DOI:10.59787/2413-5488-2025-51-3-92-106

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UNDERGRADUATES' PERSPECTIVES ON TEACHING AS A CAREER: EVIDENCE FROM KAZAKHSTAN

Abstract. This study investigates the determinants of choosing teaching as a career in Kazakhstan. Using a quantitative, cross-sectional survey of 625 undergraduate students across 38 higher education institutions, the research explores how school background, academic performance, field of study, participation in teaching-related programs, and scholarship type shape career intentions. Statistical analyses revealed several key patterns. Public school graduates were more likely than peers from selective or private schools to consider teaching. Students who considered teaching did not score significantly lower on the national exam than those who did not. Enrollment in education majors strongly predicted interest in teaching, yet notably, 68% of non-education students also reported considering the profession, highlighting the potential of alternative entry routes. Participation in programs such as Teach for Kazakhstan or teacher clubs was significantly associated with stronger career commitment, while rural quota recipients expressed greater readiness to teach in rural areas compared to peers. The findings suggest that structural experiences and targeted incentives exert greater influence on teaching intentions than academic achievement. The study concludes that policy interventions should prioritize early classroom exposure, bundled financial and professional support, and broadened pathways into teaching to strengthen recruitment and retention in Kazakhstan's education system.

Keywords: University graduates' careers**,** teaching career, university student survey, career choice predictors, teacher supply.

Introduction

Teachers occupy a central role in shaping the prospects of societies, yet the attractiveness of teaching as a career has shifted across time and place. Globally, UNESCO (2017) projected that by 2030, nearly 69 million new teachers will be required to meet international education targets, while OECD (2024) reported that shortages are already intensifying across member states. The issue of teacher recruitment and retention has become a pressing concern in Kazakhstan, too. Analysts note that despite ongoing reforms, systemic weaknesses, ranging from workload pressures to inadequate career attractiveness, continue to undermine the teaching profession in Kazakhstan (Lykova, 2024). President Tokayev has further highlighted the severity of the teacher shortage, revealing that more than 5,000 teaching positions remain unfilled across the country (There is a shortage, 2023). These developments raise important questions about who chooses to pursue teaching, what motivates them, and under what conditions they are likely to commit to the profession.

Previous studies have approached this theme from different angles, including motivations for entering teaching, perceptions of career prospects, and structural or policy factors that shape career intentions. For example, Borgerding (2015) investigated early STEM majors and found that science education summer internships could influence interest in teaching careers. Cabral and Lambirth (2017) examined accelerated education degrees, identifying alternative routes into teaching. Carroll, Parasnis, and Tani (2021) analysed

gendered patterns in the profession, concluding that men and women face different economic incentives and career expectations. Chandran, Padalkar, and Shimray (2025) highlighted the emerging motivations of preservice teacher education students, emphasising personal and social drivers.

The methodological approaches across prior research also vary, ranging from qualitative multi-case studies (Borgerding, 2015) to large-scale surveys (Christensen et al., 2019; Han, Borgonovi, & Guerriero, 2020), longitudinal data analysis (Savage et al., 2021), and systematic reviews (Thompson-Lee, See, & Klassen, 2025). This range of approaches has provided robust evidence on motivations and barriers. For instance, Fray and Gore (2018) conducted a scoping review of empirical studies, revealing recurring patterns such as altruistic motivations and perceptions of job security. Watt et al. (2012) extended this further through an international comparison using the FIT-Choice scale. Although the issue has received scholarly attention on an international level, there is limited exploration of the topic within the specific socio-economic and policy environment of Kazakhstan.

In Kazakhstan, some research has examined aspects of teacher education and professional training, but it remains mostly descriptive in nature. Ospanova (2024), for instance, documented reforms in teacher preparation, noting both achievements and persisting challenges in aligning teacher education with labour market needs. However, empirical evidence directly addressing Kazakhstani students' career intentions and the structural incentives or disincentives shaping these choices remains scarce. Given the country's acute teacher shortage and the government's stated policy goals, this represents an important area for investigation.

The present study aims to address this gap by exploring the determinants of teaching career choice among Kazakhstani students. Specifically, the study addresses the following questions:

1. Does the type of secondary school attended—public, selective, or private/international influence whether students consider teaching as a career?
2. Do students who have considered teaching as a career have higher academic achievement, as measured by UNT scores, compared to those who have not considered teaching?
3. Are students enrolled in teaching-related majors more likely to consider a teaching career than students enrolled in other fields?
4. Does participation in teaching-related programs such as Teach for Kazakhstan, university teacher clubs, or internships strengthen students' commitment to a teaching career?
5. Are students receiving rural or targeted scholarships more likely to express readiness to teach in rural areas compared to other students?

Literature review

Across contexts, research on entry into teaching has been dominated by studies of motivation, altruistic, intrinsic, and extrinsic drivers, often operationalised through the FIT-Choice framework (Fray & Gore, 2018; Watt et al., 2012). Other studies broaden this lens to include structural and sociological influences such as socio-economic background, family expectations, and national policy settings that shape who considers teaching and under what conditions (See et al., 2022). Evidence from specific domains (e.g., STEM) further indicates that policy levers like scholarships and bonuses do not affect recruitment and are more effective for retention (Thompson-Lee et al., 2025).

Demographic sorting into teacher education and the profession is evident in multiple settings. In Germany, higher social/artistic interests and parental influence, especially a parent wanting the child to teach, were strong predictors of entry to the profession (Savage et al., 2021). A more exhaustive international review concludes that socio-economic background is

an important factor influencing career decisions in teaching (See et al., 2022). At the school-leaver stage, willingness data show that students who view themselves as "average" academically are more open to teaching than high achievers, and encouragement from family/others substantially predicts openness to teaching (Christensen et al., 2019). Together, these findings situate teacher recruitment within family resources, socialisation, and perceived academic positioning rather than individual motivation alone (See et al., 2022; Savage et al., 2021; Christensen et al., 2019).

Evidence on academic selectivity is mixed and context-specific. Longitudinal Swedish register data indicate a steady decline in the average academic achievement of new teachers between 1996 and 2016, with greater declines among uncertified and primary-phase entrants and relatively higher grades among prospective science teachers (Alatalo et al., 2024). In Germany, while teacher-education entrants showed somewhat lower achievement and cognitive speed, multivariate analyses yielded only weak evidence of strong "negative selection"(Savage et al., 2021). At earlier pipeline stages, high achievers are less inclined to see teaching as their best option, aligning with findings that self-identified "average" students are more open to the profession (Christensen et al., 2019).

Policy changes to entry routes shape who becomes a teacher. In U.S. data, state adoption of alternative certification was associated with sizable increases in the share of beginning teachers of colour and with growth at both ends of college selectivity, but with no apparent effect on the proportion of men; stricter entry standards within these policies were linked to increases in STEM and special education hires (Redding, 2021). Program-level studies show that accelerated degrees can operate as a "second-chance" route, drawing in candidates for reasons of cost and speed while eliciting mixed views about practice opportunities (Cabral & Lambirth, 2017). In STEM specifically, rigorous reviews report that scholarships and stipends (e.g., Noyce-type programs) generally show weak or null effects on recruitment; there is no firm evidence of the effectiveness of the alternative pathways; retention bonuses targeted to shortage subjects/contexts have somewhat more substantial evidence for reducing attrition (Thompson-Lee et al., 2025). Authentic classroom experiences (e.g., science education internships) can increase interest by centring student learning and relationship-building, though effects vary with the quality of experiences (Borgerding, 2015).

Intentions to teach in rural schools are patterned by origin and region. A large survey of teacher-education students in eastern China showed that urban-origin students were markedly less willing to teach in rural areas compared to their counterparts from rural areas (Wang et al., 2023). Female students were more inclined to teach in their hometown villages (Wang et al., 2023).

Methods

The study utilised a quantitative, cross-sectional survey design to investigate career intentions, motivational orientations, and perceptions of the teaching profession among undergraduate students in Kazakhstan. The instrument consisted of items grouped into four thematic blocks: socio-demographic information, career intentions, motivational orientations, and perceptions of teaching as a profession. The structure of the questionnaire was informed by prior literature on teacher motivation and recruitment (Fray & Gore, 2018; See et al., 2022). Before dissemination, the instrument was piloted with a small group of students to ensure clarity and validity.

The target population consisted of undergraduate students across all fields of study. Invitations were sent via the administrations of 38 higher education institutions in Kazakhstan. Participation was voluntary and anonymous. Students accessed the online survey through a link hosted on SurveyMonkey. Prior to beginning, respondents read an informed consent statement,

and only those who agreed proceeded. The survey was designed to exclude any identifying information such as names, email addresses, or phone numbers.

The survey yielded 1,103 initial responses. Of these, 173 students did not consent and were removed. A further 238 did not complete the survey. Of the 692 who provided complete responses, 67 were excluded during data cleaning. Exclusion criteria included: (1) surveys completed in less than three minutes, (2) patterned responses across items, and (3) duplicate submissions with identical response patterns and timestamps. The final analytic sample comprised 625 valid responses.

Data cleaning was performed using Microsoft Excel, while statistical analysis was conducted in Python.

Results

Demographic Characteristics

A majority of respondents were female, representing 72.96% of the total, while men accounted for 27.04%. This distribution does not fully reflect the gender balance in Kazakhstan's higher education system overall, where the proportion of women is closer to 53% and men 47%. However, given the topic of the survey and the fact that 61% of respondents were studying in education-related fields, the sample remains broadly representative. According to national statistics, as of 2025, women make up 82.1% of the country's teaching workforce, which helps explain their overrepresentation in this study.

Table 1.

Distribution of Respondents by Gender

Gender	n	%
Female	456	72.96
Male	169	27.04
Total	625	100.00

Respondents' places of birth were also recorded. The majority, 477 students (76.32%), reported being born in regional centres, highlighting the predominance of students with origins in large urban settlements. A smaller share, 119 students (19.04%), came from smaller towns and villages under regional administration, while only 29 respondents (4.64%) were born in cities of national significance, namely Astana, Almaty, and Shymkent.

Table 2.

Distribution of Respondents by Place of Birth

Place of Birth	n	%
Regional centers	477	76.32
Towns/villages under regional administration	119	19.04
Cities of national significance (Astana, Almaty, Shymkent)	29	4.64
Total	625	100.00

In terms of financial support, 42.40% of respondents were studying based on a general state grant, while 33.76% were paying tuition fees independently. Other forms of support appeared less frequently, including rural quotas (8%), the *Serpin* program (3.84%), Akimat (municipal) grants (3.68%), university-specific grants (2.72%), and the Kazakhstan Halkyna fund (2.24%). Smaller shares were also covered by other special quotas (3.36%).

Table 3.
Distribution of Respondents by Grant Type

Grant Type	n	%
General state grant	265	42.40
Self-funded (tuition)	211	33.76
Rural quota	50	8.00
Serpin	24	3.84
Akimat grant	23	3.68
Other quotas	21	3.36
University grant	17	2.72
Kazakhstan Halkyna	14	2.24
Total	625	100.00

Finally, distribution by field of study showed that most respondents (61.76%) were enrolled in education programs (classified under 6B01 Pedagogical Sciences), while the remaining 38.24% pursued non-education disciplines.

Table 4.
Distribution of Respondents by Field of Study

Field of Study	n	%
Pedagogical sciences	386	61.76
Other disciplines	239	38.24
Total	625	100.00

In determining the readiness for a teaching career, the survey included two items. First, all participants from teaching and non-teaching majors were asked whether they consider or have considered teaching as a career (Yes/No). Second, to obtain more specific career information, those who answered "Yes" were asked questions about specific plans to become a teacher (No, Undecided, Yes – Career Goal, Yes – Obligation).

Consideration of Teaching by School Background

School background may shape career intentions through exposure to different values, expectations, and role models. Graduates of selective or elite schools may be more likely to pursue high-status professions other than teaching, whereas public-school graduates may view teaching as a more attainable career. The following hypothesis was formulated:

Hypothesis 1. Students' school background influences whether they consider teaching as a career. The results of cross-tabulation are shown in Table 5, where expected values are shown in square brackets [] next to observed values.

Table 5.
School Type vs. Consideration of Teaching

School Type	Did not consider	Considered	Total
Public	93 [102.73]	429 [419.27]	522
Selective (Gymnasium, NIS, BIL)	22 [14.37]	51 [58.63]	73
Private/International	8 [5.90]	22 [24.10]	30
Total	123	502	625

$\chi^2(2, N = 625) = 7.14, p = .028$.

Public school graduates were less likely than expected not to consider teaching (93 observed vs. 102.73 expected) and more likely than expected to consider it (429 observed vs. 419.27 expected). Selective school graduates, however, were more likely than expected not to

consider teaching (22 observed vs. 14.37 expected) and less likely to consider it (51 observed vs. 58.63 expected). A similar pattern is seen for private/international school graduates, where non-consideration was higher than expected (8 vs. 5.90) and consideration was lower (22 vs. 24.10). These deviations confirm a statistically significant association between school type and teaching career consideration.

National Exam Results (UNT) and Career Intentions

Evidence on academic selectivity into teaching is mixed and context-dependent. Longitudinal data show declines in average grades among teacher entrants over time, with subject-specific variation (Alatalo et al., 2024). An exploratory study based on the German National Educational Panel Study has not confirmed academic scores to be predictors of choosing teacher education programs (Savage et al., 2021). The study conducted in the US showed that in the earlier stages of the pipeline, top performers are less likely to view teaching as their preferred career path, consistent with evidence showing that students who consider themselves "average" are more receptive to entering the profession. (Christensen et al., 2019). It is therefore important to examine whether academic performance, measured by Unified National Test (UNT) scores, differs between those who have considered teaching and those who have not.

Hypothesis 2: Students who have considered teaching will have lower academic achievement than those who have not. The results of the t-test are displayed in Table 6.

Table 6.

UNT Scores by Consideration of Teaching

Group	n	M	SD
Considered teaching	421	88.46	20.04
Did not consider	100	84.71	18.95

$t(519) = 1.76$, $p = .080$.

Students who considered teaching scored slightly higher on the UNT than those who did not (88.46 vs. 84.71). However, the difference was not statistically significant.

Consideration of Teaching by Major

International evidence suggests that who enters teaching reflects both individual motives and structural sorting. Reviews find persistent patterns in which entrants to teacher education disproportionately come from particular social backgrounds and are shaped by perceptions of the profession (See et al., 2022; Fray & Gore, 2018; Watt et al., 2012). Country evidence shows that students enrolled in teacher-education programs often differ systemically from peers in non-education majors (e.g., by interests, prior achievement, and parental influence), which helps explain a stronger orientation toward teaching careers within education majors (Savage et al., 2021). Given the importance of obtaining a state grant to sponsor a university and the abundance of grants for teaching, anecdotal evidence in Kazakhstan suggests that students in teaching majors often select this field to pursue their degree. Therefore, the following hypothesis was formulated.

Hypothesis 3: Students in teaching majors will be more likely than students in non-teaching majors to consider a teaching career. The cross-tabulation of primary and career consideration is presented in Table 7.

Table 7.

Major vs. Consideration of Teaching

Major	Did not consider	Considered	Total
Other disciplines	76 [47.04]	163 [191.96]	239
Pedagogical sciences	47 [75.96]	339 [310.04]	386
Total	123	502	625

Note. Expected counts in brackets. $\chi^2(1, N = 625) = 33.49, p < .001$.

Observed frequencies show that fewer non-education students considered teaching than expected (163 observed vs. 191.96 expected), while more non-education students than expected did not consider teaching (76 observed vs. 47.04 expected). Conversely, education majors were more likely to consider teaching (339 observed vs. 310.04 expected) and less likely not to consider it (47 observed vs. 75.96 expected). These results confirm a strong association between primary and career consideration.

Another important result of this test was the fact that 68% of non-teaching major students consider or have considered teaching as a career. This highlights the importance of exploring alternative teaching routes for individuals with non-teaching majors.

Participation in Teaching-Related Programs

Experiential opportunities and role models are known to shape career intentions. Authentic exposure to classroom or education-focused experiences (e.g., internships, realistic job previews, service programs, or campus clubs) tends to strengthen interest and crystallise intentions to teach (Borgerding, 2015; Watt et al., 2012; Klassen, 2023). Alternative or accelerated pathways can broaden access and shape pipeline flow (Cabral & Lambirth, 2017; Redding, 2021). Engagement in initiatives such as Teach for Kazakhstan, university-based teacher clubs, or similar programs may strengthen career commitment, particularly among a large number of non-teaching major students who consider teaching as a possible career path. Hypothesis 4: Students who participate in teaching-related programs or clubs are more likely to demonstrate commitment to a teaching career. The cross-tabulation is presented in Table 8.

Table 8.

Participation in Teaching Programs vs. Career Commitment

Participation	No	Undecided	Yes – Career Goal	Yes – Obligation	Total
No programs	37 [36.42]	93 [78.15]	147 [163.12]	72 [71.32]	349
Programs	11 [11.58]	10 [24.85]	68 [51.88]	22 [22.68]	111
Total	48	103	215	94	460

$\chi^2(3, N = 460) = 18.37, p < .001$.

Among students who did not participate in programs, more than expected remained undecided about a teaching career (93 observed vs. 78.15 expected), and fewer than expected reported teaching as their career goal (147 observed vs. 163.12 expected). In contrast, students with program experience were less likely than expected to be undecided (10 vs. 24.85) and more likely to state teaching as their goal (68 vs. 51.88). These deviations indicate a significant association, confirming that program participation is linked with more substantial career commitment.

Some of these programs that offer an alternative route to teaching are also important to increase teacher supply from non-teaching majors.

Readiness to Teach in Rural Areas by Grant Type

Teaching intentions in rural schools vary by students' backgrounds and location. A large-scale survey of teacher-education students in eastern China found generally strong willingness to work in one's hometown (Wang et al., 2023). In Kazakhstan, alongside General grants, there are targeted grants such as rural quota or Akimat (Mayor's Office) grants. They might have terms obligating them to return to their home regions. Thus, grant type may influence readiness to teach in rural schools.

Hypothesis 5: Students receiving rural or targeted scholarships will express greater readiness to teach in rural areas than other students. The cross-tabulation is shown in Table 9.

Table 9.

Grant Type vs. Readiness to Teach in Rural Areas

Grant Type	No	Unsure	Yes	Total
Akimat grants	3 [3.79]	5 [2.96]	7 [8.25]	15
General	59 [55.66]	52 [43.39]	109 [120.96]	220
Other quotas	7 [3.79]	0 [2.96]	8 [8.25]	15
Self-funded	39 [40.98]	28 [31.95]	95 [89.07]	162
Kazakhstan Halkyna	7 [3.29]	0 [2.56]	6 [7.15]	13
Rural quota	3 [11.13]	8 [8.68]	33 [24.19]	44
Serpin	5 [4.81]	4 [3.75]	10 [10.45]	19
University grant	4 [3.54]	2 [2.76]	8 [7.70]	14
Total	127	99	276	502

$\chi^2(14, N = 502) = 27.97, p = .014$.

Notable deviations were observed among rural quota recipients: more students than expected expressed willingness to teach in rural schools (33 observed vs. 24.19 expected), and fewer than expected indicated no willingness (3 observed vs. 11.13 expected). For general grant holders, fewer than expected expressed willingness (109 vs. 120.96), and more than expected were unsure (52 vs. 43.39). These results indicate an important relationship between grant type and rural readiness, with rural quotas especially effective in encouraging service outside urban areas.

Discussion

This study investigated the factors that attract individuals to teaching careers. The data revealed consistent patterns across analytical approaches where respondent intentions correlate with institutional structures encountered during educational experiences rather than standardized test performances. Notably, the recipients of the targeted rural educational reported significantly higher levels of readiness to serve in rural contexts. Conversely, differences in Unified National Test (UNT) scores between those who expressed interest in teaching and those who did not were minimal. The practical implications of these results seem self-evident: exposure to real teaching opportunities and the provision of well-structured, context-sensitive incentives appear to exert greater influence on career intention than do narrow academic thresholds.

Interpreting the patterns

The relationship between academic major and intention to teach, though anticipated, merits closer examination. It is plausible that two distinct, but intertwined processes are at work. Some students may enter education programs already inclined toward teaching, bringing with them a set of pre-existing values and aspirations. Simultaneously, the experiences provided through coursework and early engagement with schools may gradually cultivate and affirm a sense of teacher identity, as suggested by Lortie (2008). Although the present findings cannot isolate these processes with precision, both converge on a common point of leverage.

Programs that incorporate early immersion in classroom environments often do more than inform career choice. They deepen intention and transform vague interest into concrete commitment. This perspective resonates with research highlighting how authentic practicum experiences foster stronger motivation and a more defined conception of the teaching role (Watt et al., 2012).

Involvement in programs beyond the formal curriculum also reveals a noteworthy, albeit modest, association with increased commitment. The various initiatives considered, that range from outreach efforts to student-led clubs, differ considerably in scope and structure. Nonetheless, the pattern remains consistent. Practical exposure appears to shift teaching from a notional career option to a tangible and meaningful possibility. This is consistent with findings from teacher recruitment literature, which point to the pivotal role of experiential learning in shaping professional trajectories (Klassen, 2023). Through such encounters, students are not merely introduced to the profession but begin to inhabit it.

Furthermore, rural quota awards are linked with a higher reported willingness to serve beyond major cities. It appears that incentives may guide intentions toward schools in areas where shortages are acute. Nonetheless, willingness expressed in a survey is not the same as actual placement, and it may even be further from long-term retention. The literature suggests that without housing, mentoring, and a manageable workload in the first year, many teachers exit early (Sisouphanthong et al., 2020). The results of this study should therefore be interpreted as an initial step. It requires a more developed, sophisticated support system if it is to lead to sustainable staffing.

Graduates of public schools seemingly demonstrate a somewhat stronger tendency to consider teaching than those from selective or private schools. One explanation may be visibility. In public schools, students observe a greater number of ordinary teachers and are less exposed to elite professionals, which makes the occupation appear familiar. The civic role of such schools within communities may also reinforce teaching as an attainable path. Another possibility is the status of teaching across different peer cultures. This is speculative and invites qualitative follow-up, yet it offers a plausible line of inquiry.

Finally, the minimal difference in UNT scores deserves attention. Our results confirm that the association between academic success and choosing a teaching career is not straightforward and varies by context. In line with Savage et al. (2021), we find that academic achievement is not a significant predictor of teaching career. This can be explained by the relative stability of teaching jobs and reflects the impact of reforms in Kazakhstan towards increasing teacher status and salaries.

Implications for policy

Looking more broadly at scholarship programs, existing research suggests that financial incentives alone may be insufficient to address teacher shortages effectively. The most promising interventions appear to integrate funding with comprehensive professional preparation and ongoing support systems. Thompson-Lee et al. (2025) demonstrated that retention-focused measures often outperform recruitment bonuses, while international evidence indicates that experiential learning opportunities strengthen career commitment among prospective teachers (Borgerding, 2015).

This body of evidence implies that scholarships, in theory, could be redesigned as elements within larger developmental frameworks rather than treated simply as financial transfers. Universities, for instance, could offer credit-bearing micro-placements that bring students into classrooms for structured and rigorous periods of classroom observation and practice. It is our contention, based on the emerging results of the current study, that such opportunities would allow even students outside education programs to test their interest and skills in teaching within real-life professional contexts. One practical way forward could be to integrate these placements into partnerships with local schools so that students experience them

during their regular academic year rather than only through summer internships. Likewise, for students who are approaching graduation, there is a case for creating paid para-professional positions that ameliorate the passage from study to full employment. These roles could offer real responsibility in the classroom, while helping to maintain access to mentors and development activities at the same time. The assumption is that commitment to teaching usually grows gradually through experiential immersion, not through abrupt transitions from university to independent teaching.

The issue of staffing in rural areas deserves particular focus. Existing quota systems have demonstrated seemingly unsatisfactory results, and many stakeholders and observers argue that they should be replaced with more comprehensive fellowship schemes. Such initiatives would need to go beyond financial incentives. Comprehensive support structures that include guaranteed accommodation, structured mentoring, reduced administrative responsibilities in the initial year of service, and assistance with relocation expenses are likely to play a crucial role in both recruitment and retention. Moreover, there is growing empirical support for the proposition that candidates with prior exposure to rural contexts, whether through personal background or placement experience, exhibit higher rates of long-term retention. Prioritizing these applicants in selection processes may enhance the stability and sustainability of rural staffing efforts.

It could also be put forward that funding schemes could also be refined so that institutions are rewarded for measurable outcomes rather than simply for student enrollments. Linking university and district support to employment conversion rates and to teacher retention at one- and three-year intervals would create incentives that align more closely with workforce development. The principle is not complicated: programs that combine financial support with meaningful professional experiences are more likely to produce teachers who not only begin the job but also stay with it.

Secondary schools have responsibilities that reach well beyond serving as landing points for graduates of teacher education programs. They are also places where many young people first encounter the idea of teaching as a career. These early impressions often arise through brief, informal interactions rather than planned exposure. However, the data presented in this study suggest a more deliberate approach yields stronger results. Undergraduates who engage in structured, teaching-related activities tend to report a higher level of commitment to the profession.

This pattern has implications for secondary schools. They do not need to depend entirely on universities to develop future teachers for them. Instead, they can take a more proactive role in building early-stage pathways. Several forms of engagement are achievable. Senior students, for example, could participate in supervised assistant teacher programs. In these, they would help design lessons, support classroom delivery, and observe experienced educators at work. After-school tutoring could also be transformed. What often begins as casual peer help may turn into a formalized mentoring system: one supported by reflection sessions and guided feedback from staff. Another promising strategy is job shadowing. This approach offers more than observational learning; it provides a practical window into daily teaching life. It may be especially effective in rural contexts or in subjects where teacher shortages continue to persist. In such contexts, brief visits are rarely sufficient; instead, students need repeated, meaningful contact with the profession. Guidance counsellors would serve as essential facilitators in this process. Their task is not merely to provide information but to frame teaching as a gradual, attainable journey that begins with school-level roles and extends through paraprofessional experience to full qualification. The path must be visible; the steps must be clear; the support must be consistent.

If schools move in this direction, it is likely that there will be additional demands on experienced teachers. Hosting placements, supervising young assistants, or guiding job

shadowing requires time and effort. Institutions should therefore recognize this contribution through small grants, release time, or other supportive measures that acknowledge mentoring as a form of professional development in its own right. The broader aim remains consistent: to make teaching visible and respected within school communities and wider society to create multiple entry points through which young specialists can see themselves as potential future educators.

Implications for teacher education in higher education

Teacher education programs continue to face the challenge of balancing/aligning academic standards, and their curriculum plans with the realities of classrooms in regular schools. Standardised test scores have often been assumed to predict teaching success, yet recent studies consistently challenge this view. Evidence points instead to program design and experiential learning as stronger indicators. If this is the case, universities may need to reconsider how teachers are prepared. One response is to broaden access by offering teaching minors or certificates in other disciplines. When such routes include school-based modules from the outset, they not only capture the interest of students who had not previously considered teaching but also provide authentic exposure to practice.

Selection processes within teacher education warrant closer scrutiny. Admittedly, current academic metrics remain part of the equation. They offer a clear, standardized measure of knowledge. Nevertheless, it should be acknowledged that they fail to account for qualities that matter just as much such as resilience, empathy, communication skills, and ethical judgment among them. To address this shortcoming, programs could incorporate additional assessment methods. For instance, structured interviews, classroom simulations, and situational judgment tests provide more insights. These instruments are not without limitations; nonetheless, they can reveal how candidates respond to real-world teaching challenges. While such tools cannot predict long-term success with certainty, they help form a more holistic picture of a candidate's potential to manage the interpersonal and ethical complexities of the classroom. Equally important is the timing of practicum experience. It is worth asking: why should students wait until their final year to enter classrooms? Early placement serves a dual purpose. It allows students who are poorly suited to the profession to reconsider their path before investing further. At the same time, it affirms and strengthens the commitment of those who show aptitude. In this way, the practicum acts not only as a training ground but also as a selection filter that aligns professional preparation with long-term dedication.

Other matters are more practical in nature. Career changers and students without an education background require flexible entry routes. One-year post-baccalaureate programs offer an effective solution, particularly in high-demand subject areas where the teacher supply remains insufficient. Finally, no meaningful reform is possible without systematic evidence. Programs cannot evolve if they lack data. Universities should therefore implement mechanisms to track graduate placement and retention over time: data should be gathered at one- and three-year intervals and disaggregated by subject area, practicum site, and program pathway. Without this information, judgments about program effectiveness rest on assumption rather than fact; with it, decisions can be anchored in patterns that emerge across cohorts and contexts. Good intentions are not enough. To build a teacher workforce that is skilled, stable, and sustainable, reforms must be guided by evidence—collected, analyzed, and applied with care.

Conclusion

This study examined the conditions under which undergraduates in Kazakhstan move toward a teaching career. Across analyses, intentions align more with the structures that students encounter than with marginal differences in test performance. Education majors are more likely to consider teaching. Participation in teaching-related programs corresponds to a stronger commitment, and recipients of rural quota grants report greater readiness for rural

service. Public school graduates show a slight inclination toward teaching relative to peers from selective or private settings. Differences in UNT scores between those who considered teaching and those who did not are small. Taken together, the pattern points to a practical reading. Experience and incentive design appear to shape career thinking more reliably than academic screening.

Three conclusions follow. First, exposure to teaching as early as possible has a huge impact on students. When students go through in-service practicum and enter real classrooms, even for a short period of time, teaching becomes a serious consideration for their careers rather than an abstraction. Second, incentives work best not in isolation but when bundled with systematic and consistent support. Although, scholarships attract applications, housing, mentoring, and a lighter non-teaching load in the first year are presumably more likely to translate intention into arrival and early retention. Third, the pathway into teacher education should remain available for strong candidates from non-education majors, with selection placing more weight on interpersonal and practice-oriented indicators than on fine distinctions in test scores. These conclusions are in line with the results of the study and offer a tractable agenda for ministries, state schools, and universities.

As far as the policy message emerging from the study is concerned, we strongly recommend developing away from a narrow focus on score thresholds. Move toward packages that combine funding with structured school experience and early induction into teaching. State secondary schools can serve as sites of socialisation through assistant teacher terms, mentoring hubs, and systematic shadowing. Teacher education can front-load practicum, open bridge routes for final year students in other fields, and adopt selection tools that read motivation, communication, and judgment. None of these moves requires a leap of faith: on the contrary, they extend existing practices in a more deliberate, data-aware form.

The study, however, has limitations that are necessary to take into consideration when assessing and contextualizing the conclusions of this investigation. The design is cross-sectional; hence the causal inferences are limited. The sample of the survey is not probability-based, and female respondents appear to be over-represented, which might have, in its turn, affected external validity. Also, outcome measures rely on single items, and the UNT scores are self-reported. This might have introduced measurement error. Additionally, analyses lean on bivariate associations; unobserved confounders may remain. Effect sizes in several tests are small, so practical importance should be read with care. These limitations do not necessarily negate the main conclusions and patterns. Yet, they invite the readers to interpret the findings with caution when considering to extrapolate the results into other contexts.

An important recommendation for future research is a prospective, multi-wave, cohort study that would follow undergraduates from the first expression of interest in teaching through application, appointment, and the first three years of employment. A study of this kind would offer a robust framework for understanding the full trajectory from intention to retention. The process might begin with a baseline survey administered early in the undergraduate program. This instrument would collect data on teaching intention, academic major, exposure to relevant programs, rural background, and psychosocial characteristics. These variables would serve as foundational predictors for later outcomes. Each participant could then be linked to administrative records, including application submissions, hiring decisions, placement details, and employment continuity. Such linkage would require secure data-sharing agreements but is feasible within current institutional and legal structures. Following the initial wave of data collection, participants would be recontacted at critical transition points. These might include the completion of practicum, graduation, the start of induction, and the end of the first and third years in the workforce. At each point, brief but psychometrically stable instruments could be used to measure commitment to teaching and readiness for rural placements. The use of concise multi-item scales would help ensure both data quality and participant retention.

Importantly, this research design allows for more than descriptive insights. With appropriate modeling, it would permit the estimation of conversion rates from expressed intention to actual entry into the profession, and from initial entry to sustained participation. Event-history models could be employed to explore how early experiences, such as participation in para-teaching, exposure to rural schools, or involvement in fellowship programs, influence movement through the pipeline. These relationships could be estimated while accounting for relevant confounders.

Stratified sampling would improve the representativeness of the study. By recruiting participants across universities, academic disciplines, and geographical regions, the study would be better positioned to capture variation in pathways toward hard-to-staff subjects and rural locations. Sampling weights could be applied where necessary to correct for imbalance. In addition, pre-registering outcomes and conducting a priori power analyses would enhance the rigor of statistical inference. Methodologically, panel loss presents a real concern. Yet it can be addressed. A combination of modest incentives, planned missingness designs, and streamlined follow-ups would support participant retention over time. The pairing of self-reported data with verified administrative outcomes would further strengthen the reliability of the findings. In sum, this kind of longitudinal, mixed-methods approach would move the field beyond surface-level correlations. It would offer concrete evidence about which factors truly matter in converting early interest into long-term commitment.

The broader body of evidence points to a pragmatic shift in strategy. If Kazakhstan aims to secure a sustainable and committed teaching workforce, reforms must focus on more than recruitment quotas or test-based admissions. Instead, the system should invest in meaningful opportunities to teach, targeted forms of support that accompany financial incentives, and a selection process that recognizes not only academic achievement but also the dispositions and practical readiness that effective teaching demands.

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

Funding Information

This research was funded by the Committee of Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No. BR24993019)

Author Contributions

Kairat Moldashev: Conceptualization, Methodology, Formal analysis, Resources and Writing - Original Draft, Writing - Review & Editing, Project administration; Askat Tleuov: Conceptualization, Writing - Original Draft, Writing - Review & Editing.

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