

The Effect Of Earnings on Attraction & Retention of Teachers

Team 1 – Accenture Team
aka
The 'A' Team



Agenda

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- 2 Policy Implications
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Problem Statement:

There is a gap in demand and employment of teachers in the State of Syntucky.

“[There are] at least 36,000 vacant positions along with at least 163,000 positions being held by underqualified teachers.” (Nguyen, Tuan D., Chanh B. Lam, and Paul Bruno. "Is there a national teacher shortage? A systematic examination of reports of teacher shortages in the United States." EdWorkingPaper No. 22-631, Brown University, 2022.)

Teacher shortages impact student achievement and result in reduced student outcomes. (García, E., & Weiss, E. "The teacher shortage is real, large and growing, and worse than we thought (The Perfect Storm in the Teacher Labor Market)." Economic Policy Institute, 2019.)

“Teachers are paid less (in weekly wages and total compensation) than their nonteacher college-educated counterparts, and the situation has worsened considerably over time.” Allegretto, Sylvia. "The Teacher Pay Penalty Has Hit a New High: Trends in Teacher Wages and Compensation through 2021." Economic Policy Institute.

“The overwhelming reason that students are not interested in teaching is salary. Nearly two-thirds (63%) of those not interested in teaching cited pay as one of the top three reasons they were not interested in teaching” (Croft, M., Gretchen, G., & Dan, V. "Encouraging More High School Students to Consider Teaching." ACT Policy Research, June 2018.)

“Annual rates of teacher attrition from the workforce have been between 5% and 8% for each of the past 35 years.” (Goldhaber, D., & Theobald, R. "Teacher Attrition and Mobility Over Time." Educational Researcher, vol. 51, no. 3, 2022, pp. 235-237.)

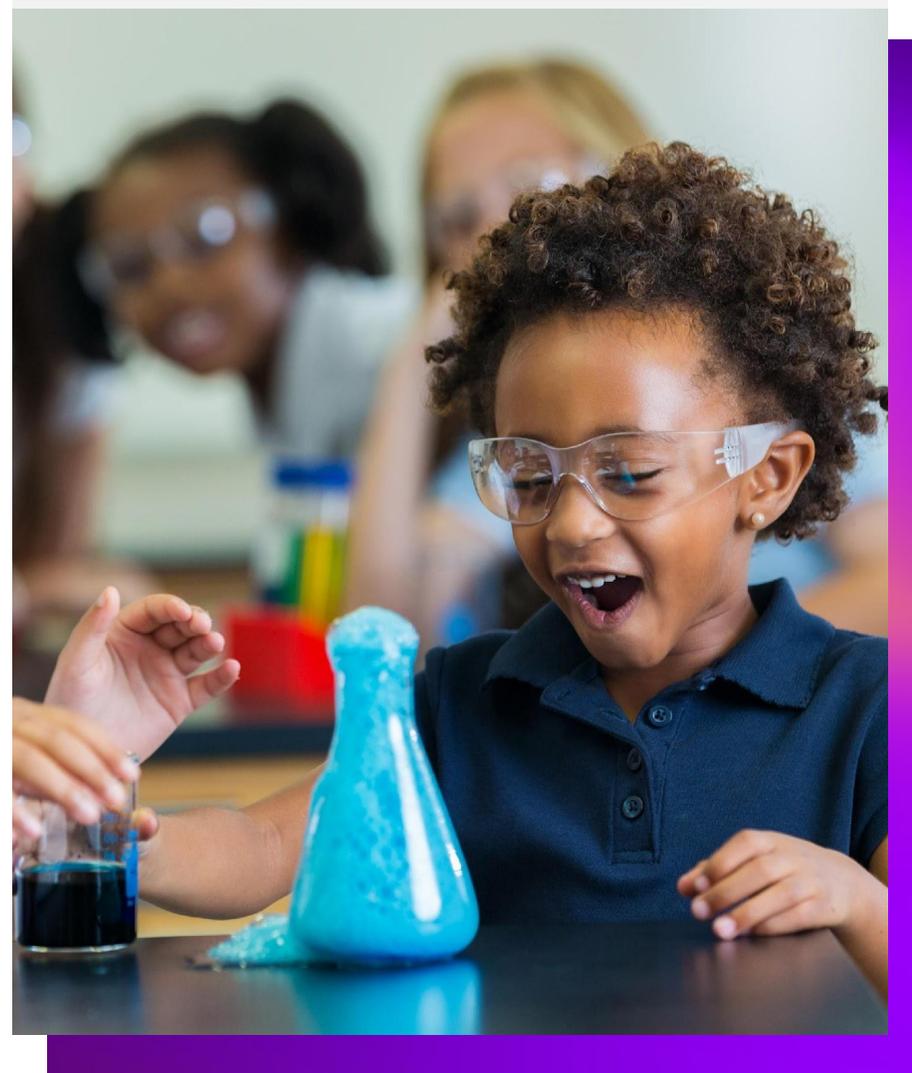
“...Reducing attrition by half could virtually eliminate shortages.” (Sutcher, Leib, Linda Darling-Hammond, and Desiree Carver-Thomas. "A Coming Crisis in Teaching? Teacher Supply, Demand, and Shortages in the U.S." Learning Policy Institute, 15 September 2016.)

Policy Implications:

A teacher shortage will lead to lower educational outcomes in the state and have long term impact on the state's ability to meet its workforce needs.

There are two potential levers through which to address the policy issue:

- Retaining more teachers, and
- Attracting more people to the teaching profession





Hypothesis:

There is a negative relationship between obtaining a degree in Education and wage growth over time which leads to job abandonment or field avoidance for higher-paying, non-education fields.

Approach

Explore two premises:

- Not enough people are entering the profession because of low wages
- People are leaving the profession because of low wage growth

Methodology

To examine if there is a negative relationship between obtaining an education degree, wage growth over time, and career abandonment, the data was segmented into:



Education Degree Completers



Education Degree Non-Completers

The analysis of completers was focused on the 2014 cohort of **Bachelor's and Master's Degree completers**, since the count for Associate completers and Non-completers was negligible.

To check for data quality and missingness, **counts across our variables (earnings and employment in industry) were the primary indicator of any missing data**. However, it should be noted that, in this case, the data currently does not have enough information to prove missingness is a result of data quality or other reasons for leaving the profession.

We analyzed the population of education majors completed with Bachelors and Masters degree programs, grouped by their employment status in the field of education across years 5, 6, and 7 of employment.

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	group	count	percent
0	completer, Associate	78	0.03
1	completer, Bachelor	2113	0.81
2	completer, Master	397	0.15
3	non-completer	10	0.00



	Group	Year 5	Year 6	Year 7
0	Non-Enterers			
1	Late Starters			
2	Late Joining Revolvers			
3	Delayed Starters			
4	Early Leavers			
5	Rejoiners			
6	Late Leavers			
7	Stayers			

There were only 10 Non-completers, people who have studied education but did not complete their degree. These students could have dropped out or postponed completing their degree. The reason for such a small count could be due to a change in majors, dropping out of the degree program entirely, or transferring to another institution in another state. Because the number is so small, we did not investigate the employment outcomes of this population further.

Employed in Education

Group Definitions

Within those that completed an education degree, we grouped completers by education profession employment type and examined wage growth over years 5-7 of employment.

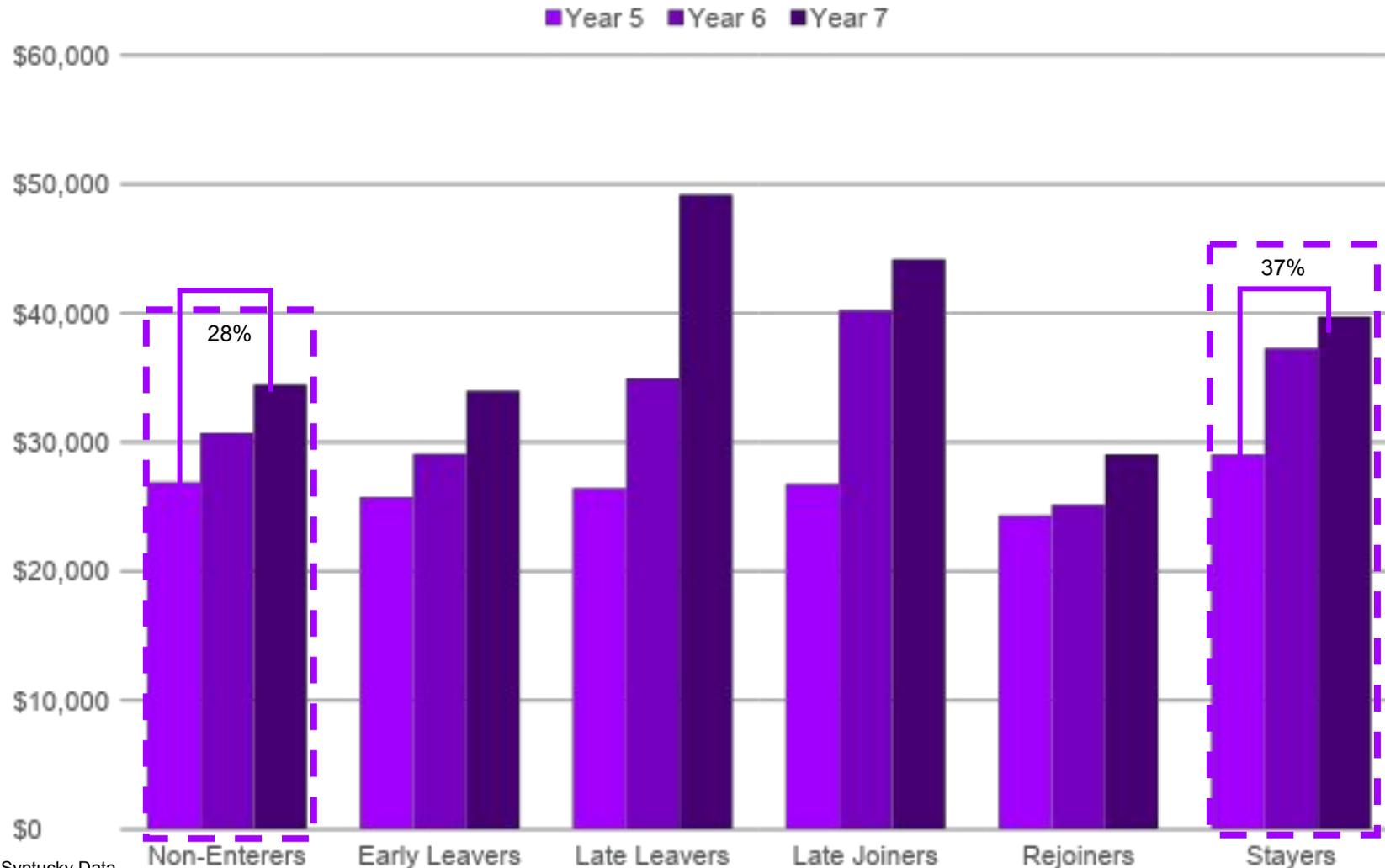
Employment Type	Description
Non-Enterers	Education degree completers who did not enter an education profession in years 5 through 7
Late Starters*	Education degree completers who did not enter an education profession until year 7
Late Joining Revolvers	Education degree completers who did not enter the education profession until year 6 and left after 1 year of employment in the education profession
Delayed Starters*	Education degree completers who did not enter an education profession until year 6
Early Leavers	Education degree completers who enter an education profession in year 5 but leave after 1 year of employment in the education profession
Rejoiners	Education degree holders who enter the education profession in year 5, leave in year 6, and return to the education profession in year 7
Late Leavers	Education degree holders who enter the education profession in year 5 and leave in year 7
Stayers	Education degree holders who enter the education profession in year 5 and remain employed in an education profession through year 7

*For the purpose of our analysis, we did not analyze wage growth for degree earners who started late in the profession, as delayed starts and late starts were not the focus of our hypothesis.

Analysis: Wage Growth Comparison of Non-Enterers vs. Stayers

Education majors who are employed within education in year five and stay employed within education through year seven make higher wages than education majors who never enter education within that timeframe.

Mean Wages and Percent Change Year over Year by Employment Path



Year 5	Year 6	Year 7

Observation

- Education majors who **never became educators** realized **28% wage growth** from Year 5 to Year 7, which is lower than the **37% wage growth** experienced by people who were **educators** during that same period.

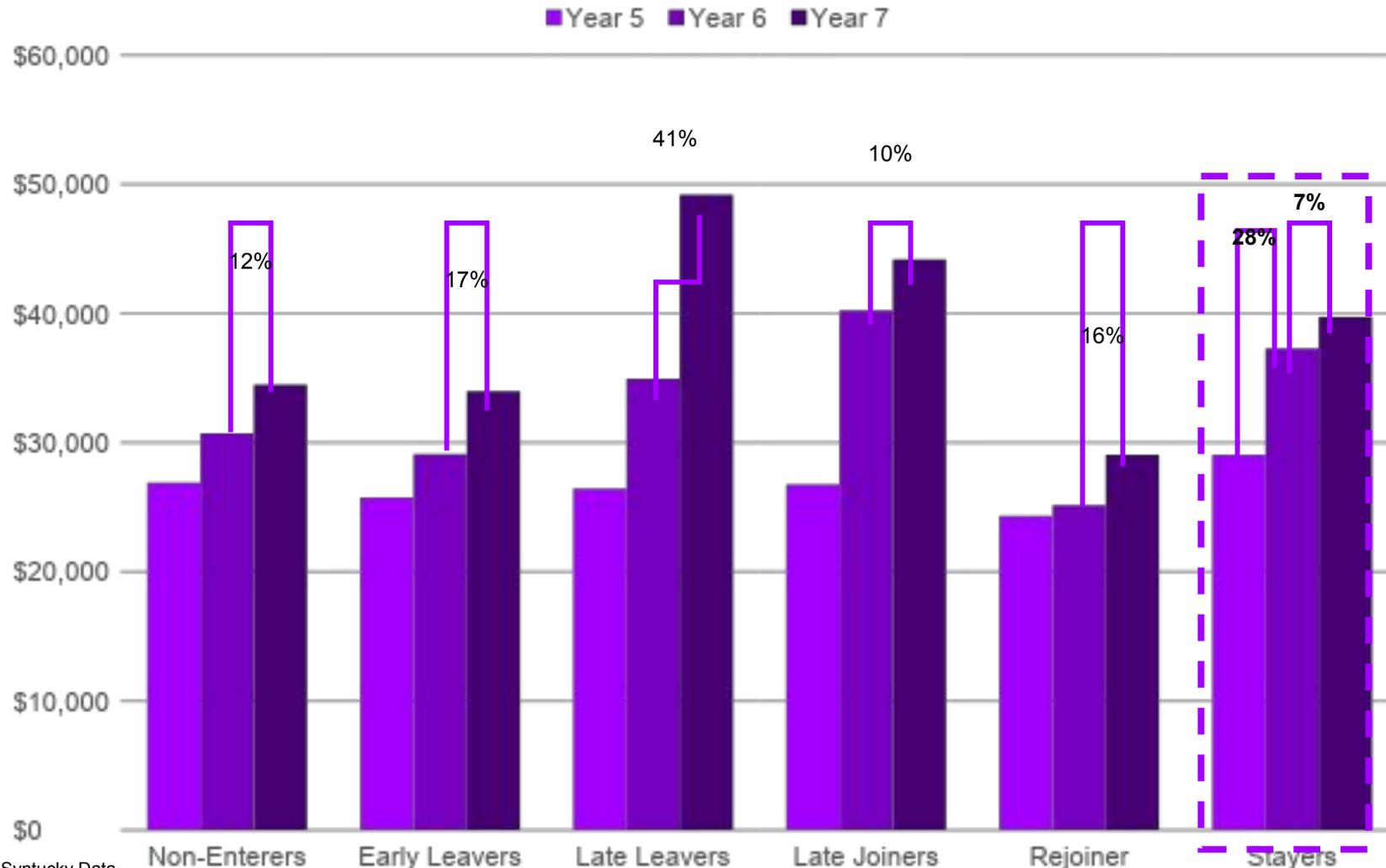
Impact

- This disproves part of our hypothesis that higher wages in other professions deter people from entering education professions.
- While this could be interpreted as a positive indicator that wage is not a contributing factor to entry into education professions, additional analysis should be conducted to identify anomalies that may exist in the data or in the analysis approach which may have resulted in results incongruent with the findings of other literature.

Analysis: Wage Growth of Stayers

Higher wage growth for educators who remain employed in education happens between years five and six than between years six and seven.

Mean Wages and Percent Change Year over Year by Employment Path



Year 5	Year 6	Year 7

Observation

- While people who were employed during this period as educators had 28% wage growth from Year 5 to Year 6, **wage growth lowered to 7%** from Year 6 to Year 7. This was the lowest level of wage growth amongst all cohorts between years 6 and 7.

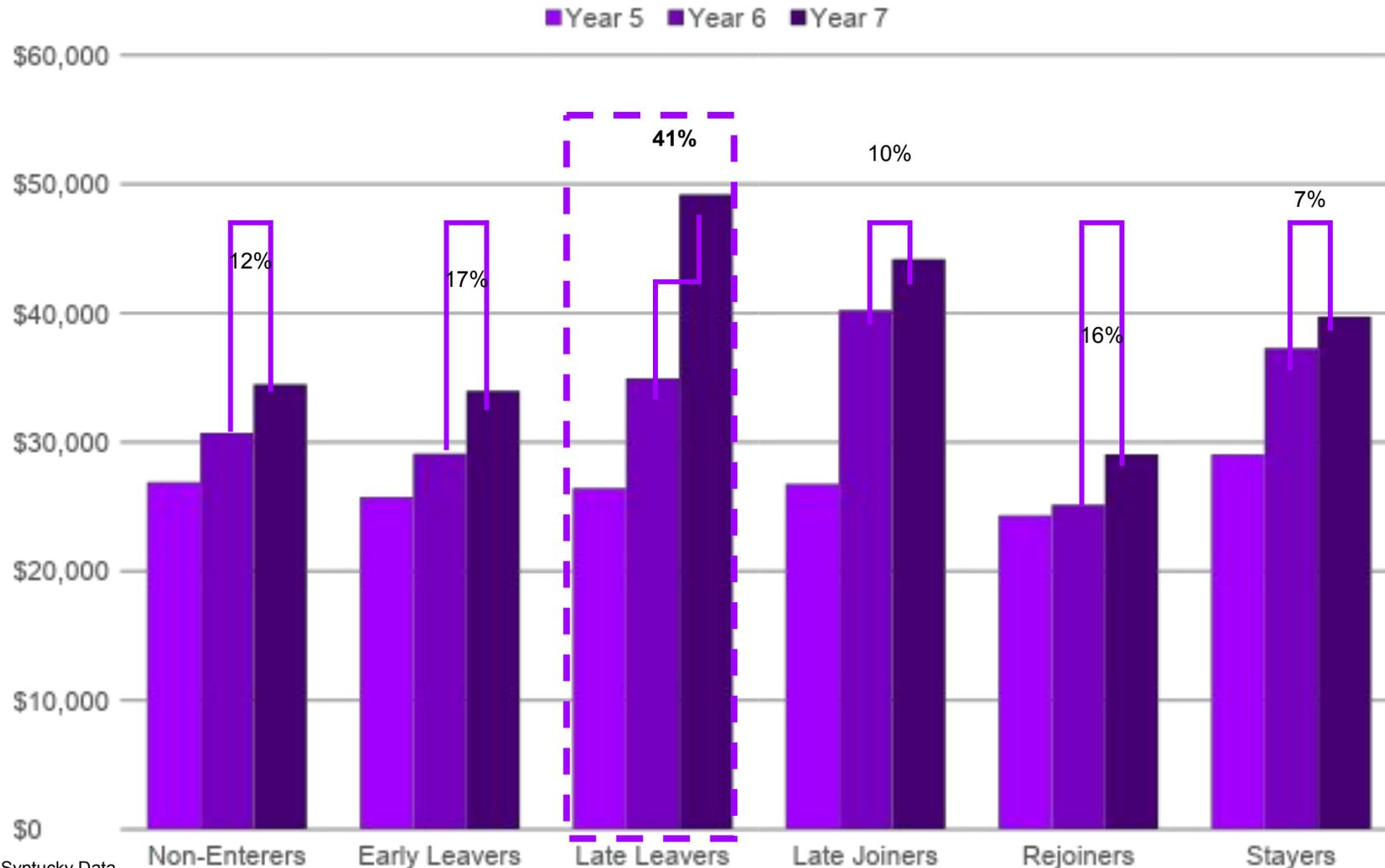
Impact

- This analysis confirms that those who remain employed in education experience a decline in wage growth over time.
- Additional analysis should be conducted to understand if this trend continues across longer-terms of employment in the profession.

Analysis: Wage Growth of Late Leavers

People who leave working in education after year six experience the highest wage growth after leaving.

Mean Wages and Percent Change Year over Year by Employment Path



Year 5	Year 6	Year 7

Observation

- People who **leave** education professions after years 5 & 6, experience **high wage growth after leaving (41%)**. This is the highest level of wage growth experience between years 6 and 7 across all groups employed in education.

Impact

- This confirms the hypothesis that leaving for another profession creates higher wage growth opportunities
- Representative of a loss of experienced educators
- Additional research should explore factors other than wage that may influence educators to leave the profession.

Analysis: Wage Growth of Late Joining Revolvers

People who enter an education profession in year six and leave after one year of employment see an increase in wage growth upon entering an education profession and lower wage growth when they leave.



Year 5	Year 6	Year 7

Observation

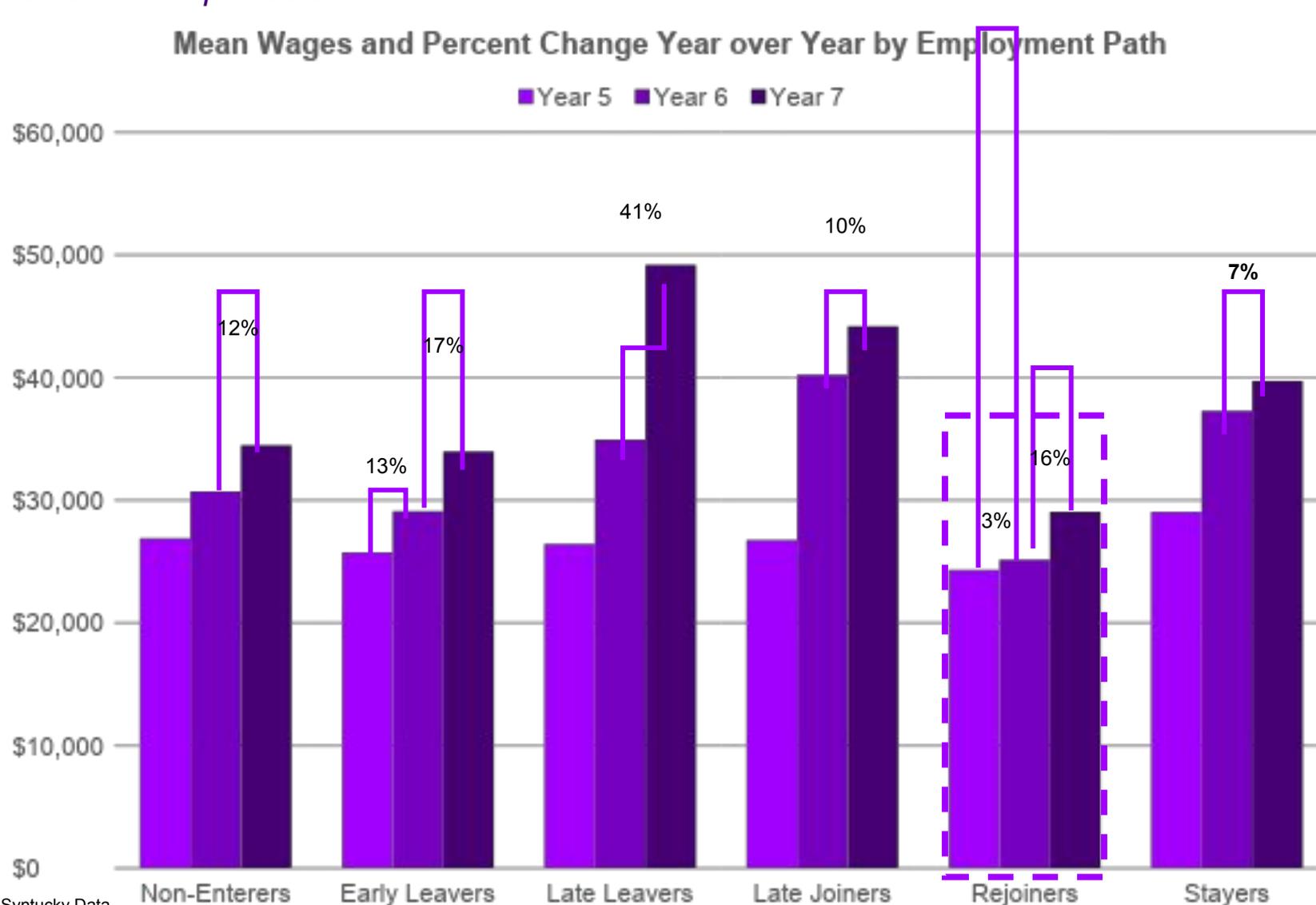
- Educators who **enter** the field in **Year 6** and **leave** by **Year 7** realize a **50% increase in wages** from Year 5 to Year 6, but experience much lower wage growth after leaving the profession.
- The wage increase between years 5 and 6 for this group is the **highest percentage increase** in this interval across groups. Those who joined in year 6 mean salary also had the highest salary across groups.

Impact

- This implies that joining education later may be ideal for those seeking a higher paying education profession job. However, leaving the education profession after only one year may have negative post-education profession wage growth impact. This could serve as a disincentive to leaving the profession after joining late for wage growth purposes.

Analysis: Wage Growth of Rejoiners

People who enter an education profession, leave, and then return realize low wage growth after leaving and after returning to the education profession.



Year 5	Year 6	Year 7

Observation

- Educators who **enter** the field in **Year 5**, **leave** in **Year 6**, and **rejoin** in **Year 7** realize a **only a 3% increase in wages** after leaving the profession and a **16% increase** after rejoining the profession.
- This is a lower increase between years 6 and 7 than early leavers who remained employed outside of education achieved and is in the middle range across groups in wage increase between years 6 and 7.
- Additionally, the total final year 7 salary is the lowest among all groups.

Impact

- These findings suggest that leaving and rejoining the profession has comparatively negative outcomes in consideration of all other education profession employment pathways.

Summary Findings

While part of our hypothesis that completers who enter other fields have higher wage opportunity was disproven, we discovered that there are wage growth related incentives to leave the profession. We also discovered that switching in and out of the education profession over time has a negative comparative impact on wage growth.

Finding #1

Education degree holders do not make more money in other fields, without starting their career in education

Finding #2

Those who remain employed in education experience a decline in wage growth over time

Finding #3

Leaving the education profession for employment in another field creates higher wage growth

Finding #4

Joining the education profession later may increase entering wages, but leaving after one year has negative post-education wage growth impact

Finding #5

Leaving and rejoining the profession has negative wage outcomes in comparison to other education profession employment pathways

Policy Recommendations

The following four policy recommendations can help encourage more education degree holders to enter and remain in an education profession.

Recommendation #1

Identify the factors other than wage that incentivize education degree completers to seek employment in other fields.

Recommendation #2

Implement an annual COLA to ensure that wage growth is able to keep pace with inflation.

Recommendation #3

Develop teacher retention programs with financial incentives such as step increases based on years of service to encourage teachers to remain employed in their profession.

Recommendation #4

Implement a program to encourage education degree completers to who did not immediately join the field after graduation to join the profession

Limitations & Additional Exploration

Limitations

Missingness

The data showed a very limited number of non-completers and we do not have information on the reason individuals left the education profession for another field. Those individuals could have entered into non-education professions or education degree programs in other states or entered into education profession not covered under by state UI system or decided not to enter the workforce.

Limited years and cohorts

Our analysis dug deeper into one cohort year of degree completers, however, this should be expanded to additional cohort years for a more comprehensive review.

Recentness of Data

The data used for our analysis is based on years prior to the Covid-19 pandemic and therefore is somewhat outdated. More recent data could have different results, as the pandemic has had documented impact on teacher retention and attraction of candidates to education professions

Broad Applicability of Education Professions

Our data set identified employment in an education profession, but did not specify if those were administrative or teaching jobs or what level of education institution (Pre-K, K-12, Higher Education) these professionals were employed in.

Additional Exploration

Data Missingness

- Data cleaning and evaluation of missingness within cohort wage data
- Confirmation of the source of missingness through further exploration of data quality with supplemental data about educators would help to address any data quality issues.
- An assessment of missingness in other degree types or fields

Additional Education Profession Trends

- Quantitative data (ie., survey data or other information) to inform why education majors are leaving employment in education. This would supplement any current inferences about wage correlation. What fields education majors are employed in if not in education
- Additional analysis to understand if the identified trends continue across longer-terms of employment in the profession
- Exploration of the factors other than wage that may influence educators to leave the profession
- Further analysis into the drivers of the wage stagnation for experienced educators

Employment in other fields

- Analysis of the applicability of the trends seen in education across other fields