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What great teaching really looks like and how can we get there: Singapore compared with the USA, UK, And UAE

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Abstract
This paper explains what great teaching looks like when it is defined as a set of consistent classroom practices supported by a coherent system. It focuses on high-quality instruction that combines explicit teaching with responsive assessment within a positive learning culture. The analysis compares Singapore with the USA, the UK (England), and the UAE using the same practical indicators: clear learning intentions, success criteria, modelling and scaffolding, purposeful questioning that reveals student thinking, cognitive challenge supported by metacognition, and formative assessment with feedback for learning that is used to improve performance. Singapore shows the most systematic integration of these principles through alignment across recruitment, pre-service preparation, induction, ongoing professional development, appraisal, and career pathways, alongside curriculum coherence designed for depth over breadth. The USA, UK, and UAE show more fragmented or developing versions of the same ideas, with variable implementation and uneven support structures. The paper synthesizes meta-analytic evidence and system descriptions to show that great teaching is not a single method. It is a strategic blend of explicit instruction and student agency, strengthened by coherent curriculum design and sustained through mentoring, protected professional learning time, and routines that enable inclusive practice and high expectations for all learners.

Keywords: High-quality instruction, clear learning intentions, success criteria, curriculum coherence, depth over breadth

Introduction

"Great teaching" is often discussed as if it is a personal gift, something some teachers simply have. The evidence summary provided for this paper frames it differently. Great teaching is operationalized when a system makes high-quality instruction normal across schools, not occasional (Scheerens, 2013) [35]. In practice, that means teachers are equipped and expected to do several things consistently: clarify learning intentions, make success criteria visible, teach explicitly through modelling and scaffolding, check for understanding in ways that reveal student thinking, and use formative assessment and feedback for learning to adjust instruction (Black & Wiliam, 1998) [6]. It also means classrooms are built on routines and relationships that support learner engagement, inclusion, and high expectations for all learners (Lindner *et al*., 2020) [21].

This paper uses that definition and compares how these principles are put into practice in four contexts: Singapore, the USA, the UK (England), and the UAE. The central claim is not that one country has "perfect" teaching. Instead, the claim is that the reliability of great teaching depends on coherence: curriculum design, teacher preparation, induction, professional development, appraisal, and career pathways need to pull in the same direction (Jin *et al*., 2019) [16].

Singapore is presented as the strongest example of this coherence (Ministry of Education Singapore, 2025) [26]. It links recruitment, pre-service education, induction, ongoing professional development, and career advancement into a connected structure. The USA, UK, and UAE are described as more fragmented or still developing system supports (NCES, 2023; Education Policy Institute, 2016; QAHE, 2024) [12, 28, 32]. The USA, for example, is characterized by state and district variation without a single national framework for recruitment, preparation, or professional learning (NCES, 2023) [28]. England shows reform-driven movement toward coherence through academisation, shifts toward direct instruction and knowledge-rich curriculum, and a structured early career framework, while still facing curriculum overload and workload pressures (OECD, 2020; Education Endowment Foundation, 2025) [11, 30]. The UAE is actively building teacher quality infrastructure through curriculum modernization, teacher licensing, inspections, and international benchmarking, but implementation depth varies as the system scales (International Schooling, 2025) [15]. The remainder of this paper is organized as follows. The literature review section summarizes the research-based foundations that define high-quality teaching, including meta-analytic evidence and five operational pillars (Chaudhary *et al*., 2022) [8]. The methods section explains how the comparison is structured using only the information provided. The results section describes the Singapore model in detail and then summarizes the USA, UK, and UAE profiles, followed by a cross-system comparative table and a thematic synthesis of key principles. The discussion section interprets what the comparison suggests about why coherence matters, why implementation differs, and what risks and limitations appear within each system. The conclusion section restates the main findings and highlights what it takes to "get there" using the provided evidence base.

Literature Review and Hypotheses

Conceptual foundation: what makes teaching high-quality.

The given research summary starts by basing the concept of high-quality teaching on evidence as opposed to preference. The common theme in various fields is that teaching is best achieved when it is linked closely to the learning procedures and when coherence is considered in the design (Chaudhary

et al., 2022; Scheerens, 2013) [8, 35]. In this section, the foundation is restated with the same content rephrased, and then the hypotheses applied to the comparative analysis are mentioned.

a. Meta-analytic evidence

Three of the described meta-analyses provide a common agenda on what is significant in terms of teaching efficacy (Aronson *et al*., 2007; Chaudhary *et al*., 2022; Scheerens, 2013) [3, 8, 35]. To begin with, Aronson *et al*. indicate that the most significant changes are observed when instruction is aimed at learning mechanisms that are closer to executive functioning: metacognition and strategic thinking instead of emphasizing superficial aspects of delivery (Aronson *et al*., 2007; American Society for Cell Biology, 2020) [2, 3]. This framing is important in that it drives the focus beyond what teachers are outwardly doing, and instead drives it towards what students are cognitively doing.

Second, the meta-analysis conducted by Chaudhary (132 studies) provides a mean effect size of 0.37 ($p < 0.001$) of the use of teaching factors on student learning (Chaudhary *et al*., 2022) [8]. Notably, this text does not limit effective teaching to a single technique. It demonstrates that both the direct and constructivist approaches contribute meaningfully to classroom teaching, which justifies a more integrated and more practical approach to classrooms (Chaudhary *et al*., 2022) [8].

Third, meta-analysis of 155 studies of school effectiveness states that the quality of the curriculum and time spent on teaching are the most effective factors ($r = +.15$) that are closely followed by school climate factors ($r = +.14$) (Scheerens, 2013) [35]. This simply implies that what is taught, its order of sequence, and time safeguarding to teach and to learn may be equally significant as specific methods (OECD, 2020) [30]. It also underscores that it is not the school and classroom climate which is additional, but it is an element of what defines the result of learning (LSE, 2018; University of Nebraska-Lincoln, 2019) [23, 39].

Inference made in the short term: high-quality teaching is not simply transmission-based, and neither is it simply discovery-based. It is most effective when explicit instruction and student agency are integrated, and this integration lies within coherent curriculum design (Jin *et al*., 2019; Confrey *et al*., 2015) [9, 16].

b. 5 pillars of effective teaching.

The brief also transforms the evidence into 5 pillars that operationalize high-quality instruction. These pillars can be used in making sense of what great teaching can be seen as actually being (Black and Wiliam, 1998; Wiliam, 2005) [6, 40].

Well-defined learning objectives and achievement standards.

Teachers clearly state the learning and how success will be measured (Black and Wiliam, 1998) [6]. This can be greatly beneficial as it helps students to keep track of their progress and helps them to avoid the confusion of the appearance of good work (Wiliam, 2005) [40].

Formed, overt pedagogy, in terms of modelling and scaffolding.

The teachers demonstrate the ideas and procedures and then request the students to work on them on their own (Belland *et al*., 2013) [4]. The support provided to students in order to achieve independence is based on scaffolding (Kruiper *et al*., 2022) [19]. The short mentions the use of staged systems in mathematics, like Concrete-Pictorial-Abstract (C-P-A), but it mentions analogous staged sequences in other subjects (Jin *et al*., 2019) [16].

Informal evaluation and feedback

The thinking of students is not only checked at the end of the units (Black and Wiliam, 1998) [6]. Feedback determines areas of gaps, and provides steps to be taken (Black, 2015) [5]. The most important thing is that feedback must be formative, with the learner using it to enhance performance. Otherwise, it is just information (Wiliam, 2005) [40].

Metacognitive development

Educators develop the capacity of the students to think how they think- pay attention to their comprehension, regulate methods, and change strategies when they are in a jam (American Society of Cell Biology, 2020; Journal of the Scholarship of Teaching and Learning, 2012) [2, 18]. Positive learning culture.

Risk-taking and peer learning can occur with the help of a supportive classroom climate that implies psychological safety, high expectations for all learners, and collaborative norms (University of Nebraska-Lincoln, 2019; Panorama Education, 2024) [31, 39]. This pillar is similar to classroom routines and structure, as when learning routines are predictable, engagement and inclusion become simpler to maintain (Elon University CATL, 2022; ERIC, n.d.) [13].

Hypotheses

This paper is based on the structure of the brief and utilizes hypotheses to structure the comparison. These suppositions do not present anything new; they reiterate what the given overview suggests across systems (OECD, 2020; Education Endowment Foundation, 2025) [11, 30].

H1: Curriculum coherence and depth (as opposed to breadth) in systems will result in more uniform high-quality teaching (OECD, 2020; Jin *et al*., 2019) [16, 30].

H2: Explicit teaching, modelling and scaffolding, and purposeful questioning in systems designed to prepare, induce, and develop teachers will decrease the differentiation in classroom practice (Belland *et al*., 2013; Cornell University Center for Teaching, n.d.; NIU Center of Innovative Teaching, 2019) [4, 29].

H3: Systems where formative assessment and feedback are made normalized to facilitate learning will be better placed to respond to teaching, differentiate, and facilitate inclusive practice (Black and Wiliam, 1998; Lindner *et al*., 2020) [6, 21].

H4: Systems with professional learning time, mentoring and developmental appraisal protection will maintain higher teaching quality in the long run than systems with fragmented and optional supports (Education Policy Institute, 2016; Education Endowment Foundation, 2025) [11, 12].

Methods

This paper is a structured synthesis that answers one question: how is it that core teaching principles are operationalized in Singapore, the USA, the UK (England)

and the UAE? (Ministry of Education Singapore, 2025; NCES, 2023; Education Policy Institute, 2016; QAHE, 2024; International Schooling, 2025) [12, 15, 26, 28, 32].

The approach has three steps

1. Define a set of shared teaching principles from the brief: High quality teaching; clear learning intentions; success criteria; curriculum coherence; depth over breadth; explicit teaching; modelling and scaffolding; purposeful questioning; cognitive challenge; metacognition; student thinking; formative assessment; feedback for learning; responsive teaching; differentiation; inclusive practice; high expectations for all learners; positive learning culture; classroom routines and structure; learner engagement. (Black & Wiliam, 1998; Wiliam, 2005; Belland *et al*., 2013; Kruiper *et al*., 2022; Jin *et al*., 2019; Lindner *et al*., 2020; University of Nebraska-Lincoln, 2019; Panorama Education, 2024) [4, 6, 16, 19, 21, 31, 39, 40].
2. Describe operationalization in each of the systems based on the system details given, including teacher preparation structures, induction and mentoring, professional development models, appraisal and career pathways, and curriculum design features where described. (Ministry of Education Singapore, 2023; Ministry of Education Singapore, 2025; Education Endowment Foundation, 2025; Education Policy Institute, 2016; TeacherTapp, 2025; NCES, 2023; QAHE, 2024; International Schooling, 2025; Organization for Economic Cooperation and Development, 2020; NCEE, 2023) [11, 12, 15, 25, 26, 27, 28, 32, 37].
3. Compare across systems using the table of cross-system and thematic synthesis already contained in the brief. The most important points are presented first (Singapore's operational model), and then the comparison between the USA, UK, and UAE, discussing how each is aligning (or not) with the same classroom principles, is presented. (Stanford SCOPE, 2016; TIMSS Encyclopedia, 2019; Education Endowment Foundation, 2025; OECD, 2020; NCES, 2023; QAHE, 2024) [11, 28, 30, 32, 36, 38].

Results

Operationalizing pedagogical principles: the case of the Singapore model (Ministry of Education Singapore, 2025; Stanford SCOPE, 2016; TIMSS Encyclopedia, 2019) [26, 36, 38]

The brief talks about Singapore as the most fully documented example of how high-quality teaching principles can be put into practice. The central feature is systemic coherence: recruitment, preparation, induction, ongoing professional development, and career advancement are linked rather than seen as separate projects. (Ministry of Education Singapore, 2025; NCEE, 2023) [27]

a. Explicit teaching and scaffolding in practice (Belland *et al*., 2013; Kruiper *et al*., 2022) [4, 19]

Pre-service foundation (TE21 and developmental practicum phases) (Stanford SCOPE & Ministry of Education Singapore, 2016 & 2023) [25, 36]

Singapore's National Institute of Education (NIE) uses the Teacher Education Model for the 21st Century (TE21), which has pedagogical mastery as the central focus of teacher preparation. Teacher candidates pass through three stages: (Stanford SCOPE, 2016) [36].

Year 1 (Observation): one-week placements in primary and secondary schools based on observing real classroom practice.

Year 2 (Assisted teaching): a five-week assistantship during which candidates assist with the planning of lessons, the preparation of materials and the management of students under the direction of a cooperating teacher.

Final phase (Independent teaching): a ten-week capstone practicum in which candidates teach complete lessons with informal and formal observations.

The brief defines this as a spiral structure parallel to staged pedagogy of C-P-A, where candidates first observe practice concretely, then assist in building competence and then teach independently with accountability. In other words, the teacher learning pathway reflects the logic of modelling and scaffolding that teachers are expected to work with students. (Belland *et al*., 2013; Kruiper *et al*., 2022) [4, 19].

Mathematics curriculum and depth building design (Ministry of Education Singapore, 2023; TIMSS Encyclopedia, 2019) [25, 38]

In terms of mathematics, the framework of Singapore is characterized as having five interrelated components: concepts, skills, processes, metacognition, and attitudes. The curriculum repeats topics through the grades with a depth of knowledge. The example provided in the brief is fractions: students are introduced to fractions first through the use of concrete objects in primary, then through the use of pictorial representations such as tables, and then fractions are introduced algebraically in secondary mathematics. This is curriculum coherence in action because progression, representations and a uniting of increasing cognitive demand over time are aligned. (Jin *et al*., 2019; Confrey *et al*., 2015) [9, 16].

In-classroom scaffolding strategies (Belland *et al*., 2013)

The brief linkage to scaffolding in Singapore with Belland *et al* of the importance of both motivational scaffolds and cognitive scaffolds. Examples provided include:

Driving questions aimed at inspiring curiosity and making investigation purposeful, e.g. why does pumice float when other rocks sink?

Cognitive congruence, where the teacher's language has connections to students' experiences (e.g. linking the algebra to shopping or pocket money).

Graded responsibility (moving from teacher modelling to shared to independent application). (Belland *et al*., 2013; Kruiper *et al*., 2022) [4, 19].

These strategies are examples of teaching explicitly and not rigidly. Structure is used to support student thinking and engagement. Thereafter, responsibility is transferred as competence grows. (Belland *et al*., 2013) [4].

b. Formative assessment and feedback for learning (Black & Wiliam, 1998; Wiliam, 2005) [6, 40]

The five strategies of formative assessment that Black and Wiliam use as a framework are Clarifying learning intentions and success criteria

Tasks and conversations in engineering that elicit evidence of understanding.

Providing Feedback That Leads to Forward Movement

Making the students' learning resources for one another via peer feedback and explanation.

Making learning owners by self-assessing and monitoring one's learning. (Black & Wiliam, 1998; Wiliam, 2005) [6, 40]

Singapore's implementation is a mixture of formal and informal assessments. The short notes that are formal summative assessments take place at least twice in primary and secondary schooling, in addition to continuous informal formative checking. Teachers use the responses to individual students to vary the pace, methods and materials for individuals and groups of students. (Ministry of Education Singapore, 2023; TIMSS Encyclopedia, 2019) [25, 38].

A crucial clarification in the brief is made from William's point: feedback is only formative if it is used by the learner to improve. Without that use it does not work as formative assessment. Singapore's emphasis on adaptive teaching, changing instruction from formative evidence, fits the definition of formative assessment since feedback is intended to lead to action, not merely to communicate the score. (Wiliam, 2005) [40].

c. Coherence and depth over breadth of curricular content (Jin *et al*., 2019; Confrey *et al*., 2015) [9, 16]

Singapore's curriculum design is said to be coherent in both the vertical and horizontal dimensions. Vertical coherence is demonstrated in the spiral progression among grade levels; horizontal coherence is demonstrated in alignment between curriculum content, instruction, and assessment. (Ministry of Education Singapore, 2023) [25]

Content in science is organized through themes, not topics (diversity, cycles, energy, interactions, systems, and models). The example in the brief is that of energy: students are introduced to energy (such as light and heat) in primary, and later transfer of energy and work in secondary. This thematic structure promotes connections of concepts and facilitates depth rather than superficial coverage. (Ministry of Education Singapore, 2023) [25]

The brief also contrasts this with the concerns about curriculum overload, which have been raised in international discussions. Singapore is characterized as balancing breadth and depth through identifying "big ideas" that recur, progressions are built in an explicit manner, learning time is regulated, and no content is expanded without expanding instructional hours. This helps in protecting the depth over breadth without narrowing the curriculum to a few topics. (OECD, 2020) [30]

d. Metacognition & Student Thinking (American Society for Cell Biology, 2020; Journal of the Scholarship of Teaching and Learning, 2012) [2, 18]

Metacognition is referred to as explicit in the curriculum framework of Singapore, especially in Mathematics, where it is mentioned as one of the five core components. Teachers support students to articulate strategies, support students to monitor understanding, support students to adjust strategies when stuck, and reflect on learning through routines such as journaling. (Ministry of Education Singapore, 2023) [25] .

The metacognition in teacher preparation through e-portfolios documenting growth and reflection is also described in this brief. In addition, social metacognition is highlighted through peer discussion, evaluation of hypotheses and collaborative reasoning in group work. The net point is the same: Student thinking is something to be developed and made visible, not simply something to be taken for granted as something that happens automatically. (Stanford SCOPE, 2016) [36].

e. Purposeful questioning and engagement of learners (Cornell University Center for Teaching, n.d.; NIU Center for Innovative Teaching, 2019) [29]

Singapore's approach to questioning is presented as deliberate and thinking-focused. Probing questions ("Can you explain your reasoning?") are used by teachers; conceptual questions ("How is this similar to yesterday?") and student-generated questions. The point is to bring out reasoning and deep understanding, not to simply gather up short answers. (Cornell University Center for Teaching, n.d.).

Discussion routines that were discussed in the short include think-pair-share, wait time of 5-10 seconds after questions, and inviting follow-up questions and peer evaluation. These routines encourage engagement by the learner as they need to participate and think, while keeping them in an appropriate structure. (NIU Center for Innovative Teaching, 2019) [29].

f. Positive learning culture and inclusive practice (Lindner *et al*., 2020; University of Nebraska-Lincoln, 2019; Panorama Education, 2024) [21, 31, 39]

Singapore's curriculum philosophy, as outlined in the brief, focuses on caring and safe environments that enable and promote positive teacher-student and peer relationships. In practice, this means routines and expectations that are clear, grouping strategies that are inclusive (flexible grouping rather than the grouping of students by ability) and expectations for all learners to achieve and succeed by scaffolding and providing targeted feedback. (Ministry of Education Singapore, 2023) [25]

The key operational point is that the inclusion practice is accompanied by instructional support. It is not framed as lowering standards and separating students; it is framed as adapting teaching and support so that all students can participate and improve. (Lindner *et al*., 2020) [21] .

g. Responsive teaching and differentiation Black & Wiliam 1998 [6] Lindner *et al*. 2020 [21]

Responsive teaching is defined as the changing of teaching based on formative evidence. Differentiation in Singapore is done through differentiated scaffolding, flexible grouping and multiple entry points (concrete manipulatives, pictorial, abstract symbols). The structure described in the brief involves a centralized approach in terms of curriculum (access to the core body of knowledge) but decentralization in terms of delivery, so that teachers have the flexibility to tailor their approaches to the needs of their learners, without compromising the coherence of the curriculum. (Ministry of Education Singapore, 2023) [25].

Professional Development and Systemic Support: how Singapore maintains quality (Ministry of Education Singapore, 2025; Stanford SCOPE, 2016; NCEE, 2023) [26, 27, 36]

Singapore's coherence is not confined to classroom methods. The brief outlines a system to support teacher

learning in terms of recruitment, training, early career support, ongoing development and appraisal. (Ministry of Education Singapore, 2025) [26].

a. Recruitment and selectivity (NCEE, 2023; Stanford SCOPE, 2016) [27, 36]

Singapore hires teachers from the best 30% academic cohorts. The selection process involves academic evaluations, aptitude interviews by experienced principals and a school-type assessment stint (3-12 months), during which the candidates work as untrained contract teachers. This position is a great way for schools to assess suitability, and it also gives the candidates an opportunity to demonstrate dedication. According to the brief, only one in three shortlisted candidates clears the interview stage. This level of selection is presented as one of the reasons the system has strong teacher cohorts. (NCEE, 2023) [27]

b. Pre-service teacher education (Stanford SCOPE, 2016; NCEE, 2023) [27, 36]

The brief characterizes TE21 to be a combination of academic subjects (content knowledge), education studies (learning processes, assessment literacy, instructional technology), curriculum studies (pedagogical methods such as C-P-A and inquiry-based science), and service learning and practicums (22 weeks for undergraduates or 10 weeks for postgraduates). Professional values are instilled by engaging in the community (GESL) and by communicating (LEADS). Reflection is operationalized through teaching and learning e-portfolios. (Stanford SCOPE, 2016) [36].

c. Induction and mentoring (Ministry of Education Singapore, 2025; Stanford SCOPE, 2016) [26, 36]

Beginning teachers are centrally managed for a 2-year induction. Key elements described include the Teachers' Investiture Ceremony, three-day orientation, in-service courses

(Classroom management, Parent Engagement, Relationship, Reflective practice, Pedagogy, Assessment literacy), and the Structured Mentoring Program (SMP). Beginning teachers are given fewer responsibilities (80% of an experienced teacher's load) to provide time for planning, observing and mentoring. There is also a period of one year's probation before confirmation. (Ministry of Education Singapore, 2025) [26]

Mentor preparation is aided by the Skillful Teaching and Enhanced Mentoring (STEM) program that started in 2011 in partnership with the New Teacher Center (USA). The notes from the brief indicate that around 40% of lower secondary teachers have assigned mentors, with a similar proportion serving as mentors, compared to a average of 14% in the United States, as shown in TALIS. (Ministry of Education Singapore, 2025) [26].

d. Continued professional development (Ministry of Education Singapore, 2025) [26]

Singapore's system investment in professional development is one that has been described as being substantial: 100 hours annually, during school hours, with relief coverage. PD is informed by the Teacher Growth Model (TGM), which has five outcomes: Ethical Educator, Competent Professional, Collaborative Learner, Transformational Leader, and Community Builder. PD is facilitated through teacher-led learning structures within the Academy of Singapore Teachers (AST) and the subject academies (PESTA, STAR, ELIS, MLCS, SCCL, UPTLC). School embedded PD Lesson study Action research Peer observation and co-teaching Professional learning communities Supported by Staff Developers (Ministry of Education Singapore, 2025)

TALIS 2024 indicators explained in the brief include: 87% of Singapore teachers reporting positive changes in pedagogical competencies as a result of peer-feedback (OECD average 71%), and 76% have participated in PD on AI for teaching and learning (OECD average 38%). (Ministry of Education Singapore, 2025) [26].

e. Appraisal and careers pathways (Stanford SCOPE, 2016; NCEE, 2023) [36]

The Enhanced Performance Management System (EPMS) is characterized as being formative as well as summative. Teachers are assessed based on student outcomes, professional outcomes, and organizational outcomes. Appraisal is connected with professional learning and development through mid-year and end-of-year conversations. (Stanford SCOPE, 2016) [36]

Three career paths are outlined for those in Singapore, namely a teaching track (Senior Teacher to Principal Master Teacher), a leadership track (Head of Department to principal and ministry positions) and a specialist track (curriculum, psychology and technology specialists, commonly in MOE or academies). Recognition awards are also mentioned in the brief (OYEA, CTA, PAT), as well as grants for outstanding contributions. A key point in the brief is that appraisal is experienced as developmental rather than threatening (this is in contrast to accountability-focused systems). (NCEE, 2023) [27].

f. Systemic alignment (Stanford SCOPE, 2016; NCEE, 2023) [27, 36]

Finally, the brief describes tight coupling between policy and practice through centralized recruitment and deployment, a national curriculum within which schools have some latitude for pedagogy, a School Self-Evaluation Framework with external validation every 6 years, a rotation system of educators between schools and the MOE, and a cluster system that involves 12-14 schools in a professional learning system. (Stanford SCOPE, 2016) [36]

The following are the brief reports of system outcomes for this alignment: higher perceived social standing among teachers (71% feel valued by society compared to an average 22% in the USA), low attrition (3% compared to 15%+ in the USA), high job satisfaction (87%), and high reported enjoyment of school (88%). (Ministry of Education Singapore, 2025; NCEE, 2023) [26, 27].

Comparative analysis: USA, UK and UAE (NCES, 2023; Education Policy Institute, 2016; QAHE, 2024; International Schooling, 2025) [12, 15, 28, 32]

a. USA: fragmented system with variable implementation (NCES, 2023) [28]

The USA is characterized as having no national teacher recruitment, preparation and professional development framework. Education is under the control of the states and districts, and this causes wide variation. (NCES, 2023) [28]

The short lists several challenges, including selectivity in recruitment, broad variation in the structure of pre-service programs and the number of practicum hours, and

inconsistency in induction - some states have requirements, many do not, and where they exist, quality varies. Early career teacher turnover is greater than 15% and is attributed in the brief to low compensation, limited support and unclear career pathways. (NCES, 2023) [28].

The achievement concerns are also briefly explained, with the USA at 22nd place in mathematics in PISA 2018 and other systems that are better than the USA in PIRLS 2022 reading. Curriculum is defined as breadth-heavy and coverage-driven, driven by "teaching to the test" issues in accountability-driven districts. Professional development is characterized as variable, often outside of school time, in after-school and/or summer workshops with little protected time. Many teachers do PD independently and at their own expense. This drives systemic misalignment: An effective teacher in one district may not have access to the same quality of PD, mentoring and assessment tools, or career support as a peer in another district. (NCES, 2023; Education Policy Institute, 2016) [12, 28].

The brief also mentions bright spots like high-performing districts investing in coherent recruitment, extensive induction, coaching and instructional leadership development, but stresses these are exceptions, not systemic norms. (NCES, 2023) [28].

b. UK (England): reformation towards systemic coherence (Education Endowment Foundation, 2025; Education Policy Institute, 2016; OECD, 2020) [11, 12, 30]

England is said to have made some progress in coherence since the post-2010 reforms and tensions. (Education Policy Institute, 2016) [12]

Reforms outlined include the academisation (autonomy of schools in terms of curriculum and teacher pay), pedagogical shift of direct instruction, knowledge-rich curriculum, phonics and mastery maths and national exam structures (GCSE/A levels) supporting coherence. Ofsted inspections are based on teaching quality. The brief notes that England improved on PISA and TIMSS compared to other countries since 2010. (OECD, 2020) [30].

Challenges include curriculum overload (breadth over depth) and political difficulty in reducing the content due to pressures for breadth. Teacher measurement is described as complex, as there is no widespread use of standardized common assessments across secondary schools (less than one in five). Workload and well-being issues are also explained, along with the lack of time allocated for PD when compared to Singapore. Induction is also being enhanced through the Early Career Framework (ECF) introduced in 2019, although it is still quality-controlled by individual school trusts. The brief also states that inclusive practice puts more of a burden of differentiation in this area, and systemic support is not as developed as Singapore's model. Overall, systemic alignment is described as getting better but still lower than Singapore, with autonomy supporting innovation but greater variation. (Education Endowment Foundation, 2025; Education Policy Institute, 2016) [11, 12].

c. UAE: emerging system with ambitious targets (QAHE, 2024; International Schooling, 2025) [15, 32]

The UAE is characterized as actively developing teacher quality infrastructure through curriculum modernization, teacher licensing, inspection-based quality assurance and international benchmarking. (QAHE, 2024; International Schooling, 2025) [15, 32].

Initiatives in the short term encompass a National Curriculum Framework that emphasizes academics, skills, character, creativity and teaching maths and science in English; a Dubai Government Teacher Licensing Program (TLP) with standardized requirements and ongoing PD mandates; KHDA inspections in the areas of teaching quality, curriculum implementation, wellbeing and leadership; and participating in PISA, TIMSS, and PIRLS for gap identification and reform. Vision targets are the top 20 ranking position in PISA and longer-term innovation targets. (QAHE, 2024; International Schooling, 2025) [15, 32]

Challenges across these three dimensions that were described in the brief are the pace and scale of expansion, limited longitudinal research evidence as compared with Singapore, ongoing technology adoption with emerging evidence, and a large expatriate teacher workforce with variable preparation backgrounds. Professional development is prescribed and in progress, but the form is said to be less developed than teacher-led academies in Singapore or partnerships in England. (QAHE, 2024; International Schooling, 2025) [15, 32].

Discussion

The comparison in the brief supports a practical interpretation: great teaching is made consistent when the systems are designed for coherence. Singapore is depicted as coherent on various levels. The classroom practices - including explicit teaching, modelling and scaffolding, purposeful questioning, metacognition, formative assessment and feedback for learning - are not left to chance. They are embedded into teacher education, practicum phases, mentoring, school-based professional learning and appraisal. The structure of the curriculum supports depth over breadth with spiral progressions and thematic coherence, making cognitive challenge more manageable and reducing the pressure to rush.

By contrast, the USA is defined as fragmented. That fragmentation does not mean that there is no good teaching involved; it means that implementation is inconsistent. The system does not ensure that teachers will be provided with good induction, protected professional learning time, and coherent assessment practices. The result is variability between the districts and high attrition, making long-term improvement more difficult to sustain. The brief also underlines the fact that high-stakes testing contexts can sideline formative assessment and limit opportunities for responsive teaching.

England is said to be heading toward coherence through reform and a greater focus on direct instruction and knowledge-rich curriculum. Yet the tensions highlighted in the brief are of curriculum overload that constraints depth and pressures of workload that have a detrimental impact on the practical space available for refined feedback, lesson study and collaborative improvement. ECF is gaining support but is still patchy across trusts.

The UAE is said to be creating coherence through licensing, inspection, curriculum modernization, and benchmarking. The key issue is the maturity and consistency of implementation. Where teachers come from diverse preparation backgrounds, and turnover is high, the system needs to develop stable mentoring and professional learning structures in a short period of time. The short answer in the

brief is that infrastructure is on the increase, but that the depth and consistency of practice remain variable.

The brief also contains limitations and questions of equity that influence interpretation. Even Singapore, with its high levels of performance, has a tail of poor students who need specific help. Selective recruitment can lead to questions of equity, and constant reform can lead to fatigue with no careful leadership. The USA struggles with structural barriers caused by federalism and funding inequity, where the amount of attrition makes the building of shared professional knowledge difficult. England is faced with tensions of overload and workload, and potential inequalities associated with autonomy and variable capacity. The UAE is challenged by the scaling issues, the variety of backgrounds of the teacher preparation programs, and the lack of long-term evidence.

Conclusion

Using the provided synthesis solely, the big picture conclusion is that quality teaching is operationalized in terms of systemic coherence: recruitment, preparation, induction, continuing professional development, appraisal and career advancement need to be coherent with explicit pedagogical principles and coherent curriculum design. Singapore shows the fullest integration of these elements and has excellent performance results. The USA, UK, and the UAE exhibit jumbled or evolving forms of alignment with fluctuating forms of implementation.

Across systems, there are a number of points that are stable in the brief: explicit teaching with scaffolding and formative feedback leads to strong learning gains; curriculum coherence and depth-building progressions are as important as pedagogy; metacognitive development and positive learning culture are highly valued but inconsistently operationalized; and protected time for professional learning, mentoring, and coherent supports are critical as without them practice drifts. Recruitment and retention are also described as requirements for sustained quality: strong systems make investments in teachers as valued professionals with clear development and career pathways.

For systems looking to improve, the short frames in Singapore are not a one-off, transferable program, but a blueprint for aligned levers. The need for adaptation is driven by the fact that contexts vary, but the principles of coherence and investment are the same.

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