85%), and Title-I eligible schools (64%).
- *Almost 25,000 additional certificated individuals have taught in Arizona but are not working in classrooms today. Additionally, over 10,000 have a teaching certificate but have never taught in Arizona.* In total, there are 34,661 people with an active teaching certificate who are not teaching.
  - Women make up a greater percentage of the 23,956 certified teachers in Arizona who are not currently teaching than teachers overall (80% v. 76% of teachers overall). 80% are white compared to 75% of teachers overall. This group has an average age of 47 (compared to 42 for teachers overall), and just over half of individuals in this group have an elementary teaching certificate (57%).
  - Certificated individuals who have never taught in Arizona have likely moved elsewhere to get a job after graduating from an Arizona university or were in online programs (e.g., Grand Canyon University, University of Phoenix) and are teaching near their physical location outside of Arizona. If so, the most likely explanation is that they applied for licensing in Arizona and then used reciprocity to be certified in their home state.
- *Schools serving low-income families have more inexperienced and alternatively certified teachers.* Many inexperienced teachers serve Title-I eligible schools. The median years of experience are lower in Title-I schools (8 years) than non-Title-I schools (10 years). Many of those with non-standard certifications can also be found working in Title-I eligible schools. Most of the international teachers (89% of all international teachers), emergency certified teachers (93% of all emergency certified teachers), emergency certified substitutes (93%), alternative certified/interns (72%), and substitutes serving in full-time positions (69%) work in Title-I eligible schools. Title-I eligible schools have more Hispanic and Black teachers that better reflect their student populations, but these teachers are also less experienced than teachers overall.
- *Many non-certified teachers are working in charter schools.* There are 3,180 (5% of all teachers) teaching without certification. These teachers almost exclusively teach in charter schools where certification is not required.

3,180  
teachers

WORK WITHOUT CERTIFICATION

1,059  
substitute teachers

FILLING FULL TIME POSITIONS

1/20  
classrooms

IMPACTED BY TEACHER SHORTAGE

- *Teachers take many pathways to certification.* While most teachers have a traditional teaching certification, several people have teaching certificates from alternative routes. There are 1,912 interns or alternative certified teachers who are being trained and teaching at the same time. There are 1,059 substitute certified individuals filling full-time positions. These may be due to a lengthy leave or because of a lack of a qualified teacher. In addition, there are 264 international teachers, 930 emergency certified teachers, and 412 with an emergency substitute certificate who are teaching in Arizona classrooms. There are 808 subject matter expert certificated individuals teaching who have experience in the subject area taught but usually do not have a teaching degree.
- *The teacher shortage may impact one in every twenty classrooms.* International teachers, emergency certified teachers, emergency substitutes, and long-term substitutes serving in full-time positions (3,115 or 5% of all active classroom teachers) indicate a significant teacher shortage. Interns (1,912, 3.3%) are less likely to be an indicator of a shortage, as hiring interns may be a strategy to train and employ local residents to be teachers who will stay in the district. In some cases, interns are certified teachers getting a new specialty certification (e.g., an elementary teacher getting special education certification).
- *Rural teachers are older, charter teachers younger.* The average (median) teacher is a 42-year-old female, but rural teachers are older (45), and charter teachers are younger (39) on average.
- *Many teachers leave in the first few years.* Years of experience per teacher show a sharp drop after the first couple of years, likely because individuals leave the profession early in their careers.
- *Teacher and student ethnicity largely do not match.* Teachers are overwhelmingly white (75%), with the remainder being primarily Hispanic (16%), Black (4%), and Native (2%). These statistics compare to a student body that is 45% Hispanic, 38% White, 5% African American, and 4% Native (ADE October Enrollment, 2020).
- *Women dominate teaching, except high school social studies.* Teachers are overwhelmingly female (76%), especially in the elementary subject area (86%). Looking at secondary subject areas, women are by far the majority except for math (53% female), science (54% female), and social studies (37% female).

## HOW MANY ACTIVE TEACHERS ARE THERE IN ARIZONA?

**58,293**  
active teachers  
IN ARIZONA

**34,661**  
certified teachers  
INACTIVE IN ARIZONA

There were 58,293 active teachers in Arizona in 2019-2020. Most are located in urban and suburban schools (87%), traditional school districts (85%), and higher poverty Title-I eligible schools (64%). They mostly hold certification in elementary education (57%), secondary education (31%), or special education (16%).

There are an additional 34,661 people with teaching certificates that are not active teachers in a public school in Arizona. Of these, 10,705 have never taught in an Arizona public school classroom. Arizona-based online teacher preparation programs (e.g., Grand Canyon, University of Phoenix) educate teachers that live out-of-state and can receive certification in Arizona. These individuals often immediately apply for a reciprocal certificate in their home state, without ever teaching here. Out-of-state college students at Arizona universities who return to their home state after receiving their certification may also account for many of these 'never taught' certificate holders.

Eighty percent of the 23,956 certificated individuals who have taught in the past but are not currently teaching are women, compared to 76% of teachers overall. Eighty percent of these individuals are also white, compared to 75% of teachers overall. Both the median and mean age of this group is 47.

## HOW OLD ARE ARIZONA TEACHERS?

Teachers range from their early twenties to well into the retirement years, with the median age being 42. The median age is slightly older in rural schools (45) and slightly younger in charter schools (39). There is no significant difference in the age of teachers in Title-I schools (42) vs. non-Title-I schools (43).

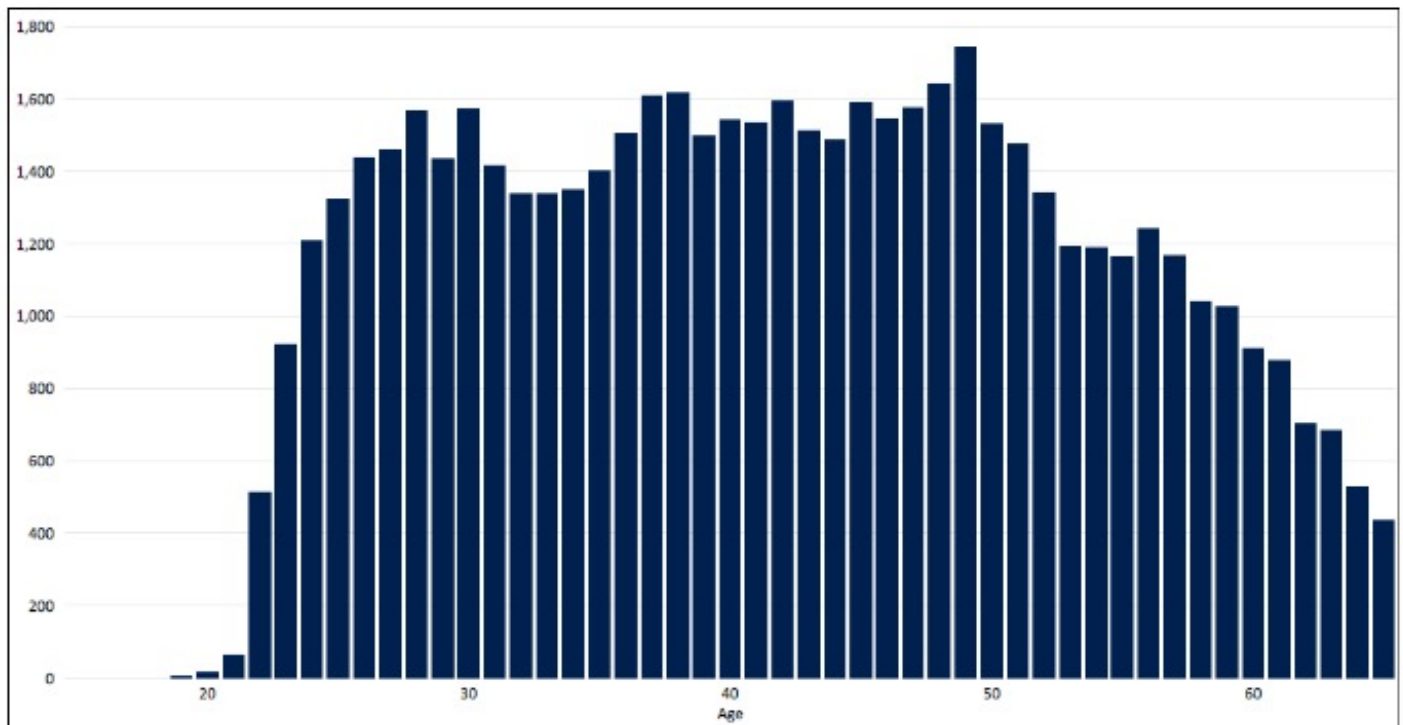


Figure: Overall Age Distribution of Arizona Teachers, AY 2019-2020

Once teachers hit age 50, the numbers drop off, and many appear to leave the profession. Exits at this age may be attributed to various factors, including the demanding nature of the job. It also likely reflects the incentives offered by the state retirement system. Retirement amounts provided at 25 and 30 years of service are such that one's take-home pay from retirement is not much different from one's paycheck as a working teacher considering contributions taken out for retirement, social security, etc. Some may calculate that they 'lose money' after getting the highest multiplier because a teacher does not collect from retirement if they continue to teach and are likely to receive only the cost of living adjustment.<sup>1</sup>

OVERALL

42

teacher  
median age

RURAL SCHOOLS

45

teacher  
median age

CHARTER SCHOOLS

39

teacher  
median age

## HOW EXPERIENCED ARE ARIZONA TEACHERS?

The median teacher has nine years of experience. The median years of experience are slightly higher in districts (10) and non-Title-I schools (10) and lower in charter schools (6) and Title-I schools (8).

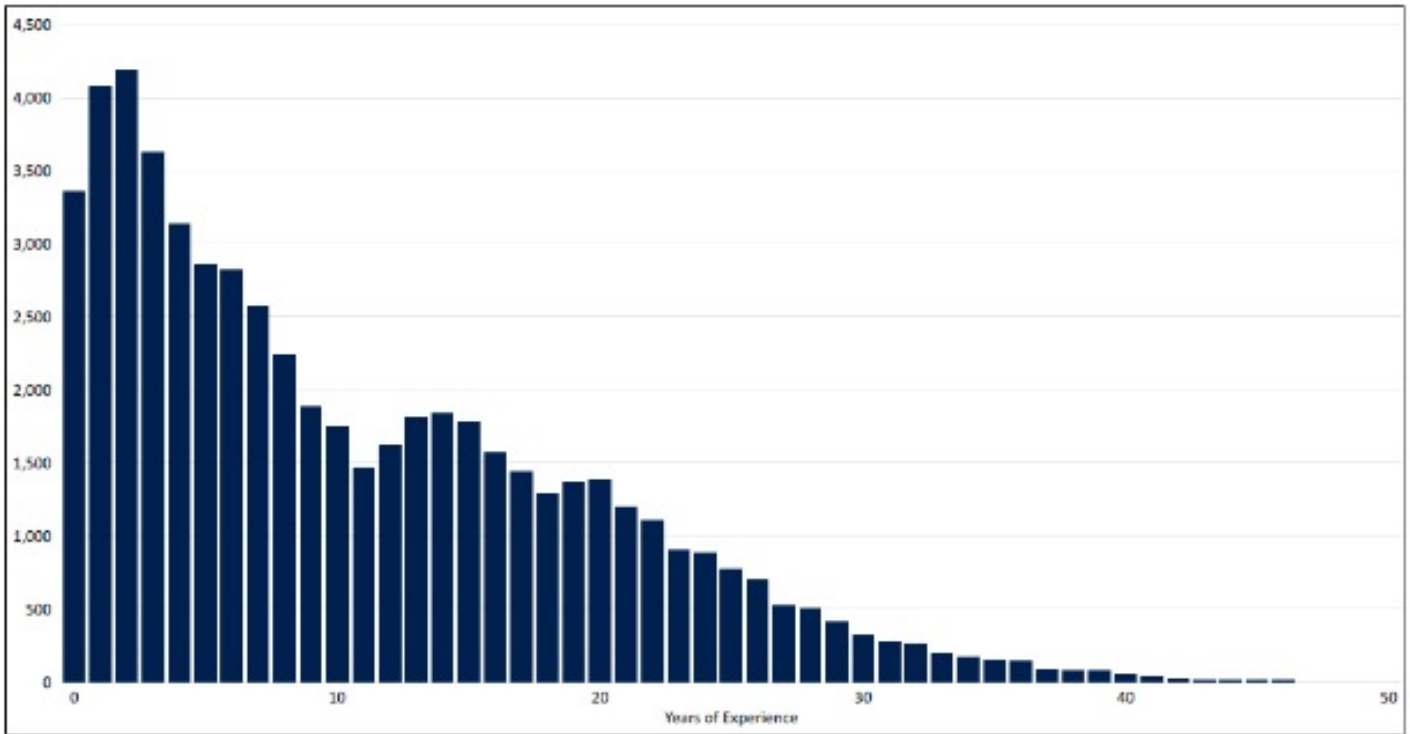


Figure: Distribution of Years of Experience of Arizona Teachers, AY 2019-2020

Although the average years of experience are nine, the career year with the largest number of teachers is two years of experience. The most frequent years of teaching are the first four, with a steep drop after that, reflecting a high teacher attrition rate after a few years of teaching. Efforts to recruit new teachers are hampered by Arizona's ability to retain teachers in the early years of their careers. Teachers may leave the profession for many reasons – being a teacher in Arizona means challenging and demanding work. Some only ever plan to teach for a short time (e.g., Teach for America), or some may have met a grant or loan forgiveness commitment, etc. However, this research brief does not seek to answer why teachers leave the profession in such great numbers in our state.

Inexperienced teachers are spread across the working years. The age of new teachers peaks in the twenties, but remains steady through age fifty, when it declines but does not go to zero. Although many begin teaching in their early twenties, a sizable number enter the field after age thirty. The number of 'new' teachers in their sixties and seventies shows that new teachers come from all age brackets.

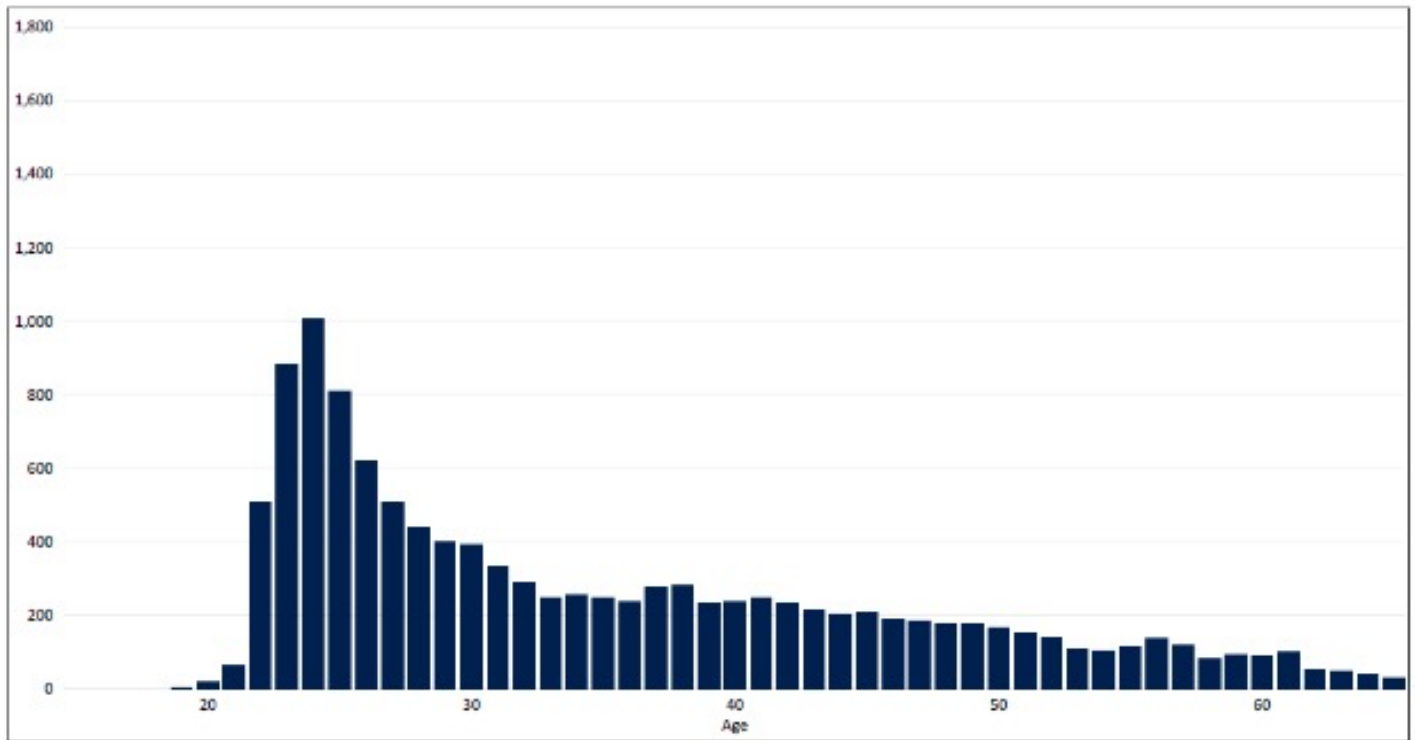


Figure: Overall Age Distribution of Inexperienced Arizona Teachers, AY 2019-2020

WHAT IS THE GENDER DISTRIBUTION OF TEACHERS?

ENGLISH TEACHERS

MATH TEACHERS

SOCIAL STUDIES TEACHERS

74% | 26%  
women | men

53% | 47%  
women | men

37% | 63%  
women | men

Women outnumber men three to one (76% - 24%). That pattern holds in rural schools, charter schools, and schools serving low-income students. The pattern is even stronger in elementary grade positions (86% - 14%), but less so in secondary positions (59% - 41%). High school English teachers reflect the overall pattern, with 74% identified as women. Math and science teachers are more closely divided by gender, with 53% of math teachers and 54% of science teachers identifying as women. Social studies are the one subject area that reverses that trend, with only 37% of social studies teachers identifying as women.

## WHAT IS THE ETHNIC MAKEUP OF THE TEACHING WORKFORCE?

75%  
white

16%  
hispanic

4%  
black

2%  
native

The teaching profession in Arizona is overwhelmingly white (75%), with the remainder being primarily Hispanic (16%), Black (4%), and Native (2%) – compared with a student body that is 38% white, 45% Hispanic, 5% Black and 4% Native. In a separate analysis, we found that the current teaching workforce represents an improvement in diversity over past years. Still, the change is gradual and is not significantly changing the makeup of the profession in Arizona. There are more Hispanic teachers in low-income (Title-I) schools (19%) than higher-income schools (9%). The same pattern holds for Black educators (5% vs. less than 2%). However, new Hispanic teachers (19% of inexperienced teachers) and new Black teachers (6%) also are overrepresented in the new teacher pool compared to teachers overall, and new teachers are more likely to be hired in schools serving lower-income students.

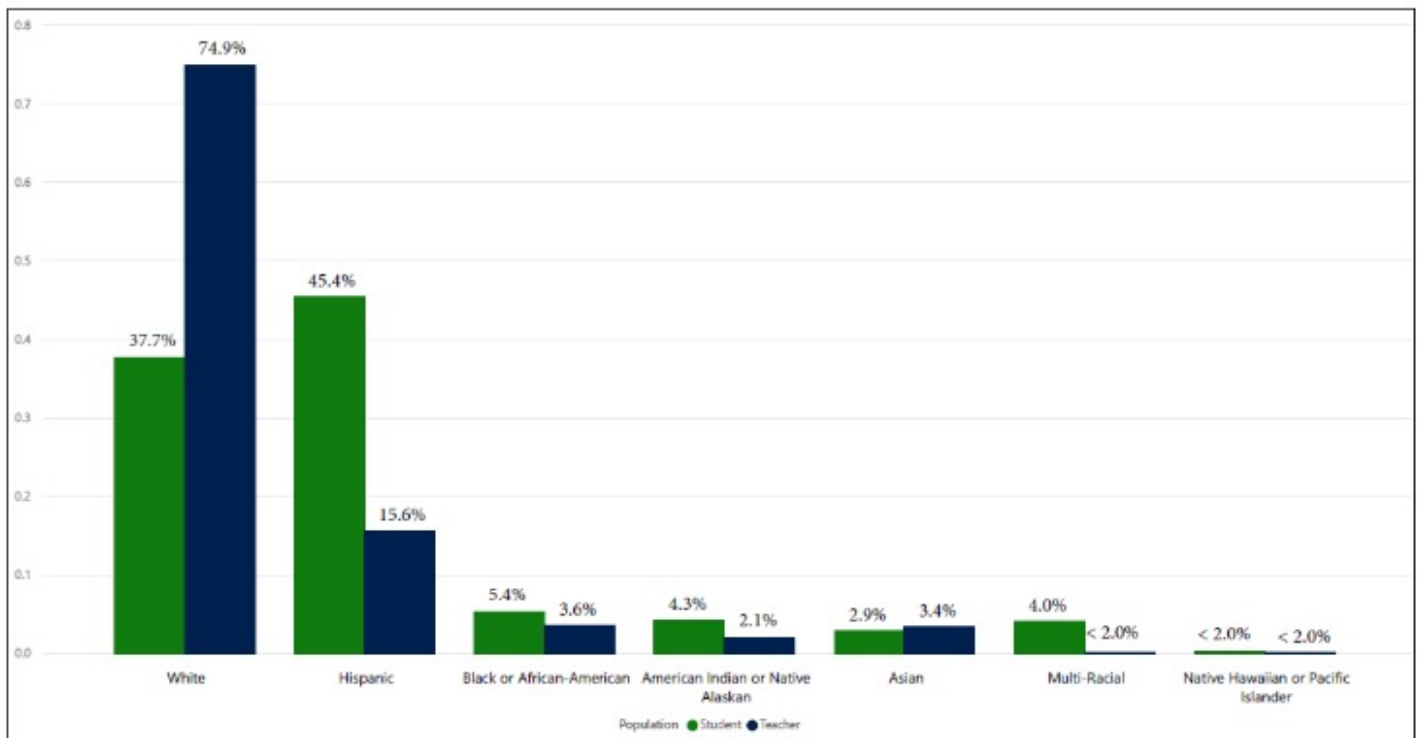
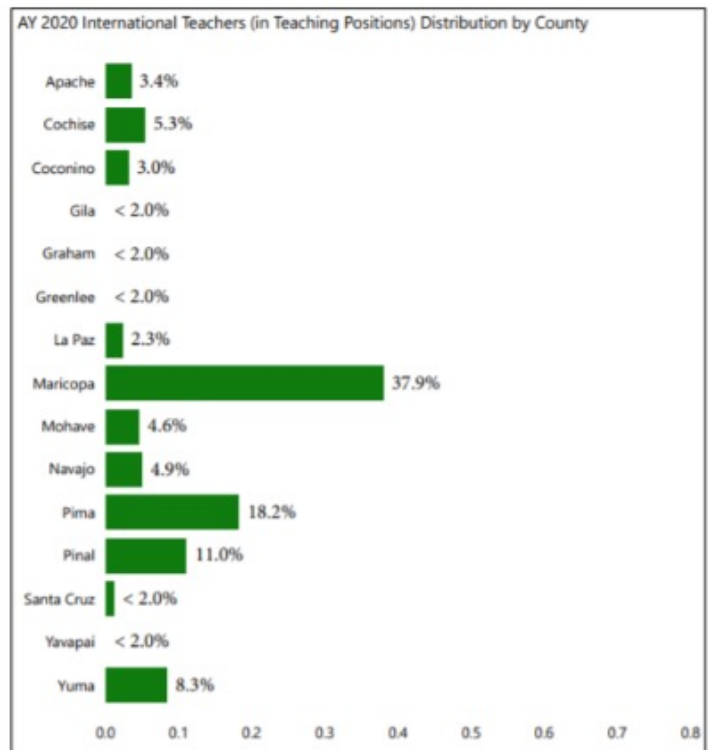
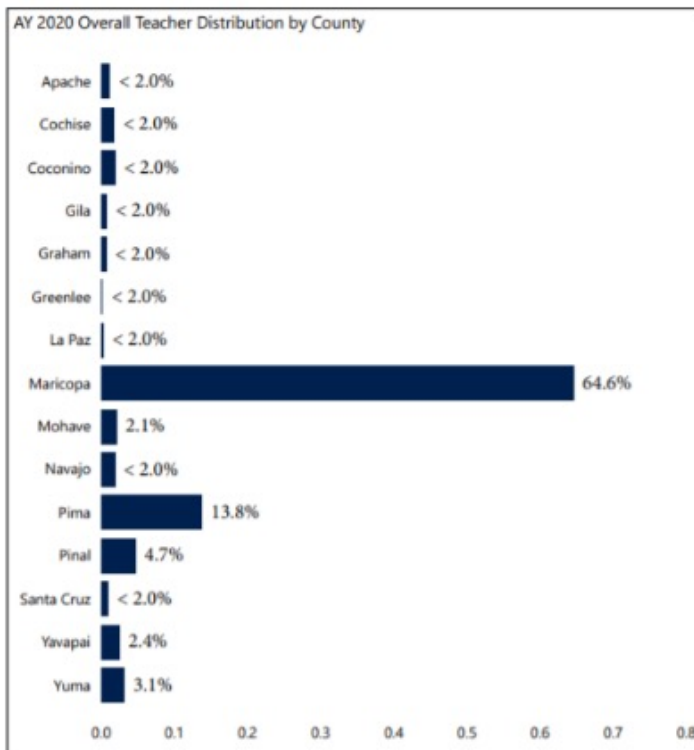


Figure: Comparing Student and Teacher Ethnicity Proportions, AY 2019-2020



## OTHER TEACHER CERTIFICATIONS

A person who receives a standard teaching certificate is typically a graduate of a teacher preparation program who meets all the state requirements (e.g., test scores, background check) for full certification. In addition to this traditional pathway to the classroom, there are several other ways individuals can become classroom teachers. The following are different certification types for classroom teachers in Arizona. The numbers reported reflect those actually teaching and using the listed certificate for their position, not all the people who hold a certification.



## CERTIFIED SUBSTITUTE TEACHERS TEACHING FULL-TIME

One thousand five hundred nine certified substitute teachers are teaching full-time in Arizona. These may be due to a leave of absence of a full-time teacher (e.g., maternity leave, health issue) or the lack of a qualified full-time teacher. These teachers are more often Hispanic (18%) and Black (12%), and male (31%) than full-time teachers overall. These teachers have limited experience (59%) and are overrepresented in Title-I eligible schools (69%), charter schools (62%), urban/suburban schools (90%), and Maricopa County (70%). Subjects taught include elementary (42%), math (9%), science (8%), ELA (7%), special education (7%), and social studies (6%).

## INTERNATIONAL TEACHERS

There are 264 international teachers employed in Arizona. These are individuals who graduated from a teacher training program from outside the United States. Most are women (75%), and they are proportionately split between districts (85%) and charters (15%). Almost half (46%) have three years or less experience, with 25% having no teaching experience. These individuals teach general elementary classes (31%), math (19%), special education (18%), science (14%), English Language Arts (9%), as well as a variety of other subjects. Some assume that these teachers work in rural areas where it may be harder to attract teachers. Only 28% work in rural areas, although this is a higher percentage than teachers who work in rural schools (13%) overall. The percent of international teachers is higher than the percentage of Arizona teachers in several counties. Still, with only 265 teachers, an increase of only three teachers will increase the percent by a point.

Eighty-nine percent of all international teachers are working in Title-I eligible schools. And, while these teachers did go through teacher education programs in their home countries, many are inexperienced by Arizona standards. The inexperience of these teachers raises questions about the quality of the instruction students are receiving because of possible language barriers, a lack of familiarity with how Arizona schools work, etc.

## NON-CERTIFIED TEACHERS

There are 3,180 non-certified teachers employed in Arizona, 96% of which are working in charter schools. Two-thirds are women (68%), and their ethnic breakdown is White (70%), Hispanic (17%), Black (6%), and Asian (5%). Almost four in ten (39%) have three years or less experience, and this group is less experienced than teachers as a whole. These individuals are assigned to teach general elementary classes (39%), science (10%), math (9%), Arts (8%), English Language Arts (8%), and less than 2% in special education and classes serving English Language Learners. Almost half are in Title-I eligible schools (49%), while only 6% are in rural locations.

## ALTERNATIVE CERTIFICATION TEACHERS

There are 1,912 alternative certification teachers, sometimes called interns, employed in Arizona. These are individuals who have a BA/BS and are taking courses while they are teaching. Most are women (72%), and they primarily work in traditional districts (89%). Two-thirds are inexperienced (68%). Those with experience may be getting further education in a new subject area (e.g., an elementary education teacher getting a master's in special education). These teachers taught general elementary classes (29%), special education (29%), English Language Arts (9%), math (8%), and science (8%). Many are working in Title-I eligible schools (72%). These teachers are more frequently found in Pima County (21% of alt cert teachers v. 14% of state teachers) and less frequently in Maricopa County (55% v. 65%). Rio Salado College is mostly educating these teachers (24%), along with Grand Canyon University (20%), Pima Community College (18%), and ASU (12%).

## SUBJECT MATTER EXPERTS

There are 808 teachers employed in Arizona using a subject matter expert certification for the subject they are teaching. Subject Matter Experts have a BA and five years of relevant work experience, a degree in the subject, or post-secondary teaching experience. This category was created so that those with subject-matter experience could teach without going through a teacher preparation program. About half are women (53%) and more likely to be Hispanic (19%) and African American (8%) than teachers overall. Seven in ten are in districts (70%) and urban and suburban schools (83%). Just over half (55%) have three years or less experience. Not surprisingly, unlike other certifications, few of these teachers taught general elementary classes (5%), special education (less than 2%), or English learner classes (less than 2%). Subject Matter Expert certified individuals instead primarily teach science (20%), math (17%), ELA (17%), social studies (11%), and arts (10%). Although they teach specific subjects, a third (34%) can be found in schools with grades in the K-8 range. These teachers are found at higher rates in Pima County (21% of emergency certs v. 14% of state teachers). They are primarily employed in urban schools (83%) and Title-I eligible schools (66%).

## EMERGENCY CERTIFIED TEACHERS

There are 930 teachers employed in Arizona with an emergency certification. These people do not qualify for a position, but the local education agency has requested an emergency certification to fill a hard-to-staff position. This category reflects a severe teacher shortage. Most are women (73%), and they are much more diverse than teachers overall – 39% Hispanic, 10% African American, and 6% Native American. They primarily work in districts (97%) and urban and suburban schools (80%). Most (77%) have three years or less experience, with 22% with several years of teaching experience but not in the subject area needed. These individuals taught general elementary classes (40%), ELA (11%), math (10%), science (10%), special education, social studies, PE, and other (5% each).

## EMERGENCY SUBSTITUTES

There are 412 'emergency substitutes' employed in Arizona. Local education agencies apply for these certificates for individuals who do not have a bachelors' degree. While emergency substitute certificates are intended to be used on an emergency basis only, some are working full-time and maybe serving as long-term substitutes. Most are women (79%); they are primarily in districts (97%) and overwhelmingly are placed in Title-I eligible schools (93%). Eighty-five percent have three years or less experience, with 45% having no teaching experience at all. Thirty-six percent of these individuals teach general elementary classes. In contrast, 14% teach special education, 8% teach English Language Arts, 7% teach science, and 6% teach math, with the remainder teaching various other subjects.

## COUNTY DATA ON THE 2019-2020 TEACHER WORKFORCE

A summary of the teacher characteristics by county can be found in a companion document, *The 2020 Arizona Teacher Workforce By County*.

### LIMITATIONS OF THE DATA

While this is the most comprehensive look at the Arizona teacher workforce to date, there are data limitations to consider. Employment reporting rates are relatively high at the school level for districts and charters, but not every entity provides data. We also have no verification that all positions are reported as data submissions and are dependent on the local education agency to report. Not all teaching positions are captured in TIA as the application focuses mainly on core academic positions. Private school teachers are omitted.

We also cannot address if a teacher is qualified for the position held. We can identify which teachers are certified. We cannot identify whether or not they are certified for the position they are teaching. Determining which certifications identify appropriate certifications for particular positions can be a judgment call.

An educator may be represented more than once in an academic year if they held multiple teaching positions within that year or worked for more than one district. Still, distinct counts by Educational Stakeholder ID numbers are used where appropriate, which limits double counting. Urban/rural classification is unknown for 9% of the schools overall (academic years 2010-11 through 2019-20; these schools represent 3% of the teacher workforce analyzed); 2% of the schools for the academic year 2019-20 (representing 1% of the teacher workforce for that academic year).

## METHODOLOGY

Teacher data were collected from ADE's Teacher Input Application (TIA) in January 2020. As this is a snapshot on a specific date, results may vary slightly from other reports if a different time frame is analyzed.

TIA is an online application where local education agencies (LEAs), both district and charter, input the current academic year's data on teachers and positions as of October 1st. The data used in this report represent only school teachers in both district and charter public school settings, not administrators or support staff. Private schools do not provide data to ADE on their teacher workforce.

The application collects primarily core academic instructional positions for each school site. Other teaching/non-teaching positions are limited to a list on the application's interface. While teacher certification data are linked in the TIA system with data in a second source (Certmaster data), the teachers reported in the TIA may or may not be certified as that is not a required element of the application. For instance, not all of the teachers who are teaching in charter schools hold AZ certification.

Information regarding urban/rural school status was provided by the Maricopa Association of Governments (MAG) to the ADE Accountability and Research team for a previous project. It is based on 2017 population statistics of school district boundaries, with charter schools adopting the urban/rural classification of the district boundaries in which they are located. The urban/rural status is based on Census Bureau 2010 classifications. The formula used to calculate this status was determined by the percentage of a district's population living in an urban area. If the urban population was above 50%, then the district was considered urban, 50% or less was considered rural. For the calculation, MAG included suburban areas in the urban classification.

## REPORT AUTHORS

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## NOTES

1. <https://www.teacherpensions.org/blog/how-do-teacher-pension-plans-encourage-teachers-retire-explainer>