# Contextualizing entrepreneurial leadership in the K-12 school setting—lessons from Austria and Germany

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Global megatrends such as climate change, demographic shifts, and technological disruption increasingly compel K-12 school leaders to innovate within complex and uncertain environments. Entrepreneurial School Leadership (ESL), encompassing opportunity recognition, initiative, and strategic resource management in a bureaucratic setting, offers a framework for adaptive and future-oriented K-12 leadership. This conceptual paper examines ESL in German-speaking countries, where educational traditions that prioritize humanistic Bildung over market-oriented models, interact with pressures for efficiency and accountability. A document analysis of normative school leadership profiles from Austria and Germany highlights the formal integration of entrepreneurial content knowledge and competencies, including innovation, networking, and strategic planning, while revealing persistent tensions between pedagogical and economic rationalities. The analysis underscores that ESL operates at the intersection of individual dispositions, institutional conditions, and national-cultural contexts. Future research should investigate how ESL is enacted in practice, including its potential for fostering social value, transformative innovation, and sustainable school development, while critically attending to unintended consequences and context-specific constraints.

## 1 Introduction

Current megatrends such as climate change, demographic shifts, and artificial intelligence compel school leaders (SLs) to rethink school development strategies (Arar, 2020; Chiu, 2023; Pietsch et al., 2023a). These dynamics place SLs in a volatile, uncertain, complex, and ambiguous (VUCA-) environment shaped by societal, technological, and ecological demands (Ainscow, 2020; Iberer and Warwas, 2024; Koch et al., 2015; Schleicher, 2018). Schools are expected to foster knowledge, skills, and values that enable students to navigate these conditions, including critical thinking, global citizenship, and sustainable development (Goren and Yemini, 2017; Pietsch et al., 2023a; Vare and Scott, 2007).

Against this backdrop, schooling is shifting from standardized instruction toward individualized learning within flexible organizational structures. Teachers increasingly act as facilitators, curating resources and designing practice-oriented projects, supported by digital technologies and adaptive learning software that promote equity. Realizing these

changes requires educational leadership that leverages institutional autonomy, encourages innovation, and cultivates external partnerships. Future-oriented K-12 leadership (so-called Leadership 5.0) integrates scientific and technological advancements, employs participatory formats, and embraces diversity, transforming schools into adaptive learning organizations responsive to a hybrid, complex, creative, and digital world (Interview with Isabell Welpe and Esther Ostmeier, In Kuhn, 2021).

Innovation is therefore central to contemporary educational leadership, offering SLs strategies to manage uncertainty and drive improvement to challenging demands (Kasim, 2021; Lope Pihie and Bagheri, 2013). It encompasses both incremental and transformative shifts in processes, institutional structures, and leadership practices (Sánchez and Gutiérrez-Esteban, 2023). Obstacles such as technological disruption, societal expectations, the integration of sustainable development goals, and resistance to change persist, hindering strategic progress (Aldridge and McLure, 2024; Maritzen, 2015; Schleicher, 2018). Consequently, innovation for SLs entails continuously redesigning teaching, learning, and organizational frameworks to enable flexible, inclusive, and sustainable responses to current and emerging challenges.

Entrepreneurship complements innovation by enabling the identification of opportunities, the assumption of initiative, and the implementation of novel solutions under conditions of uncertainty (Hörnqvist and Leffler, 2014; Samson and Gloet, 2016). Entrepreneurial School Leadership (ESL) emphasizes how SLs can develop competencies to manage complexity, lead adaptive and inclusive schools, and address both pedagogical and structural challenges (Demirbilek, 2022; Hebert et al., 2012; Pashiardis and Brauckmann-Sajkiewicz, 2022). In this view, SLs act not merely as policy implementers but as strategic actors who translate policy into practice and align organizational structures with innovation-oriented goals (Bonsen, 2003; Yemini et al., 2015). Empirical studies further demonstrate how SLs engage in entrepreneurial practices, operationalizing theoretical concepts into strategies for school improvement and sustained innovation (Ariyani et al., 2021; Hebert et al., 2012; Kafa et al., 2025; Syafrudin et al., 2023).

SLs do not develop these entrepreneurial competencies in isolation, as their actions are influenced by broader governance reforms. In particular, public sector modernization through New Public Management (NPM) emphasizes performance, efficiency, and accountability within decentralized, results-oriented frameworks (Brauckmann et al., 2015, 2019a; Follmer, 2015; Grimm and Bock, 2022; Keddie et al., 2018). While NPM and governance reforms shape the institutional context for entrepreneurial thinking and action, its implementation is also mediated by cultural-national traditions.

Entrepreneurship has gained traction in educational leadership research, yet remains conceptually ambiguous and culturally sensitive (Frentz et al., 2025). In German-speaking countries, introducing economic principles faces skepticism rooted in the humanistic tradition of *Bildung* (Böttcher, 2001; Krautz, 2020; Wagner, 2006), whereas Anglo-Saxon and Nordic systems frame SLs pragmatically as change agents linking creativity to measurable improvement, supported by robust local governance (Bates, 2006; Brauckmann et al., 2015; Mincu, 2022; Moos et al., 2004; Mintrop,

2015). Consequently, strategies successful in one context may not transfer automatically, requiring SLs to adapt international lessons to local pedagogical and cultural settings (Mincu, 2022). These cross-cultural insights underscore the importance of balancing efficiency and innovation with pedagogical initiatives that promote inclusion, equity, and student wellbeing (Ainscow, 2020; Brauckmann-Sajkiewicz and Pashiardis, 2022; Wilkins et al., 2021).

On this basis, the central research question is: How can entrepreneurial thinking and action contribute to innovative school leadership in German-speaking countries while navigating tensions between economic pressures and pedagogical goals? This conceptual paper analyzes the integration of entrepreneurial approaches in K-12 leadership and investigates how economic and pedagogical rationalities intersect in the German-speaking context.

The paper proceeds as follows: Section 2 discusses the contextual nature of educational leadership and its interplay with national and cultural environments. Section 3 introduces entrepreneurship and its relevance for school leadership. Section 4 explores debates on the economization of education in German-speaking countries and presents a document analysis of normative school leadership profiles from Austria and Germany. Section 5 discusses how entrepreneurial thinking supports contextually grounded school improvement, followed by Section 6 with an outlook and reflection on limitations.

## 2 Educational leadership and the consideration of context

Educational leadership in K-12 settings is increasingly understood as an interactional process shaped by social and institutional environments (Blose, 2024; Pietsch et al., 2023b). This perspective acknowledges that the daily work of SLs is highly context-dependent, encompassing curriculum and instruction while also cultivating a positive school culture (Daniëls et al., 2019). Context is not merely a backdrop. It both enables and constrains leadership practice, shaping how SLs enact their roles. Consequently, assumptions of universally effective leadership must be reconsidered in favor of adaptive, context-aware approaches (Brauckmann et al., 2016; Mincu, 2022; Pont et al., 2008).

Educational leadership operates across multiple layers of context, from individual experiences to institutional and national-cultural systems (Hallinger, 2018; Torres, 2022). Historically, K-12 leadership was shaped by technocratic and bureaucratic logics that prioritized efficiency and administration over pedagogical concerns (Bates, 2006). Since the 1990s, research has increasingly highlighted the importance of national culture, societal values, and organizational structures in shaping effective leadership practices (Hallinger, 2018). Cross-national studies show that cultural dimensions, such as hierarchy, collectivism, and stakeholder relationships affect collaboration, decision-making, and leadership enactment (e.g., Blose, 2024; Lee and Hallinger, 2012; Oplatka and Arar, 2017; Pietsch et al., 2025).

Empirical evidence also suggests that educational leadership varies significantly depending on the degree of system centralization or decentralization at the institutional level.

SLs in centralized systems experience limited autonomy, whereas those in decentralized systems report greater flexibility and instructional involvement (Balasi et al., 2023; Kemethofer et al., 2023). These findings emphasize the importance of leadership development that is sensitive to local contexts, integrating formal training with experience-based learning to foster adaptive practices (Brauckmann et al., 2023; Hallinger, 2018).

By outlining the contextual framework, this section lays the foundation for understanding how entrepreneurial thinking and action can be effectively applied by SLs across diverse educational environments. Context shapes not only the opportunities and constraints encountered by SLs but also the manner in which entrepreneurial strategies can be meaningfully operationalized.

# 3 Entrepreneurship and entrepreneurial thinking and acting among school leaders

Entrepreneurship originates in economics (Bacigalupo et al., 2016; Kirzner, 1973; Schumpeter, 1997). In contrast to popular associations with start-ups, entrepreneurship refers to a complex process involving innovation, creativity, risk engagement, and opportunity recognition and exploitation (Ricketts, 2008; Shane and Venkataraman, 2000). Entrepreneurial thinking and acting is increasingly recognized as essential for SLs to navigate rapid societal and organizational change (Frentz et al., 2025; Kafa et al., 2025). An entrepreneurial mindset enables them to move beyond reactive problem-solving and proactively shape educational environments through innovation and strategic resource management (Balasi et al., 2023; Brauckmann-Sajkiewicz and Pashiardis, 2022).

Building on this, entrepreneurial leadership, in general, denotes a leadership role focused on influencing organizational emergence and driving development (Frentz et al., 2025; Kearney, 2020; Leitch et al., 2013). With a focus on the K-12 public sector, entrepreneurial SLs must navigate political priorities, institutional norms, and bureaucratic procedures that can both enable and constrain innovation (Vivona et al., 2025), while balancing diverse stakeholder expectations and accountability requirements, creating inherent tensions between innovation and administrative compliance (Currie et al., 2008). The development of competencies such as proactivity or opportunity recognition is thus closely shaped by organizational structures, which can both discourage risk-taking and support networking (Gandhi et al., 2021; Vargas-Halabí et al., 2017).

In educational leadership research, this understanding has led to several interconnected approaches of entrepreneurship (Frentz et al., 2025): Intrapreneurship and corporate entrepreneurship (Covin and Slevin, 1991; Pinchot, 1985) highlight how SLs drive innovation *within* existing organizational constraints (Eyal and Kark, 2004; Follmer, 2015; Hall et al., 2023; Lope Pihie and Bagheri, 2013) while managing organizational tendencies toward risk avoidance (Geradts and Alt, 2022). Such intrapreneurial action fosters internal change by leveraging opportunities from within, supporting decentralization, autonomy, and distributed decision-making (Elert and Stenkula, 2022). Complementary forms include

social entrepreneurship, which prioritizes the creation of social value over profit and seeks collaborative, community-oriented solutions to systemic challenges (Sagie et al., 2016; Yemini et al., 2015), or edupreneurship, merging business-oriented, educational, and instructional elements to encourage independence and meaningful stakeholder engagement (Pashiardis and Brauckmann, 2019). Together, these approaches illustrate that ESL represents a spectrum of practices combining innovation, adaptability, and value creation across diverse institutional settings, which is why, in the following, the encompassing terms *entrepreneurship* and *entrepreneurial* will continue to be used.

ESL synthesizes these principles by emphasizing value creation, opportunity recognition, and innovation within educational settings (Frentz et al., 2025; Gupta et al., 2004; Renko et al., 2015; Vivona et al., 2025). Although rooted in economics, applying entrepreneurial thinking in schools requires careful adaptation. Accordingly, this study conceptualizes ESL as a hybrid model combining strategic competencies with pedagogical aims, including innovative school development, student-centered learning, and inclusive culture-building (Brauckmann-Sajkiewicz and Pashiardis, 2022; Kafa et al., 2025), positioning ESL as a flexible leadership approach capable of navigating uncertainty while maintaining educational purpose (Ariyani et al., 2021; Frentz et al., 2025; Kasim, 2021).

Entrepreneurial SLs act as visionaries who motivate staff, encourage professional experimentation, foster collegial, future-oriented cultures, and build external partnerships to support school development (Brauckmann et al., 2023; Da'as, 2023; Lope Pihie and Bagheri, 2013; Mamabolo, 2020). Core ESL competencies include risk-taking, personal initiative, innovativeness, and value-based decision-making (Frentz et al., 2025; Ghazali et al., 2022; Syafrudin et al., 2023). Entrepreneurial SLs also mobilize staff creativity, engage stakeholders, secure resources, and exploit opportunities to advance strategic goals (Brauckmann-Sajkiewicz and Pashiardis, 2022; Lope Pihie and Bagheri, 2013). Empirical evidence shows that such leadership contributes to school effectiveness and dynamic learning environments (Ayub and Othman, 2013; Kasim, 2021; Pihie et al., 2014), achieving sustainable impact even under resource constraints (Ghazali et al., 2022; Mas et al., 2021; Pashiardis and Brauckmann, 2008).

Despite these demonstrated benefits, the approach is not uncontroversial. Critics caution that the pursuit of innovation and entrepreneurial risk-taking may conflict with humanistic and democratic values, as it presupposes considerable autonomy and discretionary authority for SLs, whereas accountability regimes emphasize standardized procedures and compliance. In particular, the prioritization of market-oriented accountability over broader administrative and pedagogical oversight may lead schools to emphasize short-term performance indicators at the expense of students' holistic development and safety, thereby risking the erosion of the fundamental humanistic values that underpin public education (Maranto, 2015; Mockler et al., 2023).

A conceptual summary of context, educational leadership, and ESL is illustrated in Figure 1.

The next section will explore how ESL practices intersect with economic pressures and debates on the economization of education in German-speaking countries, highlighting both opportunities and tensions for innovative school leadership.
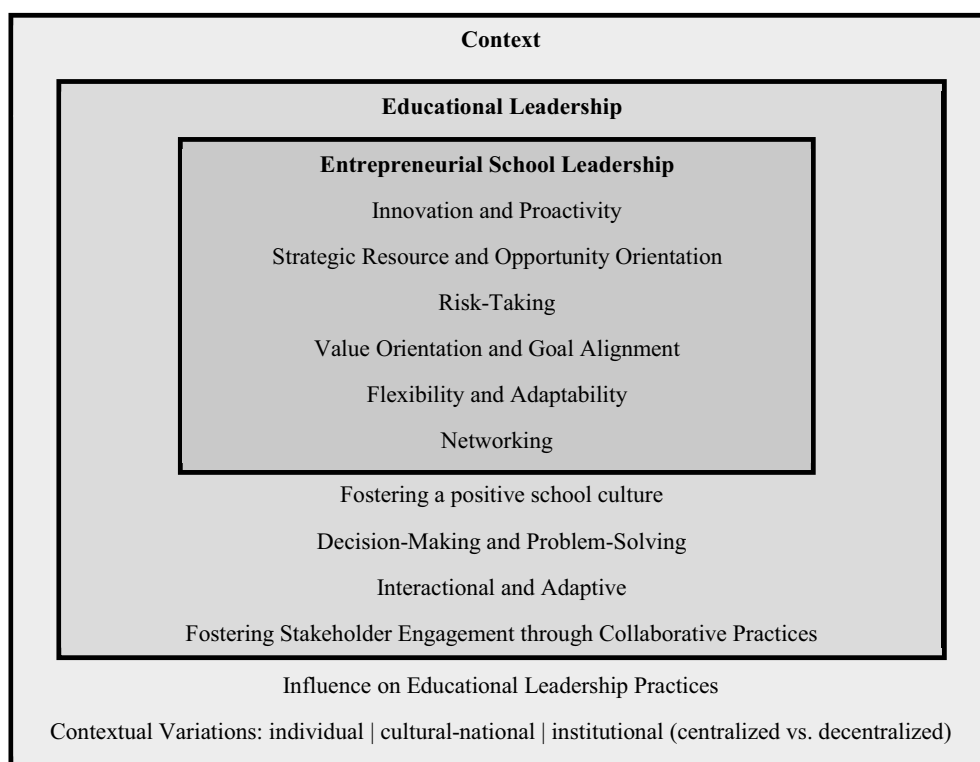
**FIGURE 1**
Entrepreneurial school leadership: a conceptual model considering context and educational leadership.

# 4 School education and economization—exploring the debate in Austria and Germany through entrepreneurial school leadership

Building on the discussion of the interplay between pedagogical objectives and economic pressures, Section 4.1 examines this debate in the German-speaking contexts, while Section 4.2 presents a document analysis of school leadership profiles from Austria and Germany, illustrating how these dynamics are reflected in normative documents.

## 4.1 Balancing pedagogical goals and economic demands in the German-speaking K-12 educational context

The discussion surrounding the economization of school education is not new. Oplatka and Hemsely-Brown (2007), for instance, emphasize that within schools, market orientation (MO) should prioritize the interests of current and prospective customers, such as parents and students. By focusing on customer needs, MO heightens awareness of competitors and promotes cross-departmental collaboration, securing a competitive edge in dynamic environments. Hence, MO should be integrated into school culture.

This understanding of MO provides a foundation for examining how similar economic principles have shaped education systems in specific cultural contexts, particularly in German-speaking countries. To elucidate the complex debate surrounding the economization of education and ESL in this region, this paper predominantly draws on German-language sources. This deliberate focus reflects region-specific concerns, challenges, and scholarly perspectives central to the ongoing discourse.

The concept of economization describes a process in which individuals and organizations increasingly prioritize economic criteria, shaped by the overarching framework of capitalist development (Höhne, 2022). Within education, this shift has generated substantial controversy. *Bildung* traditionally seeks the holistic development of individuals, enabling autonomy and freedom (Menze, 1980; Wagner, 2006). Rooted in the humanist thought of Friedrich Wilhelm von Humboldt (1767–1835), *Bildung* aims at the harmonious cultivation of all human capacities, ensuring that no single ability is overemphasized or neglected (Ungern-Sternberg, 2005). Defined as the structured and active acquisition of knowledge and skills for self-determined growth, *Bildung* fosters reflective lifestyles and critical engagement with the world (Raithel et al., 2009). Schools thus play a crucial role in empowering students to act independently, make informed decisions, and assume social responsibility (Krautz, 2007).

The process of economization, however, contrasts sharply with these traditional aims by emphasizing rationality and cost-efficiency, modeled on the concept of *homo oeconomicus*—individuals motivated by benefit-maximizing behavior (Mockler et al., 2023). This shift toward economic rationalization introduces a logic of control and regulation into *Bildung*, raising the question of how educational ideals can coexist with ESL practices that also emphasize autonomy, innovation, and accountability. Originally confined to spheres of production and labor (Höhne, 2022), economization has increasingly permeated educational systems through reforms granting schools greater autonomy. Yet such reforms also expose schools to economic pressures, embedding principles of resource efficiency, output-oriented instruction, evidence-based decision-making, and decentralized governance that mirror business management models (Altrichter and Rürup, 2010; Böttcher, 2002; Krautz, 2020; Pietsch and Leist, 2019). Moreover, economic control and incentive mechanisms for teachers or SLs—still controversial in German-speaking countries—manifest through performance metrics and competitive strains (Böttcher, 2001; Engartner, 2020; Heller and Hany, 2014; Pietsch and Leist, 2019).

Although economic and pedagogical paradigms are not inherently irreconcilable (Wagner, 2006), their convergence often shifts emphasis away from *Bildung*'s traditional role, focusing instead on producing individuals equipped to enhance regional human capital (Lederer, 2014). This reconciliation is visible in policy frameworks and school practices. Some educational policies explicitly integrate ESL models that incorporate *Bildung*'s core values, such as autonomy, critical thinking, and reflection, into curricula and governance structures. This can manifest in shared or distributed decision-making and network communication (Bush and Glover, 2014; Harris and DeFlaminis, 2016; Mintrop, 2015). In these contexts, *Bildung* is frequently reframed as a means to an end—namely, increasing economic competitiveness (Pietsch and Leist, 2019). Such reorientation risks sidelining *Bildung*'s broader cultural and societal dimensions and raises questions about the long-term costs and benefits of educational investment (Weiß, 2001).

In practice, some schools attempt to balance entrepreneurial activities, such as fundraising or community partnerships, with pedagogical priorities. These models illustrate that economic demands and educational values can coexist when leadership intentionally aligns them. Schools that involve teachers, students, and parents in designing fundraising initiatives, for instance, often ensure that these efforts support a broader educational mission rather than undermine it (Blake and Mestry, 2014). Such tensions are especially pronounced in contexts shaped by austerity policies and increasing reliance on private funding to meet institutional goals (Ghazali et al., 2022), a dynamic less prevalent in German-speaking systems. As schools are increasingly viewed as service providers, with students and parents positioned as clients or consumers, the burden of responsibility often shifts to educators, who must manage both instructional and economic tasks to enhance institutional performance and appeal (Altrichter and Maag Merki, 2010; Engartner, 2020; Weiß, 2001).

Quality management systems frequently assess success through cost-benefit analyses, aligning institutional goals with economic efficiency (Bonsen, 2003; Böttcher, 2002; Höhne, 2022). Simultaneously, self-directed learning models align with neoliberal ideologies by transferring responsibility for success from educators to students. While such approaches expand traditional individualized pedagogy, they also reinforce economic rationality and perpetuate the logic of personal accountability (Krautz, 2020).

This growing emphasis on economic rationality within education underscores the interpretive role of *Bildung* in ESL. By linking *Bildung*'s philosophical ideals with entrepreneurial values such as innovation, initiative, and proactive action (Hörnqvist and Leffler, 2014; Samson and Gloet, 2016), SLs can navigate economic pressures while preserving pedagogical integrity. This synthesis invites reflection in the German-speaking context on whether ESL can reconcile these economic pressures with the educational mandate rooted in the tradition of *Bildung*.

## 4.2 Document analysis on school leadership profiles from Austria and Germany

To explore how tensions between economic demands and pedagogical goals manifest in practice, this study analyzes normative school leadership frameworks from Austria and Germany through a systematic document selection process. These two countries were selected for their shared language and cultural proximity, which allow for controlled comparison. Other German-speaking countries, such as Switzerland or Belgium, were excluded due to more pronounced systemic and cultural differences. To interpret how national contexts may influence leadership expectations and the emphasis on economic vs. pedagogical priorities, Hofstede's (1980) cultural dimensions provide a useful lens. Austria and Germany share low Power Distance (Austria: 11; Germany: 35) and high Individualism (Austria: 77; Germany: 79), supporting autonomy and decentralized leadership, but high Uncertainty Avoidance (Austria: 70; Germany: 65) favors structured procedures. Differences in Achievement Orientation and Indulgence suggest nuanced variations in leadership conceptualizations (Hofstede, 1980; The Culture Factor Group, 2025).

### 4.2.1 Data basis, analysis, and category development

Building on the contextual understanding outlined above, the analysis focuses on school leadership documents that exemplify these cultural characteristics. Documents were purposefully selected based on their recency, public accessibility, and sufficient level of detail to ensure analytical validity. In Germany, the federal education system does not provide a fully standardized, nationwide profile for school leadership. At the national level, the non-binding Guiding Framework for the Qualification of School Leaders [Kultusministerkonferenz (KMK), 2024] was considered, while at the state level [*Länder*], leadership profiles from Baden-Württemberg (KM-BW, 2023) and Lower Saxony (KM-NI, 2022) were included to enable systematic comparison. These documents

outline specific competencies and responsibilities expected of SLs within their respective jurisdictions. In Austria, the centralized education system provides a single, comprehensive leadership profile (BMBWF, 2019) applicable to all schools, aligning with national educational standards (Kanape-Willingshofer et al., 2016).

The comparative analysis of these school leadership profiles followed an *abductive approach* (Timmermans and Tavory, 2012), combining inductive theme development from the documents with theoretically informed category refinement. The analysis was guided by Bowen's (2009) qualitative framework, integrating structured skimming, close reading, and thematic interpretation. Using inductive coding (Bingham, 2023), two researchers independently analyzed the documents, resolving discrepancies through discussion. Member checking with an educational leadership expert further supported interpretive validity.

Grounded in the theoretical framework outlined in Section 3, the coding distinguished between *content knowledge* and *competencies* as two analytically relevant dimensions, a well-established distinction in leadership research (Brauckmann-Sajkiewicz and Pashiardis, 2022; Demirbilek, 2022; Mas et al., 2021) that is particularly pertinent to ESL. Viewing these dimensions as interconnected highlights their complementary role in effective leadership and underscores that strengthening entrepreneurial competencies supports innovation and conducive learning environments (Ariyani et al., 2021; Lope Pihie and Bagheri, 2013), indicating that entrepreneurial knowledge and competencies form essential components of leadership processes directly shaping school outcomes (Hussain and Li, 2022).

Building on this distinction, the abductive approach was applied to identify relevant categories from material-proximate terms. By comparing theoretical concepts of entrepreneurship (Section 3) with empirical material from normative guidelines [BMBWF, 2019; Kultusministerkonferenz (KMK), 2024; KM-BW, 2023; KM-NI, 2022], the coding was structured along these analytically relevant dimensions, ensuring that the analysis remained closely aligned with both theoretical constructs and empirical evidence:

a. *Entrepreneurial/Economic content knowledge of SLs:* This refers to SLs' understanding of fundamental entrepreneurial/economic concepts and principles relevant to ESL.

b. *Entrepreneurial competencies of SLs:* This denotes the skills and dispositions SL require to identify opportunities, take initiative, manage risk, and innovate within the school context to drive innovation and improvement.

### 4.2.2 Results

The Guiding Framework for the Qualification of SLs [Kultusministerkonferenz (KMK), 2024] emphasizes the role of innovation in school development and leadership, highlighting the importance of both technology-driven innovations and the contextual conditions of each school. It explicitly addresses change processes (p. 5) and quality management (p. 6). Among the competencies associated with ESL are proactive change management, resource mobilization, partnership building, organizational flexibility, and networking. For example, the

framework specifies that SLs contribute to the opening and shaping of the school through targeted network building (p. 10), illustrating how entrepreneurial principles can be enacted within institutional constraints to leverage contextual opportunities for school development (Hall et al., 2023).

The two *Länder* frameworks define specific competencies expected of SLs, including self-competence, social competence, and professional expertise. In the profile of Baden-Württemberg (KM-BW, 2023), innovative practices are attributed to social competence and aligned with change management. This is explicitly reflected in references to project and process management, financial and material resource management, as well as quality management and assurance (p. 6). In the leadership profile of Lower Saxony (KM-NI, 2022), innovation is not explicitly mentioned. However, the competence to initiate, support, and sustain change can be linked to entrepreneurial principles. The framework emphasizes an evaluation culture whose results lead to change processes, as well as cooperation with external partners and the use of networks (pp. 10–12). Both profiles also delineate distinct areas of responsibility for school leadership, emphasizing on ensuring quality through clear accountability, while also addressing key responsibilities such as coordinating instruction, managing finances, overseeing projects and processes, and enforcing regulatory compliance. Another key responsibility identified in both frameworks is a network-oriented mindset and the coordination of external partnerships. These observations also align with intrapreneurial actions in the K-12 setting, reflecting how SLs navigate complex systemic expectations (Lope Pihie and Bagheri, 2013).

In the Austrian school leadership framework (BMBWF, 2019), the focus is placed on various leadership levels: leading the organization, leading people, and leading oneself. Terms commonly associated with the private sector, such as leadership and management (pp. 3–4), quality management (p. 7), human resource management (pp. 10–14), and internal and external communication (p. 15), are emphasized. These concepts reflect an increasing alignment with content knowledge and skills from business management practices. Furthermore, a clear link to ESL emerges through core competencies mentioned such as strategic orientation (p. 7), change management (p. 9), networking (p. 13), adaptability and visionary thinking (p. 18), operationalize ESL principles even within Austria's more centralized system. While centralized structures may limit certain degrees of autonomy (Balasi et al., 2023), the framework demonstrates that entrepreneurial enactment is possible through these competencies, illustrating the adaptive application of ESL in prescriptive institutional contexts.

### 4.2.3 Synthesis of empirical findings and ESL principles

The examined leadership profiles reveal that knowledge areas and action domains shaped by entrepreneurial considerations, such as change management, innovation, and strategic collaboration (Frentz et al., 2025; Yemini et al., 2015; Section 3), are present across the analyzed frameworks. While terminology and emphasis vary, all documents reflect the growing expectations for SLs in

increasingly complex educational environments (Ainscow, 2020; Section 1).

In some frameworks [Kultusministerkonferenz (KMK), 2024; KM-BW, 2023] innovation is explicitly mentioned as a leadership expectation, whereas in others (KM-NI, 2022; BMBWF, 2019) it is not. Nevertheless, competencies related to initiating, supporting, and sustaining change are documented in all cases, indicating that the principles of ESL are enacted in practice, even when terminology differs. This pattern strongly corresponds to the concept of intrapreneurial action (Follmer, 2015; Hall et al., 2023; Section 3), where entrepreneurial activity occurs incrementally within organizational constraints rather than as disruptive innovation.

Overall, these observations reveal not only the distribution of competencies across national frameworks but also the mechanisms through which ESL principles are translated into practice. They indicate that ESL is realized differently depending on the context (Blose, 2024; Mincu, 2022; Section 2) and design of each framework. By linking the documented knowledge and competency areas to the theoretical distinction between understanding and action, this analysis provides a concrete illustration of how ESL principles are embedded in school leadership expectations within national contexts especially characterized by low power distance, high individualism, and strong uncertainty avoidance (Hofstede, 1980). These insights establish a foundation for the following discussion.

Table 1 summarizes the analyzed documents, including title, issuing body, publication year, and main leadership domains covered.

# 5 Discussion

In this conceptual paper, the role of entrepreneurial thinking and action in shaping educational leadership practices in K-12 settings has been examined in relation to the economization debate in Germany and Austria. While ESL offers opportunities for innovation and adaptability, these potentials must be critically evaluated within the deeply embedded pedagogical traditions and institutional constraints of German-speaking education systems (Altrichter and Maag Merki, 2010; Bonsen, 2003; Huber, 2003; Warwas, 2012). Economic considerations remain a source of tension, reflecting not only historical skepticism toward market-oriented logic but also the risk of prioritizing efficiency over holistic educational aims (Section 4.1).

Contemporary SLs operate in highly complex, volatile, and technology-driven environments (Pietsch et al., 2023a), as captured by the concept of Leadership 5.0, which emphasizes adaptive, future-oriented, and participatory K-12 leadership that integrates societal, technological, and ecological considerations (Kuhn, 2021; Section 1). Schools are not market-oriented enterprises, as they pursue educational objectives centered on student development and human flourishing, in line with the principles of *Bildung*. Nevertheless, SLs have to adopt a forward-looking mindset to remain resilient in the face of EdTech companies (Kuhn, 2021) which provide innovative educational programs as commercial products. ESL aligns with Leadership 5.0, promoting proactive problem-solving, strategic resource management, and collaborative

innovation (Balasi et al., 2023; Kafa et al., 2025; Frentz et al., 2025). However, the extent to which German-speaking K-12 contexts, characterized by high uncertainty avoidance, strong institutional structures, and deeply rooted humanistic educational traditions (Section 4) can fully realize the transformative potential of ESL, remains limited.

Although international research highlights the positive influence of ESL on adaptive and innovative school environments (Anderson and White, 2011; Frentz et al., 2025; Hörnqvist and Leffler, 2014; Yemini et al., 2015), the transferability of these findings to German-speaking contexts is not straightforward. In practice, innovation often remains narrowly defined as incremental improvement (Rürup, 2011) rather than transformative change (OECD, 2009; Vare and Scott, 2007), raising questions about whether ESL can substantively alter educational practice or whether it primarily serves as a rhetorical alignment with policy discourses.

The document analysis of normative leadership profiles from Germany [Kultusministerkonferenz (KMK), 2024; KM-BW, 2023; KM-NI, 2022] and Austria (BMBWF, 2019) confirms the formal integration of entrepreneurial and economic content knowledge and competencies into school leadership expectations. While these documents emphasize strategic planning, networking, and innovation, it is unclear whether these expectations translate into meaningful pedagogical change or the full enactment of ESL principles.

The tension between entrepreneurial aspirations and educational values requires careful scrutiny. While ESL encourages proactive problem-solving, opportunity recognition, and collaborative innovation, it may simultaneously generate unintended consequences, such as increased workload for teachers and SLs, reinforcement of inequities, or overemphasis on performance metrics at the expense of student-centered learning (Maranto, 2015; Mockler et al., 2023). Moreover, the alignment of leadership practices with economic rationalities may risk instrumentalizing *Bildung*, reducing its holistic and humanistic dimensions to functional outputs aimed at efficiency or competitiveness (Lederer, 2014; Pietsch and Leist, 2019).

Practical implications therefore involve deliberate fostering of entrepreneurial competencies within school teams through initiative, creativity, and collaborative problem-solving, while remaining mindful of the structural constraints known in the public sector (Currie et al., 2008; Vivona et al., 2025; Section 3). Leadership development should therefore incorporate resource mobilization, strategic planning, and adaptive decision-making to bridge pedagogical and economic objectives. Fostering ESL requires a careful balance between autonomy, innovation, and accountability. In line with NPM principles, governance structures and frameworks should additionally establish structures and frameworks that enable entrepreneurial practices within bureaucratic environments (Ariyani et al., 2021) without compromising educational integrity. Nevertheless, current arrangements, particularly centralized systems or strict evaluation regimes, can constrain the practical enactment of entrepreneurial practices, generating systemic tensions that limit the transformative potential of ESL. The variation observed across the analyzed school leadership frameworks, where, for instance, innovation is explicitly mentioned in some documents but absent in others, further

TABLE 1  Summary of findings from the document analysis.

| No. | Document | Issuing body/institution | Year of publication | Economic/entrepreneurial contents and competencies |
|---|---|---|---|---|
| Germany (national, non-binding) | | | | |
| 1 | Guiding Framework for the Qualification of SLs | Kultusministerkonferenz (KMK) | 2024 | Innovation, change management, resource mobilization, networking, organizational flexibility |
| Germany (state-level) | | | | |
| 2 | School Leadership Profile Baden-Württemberg | Ministry of Education, Youth and Sports Baden-Württemberg (KM-BW) | 2023 | Innovation, quality management, project and process management, external partnerships |
| 3 | School Leadership Profile Lower Saxony | Ministry of Education Lower Saxony (KM-NI) | 2022 | Change management, quality management, networking and partnership coordination |
| Austria (national) | | | | |
| 4 | School Leadership Competencies in Austria | Federal Ministry of Education, Science and Research (BMBWF) | 2019 | Leading the organization, leading people, self-leadership, quality management, human resource management, internal & external communication, visionary thinking, strategic orientation, adaptability, change management, networking |

highlights the context-dependency and uneven operationalization of ESL principles.

While ESL offers strategies aligned with the future-oriented vision of Leadership 5.0, its practical application in German-speaking contexts is contingent, constrained, and potentially double-edged. Schools may simultaneously benefit from enhanced innovation and risk over-prioritization of efficiency, resulting in tensions with core pedagogical aims.

# 6 Limitations and outlook

This conceptual paper is limited by its focus on normative documents and literature from German-speaking countries, highlighting the need for empirical research to investigate how ESL is enacted in practice, including its challenges and unintended consequences. While these documents illuminate formal expectations and policy intentions, they do not capture how ESL is implemented in day-to-day K-12 leadership practice, revealing a potential gap between prescribed frameworks and lived realities. Although German is also an official language in Switzerland and parts of Belgium and Italy, these regions were excluded due to their distinct multilingual and cultural contexts. Moreover, the analysis relies primarily on normative and secondary sources, lacking empirical validation regarding the effective implementation of these frameworks. The persistent tension between pedagogical and economic priorities is therefore acknowledged but remains unresolved.

In the ongoing debate on the economization of German-speaking educational systems (Section 4.1), a contextualized and multidimensional understanding of ESL is essential. Drawing on the preceding discussion, this study emphasizes the need to examine how entrepreneurial practices can simultaneously foster innovation and reproduce economic pressures, particularly where they intersect with traditional pedagogical values. If entrepreneurial practices in educational leadership become vehicles for neoliberal agendas that prioritize economic stability over educational purposes (Maranto, 2015; Mockler et al., 2023), they risk

reinforcing economization trends unlikely to gain acceptance in German-speaking contexts. Conversely, when leadership promotes autonomy, reflection, and empowerment among students, teachers, and communities, it may support sustainable school development, although its empirical impact and long-term viability remain insufficiently explored (Frentz et al., 2025).

Future research should consider the broader contextual diversity of education systems to refine the conceptualization of ESL and clarify what entrepreneurship in education genuinely entails (Frentz et al., 2025; Kafa et al., 2025). A comprehensive understanding of ESL requires attention to instructional and community dimensions (Hallinger, 2018) as well as to the individual dispositions of SLs. This raises a central question regarding whether an entrepreneurial mindset exists among SLs at all. Although the present study primarily examines cultural and institutional levels and acknowledges differences in German-speaking governance structures (e.g., centralistic vs. decentralistic, normative expectations), future research must engage more thoroughly with individual-level dispositions to capture contextual variations fully. Even in settings where broader institutional or cultural conditions are not conducive to innovation, SLs with strongly developed entrepreneurial dispositions, such as high self-efficacy (Mavi et al., 2023) or risk-taking (Balasi et al., 2023), may nonetheless act innovatively.

Beyond individual dispositions, organizational conditions also shape entrepreneurial opportunities and constraints. Future research should examine differences between ESL in public vs. private schools (Frentz et al., 2025) and consider the leadership of multiple schools simultaneously (Brauckmann et al., 2019b), as such organizational contexts, embedded within broader institutional frameworks, may significantly influence the scope for innovative action.

To highlight the challenges of implementing innovative practices within established organizations, the theoretical framework of intrapreneurship was employed (Balasi et al., 2023; Follmer, 2015; Section 3). This framework emphasizes that ESL should be understood as the product of complex interactions among individual dispositions, organizational structures, and

cultural contexts. However, to explicitly address the broader objectives of schooling, namely, equity, wellbeing, and educational justice for all members of the school community (Ainscow, 2020; Wilkins et al., 2021; Section 1), the social dimension of entrepreneurial thinking and acting in established structures merits closer consideration (Sagie et al., 2016). The notion of *social intrapreneurship* becomes particularly relevant here. It provides a theoretical and practical lens for strengthening SLs' capacity to respond innovatively, ethically, and systemically to the challenges outlined above. Social intrapreneurship denotes entrepreneurial thinking and action within existing organizations that prioritizes social value creation over economic gain (Geradts and Alt, 2022). These considerations underscore the importance of further examining SLs as social intrapreneurs in the public sector.

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