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Authorised Inversion: Reverse Mentoring for Teachers Digital Competence in Chinese Schools and Universities

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Abstract

Reverse mentoring lets a junior colleague teach a senior, yet it often unfolds in organisations where rank still matters. This conceptual paper examines how digital knowledge can move upward among teachers in Chinese schools and universities without requiring the status order to change. We propose authorised inversion: a configuration in which organisational sanction makes upward teaching legitimate, face-work protects the senior's standing, and renqing-based obligations help sustain the junior's contribution. The argument distinguishes knowledge from status and treats sanction, face-work and reciprocity as separate explanatory conditions. Fourteen propositions trace participation, engagement, reciprocal learning and organisational uptake. A purposive probe of existing studies identifies evidence for several premises and related outcomes, but none of the complete propositions has been directly tested. Comparative research on teacher development also cautions against assuming that reverse mentoring outperforms other forms of collaboration. We set out the model's boundary conditions, observable indicators and a multilevel research design for Chinese schools and universities.

Keywords: Reverse Mentoring, Authorised Inversion, Face-Work, Renqing, Teacher Digital Competence, Chinese Education

Introduction

Authority in Chinese schools and universities has long rested on the expectation that those who are older and more senior know more. Digital transformation has unsettled that expectation: younger teachers and newly appointed lecturers are often more fluent than their seniors with learning platforms, data dashboards and generative artificial intelligence (AI). Fluency is not the same as the ability to use these tools for teaching (Mishra & Koehler, 2006), and the evidence is mixed. In Anhui Province, younger in-service teachers reported higher competence in several technical areas, yet in-service teachers as a whole reported higher competence than pre-service teachers (Yang et al., 2022); a 2024 survey reported in Liu and Yang (2025) found that 64% of Chinese university students but 54% of teachers used

generative AI frequently, a measure of use rather than competence. China's first standard on teachers' digital literacy (Ministry of Education of the People's Republic of China, 2022) and the 2025 national plan for education (Communist Party of China Central Committee & State Council, 2025) raise the demand for digital competence in a system organised by seniority, without prescribing how teachers should acquire it.

These conditions create a status–knowledge mismatch: the teachers who hold the relevant digital knowledge often have the least standing to teach it, while the colleagues who most need it risk losing face if seen learning from a junior (Ho, 1976; Hwang, 1987). Common responses leave the mismatch in place. Mandated training can be completed ceremonially, with attendance recorded but practice unchanged (Meyer & Rowan, 1977); informal help avoids exposure but stays private; and juniors asked to help without recognition carry unacknowledged extra work. The problem this paper addresses is how upward transfer of digital knowledge among teaching staff can become open, deep and cumulative while the status order remains in place.

The phenomenon studied is reverse mentoring among teaching staff: a junior teacher or lecturer helping a senior colleague acquire knowledge in a bounded domain in which the junior is ahead, usually digital tools and their use in teaching. It may be arranged formally, for instance through two-way *qinglan* pairs or teaching research groups, or arise informally, and it ranges from ceremonial participation to change in the senior's lesson design and practice. It concerns teaching staff in mainland Chinese schools and universities; students mentoring teachers are treated as adjacent.

Reverse mentoring has been examined in business (Chaudhuri & Ghosh, 2012; Kaše et al., 2019; Murphy, 2012), medicine (Clarke et al., 2019) and higher education (Morris, 2017). Social exchange and leader–member exchange are prominent explanations (Chaudhuri et al., 2022). Many accounts describe hierarchy as a difficulty to be managed, while others acknowledge the importance of organisational support and senior leaders' involvement (Gadomska-Lila, 2020; Murphy, 2012). Social exchange theory also allows returns that arrive later and take different forms (Blau, 1964). The question is therefore not whether existing theory can accommodate hierarchy, but how authority, face and obligations work together when rank remains visible.

The phenomenon matters practically and theoretically. Practically, it concerns some 18.7 million full-time teachers (Ministry of Education of the People's Republic of China, 2026) and a policy agenda that relies on collegial learning for digital competence; if upward learning stays ceremonial or private, investment in digital transformation may change records more than teaching. Theoretically, it places reverse mentoring where age, title, administrative position and reputation all confer standing (Fei, 1992) and where research on teacher mentoring has concentrated on knowledge flowing downward (Wang & Paine, 2001). Chinese organisational studies show that upward learning occurs and benefits both partners (M. Li et al., 2025; Peng et al., 2026), but not how hierarchy shapes it.

To address this problem, we argue that, in what we call Chinese-style reverse mentoring, the status order can stabilise upward knowledge flow rather than block it when three conditions meet: legitimacy conferred by an authority both partners recognise, face-work that protects the senior's standing, and renqing reciprocity that repays the junior in

another currency and over a longer horizon. We call this configuration *authorised inversion*. None of the three mechanisms is new on its own; the contribution is a configurational, cross-level explanation. It separates the knowledge axis of the mentoring relationship from its status axis, specifies how unit-level sanction and dyad-level face-work interact to produce deep rather than ceremonial or covert learning, and derives predictions that distinguish renqing from generic social exchange. We develop fourteen propositions, probe each against existing evidence and propose indicators for testing them.

Literature Review

Reverse Mentoring and Its Dominant Explanations

Kram (1985) distinguished mentoring's career and psychosocial functions; later work placed mentoring within networks of developmental ties rather than a single, fixed relationship (Higgins & Kram, 2001). In reverse mentoring, younger mentors can gain leadership experience and organisational knowledge while older mentees gain technical skills and insight into younger colleagues (Murphy, 2012). Chaudhuri and Ghosh (2012) analysed this exchange as a way to engage older employees and retain younger ones. Morris (2017) drew attention to its potential in universities. Educational research has also tested reverse mentoring in digital teacher development. In Germany, Bertram et al. (2023) paired pre-service and in-service teachers in a two-day programme and compared it with other collaborative learning formats. Staff–student pairs in English higher education offer another related example (Cain et al., 2024). Neither arrangement is identical to mentoring between employed junior and senior colleagues, but both bear on what the approach can achieve.

Three points emerge from this literature. Hierarchy is usually treated as a barrier to be softened or managed, although it rarely disappears (Clarke et al., 2019). The mentoring pair remains the main focus, even when organisational sponsorship is recognised (Gadomska-Lila, 2020; Murphy, 2012). And the exchanges most often studied are those between mentor and mentee. This is not a limitation of social exchange theory itself: it includes deferred, indirect and generalised exchange (Blau, 1964; Cropanzano & Mitchell, 2005; Molm et al., 2007). Rather, reverse mentoring studies have given less attention to how third parties recognise contributions, how face is negotiated and how authority shapes the learning relationship. Those are the connections developed here.

Mentoring, Hierarchy and Face in Chinese Educational Organisations

Chinese schools have a dense, formal and largely collective mentoring infrastructure. Novice teachers are paired with experienced colleagues under *qinglan gongcheng* (青蓝工程) schemes, and lessons are planned, observed and critiqued in teaching research groups (*jiaoyanzu*) that make professional learning public (Paine & Ma, 1993; Wang & Paine, 2001). The everyday phrase for the practice, *chuan bang dai* (传帮带, to pass on, to help, to lead), assumes that knowledge travels downward.

This infrastructure sits inside a relational order. Leadership in Chinese organisations has been characterised as paternalistic, combining authority, benevolence and moral exemplarity (Farh & Cheng, 2000); obligations weaken with relational distance in what Fei (1992) called a differential mode of association; and exchange follows renqing, in which favours create obligations repaid over time in a form suited to the relationship (C. C. Chen et

al., 2013; Hwang, 1987). Face is the respectability a person can claim by virtue of a position, lost when they are seen to fall short of it (Ho, 1976). Hu (1944) distinguished *mianzi*, the prestige that comes with position and success, from *lian*, the community's confidence in a person's moral character. A senior teacher visibly taught by a junior risks the first; because Confucian ideals treat continued learning as a mark of character, the same act can also be presented as evidence of the second, a possibility on which face-work depends.

Status and Professional Learning in Schools and Universities

Status in Chinese educational organisations is not one-dimensional. Age, professional title (*zhicheng*, 职称), administrative position and teaching or academic reputation each confer standing and need not coincide: a young department head may outrank an older lecturer. Administrative rank is closer to power, the control of valued resources, and reputation to status, the respect others accord (Magee & Galinsky, 2008). We therefore treat status distance as multidimensional and expect the face threat of learning from below to be greatest when the junior is lower on every dimension. Nor do national values determine individual behaviour: individuals differ in power distance orientation (Kirkman et al., 2009), which the model treats as an individual-level condition.

Schools and universities also differ in the conditions the model depends on (Table 1). In schools, professional learning is collective and institutionalised in teaching research groups and public lesson observation, sanctioning authority sits with principals and group leaders, and teaching is evaluated in public. In research universities, development runs through disciplinary teams and individual career tracks, authority is divided among deans, department heads and teaching-team leaders, participation is largely discretionary, and evaluation weighs research heavily, so learning for teaching competes with research for time and recognition.

Table 1

Conditions for Reverse Mentoring in Chinese Schools and Research Universities

Condition	Schools	Research universities
Collective professional learning	Teaching research groups, lesson preparation, *qinglan* pairing, public lesson observation	Disciplinary and research teams; development largely individual
Sanctioning authority	Principal, deputy principal for teaching, teaching research group leader	Dean, department head, teaching-team leader
Salient status dimensions	Age, seniority, title, designations such as backbone teacher	Title, academic reputation, administrative post, age
Evaluation emphasis	Observed teaching, student results	Research output and grants alongside teaching
Autonomy in professional learning	Lower; group learning expected	Higher; largely discretionary
Likely form of reverse mentoring	Group-based, potentially universal in the teaching research group	Dyadic or team-based, attached to course redesign
Propositions most applicable	4, 7	2a, 5a–5c

Note. Developed by the authors. The contrasts describe typical conditions; individual institutions vary.

Intergenerational Knowledge Inversion

Mead (1970) described prefigurative cultures, in which rapid change leads elders to learn from the young. Zhou (2022) used wenhua fanbu (文化反哺), or cultural reverse, for a related Chinese pattern in values, everyday conduct and new media. Organisational research in China has since begun to examine reverse mentoring more closely. P. Jiang et al. (2025) proposed a framework linking it to resistance to digital transformation, and Peng et al. (2026) developed and validated a measure of reverse mentoring relationships. Three participants in Peng et al.'s qualitative sample worked in education, but the quantitative samples did not focus on teachers. Zhu et al. (2026) have also proposed a multilevel account of relationship formation, mutual development and diffusion through intergenerational networks. That account makes it particularly important to specify what is distinctive here. Our concern is not cross-level diffusion alone, but how institutional sanction and face-work jointly shape learning when professional rank remains intact, and how obligations to junior teachers are recognised or overlooked. These processes have yet to be examined directly among junior and senior teaching colleagues in mainland Chinese institutions.

Research Approach

This is a theory-building conceptual paper (Jaakkola, 2020; Whetten, 1989): it specifies the factors involved, how and why they are related, and under what conditions, and states the resulting claims as testable propositions (Cornelissen, 2017). We problematise the emphases of the reverse mentoring literature (Alvesson & Sandberg, 2011) and draw on classical Confucian writing on teaching, Chinese relationalism, face theory and institutional theory to derive fourteen propositions. Sources are peer-reviewed studies, classical texts,[1] policy documents and press reports, which we treat as illustrations and weigh below peer-reviewed evidence.

We use a plausibility probe to ask whether existing findings are compatible with each proposition and where stronger tests are needed (Levy, 2008). The evidence was chosen purposively rather than through a systematic review. We searched Web of Science, Scopus and the China National Knowledge Infrastructure (CNKI) for work published between 2012 and October 2026, combining reverse mentoring with terms for teachers, teaching and students and using the Chinese terms 反向导师制, 反向师徒 and 反向指导. We also followed references and searched Chinese news outlets for documented cases. Classical and foundational theory were not date-restricted. Eligible sources reported empirical findings or a documented practice relevant to reverse mentoring, upward learning at work or mentoring under pronounced hierarchy. We excluded commentary without an identifiable practice and studies of inter-organisational transfer. Educational studies outside mainland China were retained when they could test a premise, suggest an alternative explanation or qualify an expected outcome; this includes a German comparative intervention with a null advantage for reverse mentoring (Bertram et al., 2023). Table 2 reports the retained material. We distinguish premise evidence, observations of related outcomes, indirect evidence and case illustrations. No source was designed to test the full configuration proposed here, so the exercise identifies credible possibilities and challenges rather than confirming the model.

[1]Following APA convention, classical works are cited in the text only. Passages from the *Xueji* (Record on Learning) in the *Book of Rites*, the *Analects*, the *Xunzi* and Han Yu's *Shi Shuo* (On Teachers, c. 802 CE) are the authors' translations.

Table 2

Sources Examined in the Plausibility Probe

Source	Setting	Design and sample	Mentoring relation	Props.	Source type
Liu and Yang (2025)	Universities, mainland China	News interview citing a 2024 Mycos survey	Students vs teachers (comparison)	1 (premise)	Press
Yang et al. (2022)	Teachers, Anhui, mainland China	Self-report survey; 248 in-service, 250 pre-service	Junior vs senior (comparison)	1 (premise)	Peer-reviewed
Bertram et al. (2023)	Teacher education, Germany	Quasi-experiment; 90 pre-service and 57 in-service teachers, two-day online workshops	Pre-service → in-service (adjacent)	6a (mixed outcomes)	Peer-reviewed
Murphy (2012); Y. Jiang (2019)	General Electric; Cisco	Corporate cases	Staff → staff	1, 2b, 3a	Peer-reviewed; press
Gadomska-Lila (2020)	Five organisations, Poland	Interviews; five pairs and managers	Staff → staff	1, 5a	Peer-reviewed
Sarıoğlu et al. (2026)	Firms, Türkiye	Interviews; 16 executives	Staff → staff	1, 3a, 5a	Peer-reviewed
Y.-C. Chen (2013, 2015)	High-technology firms, Taiwan	Scale development (n = 158); interpretive	Staff → staff	2a, 5a	Peer-reviewed; proceedings
Qian et al. (2014)	High-technology firm, mainland China	Survey; 210 employees	Senior → junior	2a	Peer-reviewed
Kaše et al. (2019)	Digital-skills initiative	Survey; 457 mentors, 293 learners	Younger → older	5a	Peer-reviewed
P. Jiang et al. (2025)	Enterprises, mainland China	Research proposal (no data)	Staff → staff	5a	Peer-reviewed (conceptual)
Cain et al. (2024)	University department, England	Pilot; six student–staff pairs	Student → staff	3a, 4, 7	Peer-reviewed
M. Li et al. (2025)	Technology firms, mainland China	Two-wave survey; 528 employees	Staff → staff	6a	Peer-reviewed
Peng et al. (2026)	Organisations, mainland China (three teachers in qualitative sample)	Interviews (n = 28); scale development (n = 941); three-wave survey (240 protégés, 292 mentors)	Staff → staff	3a, 6a, 6b	Peer-reviewed
S. Jiang (2026)	University, mainland China	First-person commentary	Students and son → teacher	3b, 8a	Press

Note. Props. = propositions to which a source is relevant; 'premise' means that a source addresses a precondition without observing the full proposition, and 'comparison' denotes a group comparison without a mentoring relationship. The German teacher study examines pre-service–in-service pairs rather than junior and senior employed colleagues. Only Peng et al. (2026) includes teaching staff in a mixed-sector qualitative study of colleague-to-colleague reverse mentoring.

The Theoretical Logic of Chinese-Style Reverse Mentoring

Cultural Logic: A Tradition That Licenses and Penalises Learning from Juniors

Classical Chinese thought supplies a warrant for reverse mentoring. The *Xueji* holds that teaching and learning advance each other (*jiaoxue xiangzhang*, 教学相长), and in the *Analects* (7.22) Confucius remarks that among any three people walking together one can be his teacher. Han Yu's *Shi Shuo* defines the teacher by possession of the Way rather than by age or rank: 'where the Way is, there the teacher is'. Yet the same text names the barrier: scholar-officials would not learn from one another, because learning from someone of low rank was shameful. The tradition thus leaves a *competence norm* that permits learning from whoever knows more and a *status norm* that penalises being seen to do so. It also offers a temporal resolution: the *qinglan* schemes take their name from the *Xunzi*'s image of a blue dye that surpasses the indigo plant from which it is drawn, so the junior surpasses the senior, but later. Reverse mentoring asks the junior to surpass the senior now, in a specific domain, while the senior still holds the higher position.

Structural Logic: The Domain-Specific Knowledge Gradient

We use *knowledge gradient* for the relation between seniority and domain-relevant knowledge and distinguish three components of digital competence: *technical-operational skill*, the ability to operate platforms and tools; *digital-pedagogical integration*, the ability to use them for instruction, assessment and student support (Mishra & Koehler, 2006); and *professional judgement*, the ability to decide what counts as good teaching or sound evidence. The gradient is most likely to invert for the first, is mixed for the second and usually remains positive for the third; the Anhui findings fit this pattern without settling it (Yang et al., 2022). Because inversion is component-specific, the overall gradient stays positive: a senior who is a novice with learning analytics remains an expert in pedagogy, so hierarchy is challenged locally and can be preserved. Juniors are ahead in operation and seniors in judgement, so integration is where each needs the other, which is the material basis for reciprocity.

Institutional Logic: Policy Pressure for Digital Competence

In Chinese education the demand for reverse mentoring comes mainly from policy. The teachers' digital literacy standard specifies five dimensions: digital awareness, digital knowledge and skills, digital application, digital social responsibility and professional development (Ministry of Education of the People's Republic of China, 2022). Neither the standard nor the national plan requires reverse mentoring; they create pressure for competence that institutions usually meet through existing structures of organised learning. That pressure can confer legitimacy, making learning from juniors an organisational task rather than a personal weakness, but it can also produce ceremonial compliance, in which structures are adopted to signal conformity while practice continues unchanged (Meyer & Rowan, 1977). Inversion is therefore structurally likely, culturally permitted and politically encouraged, yet it carries a face cost and invites ceremony.

Constructs and Operating Mechanisms

We begin by separating the behaviour from the conditions that might foster it. Reverse mentoring occurs when a junior member of teaching staff helps a senior colleague learn in a domain where the junior has greater expertise. Whether the relationship begins, how actively the senior engages, and what the senior later learns are different questions. Legitimacy conferral is a unit-level condition; face-work and the interpretation of reciprocal obligations operate within the relationship; status distance and relational closeness may alter their effects. These concepts must be observed separately from outcomes (Table 4). Authorised inversion names the configuration in which upward learning is institutionally recognised, face is protected and the junior's contribution receives reciprocal recognition while formal rank remains intact. It is not treated as a single variable or predicted from its own defining elements. Figure 1 shows how this account differs from an approach centred chiefly on the mentoring pair.

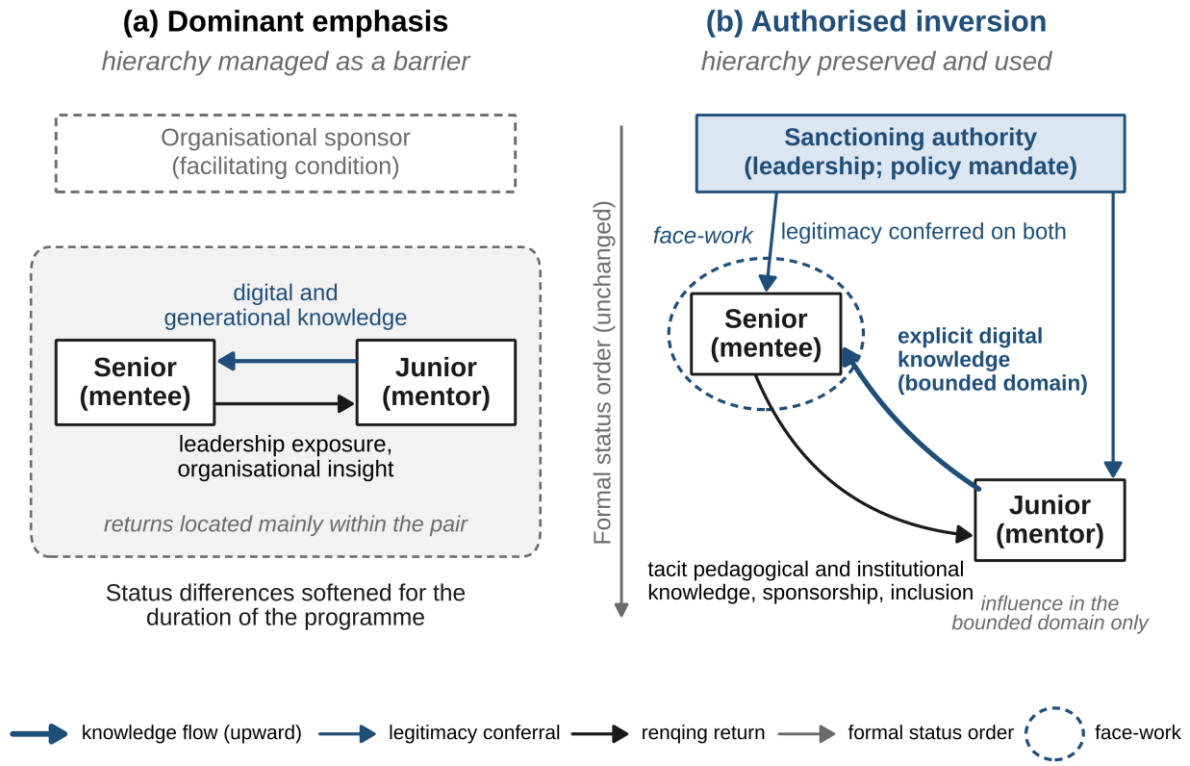


Figure 1 Two Configurations of Reverse Mentoring

Note. Panel (a) summarises the dominant emphases of the literature: hierarchy managed as a barrier, analysis centred on the dyad, sponsorship as a facilitating condition. Panel (b) shows authorised inversion; line types distinguish the unchanged formal status order, the upward flow of explicit knowledge in a bounded domain, legitimacy conferred on both partners, and the renqing return. Developed by the authors.

Legitimacy conferral. Legitimacy can be pragmatic, moral or cognitive (Suchman, 1995). In education, policy pressure can make digital learning useful, the norm of mutual learning can make it defensible, and repeated use can make it familiar. An authority recognised by both partners may give a programme a name, protect time for it, acknowledge the junior's contribution or participate personally. Such action gives the junior permission to teach without claiming superiority in rank. It also gives the senior a publicly acceptable reason

to learn. Yet sponsorship is neither necessary nor sufficient for reverse mentoring. Trusted colleagues can learn informally, while a programme backed by leaders can still become a ritual. We expect sanction to matter most for the initiation of mentoring across substantial status differences and to make formal uptake of the work more likely, not inevitable.

Face-work. Face-work comprises the actions people take to keep what they do consistent with the face they claim (Goffman, 1955). In reverse mentoring it takes five forms: *framing* the arrangement as mutual learning (*huxue*, 互学) rather than as 'reverse'; *staging* early sessions in private and outside evaluation; *ritual deference* by the junior, who gives face (*gei mianzi*) while teaching; *grafting* new skills onto problems in the senior's own work; and *universality*, so that no one is singled out. Framing does most work, recasting a threat to *mianzi* as a display of the commitment to learning on which *lian* rests (Hu, 1944). Research on help seeking agrees: asking for help can make a person seem less capable and lower in standing (Lee, 2002), yet people who seek help from less competent others underestimate how favourably observers judge them, because seekers attend to the competence conceded and observers to the flexibility displayed (Qiu et al., 2025). Face-work differs from trust, an expectation about a partner's intentions, and from psychological safety, a shared belief that a team is safe for interpersonal risk-taking (Edmondson, 1999). Both lower the risk of exposure; face-work leaves the status risk in place and manages how the act is read by third parties who rank both partners. The model therefore predicts that face-work matters over and above trust and psychological safety where status is publicly ranked.

Renqing reciprocity. The expectation of returns has long been central to social exchange theory, which covers obligations that are diffuse, delayed and indirect (Blau, 1964; Gouldner, 1960; Cropanzano & Mitchell, 2005; Molm et al., 2007). Renqing should therefore not be distinguished merely by the presence of third parties or by a long interval before repayment. Its proposed contribution is more specific to a graded relational order. When a younger teacher helps a senior, the act may be understood as a favour worth returning or simply as a duty owed upward (Hwang, 1987). That interpretation shapes whether an obligation is acknowledged. The senior may reciprocate with advice, access to institutional knowledge, introductions or support for the junior's career, but these returns should not be assumed. Recognition by colleagues or leaders may make the obligation more visible, especially within closer relationships (Fei, 1992). Whether such recognition has an additional effect beyond existing exchange expectations is an empirical question, not a prediction unavailable to general social exchange theory. Formal credit may reinforce informal obligation by naming the contribution, or replace it when both parties regard the credit as full payment (Frey & Jegen, 2001). A mandatory programme that gives juniors neither credit nor time is therefore at risk of becoming unpaid service, a concern echoed by research on uneven service burdens in academic careers (Guarino & Borden, 2017).

Over time, the outputs of successful arrangements may be codified into collective routines, a process we call *sedimentation*. We also propose, as a dynamic outcome to be tested rather than inferred, that repeated cycles produce *soft flattening*: seniors come to defer to juniors' competence in the inverted domain while formal rank and general standing are unchanged. Soft flattening concerns domain-specific influence, not status.

How the Mechanisms Relate

The three mechanisms are linked, but they do different work. We propose that face-work changes the effect of legitimacy on a senior's depth of engagement. Sponsorship may bring people to the table; it cannot by itself make a senior comfortable asking elementary questions. Face-work without sponsorship may support candid learning in trusted pairs, yet their work may be less visible to colleagues. This is a predicted interaction, not an established statistical result. Reciprocity becomes important later: it may determine whether a junior continues contributing and whether the relationship develops in both directions. Closeness and trust are possible alternative pathways to sustained learning without formal sanction. For that reason, the model keeps individual learning separate from organisational uptake and leaves room for informal communities to spread what they learn.

Figure 2 depicts these possibilities as a theoretical typology, not as four empirically validated categories. Depth of engagement concerns what the partners do during mentoring: whether seniors bring their own problems, ask questions and work through the junior's suggestions. Participation is ceremonial when meetings are recorded but little instructional exchange takes place. Covert learning occurs in private relationships that have limited organisational visibility. Whether mentoring later improves a lesson, builds digital confidence or spreads to other teachers must be measured separately rather than used to define the categories.

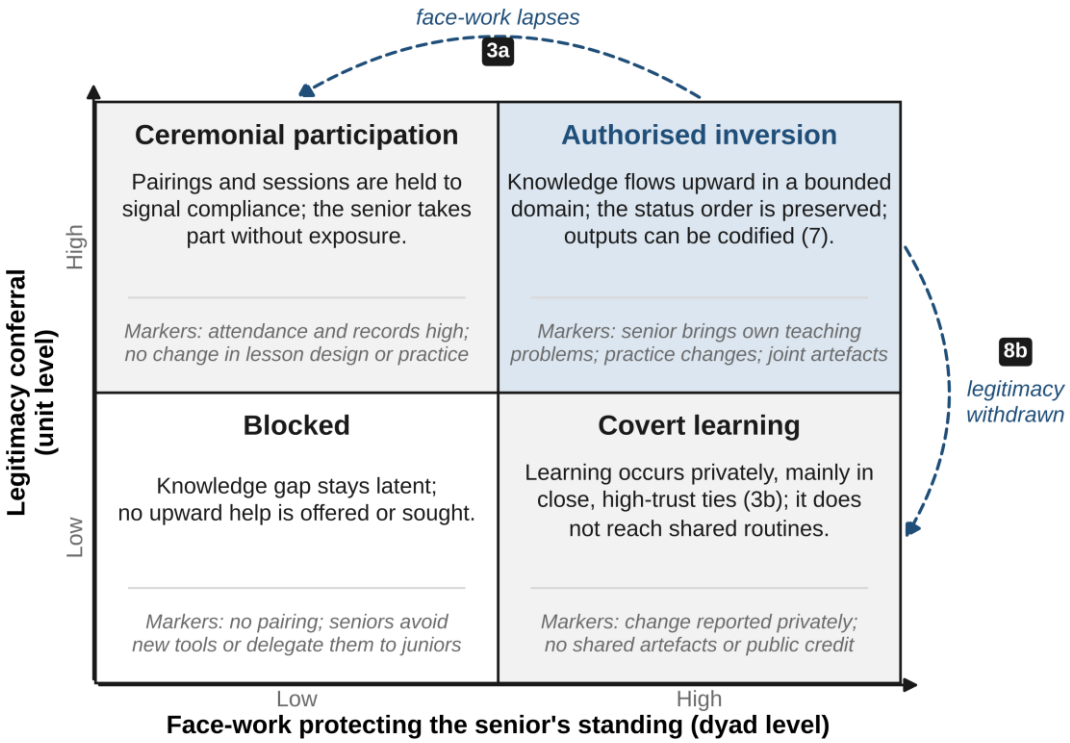


Figure 2 Four Regimes of Reverse Mentoring: A Theoretically Derived Typology

Note. A theoretically derived typology based on Proposition 3a; the regimes have not been compared empirically. Cell markers are proposed indicators (see Observable Indicators). Dashed arrows show the movements predicted when face-work lapses (Proposition 3a) or legitimacy is withdrawn (Proposition 8b). Developed by the authors.

Relation to Existing Theories

Table 3 places the proposed model beside social exchange theory, psychological safety and institutional theory (Meyer & Rowan, 1977; Suchman, 1995). These are complementary rather than mutually exclusive accounts. The distinction sought here is not that earlier theories exclude third parties or hierarchy; it is whether the combination of authority, status-sensitive face-work and renqing obligations explains variation in educational mentoring that each account leaves only partly specified.

Table 3
Authorised Inversion Compared With Existing Explanations of Upward Mentoring

Account	What it explains	What it leaves open where status is salient	Distinguishing prediction
Social exchange (Blau, 1964; Cropanzano & Mitchell, 2005; Molm et al., 2007)	Direct, indirect and generalised reciprocity; delayed returns and third-party involvement	How rank and relational obligation shape whether junior teaching is treated as a favour or an assigned duty	Compare the favour–duty interpretation and status-sensitive face obligations while accounting for indirect exchange (5a–5c)
Psychological safety (Edmondson, 1999)	Learning behaviour when the interpersonal risk of speaking up is low	Learning when status risk is publicly ranked and cannot be removed	Face-work predicts depth over and above trust and safety; universal formats reduce face threat at equal safety (4)
Institutional theory (Meyer & Rowan, 1977; Suchman, 1995)	Adoption of sanctioned practices; ceremony under mandate	What makes a legitimated practice deep in the dyad	Legitimacy's effect on depth depends on face-work (3a) and rises with status distance (2a)
Authorised inversion (this paper)	A proposed configuration of sanction, face-work and interpreted reciprocal obligations	Whether its interaction effects and routes to organisational uptake occur in teaching organisations	Sanction × face-work may predict depth; recognition of junior contribution may shape sustained mentoring; codification may help diffusion (3a, 5a–5c, 7)

Note. Numbers in parentheses refer to propositions. Developed by the authors.

Observable Indicators

Table 4 suggests indicators that would allow the conditions, the mentoring process and its outcomes to be recorded separately. These are starting points for measurement, not established scales.

Table 4

Observable Indicators for the Constructs of the Model

Construct (level)	Observable indicators	Possible data sources
Legitimacy conferral (unit condition)	Written endorsement; protected time; formal credit; visible leadership participation	Policy documents; personnel and workload records; leader interviews
Collective format (unit condition)	Universal rather than targeted invitations; group-versus-pair design	Programme rosters; participation rules; group records
Face-work (dyadic process)	Mutual-learning language; confidentiality practices; deference while instructing; ways corrections are framed	Session observation; separate partner interviews; coded interactions
Renqing interpretation (dyadic process)	Whether help is seen as favour or role duty; perceived obligation to repay; expectations of non-monetary return	Partner survey items measured before observed repayments
Actual reciprocity (subsequent behaviour)	Career advice, introductions, sponsorship, pedagogical guidance or other returns over time	Follow-up interviews and dated exchange logs
Status distance (dyad condition)	Separate differences in age, title, administrative power and reputation; individual power-distance orientation	Personnel records; reputational ratings; established scales
Relational closeness / trust (dyad conditions)	Prior ties, frequency of contact and trust ratings, analysed separately	Baseline pair surveys; contact histories
Depth of engagement (dyadic process)	Substantive teaching episodes; senior questions; joint problem-solving; application plans during sessions, before outcomes are assessed	Observed or recorded sessions; independent coding
Digital capability / self-efficacy (individual outcomes)	Technology-integration self-efficacy; assessed digital teaching knowledge; independently rated lesson plans and later classroom practice	Validated self-efficacy items; performance tasks; blinded lesson ratings; observation
Codification (unit-level process)	Documented contributions entering resource banks, meetings or shared procedures	Dated resource-bank and meeting records
Organisational learning (outcome)	Reuse by teachers outside the original pairs; independently observed adoption and sustained changes in teaching routines	Nonparticipant teacher surveys; classroom observations; follow-up audits

Note. Indicators are proposed rather than validated. Unit-level conditions, dyadic processes and outcomes should be assessed from different sources where possible. Peng et al. (2026) provide a measure of relationship quality, which should not be substituted for measures of reciprocity, teaching practice or organisational uptake.

Scope and Boundary Conditions

The model is meant to hold under three conditions: the knowledge gradient is inverted in at least one component, typically technical-operational skill, and positive elsewhere (where a junior leads across most components, the problem becomes succession rather than mentoring); status is salient and stable on at least one dimension; and an authority both partners recognise can sanction the arrangement, such as a principal or teaching research group leader in schools, or a dean, department head or teaching-team leader in universities. These conditions are typical of, but not unique to, Chinese schools and universities, which is why we treat 'Chinese-style' as a configuration rather than a national essence.

The propositions concern teaching colleagues: teachers employed in schools and staff with teaching appointments in universities, including doctoral or postdoctoral researchers formally employed as instructors or teaching assistants. Students who mentor teachers only in their capacity as students are outside the collegial career structure and may receive different kinds of return. Their experiences are useful for comparison, not direct evidence for the full model. Collective formats and codification (Propositions 4 and 7) are especially pertinent to schools; the multidimensional status gap and different career tracks (Propositions 2a and 5a–5c) may be more prominent in universities. Neither difference is absolute.

Propositions and Evidence

The fourteen propositions are grouped by their main purpose (Figure 3): conditions for participation (1–2b), mechanisms of engagement and reciprocity (3a–5c), individual outcomes (6a–6b) and longer-term organisational effects (7–8b). Each discussion distinguishes findings that bear on an assumption from those that test a related outcome or merely illustrate a possibility. Table 2 describes the evidence base.

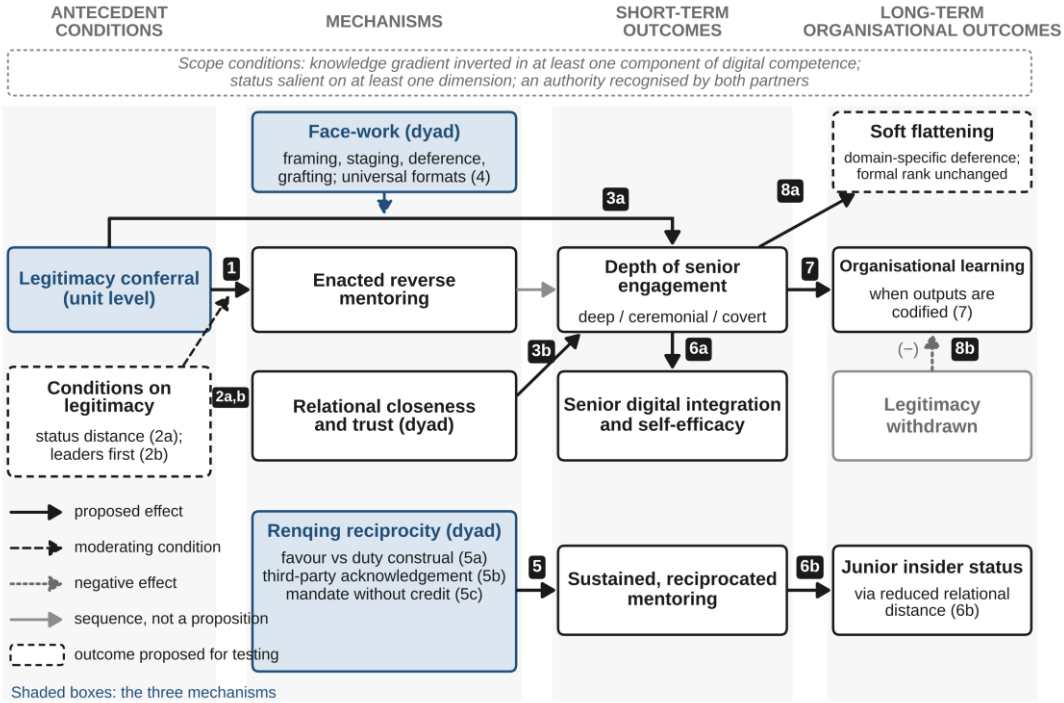


Figure 3 Propositions of the Model by Stage

Note. Solid arrows show proposed effects; dashed arrows show conditions that moderate the path they point to; the dotted arrow shows a dynamic feedback. The dashed box marks an

outcome proposed for testing rather than inferred from evidence. Numbers refer to propositions. Developed by the authors.

Antecedent Conditions

> ***Proposition 1.*** *Given a domain-specific inversion of the knowledge gradient, reverse mentoring among teaching staff is more likely to be enacted when an authority recognised by both partners confers legitimacy on it than when it is left to individual initiative.*

The inverted gradient creates latent demand, but where status is salient neither partner can easily initiate an upward lesson: the senior must admit a deficit and the junior presume to teach. Sanction removes the need for either to initiate, because both act as delegates of the organisation.

The premise is supported by Chinese data on a junior–senior gradient in technical components of competence (Yang et al., 2022) and in generative-AI use (Liu & Yang, 2025), though neither measures pedagogical integration or observes mentoring. The relation itself has not been observed. Indirect evidence comes from perceptions: executives in Türkiye judged structured programmes more effective than informal ones (Sarıoğlu et al., 2026), and leader involvement appears among the conditions for benefit in Polish organisations (Gadomska-Lila, 2020). The General Electric programme, which spread by directive (Murphy, 2012; Jiang, 2019), illustrates the relation without excluding other explanations. *Assessment: indirect.*

> ***Proposition 2a.*** *The positive effect of legitimacy conferral on senior participation is stronger the greater the status distance between the partners in age, professional title, administrative rank and reputation.*

The greater the distance, the greater the face cost of learning from below, and so the more participation depends on a sanction that reclassifies the act. Two studies bear indirectly on the premise: Y.-C. Chen (2015) interprets senior mentees' longer tenure and wider networks as reducing the support they perceive from younger mentors, and Qian et al. (2014) found informal mentoring less strongly associated with lower burnout among protégés high in power distance orientation. The first is interpretive; the second concerns an individual value in traditional mentoring. *Assessment: not directly tested.*

> ***Proposition 2b.*** *Legitimacy conferral increases senior participation more when the most senior members of the unit take part first and visibly.*

Leader participation turns a sanction into a demonstration that being taught is compatible with rank. General Electric's chief executive took a younger mentor himself, and Cisco promoted its voluntary programme by publicising a newly promoted executive who had benefited (Y. Jiang, 2019); neither case separates leader modelling from the programme. *Assessment: illustrated only.*

Mechanisms

> ***Proposition 3a.*** *The effect of legitimacy conferral on the depth of senior engagement depends on face-work: it is positive when face-work is strong and weak when face-work is absent, in which case participation tends to be ceremonial.*

The proposed interaction has not been tested. Peng et al. (2026) did, however, identify competence recognition as part of reverse mentoring relationship quality: younger mentors acknowledged older protégés' prior experience and judgement. This is relevant to the

deference involved in face-work, although it neither proves a reduction in face threat nor shows an interaction with organisational sanction.

The ceremonial failure mode is illustrated rather than demonstrated: executives in Türkiye described reverse mentoring without trust and genuine willingness as symbolic rather than substantive (Sarıoğlu et al., 2026), and the General Electric directive did not dispel seniors' stereotypes about the young (Y. Jiang, 2019), but in neither case can the absence of face-work be shown to be the cause. The English pilot combined sanction with face-protecting design, including external matching, confidentiality rules and junior-led meetings in neutral venues, and participants found power more balanced than expected (Cain et al., 2024); but the mentors were students and there was no comparison. *Assessment: not directly tested; one component observed directly.*

> ***Proposition 3b.*** *In the absence of legitimacy conferral, reverse mentoring is sustained mainly in close, high-trust relationships, and its outputs remain with the individuals involved rather than entering collective routines.*

Without formal sanction, trusted colleagues may still learn from one another because they can ask for help without exposing themselves before a wider audience. Their work may be less likely to enter institutional routines, but informal professional networks can also spread useful practices. A first-person account from a Chinese university teacher describes learning software and AI tools from students and everyday mobile services from his son (S. Jiang, 2026). It illustrates private learning, but says little about the consequences for other teachers. Assessment: illustrated only; institutional diffusion remains open.

> ***Proposition 4.*** *Universal participation in collective formats reduces senior face threat, whereas participation that targets particular seniors increases it.*

Where professional learning is public, a senior singled out for a junior tutor is marked as deficient before a session begins; when every member both teaches and learns, deficiency becomes unremarkable. The premise that Chinese school-based learning is collective and observed is well documented (Paine & Ma, 1993; Wang & Paine, 2001); the English pilot invited all departmental staff but did not compare formats (Cain et al., 2024). *Assessment: not directly tested.*

> ***Proposition 5a.*** *Junior mentors sustain their engagement longer when their contribution is construed as a favour that creates an obligation than when it is construed as a duty owed to seniors.*

Younger mentors in an intergenerational digital-skills initiative were driven mainly by extrinsic motivation and older learners by intrinsic motivation (Kaše et al., 2019), suggesting that juniors respond to what the arrangement returns; P. Jiang et al. (2025) likewise centre young mentors' commitment on their needs for competence and relatedness. Bidirectional benefits are widely reported (Y.-C. Chen, 2013; Gadomska-Lila, 2020; Sarıoğlu et al., 2026), but no study measured how the contribution was construed, and all are compatible with generic social exchange. *Assessment: indirect.*

> ***Proposition 5b.*** *Acknowledgement of the junior's contribution by the sanctioning authority or by colleagues increases the senior's reciprocation over and above the partners' dyadic exchange expectations.*

Public acknowledgement may change how a senior interprets a junior's contribution. In a closer relationship, a favour recognised by colleagues could create a more salient obligation to reciprocate, particularly when non-repayment has implications for face (Fei, 1992; Hwang, 1987). Yet this possibility is also compatible with work on indirect and

generalised social exchange, which already allows social obligations to extend beyond the pair (Molm et al., 2007). The distinctive question is whether acknowledgement has a stronger effect when a junior's help is construed as renqing within a recognised hierarchy. This requires comparison with exchange expectations, relationship closeness and other sources of social recognition. Assessment: not directly tested.

Proposition 5c. *When participation is mandated without formal credit, juniors' contribution is more likely to be construed as duty, which increases their unrecognised workload and reduces their sustained engagement.*

Mandate without credit removes the conditions for the favour construal and turns mentoring into service performed upward. Unrecognised academic service falls more heavily on women (Guarino & Borden, 2017), which makes the risk plausible but does not concern reverse mentoring. *Assessment: not directly tested.*

Short-Term Outcomes

Proposition 6a. *Deep reverse mentoring increases senior teachers' digital-pedagogical integration and digital self-efficacy.*

Bertram et al. (2023) provide unusually relevant comparative evidence from teacher development. In a German quasi-experiment, 90 pre-service and 57 in-service teachers attended two-day online workshops. Both reverse-mentoring and comparison groups improved in self-efficacy for teaching with digital technology, but reverse mentoring was not more effective than peer collaboration. Technological-pedagogical knowledge and positive beliefs did not change significantly. The mentors were pre-service teachers, not employed junior colleagues, and the intervention was short; the study did not examine the Chinese status and face mechanisms proposed here. Nevertheless, it cautions against assuming that role reversal alone produces superior digital outcomes. In Chinese organisations, Peng et al. (2026) found that relationship quality predicted older protégés' general self-efficacy; neither digital-pedagogical integration nor depth of instructional engagement was measured. M. Li et al. (2025) linked reverse mentoring with innovative behaviour, a related but distinct outcome. Assessment: related outcomes observed, with mixed comparative evidence; the proposition itself remains untested.

Proposition 6b. *Reciprocated reverse mentoring increases junior mentors' perceived insider status, and this effect is mediated by reduced relational distance between the partners.*

Peng et al. (2026) reported an association between reverse mentoring relationship quality and younger mentors' perceived insider status. This is relevant to the outcome, but relationship quality is not the same as reciprocation, and the study did not test relational distance as a mediator. Assessment: related outcome observed; the proposed mechanism and mediation remain untested.

Long-Term Organisational Outcomes

Proposition 7. *Reverse mentoring contributes to organisational learning to the extent that its outputs are codified into collective routines, such as teaching research group agendas, shared resource banks and induction materials.*

A shared resource is not, by itself, evidence that an organisation has learned. The stronger test is whether teachers outside the original mentoring pairs use what was developed and change their practice. Codification may help that transfer, whether through formal resource banks, teaching research groups or informal professional communities. In the English university pilot, a department later began a project on students' identity and

belonging after staff had reported insights from student mentors (Cain et al., 2024). The account does not establish that mentoring caused the departmental initiative. Assessment: illustrated only.

> ***Proposition 8a.*** *Repeated cycles of deep reverse mentoring increase seniors' competence-based deference to juniors in the inverted domain without changing the formal status order.*

Soft flattening is a dynamic outcome proposed for testing. It separates the formal status order, which the model predicts will be preserved, from influence within a bounded domain, which it predicts will shift. No longitudinal study exists. Chinese commentary describes authority being redistributed by domain, with tools conceded to the young and judgement reserved for teachers (S. Jiang, 2026), but this is discourse about norms, not evidence of change within relationships. The competence recognition dimension of Peng et al. (2026) runs in the opposite direction, from juniors to seniors, and so bears on face-work rather than on soft flattening. *Assessment: not directly tested.*

> ***Proposition 8b.*** *Withdrawal of legitimacy conferral from established arrangements reduces the codification of their outputs, even where learning within the dyads continues.*

Formal recognition may make it easier to record and share what a pair learns. If that recognition is withdrawn, organisational uptake may decline even when a trusted pair continues to exchange knowledge. This is a probabilistic expectation: informal networks and teacher-led communities may provide other routes to diffusion. No study has followed a sanctioned arrangement through the withdrawal of institutional support. Assessment: not directly tested.

Summary of the Evidence

Table 5 separates evidence for pieces of the argument from tests of the complete propositions. No complete proposition has been tested directly. The closest evidence concerns individual outcomes: Peng et al. (2026) report related self-efficacy and insider-status findings, while Bertram et al. (2023) show that a teacher-focused reverse-mentoring intervention was no more effective than peer collaboration on the outcomes examined. Several propositions have only indirect or illustrative evidence, and others remain without a direct test. The largest gaps concern the legitimacy–face-work interaction, how obligations to junior mentors are interpreted, and whether what pairs learn becomes useful to other teachers. These are the priorities for empirical research.

Table 5

Propositions and the State of the Evidence

Proposition	Evidence by type	Assessment	What a test requires
1. Legitimacy increases enactment	Premise: Yang et al. (2022); Liu and Yang (2025). Indirect: Sarıoğlu et al. (2026); Gadomska-Lila (2020). Illustration: General Electric	Indirect	Sanctioned vs unsanctioned units
2a. Effect rises with status distance	Premise (indirect): Y.-C. Chen (2015); Qian et al. (2014)	Not directly tested	Legitimacy × status distance
2b. Leaders first	Illustration: General Electric; Cisco	Illustrated only	Units with and without leader participation
3a. Legitimacy × face-work → depth	Direct (component): Peng et al. (2026). Illustration: Sarıoğlu et al. (2026); General Electric; Cain et al. (2024)	Not directly tested	Both measured; observed depth
3b. Close dyads learn privately	Illustration: S. Jiang (2026); possible informal diffusion not measured	Illustrated only	Track informal pairs and use of knowledge by outsiders
4. Universal formats	Premise: Paine and Ma (1993); Wang and Paine (2001). Illustration: Cain et al. (2024)	Not directly tested	Universal vs targeted groups
5a. Favour construal	Indirect: Kaše et al. (2019); P. Jiang et al. (2025)	Indirect	Construal and engagement over time
5b. Acknowledgement	Theory: Hwang (1987); generalised exchange comparison: Molm et al. (2007); direct evidence absent	Not directly tested	Vary public acknowledgement; measure favour–duty interpretation and prior exchange expectations
5c. Mandate without credit	Related: Guarino and Borden (2017)	Not directly tested	Mandated units with and without credit
6a. Senior integration and self-efficacy	Related outcomes: Peng et al. (2026). Comparative teacher intervention: Bertram et al. (2023), no advantage over peer learning; TPK unchanged	Mixed related outcomes; full claim untested	Measure session depth, later teaching quality and self-efficacy against a peer-learning comparison
6b. Junior insider status	Related outcome: Peng et al. (2026); reciprocity and relational-distance mediation not measured	Related outcome only; full claim untested	Observe reciprocation; test relational-distance mediation over time
7. Codification	Illustration: Cain et al. (2024); codification and wider uptake not isolated	Illustrated only	Distinguish documented codification from subsequent adoption beyond participating pairs
8a. Soft flattening	None; public discourse only (S. Jiang, 2026)	Not directly tested	Longitudinal panel
8b. Withdrawal of legitimacy	No direct test; informal communities provide a plausible alternative diffusion route	Not directly tested	Follow pairs after support ends; compare formal and informal diffusion

Note. The table records the best available evidence for a premise, process or related outcome, not confirmation of a full proposition. 'Related outcome' means that a measured outcome resembles one in the proposition but the specified antecedent, mechanism or context was not tested. 'Illustration' identifies a documented case without a causal comparison. No complete proposition has yet been tested directly.

Implementation Pathways

Implementation follows four practical stages—authorise, match, engage and share—at three levels: education systems set expectations and recognition; institutions design workable arrangements; and pairs negotiate trust, face and reciprocity (Table 6). These are design suggestions drawn from the framework, not interventions whose effectiveness has already been established.

An institution can begin by giving younger mentors recognised time and credit and by asking senior leaders to model learning in public. Participation need not be compulsory; a mandate without support could turn the junior's contribution into extra service. Existing qinglan pairs and teaching research groups provide possible homes for two-way learning, although voluntary teams and other formats may work as well. Matching should follow complementary skills rather than age alone. Early sessions need enough privacy for both partners to admit what they do not know. Afterward, the test is not how many meetings were held, but whether the new knowledge improves teaching and reaches colleagues who were not in the original pairs.

Table 6
Implementation Pathway for Reverse Mentoring in Chinese Schools and Universities

Stage	System level	Institutional level	Dyadic level	Risk addressed
1. Authorise	Recognise two-way mentoring in professional development frameworks as an option, with credit; align with the digital literacy standard	Leaders participate first and visibly; arrangements named as mutual learning	Both partners briefed on purpose, domain and mutual goals	Blocked and covert learning
2. Match	Recognise juniors' mentoring in workload, appraisal and promotion	Map inverted and non-inverted domains; match on complementary strengths; embed in pairing schemes and teaching research groups	Two-way learning agreement with one goal for each partner	Extraction; unrecognised junior workload
3. Engage	Do not treat counts of pairings, sessions or tool use as outcomes	Protected time; external matching; agreed ground rules; no penalty for frank feedback	Private, problem-based sessions grafted onto the senior's work; junior-led agendas	Ceremonial participation; loss of face
4. Sediment	Assess change in lesson design and teaching practice	Outputs entered into resource banks and group routines; seniors act as advocates	Joint products; reflective records; public closing that credits both partners	Decay after the programme ends

Note. Developed by the authors.

The pathway differs by setting (Table 1). In a secondary school, young teachers fluent with smart-classroom platforms can work with seniors inside the teaching research group, the seniors contributing lesson design and classroom judgement, with outputs entered into the group's resource bank. In a research university, early-career lecturers and doctoral students holding teaching appointments can be paired with professors redesigning courses, who in turn guide them on grant writing, supervision and academic judgement; because participation is discretionary and evaluation weighs research, recognition in workload and appraisal matters more there.

Discussion

Hierarchy as a Resource

Hierarchy is often treated as something reverse mentoring must overcome. It may also help make the relationship possible. When a principal or dean publicly supports a junior colleague's contribution, a senior can accept help without appearing to surrender rank. This is not uniquely Chinese, as accounts from General Electric and the English university pilot suggest. Its importance is likely to vary with how visibly people are ranked, how recognition is awarded and whether learning across rank carries a social cost. The proposed Chinese-style configuration specifies those conditions rather than treating hierarchy as a national trait.

Testing the Model

The argument can be tested against alternatives. It would be weakened if formal sanction fostered equally deep engagement regardless of face-work, if status distance did not alter the value of sponsorship, or if public recognition made no difference once relational expectations were measured. It would also be challenged if unsupported, voluntary pairs diffused their learning as effectively as institutionally recognised programmes. A multilevel study could follow pairs nested in departments or teaching research groups, measuring unit-level sanction and collective format, dyadic face-work and favour-versus-duty interpretations, and each component of status distance. Trust and power-distance orientation should be measured separately (Kirkman et al., 2009). Process observations could document who asks questions, teaches and reciprocates; later assessments could examine digital self-efficacy, scored teaching designs, classroom practice and uptake by colleagues outside the pairs. Peng et al.'s (2026) scale may help assess relationship quality, but other mechanisms need separate measures. Longitudinal work is necessary to test changes in competence-based influence and the effects of withdrawn support. The design could later be compared across education systems, including Malaysia.

Theoretical and Contextual Contributions

The main contribution is a combination of ideas rather than the discovery of an entirely new mechanism. First, it separates a person's expertise in a particular domain from their formal standing. Second, it proposes that institutional sanction and interpersonal face-work interact in shaping whether reverse mentoring becomes substantive or merely ceremonial. Third, it considers how young mentors' work is interpreted and repaid, and whether what the pair learns reaches others. Generalised exchange theory already accommodates third parties (Molm et al., 2007), while recent Chinese work on reverse mentoring also addresses relationship development and organisational diffusion (Zhu et al., 2026). The narrower contribution of this paper lies in the joint effects of sanctioned authority,

status-sensitive face-work and the recognition—or dismissal—of obligations within educational hierarchies.

Contextually, the paper offers an indigenous account grounded in classical writing on teaching and current policy (Tsui, 2004), distinguishes schools from universities rather than treating Chinese education as uniform, and gives institutions a design logic for digital transformation that works through existing structures, with propositions testable in other education systems with strong status hierarchies, Malaysia among them.

Limitations

Several limits should shape how these claims are read. The evidence is largely borrowed from firms, non-Chinese contexts or student–staff arrangements. Bertram et al. (2023) offer a welcome teacher-focused comparison, but their German pre-service–in-service design does not test the collegial status relationships central to our model. The purposive search is not exhaustive, and the coding of evidence was carried out by the authors rather than independently verified. Some organisational cases and first-person accounts come from the press. Finally, the argument does not yet explain how extra mentoring work may fall differently on teachers by gender, contract security or career stage. Comparative interventions, observation of Chinese teaching pairs and longitudinal work on organisational uptake would address these limits more directly than adding more illustrative cases alone.

Conclusion

A teacher can learn from a younger colleague without giving up professional standing. This paper argues that such learning may be easier when the institution makes it legitimate, the relationship protects both partners' face and the junior's time and expertise are properly recognised. Those conditions may help explain why some programmes turn into useful exchanges while others remain formalities or private favours. Existing research shows that reciprocal relationships can support individual outcomes, but comparative evidence from teacher development gives no reason to assume that reverse mentoring is automatically better than other forms of collaboration (Bertram et al., 2023). The proposed interaction between authority and face-work, the role of renqing obligations and the diffusion of learning among Chinese teaching colleagues still require direct tests. The practical question is not simply whether seniors learn from juniors, but whether both can do so well—and whether their institutions learn with them.

Declarations

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Data availability. This conceptual study generated no primary empirical data. It assesses evidence from published studies and documented cases, all of which are listed in Table 2 and in the References.

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