Dilemmas and Improvement Strategies for the Cultivation and Management of University-Level Research Projects

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Abstract. University-level research projects are a foundational component of the university research system, serving the important functions of incubating high-quality outcomes and cultivating the research capabilities of early-career faculty. However, the cultivation function of university-level research projects is currently weakened across institutions, manifesting as vague review standards, low funding amounts, lax process management, low-quality research outputs, and insufficient faculty participation. The underlying root cause lies in the "systematic loss of cultivation orientation"—institutions manage cultivation projects using the logic of competitive projects, compounded by low recognition of university-level projects in title evaluation systems, resource input constraints, and management inertia. This has led to the transformation of university-level projects from "incubators for early-career faculty academic growth" into "formalized research tasks." Accordingly, institutions should return to the cultivation orientation and construct a coordinated cultivation system across five dimensions: positioning reconstruction, standard refinement, tiered funding, process cultivation, and evaluation incentives.

Keywords: University-level research projects, Cultivation management, Early-career faculty, Title evaluation, Process management.

1 Introduction

University-level research projects are funded by institutions from their own budgets to support faculty in conducting scientific research, distinguished from vertical projects funded by national or local governments, horizontal projects commissioned by enterprises and institutions, and other specialized projects [1]. As the most foundational tier in the university research system, they play an irreplaceable role in enhancing faculty research capabilities, mobilizing research enthusiasm, and fostering a research atmosphere, serving as a "whetstone" for early-career faculty to accumulate experience and develop their abilities [2]. However, in practice, their cultivation function is repeatedly weakened: most institutions pay insufficient attention to university-level projects, provide low funding amounts, and employ sloppy management; recognition in title evaluation is low, leading faculty—especially early-career faculty—to regard them as

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B. P. Siba et al. (eds.), *Proceedings of the 2026 5th International Conference on Public Service, Economic Management and Sustainable Development (PESD 2026)*, Advances in Economics, Business and Management Research 411,
https://doi.org/10.2991/978-94-6239-825-2_43

"dispensable" transitional tasks with limited investment and hardly guaranteed outcome quality.

Existing studies have preliminarily explored management issues: Liu et al. found inconsistent standards and insufficient justification for application conditions, age limits, and academic ability requirements [1]; Yan revealed obstructed development pathways for early-career faculty, completion rates highly dependent on outcome requirements, and weak functionality for cultivating higher-level projects [3]; Fu identified unstable category settings, concentrated research directions, low completion rates, and lax management [2]. However, existing studies largely remain at the level of problem description and countermeasures enumeration, lacking in-depth analysis of the essential nature of "cultivation" and failing to form a unified analytical framework.

This paper examines the dilemmas and causes of university-level research project cultivation management from a "cultivation orientation" perspective and proposes improvement strategies. The core argument is that the fundamental dilemma lies not in "inadequate management" but in the "systematic loss of cultivation orientation"—using competitive logic for cultivation projects, replacing process cultivation with outcome evaluation, and imposing substantive expectations on symbolic input. Improvement requires returning to the cultivation orientation and building a coordinated "positioning–standards–resources–process–evaluation" system.

2 The Positioning and Value of the Cultivation Function of University-Level Research Projects

University-level projects differ fundamentally from provincial/ministerial or national projects: the latter are competitive projects selectively supporting established researchers with existing foundations, while the former are cultivation projects supporting immature research directions and independent researchers. Thus, they cannot simply replicate the management model of competitive projects. Their cultivation nature manifests at three levels: cultivating research directions through low-risk experimental platforms for early-career faculty with unstable focuses; cultivating research capabilities through complete training from topic selection to completion, bridging doctoral students to independent researchers; and cultivating academic norms by developing integrity, fund usage, and other norms in practice.

From the perspective of the overall university research ecosystem, university-level projects are the foundational layer and reservoir for research echelon construction. The RISE-UC program at the University of Cincinnati College of Medicine demonstrated that comprehensive measures including internal funding, academic services, mentorship, and incentives can effectively enhance research output, with an investment return rate of approximately 16.4 times [4]. Increasing cultivation efforts can yield significant research returns.

For early-career faculty, the value of university-level projects is particularly special. They face challenges such as heavy research workloads, high promotion pressure, and uneven resource allocation [5]. University-level projects provide fair starting opportunities—not relying on existing accumulation but emphasizing potential—enabling

them to accumulate preliminary foundations for higher-level projects while building confidence and forming stable research rhythms. However, most institutions currently lack sufficient recognition of the cultivation function of university-level projects, simply regarding them as low-level projects without reflecting cultivation requirements in resource input, management methods, or evaluation standards. This positioning deviation is the fundamental source of various management problems.

3 Practical Dilemmas in the Cultivation and Management of University-Level Research Projects

The problems in the current cultivation and management of university-level research projects can be systematically diagnosed along the "cultivation chain." Cultivation should run through the entire chain of "project review–resource input–process management–outcome evaluation–faculty participation," but functional weakening has occurred to varying degrees at each link.

3.1 Project Review: Vague Standards, with Competitive Logic Replacing Cultivation Logic

Review standards for university-level research projects are generally vague. Statistics from Liu et al. on 40 university-level special funds across 10 institutions showed that 35 used qualitative descriptions to define academic ability and outcomes, while only 5 used a combination of qualitative and quantitative methods [1]. Many institutions employ broad descriptions such as "having a certain research foundation," lacking quantifiable indicators and resulting in reviews highly dependent on the subjective judgments of experts. More fundamentally, most institutions replicate the "foundation-heavy, potential-light" logic of competitive projects, using existing publication counts and other "hard indicators" as primary criteria while neglecting the "research potential" and "growth trajectory" that university-level projects should prioritize. This leads to early-career faculty who genuinely need cultivation being instead unable to secure project support [3].

3.2 Resource Input: Low Funding Amounts, with Symbolic Input Failing to Support Substantive Research

Funding amounts for university-level projects are generally low and mostly adopt a "one-size-fits-all" fixed amount approach, with most ranging from 5,000 to 20,000 RMB, and some institutions even establishing "self-funded projects" [2]. Such symbolic input neither supports substantive research activities nor forms effective incentives, directly causing university-level projects to degenerate into "paper projects"—grand applications but insufficient funding for substantive research during execution, ultimately relying on patching together existing outcomes or low-quality papers to meet completion requirements. Fu's study found that at a sports university, 11 key projects in 2016, 6 ecological sports special projects in 2017, and 9 major and preliminary

projects in 2018 all had zero completions [2], with insufficient funding being an important cause.

3.3 Process Management: Emphasizing Project Approval While Neglecting Process, with the Cultivation Link Completely Missing

Process management is the core link for the cultivation function of university-level projects, yet it is currently the weakest link. Most institutions implement a management model of "two ends with no middle"—review at approval, acceptance at completion, with virtually no substantive process tracking or academic tutoring during the execution period [6]. The absence of process management is manifested not only in the lack of mid-term inspections but also in the lack of cultivation-oriented academic tutoring. Early-career faculty often encounter difficulties in research methods, data processing, and academic writing during project execution, but university-level project management mostly remains at the transactional level without academic process support. As project numbers surge, research administrators' energy is largely consumed by higher-level projects, making it impossible to advance each university-level project through the full process [3].

3.4 Outcome Evaluation: Emphasizing Quantity Over Quality, with Project Completion Marking the End

Outcome evaluation for university-level projects generally "emphasizes quantity over quality" with oversimplified methods. Most institutions use "publishing one paper in a provincial or above journal" as the primary or even sole completion condition, with insufficient recognition of diverse outcome forms such as research reports, patents, policy consultation, and achievement transformation. Yan's study found that the completion rate at Open University A was highly dependent on completion requirements—years requiring "high-level papers" had a completion rate of only 20%, while years requiring "provincial journal papers" exceeded 60% [3], reflecting the simplification and rigidity of the outcome evaluation system. More critically, outcome evaluation generally remains at the level of "whether completion conditions are met," lacking in-depth assessment of outcome quality and follow-up transformation tracking. Once a project passes completion, the management process terminates, and numerous outcomes fail to achieve effective transformation from academic discourse to policy discourse and public discourse, resulting in the dissipation of knowledge value [6].

3.5 Faculty Participation: Insufficient Motivation, with Rational Choice of "Low Investment"

The above problems ultimately converge into insufficient faculty participation in university-level projects. This cannot be simply attributed to faculty "improper attitudes" but should be understood as rational choices within the existing institutional environment. In the current title evaluation system, recognition of university-level projects is generally low. A textual analysis by Zhang et al. of 24 local universities in Henan

Province found that although most institutions propose eliminating the "Five Onlys" in general provisions, specific evaluation conditions still use traditional indicators such as papers, awards, and project levels as the basic framework [7]; Jia et al. also noted that current title evaluation remains constrained by the "Five Onlys," with project level being one of the core assessment criteria [8]. Faculty time and energy are scarce resources; when title evaluation does not recognize university-level projects, rational faculty naturally direct their energy toward higher-level projects, adopting a "good enough" low-investment strategy for university-level projects [9].

4 Analysis of the Causes of Weakened Cultivation Function

The dilemmas across the five dimensions are not isolated but have deep institutional and logical roots. This paper argues that the root cause of the weakened cultivation function of university-level research projects can be attributed to the "systematic loss of cultivation orientation," specifically manifested as the superposition of four causes.

4.1 Logical Misalignment: Managing Cultivation Projects with Competitive Logic

This is the most fundamental cause. University-level projects are essentially cultivation projects whose core objectives are to support the growth of early-career faculty and incubate research directions, rather than selectively supporting established researchers. However, in management practice, most institutions completely replicate the management logic of provincial/ministerial and national competitive projects—reviewing based on foundation, funding based on output, and evaluating based on results—entirely ignoring the core function of "supporting growth" in cultivation projects.

Based on panel data from 148 universities across 10 European countries from 2011 to 2019, Zacharewicz et al. found that competitive funding mechanisms at both national and university levels had no significant positive effects on the number of highly cited papers or total paper output [10], suggesting that funding models need to match project positioning. Using "selection" logic to conduct "cultivation" work inevitably leads to resource concentration among those with existing foundations, while early-career faculty who genuinely need cultivation are marginalized.

4.2 Incentive Distortion: The Conduction Effect of the "Batons" of Title Evaluation

The title evaluation system is the "baton" for faculty research behavior, its orientation directly guiding faculty energy allocation. Currently, university-level projects have low recognition in title evaluation, which transmits to behavior through the "rational choice" mechanism, leading to insufficient investment. Based on a systematic analysis of 532 promotion policies across 32 developed and 89 developing countries, Lim et al. found that quantitative indicators (paper counts, citation rates, project levels) remain widely used, and standardized career paths limit researchers' diversified development [11],

indicating "project level determines academic value" is a global characteristic. Based on Maslow's hierarchy of needs theory, Peng et al. pointed out that early-career faculty pursue academic status recognition after satisfying material needs; if this remains unresponsive for an extended period, they may experience confusion and research burnout [5]. The non-recognition of university-level project outcomes is an implicit denial of early-career faculty's esteem needs, weakening their motivation.

4.3 Resource Constraints: University-Level Projects Have Low Priority in the Research Funding Pie

Low funding for university-level projects has an objective background of resource constraints. Total research funding is limited, with allocation prioritizing high-"visibility" areas such as provincial/ministerial matching, key platform construction, and talent introduction. University-level projects, due to low level and weak visibility, are often regarded as "scrap" investments with low priority.

Fang's survey of early-career researchers at a central agricultural institute found their core dilemma was "lack of stable funding support during the starting phase"—national competitive projects had a success rate of only about 10%, while institutional funding was allocated annually in project form, creating "available this year, unavailable next year" instability [12]. This problem is equally prevalent in universities. However, resource constraints do not necessarily weaken cultivation function; the key is whether institutions regard university-level projects as the research ecosystem's foundational layer and grant them resource priority. The University of Cincinnati case shows that even with limited resources, 16.4 times investment returns can be achieved through targeted funding and comprehensive support [4]. The core issue is not "whether there is money" but "whether one is willing to invest."

4.4 Management Inertia: Transactional Management Replacing Cultivation Services

Management inertia is the fourth cause. University research management departments have long focused their work on the transactional level of "notification–form collection–review–completion," lacking cultivation-oriented service awareness and professional capabilities. This is manifested in: misaligned management objectives, with assessment oriented toward project quantity and approval rates rather than cultivation quality and faculty growth; insufficient management capabilities, as cultivation management requires abilities in academic tutoring, process tracking, and resource matching, which administrators lack training in; and backward management methods, as some units have not established information systems and still use Excel for fund management, making process monitoring difficult to conduct [13].

The relationship among the four causes is as follows: logical misalignment is the root, incentive distortion is the conduction mechanism, resource constraints are the objective condition, and management inertia is the operational manifestation. The four superimpose and reinforce each other, forming a stable structure of "weakened

cultivation function" that makes the dilemmas of university-level research projects difficult to fundamentally resolve through single-point breakthroughs.

5 Improvement Strategies for Returning to the Cultivation Orientation

In response to the above dilemmas and causes, the improvement of university-level research projects cannot be single-point repairs but should return to the "cultivation" orientation, constructing a coordinated cultivation system across five dimensions: positioning, standards, funding, process, and evaluation

5.1 Positioning Reconstruction: Clarifying "Cultivation" as the Core Function and Establishing Tiered and Classified Cultivation Goals

The primary task is to re-clarify the functional positioning of university-level projects, translating "cultivation" from slogan into institutional design. Institutions should stipulate in project management measures that core objectives are cultivating early-career faculty's research capabilities, incubating research directions, and laying foundations for higher-level projects, rather than pursuing direct major outcomes. This positioning must run through project setup, review, funding, management, and evaluation.

A tiered and classified cultivation goal system should be established. Tiered by development stage: "early-career start-up projects" (supporting faculty within 3 years of employment without provincial/ministerial or above projects, focusing on research directions and academic norms), "growth acceleration projects" (supporting mid-career faculty with research foundations aiming for provincial/ministerial projects, focusing on research depth and outcome quality), and "maturity enhancement projects" (supporting faculty with stable directions preparing for national projects, focusing on outcome transformation and team building). Classified by discipline: basic research emphasizing theoretical innovation, applied research emphasizing technological breakthroughs, and policy consultation emphasizing policy recommendations. Tiered and classified management replaces the "one-size-fits-all" model, truly reflecting the "cultivation" attribute of university-level projects.

5.2 Standard Refinement: Establishing a "Potential-Oriented" Review System and Implementing Tiered Review

To address vague review standards, a "potential"-centered indicator system should be established, replacing the competitive "foundation-heavy, potential-light" logic. Review dimensions should be expanded from the traditional two dimensions of "foundation + feasibility" to three dimensions of "potential + foundation + feasibility," with "potential" accounting for no less than 40%. Observable indicators for the "potential" dimension should include: cutting-edge nature and innovativeness of the research direction, problem awareness and academic value of the topic, academic training background and learning ability of the applicant, and growth trajectory of preliminary

outcomes. To prevent subjective "potential" evaluation, detailed review guidelines should be formulated and experts trained.

Simultaneously, a tiered review system should be implemented. Different tiers of university-level projects employ different review standards and expert compositions: reviews for "early-career start-up projects" should be more lenient, focusing on research idea innovativeness and applicant cultivation potential, with more "mentor-type" professors experienced in early-career faculty cultivation among experts; reviews for "growth acceleration" and "maturity enhancement" projects may appropriately raise requirements for research foundations and preliminary outcomes. Through tiered review, review standards are matched with the cultivation objectives of projects.

5.3 Tiered Funding: Establishing a Three-Tier Dynamic Funding Mechanism of "Start-Up – Cultivation – Excellence"

To address low and "one-size-fits-all" funding amounts, a tiered funding mechanism should be established, dynamically adjusting funding amounts based on project tier and execution status. Specifically, three tiers of funding can be established: the first tier, "start-up funding" (5,000–10,000 RMB), supporting topic justification and preliminary research with low thresholds and broad coverage, primarily targeting "early-career start-up projects"; the second tier, "cultivation funding" (20,000–50,000 RMB), supporting substantive research, requiring promotion from "start-up funding" through mid-term assessment, primarily targeting "growth acceleration projects"; the third tier, "excellence funding" (50,000–100,000 RMB), supporting outcome refinement and higher-level project application preparation, requiring clear subsequent application plans, primarily targeting "maturity enhancement projects." The core mechanism is "dynamic promotion": those with good execution and high-quality outcomes may be promoted with additional funding; those with poor execution or perfunctory performance may have funding terminated or downgraded, forming an "up-or-down" incentive constraint and avoiding "lifetime determination upon approval."

5.4 Process Cultivation: Transforming from "Inspection-Type" Management to "Tutoring-Type" Whole-Process Management

To address lax process management and missing cultivation links, management should shift from "inspection-type" to "tutoring-type," establishing a whole-process system covering "application tutoring–mid-term diagnosis–completion acceptance–outcome transformation."

Application tutoring: experts provide topic selection and application writing guidance for early-career faculty, drawing on Lee et al.'s "progress priority matrix" to enhance management precision [14]. Mid-term diagnosis: transforming inspections into "academic diagnosis sessions," where peer experts evaluate progress, problems, and follow-up plans, providing guidance and allowing plan changes to reflect cultivation projects' fault-tolerant space. Completion acceptance: distinguishing qualified from excellent completions, establishing a diverse outcome system including patent transformation, policy consultation reports, academic monographs, and teaching outcomes,

eliminating the "papers-only" tendency. Academic mentorship: assigning a mentor to each "early-career start-up project" for whole-process guidance. Sarabipour et al. found mentorship often fails due to insufficient time, inadequate commitment, and vague suggestions [15]; thus, mentor responsibilities must be clarified, time guarantees and incentives provided, and mentors trained for genuine effectiveness.

5.5 Evaluation and Incentives: Enhancing the "Signal Value" of University-Level Projects and Establishing an Incentive Mechanism Linking Outcomes to Subsequent Development

Boosting faculty motivation requires enhancing the "signal value" of university-level projects in title evaluation and career development, so strong performers gain tangible returns. Measures include: incorporating university-level outcomes into title evaluation, stipulating "excellent completion" as a research bonus or equal-condition priority, and setting weights in associate professor evaluation for "early-career start-up project" completers—requiring HR-research coordination. A tiered pathway: excellent completers receive priority recommendation and tutoring for provincial/ministerial applications, forming a "university-level cultivation–provincial/ministerial growth–national sprint" chain and making university-level projects a higher-level project reserve. An outcome transformation incentive: matching rewards and recognition for outcomes winning provincial/ministerial or above awards, adopted by government, achieving technological transformation, or generating social impacts, stimulating faculty's endogenous motivation.

The five strategies form a logical chain: positioning reconstruction is the premise, standard refinement the entry point, tiered funding the guarantee, process cultivation the core, and evaluation incentives the lever. Only through coordinated linkage can university-level projects return to the cultivation orientation, transforming from "formalized research tasks" into "incubators for early-career faculty growth."

6 Conclusion

University-level research projects are not "low-level projects" but the "foundational layer" and "reservoir" of the research ecosystem, determining the quality of early-career faculty's research starting points and the reserve for future higher-level projects. Current problems in cultivation management—vague review standards, low funding, lax process management, low-quality outcomes, and insufficient faculty motivation—are rooted in the "systematic loss of cultivation orientation." The key to improvement lies in returning to the "cultivation" orientation and constructing a coordinated system of "positioning–standards–resources–process–evaluation," making university-level projects the "whetstone" for early-career faculty to refine academic capabilities and enter the right track of research. This is systematic engineering requiring institutional top-level design and policy coordination, particularly title evaluation adjustment, which requires joint participation from human resources departments, academic affairs departments, and all faculties.

Disclosure of Interests

The author has no competing interests to declare that are relevant to the content of this article.

References

1. Liu, J., Gao, B., Dong, S.: Research on issues related to the establishment of university-level research fund projects in higher education institutions. Scientific Consultation 15, 47–49 (2023).
2. Fu, X.: Reflections on the current status and future development of university-level research projects. Science & Technology Information 18(4), 221–224 (2020).
3. Yan, B.: Research on improvement paths for university-level research project management: a case study of Open University A. Huazhang 1 (second half), 132–134 (2026).
4. Haworth, K.J., Niedenhausen, K., Smith, E.P., et al.: Research Initiative Supporting Excellence at the University of Cincinnati (RISE-UC): a program to develop and support research-active faculty members. Academic Medicine 98(10), 1512–1520 (2023).
5. Peng, C., Zhang, S., Xue, R., et al.: Practical challenges and optimization paths for research incentive systems for early-career faculty in universities. Contemporary Youth, 112–113 (2024).
6. Chi, L.: Research on university research project management strategies from the perspective of whole-process management: a case study of National Social Science Fund projects. China Science & Technology Overview 9, 167–170 (2026).
7. Zhang, C., Zhao, X., Shao, X.: Dilemma examination and path optimization of local university faculty title evaluation systems under the background of "breaking the five onlys." Central China Higher Education Research 1(3), 54–60 (2025).
8. Jia, Y., Zhou, X., Wang, C.: Problems and optimization countermeasures in title evaluation of university science and technology talents. Chinese Science and Technology Talents 12, 47–51 (2024).
9. Gu, L.: Practical dilemmas and reform path exploration of local university research evaluation mechanism reform. China Science and Technology Information 8, 63–65 (2026).
10. Zacharewicz, T., Pulido Pavón, N., Palma Martos, L.A., Lepori, B.: Do funding modes matter? A multilevel analysis of funding allocation mechanisms on university research performance. Research Evaluation 32(3), 545–559 (2023).
11. Lim, B.H., D'Ippoliti, C., Dominik, M., et al.: Regional and institutional trends in assessment for academic promotion. Nature 629, 783–791 (2024).
12. Fang, Y.: Growth dilemmas of early-career science and technology personnel. Human Resources, 86–87 (2023).
13. Yang, Q.: Research on optimization of research project fund management strategies based on life cycle. China Venture Capital, 135–136 (2023).
14. Lee, K., Lee, S.: Enhancing R&D performance management: a case of R&D projects in South Korea. Sustainability 15(15), 11827 (2023).
15. Sarabipour, S., Niemi, N.M., Burgess, S.J., et al.: The faculty-to-faculty mentorship experience: a survey on challenges and recommendations for improvements. Proceedings of the Royal Society B 290(2000), 20230983 (2023).

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