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Rethinking Practical Teaching Resource Allocation in Early Childhood Education: An AHP-Based Optimization in Chinese Universities

Zhuzhu Ning[1,*]

[1] Advanced School of Humanities and Fine Arts, Xi'an International University, Xi'an, Shaanxi, 710077, China

Corresponding authors: (e-mail: 2016122159@jou.edu.cn).

Abstract As there is growing emphasis on quality-oriented teacher training, the optimization of practice teaching resources in early childhood education (ECE) programs has become a strategic imperative for Chinese universities. The present article examines the allocation issues through the Analytic Hierarchy Process (AHP) method, building a decision framework incorporating pedagogical relevance, infrastructure adequacy, collaboration strength, and students' preparedness. Using mixed-methods fieldwork and expert consultations, the study ascertains the institutional investment-actual teaching effectiveness misalignments. The study offers a systematic yet flexible prioritization framework to guide resource allocation that will allow institutions to consider local constraints while aligning institutional resource allocations with national Early Childhood Education talent development priorities. Reasonable, evidence-based design, based on participatory evaluation, can greatly contribute to the professional preparation of future preschool teachers, as stated in the research.

Index Terms early childhood education, practical teaching, resource allocation, AHP, teacher training

I. Introduction

In higher education, high-quality practice teaching has emerged as the force behind the development of ECE professional competence. With China's early education system paying increased attention to play-based learning, child-centered instruction, and emotional intelligence, teacher programs are being pushed to provide authentic, reflective, and experiential learning spaces to their trainees. Despite policy and curriculum reforms, however, practice instruction continues to be the structurally most under-resourced dimension in most universities [1].

The problem is more one of not a shortage of resources but how resources are allocated, implemented, and connected to pedagogical intent. University ECE programs are often beset by a disconnect between university classrooms of theory and preschool classroom practice. Whereas the school-based study is well structured and resourced, field-based components—teaching internships, observation visits, simulation activities—are relegated to the periphery of institution-wide planning. Organizations such as demonstration kindergartens, mentor training, and teacher simulation laboratories are either sporadically funded or disconnected from actual student learning needs.

This allocation challenge is then exacerbated in resource-poor institutions, and particularly less-developed country institutions. In these, the coordination of teachers from external kindergartens is difficult, practicum experience is short and superficial, and the students themselves report feeling under-prepared for actual classroom realities. Very resourced universities, by contrast, can have lots of equipment but no adaptive allocation infrastructure, investing in hi-tech simulation labs or internet sites without any idea of learning return on investment [2].

To remedy this systemic issue, the need is for a more stringently formalized and context-sensitive framework—a one that will mediate between qualitative insight and quantitative exactness. The Analytic Hierarchy Process (AHP), originally developed by Thomas Saaty, is an appealing methodological tool with which to frame complicated decision-making in education environments. It allows institutions to decide on and prioritize significant criteria for allocating resources, syntheses of pedagogical worth and logistic feasibility. Unlike traditional budgeting, which is top-down and reactive in nature, AHP is an interactive process that can engage administrators, faculty members, and even students in information-driven decision-making.

The AHP process is applied in this research to analyze how resourceful and pragmatic teaching resources should be ideally distributed within China's university-level ECE programs. The research aims to: (1) identify the most important dimensions that underlie quality of practice teaching, (2) estimate the relative importance of different resources, and (3) construct an

evidence-based model of rational resource planning that can be scaled up. The findings are not only novel at a theoretical level but also as a strategic tool for ECE program directors interested in improving the effectiveness, equity, and responsiveness of their programs.

By reframing the question of resource allocation as pedagogical rather than logistical, this research demands a transformation in university thought, planning, and resource allocation for teacher education foundations. It is not simply a matter of how to spend more, but how to teach more effectively—through resources that truly foster reflective, competent, and child-responsive teachers.

II. The Practical Teaching Gap: Realities from the Field

In the growingly shifting environment of early childhood education (ECE), practical instruction is not an afterthought to teacher education—instead, it's critical. The capacity of prospective teachers to observe actual classrooms, observe child actions, handle routines, and think pedagogically about procedure is needed to become professionals. But even so, there is a hidden disconnect between that professed value and the way resources for hands-on learning are planned and carried out in most university-level ECE programs. Uncovered is a disconcerting disconnect—one born not of ignorance, but structural and cultural momentum still oriented toward theory over practice.

II. A. A Theory-Based System, not a Practical One

Historical practice in teacher training in China—and indeed for most of the world—has been theoretically pedagogic, with pedagogic models founded upon lecturer-led delivery and content conveyance [3]. While national curriculum reforms since 2011 have introduced increased focus on practical pedagogic competence, emotional intelligence, and situation awareness, institutions have been incapable of translating these ideals into effective resource planning activities.

Take, for example, a mid-range comprehensive university in Jiangsu Province. It boasts a high-tech curriculum development center with electronic whiteboards, textbook libraries, and microteaching analysis software. However, the program possesses not a single on-campus demonstration kindergarten. Students have to conduct their practicum outdoors in external partner sites with minimal supervision or coordination with university courses. One of the students explained, "We were told to take note of classroom management, but we did not receive a guide, a mentor to be assigned to us. I kind of observed and took notes myself."

This lack of purpose-directed intention renders what might otherwise be a process of development an empty mandate. The intent lies more in documenting that "practice happened" than in ensuring that the practice was quantitatively of learning gain. Practical experiences separated from the rest of the curriculum become performative—staffed as boxes to be checked for accreditation, rather than as activities in the building of a teacher.

Even more broadly, practice teaching lags behind the agenda in budget deliberations. Funds are always being directed into glitzy areas such as hardware rework, publishing help with research, or the reassignment of administrative office space, as opposed to the lengthy, iterative, and human-scale work of in-field mentoring and classroom engagement. The very nature of practical teaching—time-consuming, tailored, and working in close collaboration—is too easily viewed as too expensive or complex to quantify, and therefore not a priority.

II. B. Institutional Inertia and Redundancy of Resources

Findings from our empirical research, carried out during 2023-2024 at six various tier and geographical area universities, show more about the institutional barriers to effective practice teaching. Through integrating observational fieldwork, in-depth interview of staff with 18 members, and focus group interview of 42 students, three over-riding patterns have been seen: unintended redundancy, temporal mismatch, and blanket application of resources.

(1) Reduplication of Resources without Usage Protocols

Most of these institutions, particularly newly upgraded western province schools, held classrooms with play materials, musical instruments, sensory equipment, and multicultural picture books. The equipment had often been purchased en masse to meet the nation's teaching requirements or teachers' qualifying tests demands. But in most cases, the equipment were in ruins, used sometimes in teaching methods courses, and rarely applied in student practicum.

In one place, a "Montessori Simulation Space" laboratory housed over 60 sets of instruction toys but had witnessed not a single student cohort in over two semesters. Lack of proper staff training to integrate these materials into lesson plans and confusion regarding who was supposed to be responsible for coordinating and scheduling their usage were given as reasons. "We have the equipment," one instructor admitted, "but no operating system around it."

The problem here is not so much wasteful spending, but pedagogically misguided alignment. When items are bought without explicit purpose of instruction, they are props—quiet artifacts that point to contemporaneity without informing teacher learning.

(2) Scheduling Mismatches with Kindergarten Rhythms

The most graphic struggle in the schools was one involving the scheduling of student internships and the life rhythms of

kindergarten. At least four of the programs challenged taught practicums during mid-June to early July—at the very time that most public kindergartens are finishing up for summer and teachers are all wrapped up in administrative wrap-up rather than actively teaching [4].

Kids were thus typically relegated to waiting out nap time, end-of-year performances, or clean-up. "I felt like I was strolling through a school museum," replied one. "We were supposed to have weekly reflections, but there was nothing to reflect on."

Such ill-timed scheduling is not random; it is an indication of the absence of coordination among partner institutions and universities. ECE departments do not have staff to interact with kindergartners on a regular basis in most cases, creating shallow memoranda of understanding instead of genuine partnerships. With no feedback mechanisms or collaborative planning calendars, coordination with academic calendars and early childhood pedagogical cycles is poor.

(3) Single-Fit Employment of Resources

ECE students are not uniform. Each and every one of them has unique strengths, learning patterns, and interests—some leaning towards literacy skills development, others towards music instruction or developmental psychology. Most of the hands-on classroom resources are offered assuming all students require the same level of contact to the same degree.

Tutors also place all the classes within the same practicum activities regardless of career goals of students or professional interests. For example, students who are going to work in special education are assigned to regular kindergartens with minimal accompaniment or modified observation instruments. Others with significant background in movement or arts receive minimal time to integrate such into practice.

This approach converges professional identity formation and diminishes the motivational influence of practicum experience. When students are not strongly invested in concretizing their evolving pedagogical philosophy, disengagement and symbolic compliance are the outcome. One student summarized it so aptly: "I did what I had to do to pass, but I didn't grow."

II. C. A Culture of Symbolic Compliance

These problems individually and collectively herald what we refer to as a culture of symbolic compliance: organizations will lip-service the ideal of practice, resource it on paper but not create a working culture in which these resources are committed to a living pedagogy. In such an environment, the façade of wholeness covers systemic affliction.

Accreditation systems themselves, ironically, are usually guilty too. When universities are ranked by presence of partners and facilities, instead of use or pedagogical impact, then the incentive system shifts to performative fullness. Organizations prize checklists, photocopied forms, and letterhead signatures, rather than the more nuanced, qualitative measures that trace consequential student learning—such as reflective journals, mentor comments, or observed classroom conversation.

This is also amplified by the absence of cross-stakeholder collaboration. University employees, kindergarten leaders in the local community, and students do not often share a table together in collaboration to co-design resource responses. Teachers are caught in the middle—being required to deliver outcomes in practicum but with no time, resources, or levers of influence to facilitate strengthening the system. In such a scenario, even the best-intentioned teachers end up reproducing outmoded models or offering mentorship in disconnected, time-constrained episodes.

III. From Intuition to Structure: Applying AHP in Resource Prioritization

The disconnection between available resources and pedagogical quality in early childhood education (ECE) training is not just a question of insufficient funding or ineffective planning—it is also a function of the way decisions get made traditionally [5]. Allocation of resources in most universities still occurs based on administrative convention, departmental advocacy, or compliance to reactive policy, and not on pedagogical planning. A systematic, open, and evidence-based model is required that helps push decision-making from institutional routine to thoughtful design.

In such a situation, the Analytic Hierarchy Process (AHP) is theoretically sound and feasible. AHP, formulated by Thomas L. Saaty in the 1970s, is a multi-criteria decision aid that combines qualitative judgment and quantitative analysis. Its biggest advantage is that it breaks down complex, often fuzzy goals such as "practical teaching improvement" into hierarchical levels of alternatives and criteria, which are then comparatively assessed and weighted according to expert judgment.

Although AHP has come to be used more broadly in more general education contexts—e.g., school choice, program evaluation, policy analysis—its capacity to inform optimizing practice infrastructure in ECE remains under-exploited. This study adopts AHP not merely as a technical tool, but as an intervention at the conceptual level—a way of recasting institutional priorities as a matter of pedagogical reach.

III. A. Developing the Hierarchy

The first step in applying the Analytic Hierarchy Process (AHP) is to construct a clear, logically sound hierarchical model that expresses the overarching goal, key evaluative criteria, and a set of feasible resource alternatives. This structure allows complex educational planning problems to be decomposed into discrete, comparable components, enabling qualitative

judgments to be transformed into quantitative decision support.

For the allocation of practical teaching resources in undergraduate early childhood education (ECE) programs, the primary goal was defined as:

To identify and prioritize the most pedagogically sound resources for practical teaching in undergraduate early childhood education units.

This goal was structured into a three-tier hierarchy, enabling a rationalized decision process:

(1) Level 1: The Goal

Optimize practical teaching resource utilization in ECE training. This top-level objective reflects a commitment to aligning every unit of expenditure with measurable improvements in student teaching ability, instructional engagement, and professional readiness. It also signals a strategic response to the realities of resource scarcity in many public-sector universities.

(2) Level 2: Evaluation Criteria

Based on expert consultations and review of national teacher education standards, four key evaluation criteria were defined:

Pedagogical Relevance

Measures the extent to which a resource supports essential ECE competencies, such as classroom observation, curriculum design, and child interaction.

Infrastructure Adaptability

Assesses how easily the resource can be applied across different courses, cohorts, and institutional conditions.

Stakeholder Engagement

Evaluates the resource's ability to strengthen collaboration with external mentors, kindergartens, and community partners.

Student Impact

Focuses on how clearly the resource enhances student learning outcomes and professional performance.

To implement AHP, these criteria must be pairwise compared. For a set of nnn criteria, we construct a reciprocal comparison matrix $A = \left[a_{ij} \right]$, where:

$$a_{ij} = \frac{w_i}{w_j}, a = \frac{1}{a_{ij}}, a_{ii} = 1 \tag{1}$$

Here, w_i and w_j represent the relative weights of criteria i and j.

Example Judgment Matrix (A):

Suppose we are comparing four criteria:

Pedagogical Relevance

Student Impact

Stakeholder Engagement

Infrastructure Adaptability

The pairwise comparison values are given as:

Pedagogical Relevance is 3 times more important than Student Impact, 4 times more important than Stakeholder Engagement, and 2 times more important than Infrastructure Adaptability.

Student Impact is 2 times more important than Stakeholder Engagement, and 0.5 times (i.e., less important than) Infrastructure Adaptability.

Stakeholder Engagement is 0.333 times (i.e., less important than) Infrastructure Adaptability.

From these, we construct the matrix A, where the values are:

Row 1: 1, 3, 4, 2

Row 2: 1/3, 1, 2, 1/2

Row 3: 1/4, 1/2, 1, 1/3

Row 4: 1/2, 2, 3, 1

Then we compute the geometric mean of each row:

$$\omega_i = \frac{\left(\prod_{j=1}^{n} a_{ij} \right)^{1/n}}{\sum_{i=1}^{n} \left(\prod_{j=1}^{n} a_{ij} \right)^{1/n}} \tag{2}$$

Finally, to test the matrix's consistency, we calculate:

The consistency index (CI) and consistency ratio (CR) are calculated to check logical coherence:

$$CI = \frac{\lambda_{\max} - n}{n-1}, CR = \frac{CI}{RI} \tag{3}$$

If CR<0.1, then the judgment matrix is considered consistently acceptable.

(3) Level 3: Resource Alternatives

Field investigation and institutional data review revealed six prevalent types of practical teaching resources in Chinese ECE programs:

On-campus Demonstration Kindergartens – Provide real teaching exposure under faculty supervision in a controlled setting.

Off-campus Partnerships – Collaborations with external kindergartens used as internship and observation sites.

Teaching Simulation Laboratories – Facilities for microteaching, feedback, and scenario rehearsal.

Mentor Professional Development – Training and recognition for experienced kindergarten mentors.

Digital Teaching Resource Platforms – Online video libraries, teaching modules, and interactive simulations.

Practice Evaluation Systems – Structured rubrics, portfolios, observation logs, and digital assessment tools.

Each resource type is evaluated against the four criteria above, resulting in six separate 4×4 comparison matrices (one per criterion). These are processed using the same eigenvector method to produce local weights. The final global priority score for each resource alternative is computed by multiplying its local scores with the corresponding criterion weights and summing across all criteria:

$$P_i = \sum_{j=1}^{n} \omega_j \cdot r_{ij} \tag{4}$$

where, P_i: Global priority of resource alternative i, ω_j: Weight of criterion j, r_{ij}: Local weight of alternative iii under criterion j.

This hierarchical structure, augmented by AHP's mathematical rigor, reflects more than a technical methodology; it articulates a normative position that resource decisions in education must be grounded in pedagogical logic and contextual responsiveness, not institutional habit. It enables a shift toward evidence-informed, equity-sensitive, and student-centered resource planning in ECE programs.

III. B. Expert Judgments and Pairwise Comparisons

With the hierarchical model in hand, the second stage of the AHP methodology was to extract informed judgments from subject matter experts through structured pairwise comparisons among the evaluative criteria and resource alternatives ascertained [6]. These comparisons are AHP's greatest strength: they transmute subjective insight into a strictly calculable system of weights that allows open, evidence-based ranking.

To provide a balance of perspective and institutional context, we invited 12 senior faculty with more than a decade of teaching experience in early childhood education (ECE) pedagogy and practicum supervising, and 3 administrative coordinators responsible for internship operations and policy implementation. They were 15 specialists from five institutions of higher education in eastern, central, and western China, ranging across types of institutions—from high-research universities to applied colleges—thus creating a representative cross-section of the ECE higher education landscape.

Each participant completed two detailed AHP comparison matrices:

Criteria Comparison: Experts rated the relative weight of each criterion (e.g., "How much more important is pedagogical relevance than infrastructure adaptability?") on a 9-point scale in AHP tradition.

Alternative Comparison: Experts then compared the six types of resources to each criterion, repeatedly making pair-wise comparisons such as "How much more pedagogically relevant is mentor training than simulation labs?"

These matrices were then integrated into conventional AHP synthesis procedures, such as consistency ratio checks to ensure the validity of input. The result was a set of normalized weights reflecting collective expertise consensus (Table 1, Table 2 and Figure 1), both in the ranking of criteria and relative value of each category of resource for each criterion.

Table 1: Normalized Weights of Evaluation Criteria

Criterion	Weight
Pedagogical Relevance	0.38
Student Impact	0.31
Stakeholder Engagement	0.19
Infrastructure Adaptability	0.12

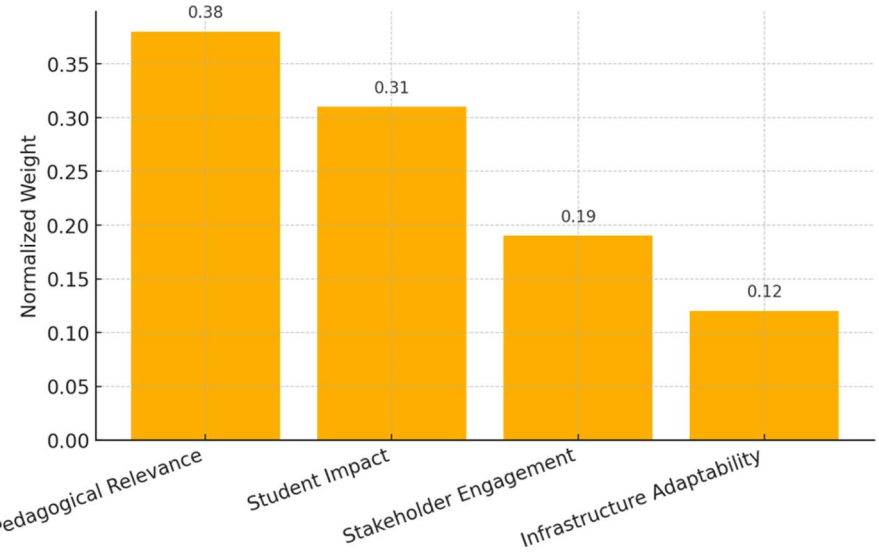

Figure 1: Visualized weights of the four AHP evaluation criteria

These results significantly complemented qualitative data gleaned from our field research. Pedagogical utility far and away became the most critical choice criterion, meaning that instructors are strongly interested in whether a resource truly contributes to the teaching skill of students in actual classrooms. Student effect, the second choice criterion, suggests that there is a growing awareness that investment in resources needs to manifest as measurable improvements in learning, not procedural compliance. Significantly, infrastructure flexibility, once emphasized in institutional budget reports for its scalability, came out lowest—assessing a shift of expert mind from administrative efficiency to pedagogical worth.

Table 2: Top-Ranked Resource Alternatives by Overall Weight

Resource Type	Normalized Weight
Professional Development of Mentors	0.24
On-Campus Demonstration Kindergartens	0.21
Practice Evaluation Systems	0.18
Teaching Simulation Labs	0.14
Off-Campus Partnerships	0.13
Digital Teaching Platforms	0.1

This ranking brings several significant lessons. Foremost, mentor professional development invariably scored highest on three of four criteria—pedagogical significance, stakeholder engagement, and student impact. Time and time again, those with expertise emphasized that without skilled, thoughtful mentor teachers, even the most advanced physical equipment or evaluation tools cannot realize their maximum potential. This supports a general thesis in our study: the role of human capital—often underemphasized in planning reports—is at the heart of practical training excellence [7].

Second, demonstration kindergartens on campus were hailed across the board for providing genuine, supervised classroom experience that allows for instant integration of theory and practice. Proximity to campus and synchronization with academic calendars are logistically and pedagogically advantageous. But concerns about their high cost of construction and upkeep—especially for rural or lower-ranked schools—were frequently expressed, raising serious questions about equity and scalability.

Third, and worst of all, computer teaching platforms performed the worst overall. This was not due to some inherent lack of utility, but due to a persistent mismatch between technological deployment and pedagogical inclusion. Several of these experts characterized these sites as "visually stunning but pedagogically deficient," pointing to underutilization, a lack of incorporation into course syllabi in an organized manner, and a lack of adequate faculty support to use them to enable reflective or collaborative learning. These results address a greater worry that digitalization without pedagogical anchor brings about symbolic, rather than substantive, improvement.

III. C. Toward a Strategic Framework

What is shown through this application of AHP is not so much a prioritization of resources, but rather a reframing of how

universities can engage "value" in effective pedagogy. Rather than relying on what is most evident or measurable, AHP provokes decision-makers to consider what is most effective, even if that effectiveness is long-burning, harder to quantify, or less picturesque.

Significantly, AHP also creates room for participatory governance. The method requires negotiation among instructors, administrators, and field mentors—who usually operate in silos. Due to its systematic comparisons, AHP transforms aimless debates into concrete decisions, with identifiable logic and recorded assumptions.

As institutions face growing pressures to maintain high-standard teacher training on shrinking budgets, the need for such systems grows more urgent. AHP is not a specific solution, but a process—a dynamic model for decision-making that can be revisited, remodeled, and re-applied as educational terrain shifts.

IV. Reallocating with Purpose: Findings and Interpretations

The application of AHP to the context of resource allocation for ECE practice teaching not only yields a clearer institutional set of priorities, but also reflects back—to reveal where many universities have got lost along the way in the name of modernization or compliance. Even though quantitative outcomes such as weighted rankings are needed, the actual value of AHP is the interpretive work it enables: uncovering contradictions, revealing hidden resources, and providing pedagogically grounded observations on what matters most. This section dissects the results through three analysis lenses: prioritization outcomes, the problem of hidden resources, and the problem of equity between types of institutions.

IV. A. Prioritization Outcomes: A Counterintuitive Hierarchy

The final weights assigned to each resource type via the AHP process resulted in a priority arrangement that stands in dramatic contrast to current investment patterns within Chinese universities (Table 3):

Table 3: Prioritized Resource Types for Practical Teaching in ECE Programs Based on AHP Weightings

Resource Type	Normalized Weight
Professional development of mentors	0.24
On-campus demonstration kindergartens	0.21
Practice evaluation systems	0.18
Teaching simulation labs	0.14
Off-campus partnerships	0.13
Digital teaching resource platforms	0.1

At first glance, this ranking may appear unexpected—especially in the context of the nation's enthusiasm for digitalization and smart-campus construction. In the past five years, an enormous amount of capital has been invested in multimedia classrooms, virtual labs, and cloud-based learning tools. But our study finds that these investments, as cutting-edge as they are, have not been preceded by proportionate pedagogical returns in the field of practice teaching.

On the other hand, mentor development—the relatively low-cost, high-leverage investment—was rated the highest. This reinforces a valuable lesson: instructional worth isn't always correlation with visibility or cost. The most influential aspects of teaching practice more frequently rely on human interaction, contextual judgment, and reflective action—factors that can't be purchased or coded but need to be developed in conjunction with time and institutional commitment.

Locating demonstration kindergartens on campus in second-highest form further supports the appeal for continuity between theory and practice. If students can see young children themselves, play supervised, and receive immediate feedback from faculty, the learning loop becomes tighter, richer, and more concrete. Yet the high capital and operating cost of such facilities continues to be an obstacle to practicality, particularly to non-elite institutions [8].

Ranking third are evaluation systems. They have a central enabling function. They provide the scaffolding whereby learning is made visible and measurable. Under effective use, instruments such as rubrics, portfolio documentation, and video-based peer evaluation not only measure competence but build it. Their relatively high rank in the lists confirms that accountability mechanisms—when pedagogically sound—are not bureaucratic weights but essential learning tools.

IV. B. The "Invisible Resource" Problem: Why Mentorship Is Neglected

The single most descriptive finding of our research is the consistent devaluation of human pedagogic infrastructure—our so-called invisible resource problem. Professional mentor training was the most pedagogically needed and operationally most at risk in each category we were considering.

Conversations with four of the partner kindergartens' mentor teachers revealed a troubling pattern. Theoretically assigned to assist student teachers, few were formally trained, had no workload relief, and no compensation—financial or professional—to their efforts. Their comments were thus vastly inconsistent: some mentors were wonderful exemplars and guides, while others regarded student interns as "more work" or even worse, an annoyance.

One of the mentors in the story, "I was told to take on a practicum student, but I never received their learning plan or course plan. I provided feedback on what was good in my head." Another confessed, "I did not have time to watch her teach. I just signed off week after week." These accounts suggest not a failure of good intentions, but a failure of structure and support. Institutions do assume that mentorship naturally follows placement, without realizing that mentoring is a pedagogical approach on its own, which requires investment, preparation, and follow-up.

Furthermore, the involvement of mentors was also seen to be on the outskirts of the university activities. Budget policies would not invest in practicum coordination training funds, and the performance appraisal of staff at the university was not incorporating practicum coordination quality assessments. This visionlessness is damaging the very foundation of practice training. As one member of the faculty put it, "It's ironic—we spend millions on new technology, but we can't give mentors a one-day workshop or even a thank-you certificate."

The stakes are high. When ineffective mentors are not reinforced, students only get sporadic feedback. When the quality of the mentors is highly asymmetric, practicum value is a game of chance. And when universities fail to make mentorship a nodal point in the learning network, they forfeit their professionalism as schools of preparation [9], [10].

IV. C. Equity in Allocation: Uneven Landscapes and Structural Disadvantages

Third, there is emphasis on the very deep differences which are the hallmark of most effective resource allocation between tiers of Chinese universities. Despite the uniform application of the AHP model, the realities to be optimized are decidedly uneven.

Highly ranked flagship institutions—especially those in more economically developed provinces—are much more likely to pursue high-level agendas. Most of them already possess model kindergartnes, practicum directors, and close partnerships with model preschools. They also possess supportive local government backing, philanthropic funding, and a great reputation that fosters quality mentors and volunteer partner kindergartnes. Their children, in turn, have the opportunity at well-designed observation periods, well-supported internships, and feedback-filled practicum cycles surrounded by sound pedagogical settings.

Recently renovated or non-prestige institutions, particularly western and central Chinese ones, are faced with multi-dimensional disadvantages that go beyond economic underprovision. Evidence in two provincial universities and a vocational-technical college revealed systemic limits on resource construction. Geographical distance usually limits access to better-equipped kindergartens for the first time, and institutions are forced to rely on under-equipped rural preschools with unorganized staffing and out-of-date pedagogic models. Secondly, institutional capacity is compromised by untenable teaching loads, meager research incentives, and chronic administrative turnover, all of which subvert long-term planning as well as the development of stable practicum arrangements.

Furthermore, the institutions enjoy diminished institutional legitimacy towards the prospective kindergarten partners. Some host school interviewees were reluctant to accept student teachers from lesser-known programs because of apprehension about students' preparation, communication problems, or absence of liaison staff from the university [11]. One example features a kindergarten principal complaining, "We had two student teachers last semester, but no one from their college ever followed up. We had to do everything by ourselves."

This fractured model of cooperation compromises the quality of practice teaching. It denies the students' experience of passive observation or formulaic classroom support, with little room for scaffolded reflection or active engagement. Worse still, it quietly provides for a two-tier system in teacher training: those who are trained in city, networked schools have significant, mentored practicum experiences; others are relegated to fend for themselves in under-supervised and under-monitored placements, executing formulaic tasks without developmental guidance.

The stakes for staff development are huge. As China's preschool infrastructure expands, particularly in more impoverished regions, demand for highly qualified teachers surges. And, as one might expect, the very schools that are themselves responsible for training such teachers are most likely to offer ineffective practice instruction. It becomes a cycle of viciousness: bad practice leads to more insecure leavers, who struggle to manage in challenging teaching environments, which in turn equates to higher levels of attrition and poorer results for children.

These equity issues are further compounded by policy structures skewed to reinforce reward measures of output indicators (i.e., the number of publications, the number of graduates) over practice-based measures of input quality. National pedagogical standards can set general assumptions around practicum hours or supervision of mentorship, but never break down from those umbrella assumptions to differentiate between institutions on the basis of initial conditions or system needs. Lower-ranked universities are then supposed to meet the same standards as higher-ranked programs—without the same ability to arrive there [12], [13].

To address these inequities, a differential support policy has to be instituted. An excellent model is establishing regional practicum resource-sharing consortia where high-achieving institutions are aligned with under-resourced universities to co-host demonstration sites, cross-institutional mentor training, and cross-institutional practicum models. Government grants can be targeted at such collaborations, such as funding mobile mentoring teams, travel stipends for student teachers,

and online forums for shared reflection and evaluation.

In addition, nation accrediting agencies must become equity-oriented, employing contextualized standards of evaluation that are resource sensitive and imaginative in potential, rather than accepting checklists [14]. For instance, a rural school producing a low-cost, community-source practicum design might be delivering greater pedagogical return on investment than a highly funded university building a high-tech lab facility that is sparsely used by students.

Finally, distribution equity is not an issue of funds—it's an issue of vision. Institutions must reimagine their models of resources not as deficiency (we don't have sufficient), but as potential (what can we do with what we have?). Local collaborations with community-based kindergartens, alumni organizations, and low-cost reflective tools (e.g., video diaries, peer feedback circles) all can be included in a high-quality practicum setting if well-designed and innovatively imagined [15].

V. Rethinking the Future: Towards Adaptive Resource Governance

The ramifications of this research extend well beyond the technical use of AHP to decision-making. What the research actually proposes is not a redesign of the way resources are presently being allocated as a logistics project, but how resources are handled as an adaptive, participatory, and iterative process. Resource management in this sense involves not only what is being allocated, but how, by whom, for what purpose, and with what accountability.

First and foremost, the universities need to embrace participatory decision-making as the key process in efficient allocation of resources. Practicum course instructors, practicing kindergarten teachers with whom practicum mentors are collaborating, and student teachers have first-hand knowledge of what is most demanded and needed from the resources. Their voice should not be tapped intermittently by way of a survey but channeled into budget and program review mechanisms. Creating standing committees or resource councils of representation by inter-stakeholders can facilitate transparency and legitimacy in resource allocation.

Second, context-sensitive models. Rural universities will not and cannot imitate the infrastructure models of urban elite universities. Instead, they will need to build local partnership systems based in the community preschools, teacher-training consortia, and adaptive mentorship schemes. This demands innovative low-cost-material configurations—such as mobile practicum squads, shared digital observation platforms, and neighborhood-based demonstration classrooms—that are sensitive to both regional constraints and cultural capital.

Third, feedback-based funding can shift resource use from compliance to performance. Practicum evaluation outcomes, such as mentor reports, student self-evaluation, and kindergarten feedback, need to feed into subsequent allocations of resources. When funding sources are tied to reasonable proxies of practice quality—rather than participation or checklists of equipment—it benefits institutions to come at resource planning in an instructional rather than bureaucratic mindset.

Finally, the AHP model itself must be utilized as an active instrument, not a one-shot calculation. Universities must be taking their AHP models back and revising them annually, in terms of student populations shifting, local policy changes, and changing pedagogic priorities. This serves to make the model into a living document—adaptive and responsive—supporting resource decisions in a cycle of evidence and reflection.

Finally, resource optimization is not the choice of digital labs or demonstration gardens—instead, it's one of balancing all of our resources to an articulated, context-rich theory of practice. It's surfacing our values that guide our teacher preparation programs, and putting every yuan, every hour, and every relationship towards developing reflective, competent, and earthed early childhood professionals. Governance, not allocation, is the horizon we must now confront.

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References

[1] Hou W ,Li N ,Cao Y , et al.Research on the Team Management Mechanism of Class Committee in College Students—Analysis Method Based on AHP[J].Frontiers in Educational Research,2023,6(8):

[2] Fei D .Application of Fuzzy Comprehensive Model of AHP in Performance Evaluation of University Administrators in China and Abroad[J].Accounting and Corporate Management,2023,5(8):

[3] Kong Y ,Li Y,Liu Y.A balanced allocation of network teaching resources in higher vocational colleges based on demand prediction[J].International Journal of Continuing Engineering Education and Life-Long Learning,2024,34(1):66-76.

[4] Xu D ,Wei A ,Chen J , et al.Utilizing big data analysis to optimize the allocation of teaching resources and promote the comprehensive development of students' practical abilities[J].Computer Informatization and Mechanical System,2024,7(3):39-43.

[5] Xiaojuan Z .Optimization of teaching methods and allocation of learning resources under the background of big data[J].Journal of Computational Methods in Sciences and Engineering,2024,24(2):1025-1040.

[6] Wei Q .The Effect of Educational Resource Allocation on Teaching and Teaching Ability in Colleges and Universities Based on BP Neural Networks[J].Applied Mathematics and Nonlinear Sciences,2025,10(1):

[7] Lv W .Research on Optimizing Teaching Resource Allocation Strategies with Machine Learning Models for Intelligent English Teaching Systems[J].Applied Mathematics and Nonlinear Sciences,2025,10(1):

[8] Cui S .Research on Optimization Strategy of English Teaching Resource Allocation Based on Intelligent Data Analysis[J].Applied Mathematics and Nonlinear Sciences,2025,10(1):

[9] Xue K ,An H .Using Information Technology to Optimize the Allocation of Teaching Resources in Open Education and Educational Reform Practices[J].Applied Mathematics and Nonlinear Sciences,2025,10(1):

[10] Zheng Q ,Huang H .Research on optimal allocation of accounting teaching resources in cloud computing environment based on genetic algorithm framework design[J].Applied Mathematics and Nonlinear Sciences,2025,10(1):

[11] Zhang Y ,Liu B .Research on the Dynamic Management Model of Teaching Resources and Optimal Allocation of Resources in Higher Education[J].Applied Mathematics and Nonlinear Sciences,2025,10(1):

[12] Song Y ,Wang N .Application of Big Data Analytics in Education Management: Enhancing Teaching Quality and Resource Allocation Efficiency[J].International Journal of High Speed Electronics and Systems,2025,(prepublish):

[13] Chen Y . Exploring the Pathways of AI-Driven Transformation in University Education Management[J].International Journal of Social Science and Education Research,2025,8(7):258-264.

[14] Dong X ,Xie Y . Research on cloud computing network security mechanism and optimization in university education management informatization based on OpenFlow[J].Systems and Soft Computing,2025,7200225-200225.

[15] Zhang J ,Yang D ,Wang Y , et al. Optimization of University Teaching Management in the Era of Artificial Intelligence[J].Journal of Higher Education Teaching,2025,2(2):