

A Study on the Analysis of the Quality of Graduate Students Admitted through Adjustment and Strategies for Improvement: A Case Study of the Ocean Engineering Discipline at a Local University in Jiangsu

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Abstract: Adjustment is one of the key ways for local applied engineering colleges/universities to achieve the master's enrollment plan and complement the source of students. Structure and overall level of adjustmentadmitted students will also determine the initial quality of graduate training. Based on all applications data of 133 admitted graduate students in the Ocean Engineering discipline of a local university in Jiangsu (from 2024 to 2026) through quantitative statistics and crosscomparison analyses from six aspects such as admission type, firstchoice source, household registration region, preliminary examination scores, undergraduate institution, and major matching degree, it was found that the proportion of adjustment admissions at our college has reached 98.50%, which indicates an extremely short supply of firstchoice applicants; the sources include 87 undergraduate institutions; the applicants coming from crossdisciplines like automation, computer science, and electrical engineering are the absolute majority but only account for 12.78% for those from oceanrelated majors; the student sources are mostly fresh bachelor's graduates from Jiangsu, Shandong, Henan, Anhui and other places; the average preliminary exam score is 292.6 points, and the number of high scorers scoring over 300 accounts for less than 30%; the applicants who failed their first choice 985/211 institutions and underwent reverse adjustment usually got better results than adjustment applicants from ordinary undergraduate institutions. We have proposed optimization plans based on the shortcomings shown by the data including targeted publicity and applicant attraction, tiered adjustment screening, diversified reexamination reform, tiered scholarship and assistantship incentives, and industryeducation integration to build distinctive features so as to provide an empirical reference for the college to optimize its student source structure and stabilize the quality of talent cultivation.

Keywords: master's admissions; adjustmentadmitted students; quality of student sources; Ocean Engineering; local undergraduate institutions

1. Introduction

Scale and categorization development of graduate education in China is entering the period dominated by the supply of applicationoriented highlevel talents via professional degree graduate students. Under the strategy of building a maritime power and upgrading coastal industries, there are still increasing demands for talent in industry. Due to the challenge from its disciplinary platform, brand, and location influence, local oceanrelated colleges and universities experience low popularity of firstchoice applications; great dependence on adjusting to meet quota; imbalance in student source structure and uneven academic foundation have been longlasting pain points that restrict training quality. Most researches about student source quality focus on the macrolevel theory or crossinstitutional horizontal comparison without fullsample quantitative analysis of one institution across several consecutive years, making it hard to match the college's actual admissions situation to form implementable measures. Only we systematically analyze only the college's own student sources based on the original archives of all admitted candidates in the college over the past three years, identify prominent contradictions existing in adjustment admissions, forming a student source quality improvement path suitable for the Ocean Engineering discipline, remediating the lack of casebased empirical evidence in similar studies, provide data support for optimizing graduate admissions governance at the college.

2. Data Sources and Research Approach

2.1 Data Sources

Each master's student that has been admitted by the College of Ocean Engineering at a local university in Jiangsu between 2024-2026 (past three years) totals 133, there is no missing data in any archival field, especially those key indicators like admission status (firstchoice / adjustment), firstchoice institution applied to, household registration province, age when applying, undergraduate institution tier, undergraduate major, and total scores in all preliminary exam subjects, it can fully reconstruct the overall profile for the college's adjustment student sources^[1].

2.2 Research Methods and Analytical Framework

This study adopts two research methods, descriptive statistics and crossgroup comparison, and establishes a sixpart analytical framework:

- a. Admission structure analysis: calculate proportion of first choice and adjustment admission, reveal dependence on adjustment;
- b. Firstchoice tier analysis: categorizing original institutions that adjustment students apply for as 985/211/ordinary firsttier/secondtier, comparing score difference;
- c. Individual profile analysis: calculating source distribution by household registration and age, identifying core target applicant groups;
- d. Preliminary examination score analysis: calculating distribution of total scores by score bands, judging overall academic foundation of student sources;
- e. Undergraduate background analysis: classifying undergraduate institution tiers, differentiating oceanrelated/crossdiscipline applicants, evaluating major compatibility;
- f. Admissions mechanism diagnosis: sorting out institutional deficiencies in current adjustment, reexamination, and publicity work with identifying shortcomings from data.

3. Multidimensional Empirical Analysis of Adjustment Student Sources from 2024 to 2026

3.1 Overall Admission Structure: Adjustment as the Absolute Main Body of Admissions, with FirstChoice Reserve Nearly Blank

The number of students who were admitted was 133 over the past three years; there are only two candidates applying to the college as their first choice (accounting for 1.50%); however, 131 were admitted by adjustment (accounting for 98.50%) – it relies solely on the adjustment pool to meet its quota, has no stable and quality reserve of previous applicants, and is passively in a supplementary admission state for a long time without being able to actively filter out highquality candidates.

The distribution of original institutions that adjustment students apply to as their first choice: All 131 adjustment students can be up to 87 firstchoice institutions, which are very scattered. 9 students applied to this university as their first choice, with an account of 6.87% of the total adjustment admission; Jiangsu University of Science and Technology, Nanjing University of Information Science and Technology, Nanjing University of Posts and Telecommunications each has 8 students; A total of 5 students applied to 211 institutions as their first choice (Hohai University, Dalian Maritime University, etc.) only 4 students applied to 211 institutions as their first choice (Harbin Engineering University, Wuhan University of Technology, etc.) Reverse adjustment students from 985 / 211 institutions are few, but they have a slight advantage in preliminary examination score, it is a rare breakthrough point for high quality student sources at the college.

3.2 Individual Profiles of Student Sources: Fresh Undergraduates from Jiangsu, Shandong, Henan, and Anhui Constitute the Core Group

Among them there are 48 candidates with Jiangsu household registration which accounts for 36.09% of all admissions: Jiangsu is by far the biggest source province; the main outofprovinces are Shandong (12 students, 9.02%), Anhui (11 students, 8.27%) and Henan (8 students, 6.02%). Four provinces

including Jiangsu, Shandong, Henan and Anhui accounted for 59.40%; student sources from other provinces are scattered, every single province accounts for less than 5%, it proves that the college's admissions publicity resources should focus on undergraduate institutions in these four provinces but the investment in remote outofprovince institutions has relatively low costeffectiveness^[2].

3.3 Distribution of Preliminary Examination Scores: Concentration in the Middle Range, with Scarce HighScoring HighQuality Student Sources

Average preliminary exam scores (all candidates): 292.6 points; Median: 291 points. Most of them were in a narrow band - 57 students scored between 280299 (42.86%), 36 scored between 250279 (27.07%). Only 30.08% scored above 300, only two scored over 340.

The tiered comparison of the scores of reverse adjustment students: There are 10 first choice 985 / 211 candidates whose average score is 293.8 points; there are first choice adjustment students from ordinary undergraduate institutions whose average score is 292.3 points. Average scores of those who failed admission into key institutions are a little bit higher which indicates their training potential but no preferential policy is set up in adjustment screening for them now, exploring high quality reverse student sources is insufficient.

3.4 Undergraduate Background: SecondTier and CrossDiscipline Applicants Constitute the Absolute Mainstream

Admitted students were from all over 87 undergraduate institutions with 26 being graduates of this university (19.55%), - The biggest proportion comes from public second tier institutions; the sum of independent colleges and private undergraduate institutions exceeds 15%, less than 25% are from public firsttier institutions, only 3% are from 985/211 undergraduate institutions—reserve of high starting point student sources is seriously insufficient. There are only 17 students who major in undergraduates related to oceans like ship engineering, marine resources, and marine engineering, accounting for 12.78%; there are 116 crossdiscipline applicants, accounting for 87.22%. Most of them come from five disciplines including electrical engineering, computer science, communications, automation, and mechanical engineering, accounting for more than 65% of crossdiscipline applicants. A lot of crossdiscipline applicants expand the total student source without some core foundation courses like fluid mechanics, ship structures, and ocean engineering fundamentals after enrollment, they need to take extra remedial basic courses, increasing the burden on teaching and research supervision. They encounter issues such as academic lag and delayed graduation because of disciplinary barriers.

4. Core Dilemmas in Adjustment Admissions Based on Admission Data

Based on the statistics of the whole sample, in these three years we discovered five major structural weaknesses which adjustment admissions at the college had and they are backed up with empirical data.

4.1 Weak Disciplinary Attractiveness and Nearly Exhausted FirstChoice Student Source Supply

Only 1.5% were admitted as first choices, mainly because they consider it a fallback option for adjustment due to: Lack of publicity about unique features of Ocean Engineering discipline; No effective communication with undergraduates about high level research platforms, results of universityenterprise joint training, and employment advantage of graduates; Lacks special incentives policy for first choice applicants; Undergraduates from our university tend to flow towards key universities in the province; Low willingness by external candidates to apply voluntarily; Long term dependence on adjustment can't let us independently control the quality of students' sources.

4.2 Single Adjustment Screening Criteria and Serious Loss of HighQuality Reverse Student Sources

Currently only one main indicator (total preliminary examination score) has been used in adjustment screening, but there is still no tiered selection system: Firstly, there are no policies prioritizing reexamination and special scholarships for reverse adjustment applicants who failed admission into 985/211 institutions which results in an easy transfer of highscoring quality candidates

to peers within the same tier; Secondly, there is no consideration of undergraduate major matching, science and innovation competitions or engineering practice as the preliminary indicators for adjustment screening resulting in a large number of crossdiscipline applicants with zero foundation entering. Thirdly, the differential ratio for adjustment reexamination is relatively small, the assessment format is monotonous, "going through the motions" phenomenon exists, can not identify candidates' research potential and professional compatibility; The shortcomings of scoreonly admission are prominent^[3].

4.3 Overly High Proportion of CrossDiscipline Student Sources and Prominent Contradictions in Disciplinary Compatibility

More than 80% of candidates apply for Ocean Engineering as a crossdiscipline major; however, only about 10% of candidates has an undergraduate foundation in the industry. Weak mathematical, mechanical and ship engineering foundations of crossdiscipline applicants, high threshold of course learning, supervisor spends a great deal of time supplementing basic teaching, low efficiency of research group progress decline, overall training quality is significantly dragged down, which will reduce the overall level of disciplinary graduation outcomes and competition outputs in the long run.

4.4 Overall Low Tier of Student Sources and Lack of Stable HighQuality Student Source Channels

The proportion of students coming from public firsttier undergraduate institutions or above is less than 25%; There is no recommended admission student source at all; The highquality first choice student source is rare; Only adjustment through a random candidate; The stability of student source supply is unstable. No longterm student source cooperation mechanism and summer camp linkage mechanism with this college for engineering colleges in the Jiangsu, Shandong, Henan, and Anhui region; Targeted high quality student sources have not been constructed.

4.5 Insufficient Precision in Admissions Publicity and Low Attraction Efficiency

The existing publicity is mostly passive online consultation from static brochure on the official website without tiered and precise operation: No targeted offline information session for target secondtier and independent colleges in Jiangsu, Shandong, Henan, and Anhui; No suitable publicity content for core crossdiscipline applicant groups of automation and computer science; No specific promotion of advantageous reverse adjustment policy to candidates who failed admission to 985/211 institutions, leading to blocking of highquality student source attraction channels.

5. Practical Improvement Strategies for Optimizing the Quality of Adjustment Student Sources

In light of the deficiencies revealed from the college's student source profile as well as the schoolrunning tendency of a local ocean engineering institution, we propose here a fullchain quality improvement plan of "publicity in advance — tiered screening — diversified reexamination — scholarship and assistantship incentives — disciplinary empowerment"^[4].

5.1 Implement Tiered and Precise Publicity to Steadily Increase the FirstChoice Applicant Base

Build a tiered list of institutions for publicity, prioritize publicity for intraprovincial secondtier/independent colleges (Nanjing Institute of Technology, Nanjing University of Posts and Telecommunications Tongda College), and target outofprovince engineering colleges (Liaocheng University, Henan University of Urban Construction, Anhui Jianzhu University) for mediumlong term publicity; Organize offline oncampus information session /online live Q&A sessions regularly, keep regular communication with counselors/professional teachers at target institutions; Customize publicity content according to candidate group: For crossdiscipline applicants in electrical engineering, computer science, and automation, emphasize crossdiscipline remedial course and zerofoundation supporting training program; For those who failed admission to 985/211 institutions, emphasize the college's horizontal research projects in marine equipment, universityenterprise internship resources, highscore freshman awards, make it a preferred choice for reverse adjustment; Regularly conduct offline summer camps for junior undergraduates in Jiangsu, Shandong, Henan, and Anhui, establish sessions for supervisor exchange, lab visit, and research experience, grant outstanding camp participants policies like bonus points in reexamination and priority admission through adjustment; Meanwhile, arrange

fulltime staff to work postgraduate entrance examination communities year round provide realtime Q&A, constantly increase candidates' willingness to apply and stickiness.

5.2 Establish a Tiered Adjustment Screening Mechanism to Deeply Tap HighQuality Reverse Student Sources

Set up a threetier system for adjusting student source priorities. Candidates applying to 985 / 211 institutions as their first choice, who score over 300 in the preliminary exam, and whose engineering background is electrical engineering, computer science, or mechanical engineering are Tier 1 student sources that enjoy priority in reexamination and priority admission; Engineering students from provincial firsttier institutions scoring above 280 belong to Tier 2 student sources; Ordinary secondtier and crosscategory candidates belong to Tier 3. Set up special scholarships for highscoring adjustment freshmen to attract highquality reverse student sources; Increase the weight of major matching during the preliminary review stage of adjustment, add whether the undergraduate major is oceanrelated, science and innovation competitions and engineering internship experience into screening references, prioritize the admission of those with industry backgrounds at equal scores, and decrease the admission scale of zerofoundation crossdiscipline applicants; formulate medium and longterm admission optimization goals, relying on publicity and incentive policies for sustained efforts, planning to reduce the proportion of adjustment admissions from 98.5% to within 60% within three years, changing admissions from being passively supplemented to proactively selecting talents^[5].

5.3 Reform the Reexamination Assessment System and Build Diversified Comprehensive Evaluation Standards

Unify the reexamination assessment rules between first choice and adjustment candidates, establish a differential reexamination ratio not less than 1:1.5, unify the elimination mechanism, completely change the situation that reexamination is just formality; Enrich the content of reexamination assessment (add modules on engineering case analysis, mechanics fundamentals, and research potential Q&A based on professional course written examinations and comprehensive interviews); Add a professional foundation diagnostic session for crossdiscipline applicants to fully evaluate the candidate's compatibility and break the single evaluation mode of determining admission only by preliminary examination scores; Set up different reexamination plans for fulltime and parttime candidates: The main assessment items for fulltime candidates are theoretical foundation and research innovation potential, but for parttime candidates are industry work experience and practical engineering implementation ability, achieving classified selection and classification training.

5.4 Establish a Tiered Scholarship and Assistantship System to Enhance the Attractiveness of the Discipline for Applications

Establish a tiered freshman scholarship system: Grant full scholarships to firstchoice applicants and recommended admission students, set up special grants for highquality adjustment students with scores over 300, differentiate rewards to form a reward gradient and direct candidates to focus on their first choice application; Strengthen supports for research and practice, broaden the coverage of graduate research assistant positions, highlight opening provincial, and ministeriallevel and enterprise horizontal ocean engineering projects for highscoring and oceanmajor student sources, optimize supporting policies (flexible study duration, onlineoffline blended teaching) for parttime graduate students to stabilize inservice student source team; Establish an integrated undergraduatetograduate cultivation channel within the university, promote postgraduate entrance examination and supervisor policy for junior and senior oceanrelated students at the college, provide undergraduatetograduate research training projects, encourage undergraduates of this university to continue studying at the college, cultivate a stable internal highquality student source^[6].

5.5 Leverage IndustryEducation Integration to Build Disciplinary Characteristics and Enhance Attractiveness from the Root

Follow the development layout of Jiangsu's coastal marine industry, cooperate with leading enterprises in ships and marine engineering equipment to establish laboratories and joint graduate training bases together, turn real enterprise engineering projects into master's thesis topics, emphasize the unique advantage of the college on applicationoriented talent training; Publicize the results of our discipline's research and quality of graduate employment, increase the visibility of this discipline and

candidate recognition, boost candidates' enthusiasm for actively making their first choice at its source, gradually solve some problems like unbalanced student source structure and difficult training due to too large proportion of adjustment admissions.

6. Conclusion and Outlook

We quantified five characteristics about adjustment student sources in this college based on all data of 133 admitted candidates for the College of Ocean Engineering at a local university in Jiangsu between 2024-2026 as follows: extremely high adjustment admissions ratio, concentrated student sources (fresh undergraduates) from Jiangsu, Shandong, Henan, and Anhui; predominant midrange preliminary exam scores; overwhelming majority of crossdiscipline applicants; score advantage for reverse adjustment students from 985/211 institutions. These data reflect five major admission dilemmas such as lack of first choice applicants, coarse screening, poor compatibility of crossdiscipline applicants, low student source tier, and imprecise publicity.

Local ocean engineering colleges don't just need to adjust in order to complete choice of high quality talents; We should build a full chain student source governance system: Accurate allocation of publicity resources based on student source profile, Establishing tiered adjustment screening mechanism, Diversify reexamination evaluation, Providing supporting tiered scholarship and assistantship policy, Highlighting discipline characteristic with industryeducation integration, Reduce dependency on adjustment year by year, Optimize student source tiers and major matching degree.

More research can track down the course grades, research output, and graduation employment data of this cohort of adjustment students during their study process; build up a link evaluation model between student source background and training effectiveness; iteratively adjust admission publicity, adjustment screening, and reexamination assessment plan, continuously improving the training quality of all graduate students in the Ocean Engineering discipline as a whole.

References

- [1] Wang Xiaorong, Jiang Genzhu, Tang Wenxian, et al. *Comprehensive Analysis of Graduate Student Source Quality and Improvement Strategies: A Case Study of the School of Mechanical Engineering at Jiangsu University of Science and Technology*. *Contemporary Education Practice and Teaching Research*, 2019 (13).
- [2] Huang Jing, Tu Zhonghua. *Reflections on Ensuring Graduate Admission Quality in the Stage of Mass Higher Education*. *Academic Degrees and Graduate Education*, 2015 (6).
- [3] Zhao Dan, Yi Yingxin. *Research on Graduate Admission Quality Based on a Grey Clustering Evaluation Model*. *Heilongjiang Researches on Higher Education*, 2014 (12).
- [4] Wang Pei. *Research on the Evaluation System of Graduate Student Source Quality*. *Journal of Leshan Normal University*, 2015 (8).
- [5] Fo Zhaohui, Xing Hui. *Policy Expectations for the Development of Higher Vocational Colleges in the Transitional Period*. *Vocational and Technical Education*, 2017 (10).
- [6] *Implementation Paths for Improving Graduate Admission Quality at a Local University in Jiangsu*. *China Graduate Admissions Information Network*, 2025.