Teachers play a vital role in the academic outcomes of students. Typically research studying teacher labour supply examines contexts where there are fewer qualified teachers than available positions. This shortage environment is helpful for understanding how teachers select themselves in and out of teaching because schools have little discretion about which teachers to hire. Recently, many locations, including Ontario, experienced teacher surpluses which presents an opportunity to answer a different important policy question: How do teacher characteristics affect the probability of obtaining a job? In this paper, I use duration analysis to provide evidence about this issue. Suitable data for this type of analysis requires information about not only employed individuals but also individuals who are eligible to teach but do not receive jobs; unfortunately, this type of data has not traditionally been available. I overcome the current lack of data by web scraping and processing the Ontario public register of individuals eligible to teach. The results obtained using a duration model show variation in the probability of securing a permanent teaching position across the cohorts of teacher graduates. The 2006 graduates had a 16 percent probability of acquiring a position in their first year, while this probability had fallen to 4 percent by 2012. The results also indicate substantial differences in hiring probabilities across teachers with different subject qualifications. For example, in 2006 male elementary teachers with French qualifications had a 49 percent success rate in their first year, while those with math qualifications only secured a job 21 percent of the time. These results are relevant for policy because current concerns about the math performance of Ontario elementary students may be related to the math qualifications of those teaching.