The European Journal of Humanities and Social Sciences 2026, No3
ISSN 2414-2344

PREMIER Publishing
ppublishing.org

Section 3. Pedagogy

DOI:10.29013/EJHSS-26-3-19-28

EDUCATIONAL ECOSYSTEM AS AN INSTITUTIONAL CONSTRUCT: THEORETICAL FOUNDATIONS, MULTI-LEVEL ASSESSMENT, AND CONDITIONS OF SUSTAINABILITY

Aleksandra Leonteva [1]

[1] Head of Department, Limited Liability Company "ISmart"

Cite: *Leonteva, A. (2026). Educational Ecosystem as an Institutional Construct: Theoretical Foundations, Multi-Level Assessment, and Conditions of Sustainability. European Journal of Humanities and Social Sciences 2026, No3.* https://doi.org/10.29013/EJHSS-26-3-19-28

Abstract

This article examines the concept of the educational ecosystem as an alternative to the conventional curriculum-centred model of instructional design. Drawing on the principle of constructive alignment (Biggs, 1999), the theory of communities of practice (Wenger, 1998), and the four-level model of learning evaluation (Kirkpatrick, 1959), the article develops an analytical framework that describes the conditions under which an educational environment produces sustainable change in learners' professional behaviour. The article integrates empirical evidence from recent research published between 2015 and 2025 and includes sections drawing on data obtained within a specific institutional context.

Keywords: *educational ecosystem, constructive alignment, communities of practice, Kirkpatrick model, competency transfer, institutional design, assessment of educational outcomes.*

1. Introduction: From Container to Environment

In contemporary pedagogical design discourse, the notion of an "educational programme" occupies a central position. Yet the semantics of this term carries an inherent conceptual limitation: a programme describes the organisational form of the learning process – its boundaries, sequence, and content – but does not describe the mechanism by which change in the learner occurs.

The proposed concept of the educational ecosystem proceeds from a fundamentally different ontology: learning is not a passage through a container, but a change unfolding within an environment. This environment exists prior to the commencement of the formal programme, accompanies it, and continues after its conclusion.

The relevance of this reconceptualisation is confirmed by a number of converging trends. According to data from the World Economic Forum, by 2027 approximately

44% of key professional skills will undergo significant transformation as a result of technological change (World Economic Forum, 2023). Under these conditions, programmes oriented towards the transmission of fixed content are structurally incapable of ensuring the long-term professional adaptability of graduates.

At the same time, research in the learning sciences consistently records a persistent gap between academic performance and professional readiness. According to data from Gallup and Lumina Foundation, only 11% of business leaders in the United States are confident that university graduates possess the competencies required for work (Gallup and Lumina Foundation, 2021). A comparable gap is documented in the European context: according to the European Training Foundation, more than 40% of employers in OECD countries report a significant discrepancy between the declared and actual competencies of graduates of professional programmes (European Training Foundation (ETF), 2022).

2. Theoretical Foundations

2.1 Constructive Alignment and Its Limits

Number of studies from the past decade point to the limitations of constructive alignment as a sufficient condition of effectiveness. Hattie and Donoghue (2016), in a meta-analytic review of factors influencing academic achievement, demonstrated that the alignment of objectives and assessment accounts for a significant but relatively modest share of the variation in educational outcomes. Substantially greater influence was exerted by factors associated with motivation, self-efficacy, and the quality of feedback – that is, variables that fall outside the internal logic of the programme (Hattie, J., and Donoghue, G. M., 2016)

The principle of constructive alignment, formulated by John Biggs in 1999 and systematised in Biggs and Tang (2011), postulates that effective learning is achieved when three components are congruent: learning objectives, teaching methods, and assessment instruments. This principle has exerted considerable influence on the practice of academic design and remains valid at the level of analysing the internal logic of a programme (Biggs, J., and Tang, C., 2011).

Thus, constructive alignment constitutes a necessary but not sufficient condition for the effectiveness of an educational environment.

2.2 Communities of Practice: From Concept to Design

Li (2019), in a systematic review of 74 studies of communities of practice in higher education, demonstrated that intentionally designed communities exhibited significantly higher levels of competency transfer compared with programmes oriented exclusively towards individual learning (mean effect size d = 0.54). Crucially, the greatest effect was recorded not during the formal programme but during the 6–12 months following its conclusion – which corroborates the thesis of the ecosystem as an environment that extends beyond the programme (Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C., and Graham, I. D., 2019).

Etienne Wenger, in Communities of Practice: Learning, Meaning, and Identity, proposed a concept according to which knowledge is constructed not through individual acquisition but through participation in collective practice. Subsequent research extended and operationalised this concept in relation to institutional contexts (Wenger, E., 1998).

More recent research by Farnsworth (2016), clarified the conditions under which communities of practice attain sustainability: the key factors proved to be the presence of a shared professional identity, the regularity of collective reflection, and institutional support without excessive control (Farnsworth, V., Kleanthous, I., and Wenger-Trayner, E., 2016).

2.3 The Kirkpatrick Model: Unrealised Potential and Contemporary Extensions

The four-level model of Kirkpatrick (1959), extended in co-authored work with James Kirkpatrick (Kirkpatrick and Kirkpatrick, 2016), remains the most widely used instrument for conceptualising learning evaluation. In practice, however, its application is substantially constrained (Kirkpatrick, J. D., and Kirkpatrick, W. K., 2016).

A large-scale study by Training Industry (2022), encompassing more than 700 organisations in 40 countries, identified the following distribution of evaluation practices (Training Industry, 2022):

- Level 1 (Reaction): applied in 91% of organisations
- Level 2 (Learning): applied in 54% of organisations
- Level 3 (Behaviour): applied in 23% of organisations
- Level 4 (Results): applied in 8% of organisations

In the academic context, the gap is even more pronounced. According to the European University Association (EUA, 2023), of 303 European universities participating in a survey on the evaluation practices of educational programmes, only 12% systematically track the professional outcomes of graduates over a horizon of more than one year following programme completion (European University Association (EUA), 2023).

Thalheimer (2018), proposed an extension of the Kirkpatrick model – the Learning-Transfer Evaluation Model (LTEM) – comprising eight levels and describing in greater detail the intermediate stages between learning and transfer. In the academic context, levels 5–7 of this model are of particular value, as they describe the degree of transfer readiness, active transfer, and sustained application within the professional environment (Training Industry, 2022; Thalheimer, W., 2018).

3. The Five-Layer Model of the Educational Ecosystem

On the basis of a synthesis of the theoretical approaches reviewed above and current empirical data, an operational model of the educational ecosystem is proposed, comprising five interdependent components.

Table 1. *Components of the educational ecosystem model*

Component	Description	Indicator of Dysfunction	Relevant Research
Content	Learning material structured in accordance with programme objectives	Low academic performance	Hattie and Donoghue, 2016
Environment	Institutional context for the application of knowledge	Absence of opportunities for practice	Kolb and Kolb, 2017
Community	The aggregate of participants who construct knowledge collectively	Intellectual isolation	Li, 2019
Feedback	Mechanisms for tracking one's own growth	Ambiguous criteria; absence of reflection	Hattie and Clarke, 2019
Motivation	Personal meaning linking learning with professional identity	Formal participation; high dropout rates	Ryan and Deci, 2020

The motivational layer warrants particular attention. Ryan and Deci (2020), in an updated presentation of self-determination theory, demonstrated that intrinsic motivation – as opposed to external incentives – is a significant predictor of long-term knowledge retention and application (Meadows, D. H., 2008).

A defining property of this model is its systemic character. Research in the field of

systems thinking in education (Meadows, 2008), consistently demonstrates that dysfunction in any one component entails degradation of the entire system. This explains the widely observed paradox whereby methodologically sound programmes exhibit low effectiveness – as a rule, due to deficits at the level of environment or community (Ryan, R. M., and Deci, E. L., 2020).

4. Empirical Analysis of Ecosystem Characteristics in Retraining Programmes

The theoretical foundations and empirical data presented above indicate a systemic deficit of ecosystem thinking in the institutional design of educational programmes. The present section reports the results of an original analysis aimed at verifying this thesis with respect to a specific and practically significant segment of professional education – retraining programmes.

4.1 Research Design and Sample

Within the framework of this study, a structured analysis was conducted of 45 retraining programmes delivered by specialised continuing professional development centres. The unit of analysis was an individual educational programme; data collection methods included content analysis of programme documentation and standardised interviews with administrative and methodological staff at each centre. The analytical framework for assessment was grounded in the five-layer educational ecosystem model described in this article.

The selection of the retraining programme segment is justified by its particular vulnerability from the standpoint of ecosystem quality: such programmes are typically characterised by compressed time frames, a high proportion of asynchronous learning, and a target audience in a state of professional transition – a situation of heightened need for support of identity and belonging to a community of practice.

4.2 Findings by Ecosystem Layer

Layer 1. Content.

All 100% of the analysed programmes (n = 45) possess a structured curriculum formalised as a systematic course plan. This result indicates that the first layer of the ecosystem – the content layer – is the most institutionally developed: the existence of a formalised curriculum is perceived as a basic programme requirement and is universally implemented.

It should be emphasised, however, that the presence of a structured curriculum is not in itself evidence of ecosystem quality – it describes the container, not the environment. In Kirkpatrick's terminology, this indicator characterises first-level conditions but does not predetermine outcomes at the second level, let alone the third and fourth.

Layer 2. Environment.

Formally, all analysed programmes meet the criterion of "environment": each includes a component for the practical application of skills. However, qualitative analysis of the structure of the practical component reveals a significant limitation: in 70% of programmes (n ≈31), practice is implemented under simulated rather than real professional conditions.

This circumstance represents a significant risk from the standpoint of competency transfer. According to data from Blume (2019), competency transfer from the learning environment to professional practice averages 10–20% in the absence of specific support conditions (Blume, B. D., Ford, J. K., Surface, E. A., and Olenick, J., 2019). In other words, 70% of programmes implement the environment in a truncated form that may create an illusion of practical preparation while offering an actually limited transfer potential – a phenomenon described by Deslauriers (2019), as the "illusion of learning" (Deslauriers, L., McCarty, L. S., Miller, K., Callaghan, K., and Kestin, G., 2019).

Layer 3. Community.

The most critical finding of the present analysis was obtained with respect to the third layer of the ecosystem. None of the 45 analysed retraining centres mentioned the existence of an organised student or alumni community during interviews – neither in the form of formal group interactions during the period of study nor in the form of alumni networks following its conclusion.

This result stands in direct contradiction to the body of research data that consistently demonstrates the central role of communities of practice in ensuring sustained profes-

sional change. Li (2019), in a systematic review of 74 studies, showed that intentionally designed communities of practice produce a mean effect size of d = 0.54 on measures of competency transfer – with the greatest effect recorded precisely in the 6–12 months following programme completion (Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C., and Graham, I. D., 2019). The absence of community in retraining programmes oriented towards radical professional transition represents a systemic exclusion from programme design of precisely the mechanism that, according to available evidence, most significantly determines long-term outcomes.

In the context of retraining, this deficit acquires an additional dimension. Learners in retraining programmes are typically in a state of professional identity rupture: they are departing from one practice and have not yet joined another. The total absence of this element in the analysed programmes reflects a systemic underestimation of the identity dimension of retraining.

Layer 4. Feedback.

Formally, instructor feedback is provided in 90% of programmes (n ≈40). However, substantive analysis of feedback structure reveals a significant qualitative limitation: in 50% of assignments, feedback is automated and takes the form of a system response to test results rather than a substantive response to the learner's professional reasoning.

This practice conflicts with contemporary research on feedback as a learning instrument. Hattie and Clarke (2019), in a systematic review, demonstrate that effective feedback must answer three questions: where the learner stands relative to the goal, how they arrived there, and what the next step should be (Hattie, J., and Donoghue, G. M., 2016; Hattie, J., and Clarke, S., 2019). Automated test-result feedback typically addresses only the first question – and only in the binary format of "correct/incorrect". It carries no information about the quality of professional reasoning, does not identify the nature of the error, and does not offer individualised guidance for development.

Moreover, studies by Shute (2008) and Nicol and Macfarlane-Dick (2006), consistently demonstrate that immediate automated feedback on test assignments fosters surface-level learning strategies – an orientation towards the correct answer rather than towards understanding (Nicol, D. J., and Macfarlane-Dick, D., 2006). In the context of retraining, where the objective is not the reproduction of information but the formation of new professional schemas of action, the predominance of automated feedback creates a systemic risk of substituting the simulation of learning for genuine deep learning.

Layer 5. Motivation and Professional Identity.

The most conceptually significant contradiction emerges in the analysis of the fifth layer of the ecosystem. All 100% of the analysed programmes include a learning module formally linked to the development of professional identity. However, in 100% of cases this module is delivered exclusively in a self-directed learning and individual self-reflection format – with no provision for meetings with an instructor, mentor, or group.

This practice reveals a fundamental conceptual contradiction: the task of forming professional identity is addressed with instruments structurally incompatible with the nature of that process. Identity, according to Wenger (1998), is formed not through individual reflection but through participation in practice together with those who already belong to that practice (Wenger, E., 1998). Ibarra (2020), in a longitudinal study of professional transitions, demonstrated that sustained changes in professional identity emerge only in conditions of "identity experiments" – the provisional adoption of new professional roles in a social context (Ibarra, H., Rattan, A., and Johnston, A., 2020). Individual self-reflection in the absence of the social mirror provided by a mentor, group, or professional community does not fulfil this condition.

4.3 Summary Assessment of Ecosystem Characteristics

The findings of the analysis are presented in the summary table below.

Table 2. *Summary assessment of ecosystem characteristics across the analysed retraining programs*

Ecosystem Layer	Formal Presence	Qualitative Assessment	Identified Risk
Content	100%	High structural quality	Excessive focus on the container with insufficient attention to the environment
Environment	100% (formally)	Limited: 70% – simulated conditions	Illusion of practical preparation; low transfer potential
Community	0%	Systematically absent	Critical deficit of the mechanism of identity transition
Feedback	90% (formally)	Limited: 50% of assignments – automated	Substitution of developmental feedback with informational feedback
Motivation / Identity	100% (formally)	Critically limited: 100% – self-directed only	Structural incompatibility of method with the nature of the process

4.4 Systemic Risks of the Identified Configuration

The aggregate of identified characteristics permits the identification of three systemic risks that, according to available empirical data, are highly likely to determine the limited long-term effectiveness of the analysed programmes.

Risk 1. Structural gap between learning and transfer.

The combination of simulated practice (70%), automated feedback (50% of assignments), and the absence of a genuine professional community (0%) produces a configuration in which programmes may successfully ensure the second level of Kirkpatrick – content learning – while being systemically incapable of ensuring the third level: sustained change in professional behaviour. This gap is structural rather than incidental: it is reproduced as a consequence of the very architecture of the programmes.

In the absence of specific support conditions, transfer averages 10–20%. The identified configuration of retraining programmes – simulated environment without a real community and with predominantly automated feedback – corresponds precisely to this lower range, since none of the three key factors supporting transfer (post-training follow-up, coaching, opportunities for real-world application) is systematically implemented in these programmes.

Risk 2. Isolated identity transition as a predictor of dropout and professional maladjustment.

The complete relocation of the professional identity module to a format of individual self-reflection, in the absence of any social support for the transition, poses a particular threat to the target audience of retraining programmes. Research on professional transitions consistently demonstrates that changing profession is one of the most stressful life events, accompanied by a temporary loss of professional identity and competency self-assessment. Under these conditions, isolated self-reflection without a social context is highly likely to intensify anxiety and uncertainty rather than reduce them. The systemic absence of this element in the analysed programmes may be directly associated with dropout rates.

Risk 3. Institutional invisibility of long-term outcomes.

The identified configuration of programmes indicates that design proceeds according to the logic of the first and second Kirkpatrick levels: reaction and learning. The absence of community, limited feedback, and

the isolated identity module indicate that long-term outcomes – professional adaptation, durability of skills, actual employment in the new specialisation – are not part of the design intention. The analysed retraining programmes reproduce this general tendency – yet in a segment where long-term outcomes are the sole substantively meaningful criterion of success: the individual undertook retraining not in order to complete a course, but in order to work in a new profession.

Thus, the results of the present analysis indicate that retraining programmes in the studied sample implement a formally complete but substantively truncated version of the educational ecosystem: a container with features of an environment, but without community, with a surrogate of feedback, and with an instrument that is fundamentally inadequate for addressing the most critical task – supporting professional identity transition.

A critical consequence of this situation is the observable, intensifying crisis of trust in institutional education. According to data from the Edelman Trust Barometer (2024), trust in educational institutions as a source of preparation for professional life declined by an average of 17 percentage points over the period 2015–2024 among employers in G20 countries (Edelman, 2024).

A study by McKinsey and Company (2023), recorded that 52% of senior students worldwide doubt that their programme provides the competencies necessary for professional success (McKinsey and Company, 2023). Yet only 34% of deans and programme directors share these doubts – indicating a substantial perception gap between the producers and consumers of education.

5. Operationalisation of Ecosystem Learning Metrics

5.1 Competency Transfer into Professional Practice

Competency transfer corresponds to the third level of the Kirkpatrick model and represents the most methodologically complex object of measurement in the academic context.

The systematic review by Blume (2019), encompassing 89 studies of transfer in professional education, established that the average level of competency transfer into real professional practice is approximately 10–20% of the volume of content learned – in the absence of specific transfer support measures (Blume, B. D., Ford, J. K., Surface, E. A., and Olenick, J., 2019). With such measures in place (post-training support, coaching, opportunities for application), this figure rises to 40–60%.

Operationalisation of transfer entails:

- Delayed assessment – repeat measurement 4–8 weeks following programme completion
- Reflective reports following a structured protocol
- 360° method – interviews with direct supervisors and colleagues of graduates
- Portfolio assessment as an instrument for demonstrating application in a real-world context

The global trend documented in research over the past decade points to the growing spread of portfolio assessment in leading universities. According to data from the Association of American Colleges and Universities (AAC andU, 2022), the proportion of programmes using portfolio as the primary assessment instrument grew from 19% in 2015 to 41% in 2022 (Association of American Colleges and Universities (AAC andU), 2022).

5.2 Systemic Change in Professional Behaviour

In accordance with Wenger's concept, and its contemporary developments (Wenger-Trayner and Wenger-Trayner, 2015), sustained behavioural change is an indicator not merely of knowledge acquisition but of transformation of professional identity (Farnsworth, V., Kleanthous, I., and Wenger-Trayner, E., 2016).

Ibarra (2020), in a longitudinal study of professional identity among 412 participants in management education programmes, demonstrated that sustained changes in professional behaviour are documented only among those participants who passed through what the authors term "identity experiments" – the provisional adoption of new professional roles in a safe environment. Programmes that do not create opportunities for such experiments produce behavioural change significantly less often (28% vs. 67%) (Ibarra, H., Rattan, A., and Johnston, A., 2020).

The distinction between "wrote a research paper" and "began to think analytically in everyday practice" is fundamental: the former describes an event, the latter a change in the subject.

Operationally, systemic behavioural change is measured through:

• Longitudinal observations with no fewer than three time points (before, immediately after, and 3–6 months later)

• Professional self-efficacy scales

• Analysis of the quality of professional decisions via case-based assessment

5.3 Institutional Agreement on Educational Outcomes

The most complex and least widespread condition for the functioning of an educational ecosystem is the prior institutional agreement on outcomes – established before the programme is launched rather than after its conclusion.

A study by Connecting Credentials (2023), conducted jointly by the Lumina Foundation and OECD with a sample of 240 educational institutions in 28 countries, showed that only 18% of institutions have formalised agreements with employers on measurable educational outcomes over a horizon of more than one year (Lumina Foundation and OECD, 2023). Programs with such agreements demonstrated 41% higher rates of employment in the area of specialisation and 35% higher levels of employer satisfaction.

This agreement entails:

• Baseline interviews with employers and professional communities – prior to programme launch

• Formalisation of delayed outcomes – specific, measurable indicators with a time horizon of no less than one year

• Built-in measurement points throughout the entire programme cycle and following its conclusion

• Institutional accountability for Level 4 outcomes

6. Conditions of Institutional Sustainability of the Ecosystem

The transition from programme-oriented to ecosystem-oriented thinking requires changes not only in design methodology but also in institutional culture. Fullan and Quinn (2016), in a study of the conditions for systemic educational change, identify four components of "coherence" – a state in which an institution moves in the same direction at all levels: a focused direction, collaborative meaning-making, deep learning, and accountability (Fullan, M., and Quinn, J., 2016).

Applied to ecosystem design, this means that the intentional creation of an ecosystem requires coordinated action at the levels of the curriculum, institutional culture, assessment systems, and management decisions simultaneously. Changing only one of these levels while leaving the others unchanged generally produces no sustainable effect.

Even the most carefully designed programme does not automatically become an ecosystem. For example, introducing portfolio assessment while preserving a culture of the single correct answer and the final examination as the primary assessment instrument creates cognitive dissonance that diminishes the effectiveness of both instruments.

7. Limitations and Directions for Further Research

7.1 Methodological Limitations

The proposed analytical framework has a number of limitations that must be taken into account when applying it.

First, the five-layer ecosystem model is analytical rather than ontological in character: the distinction into five layers is a conceptual instrument, not a description of actually existing boundaries. In practice, the layers interpenetrate significantly, and their diagnosis requires qualitative methods that are robust to this interdependence.

Second, the majority of studies cited were conducted in the context of higher education, which limits the direct applicability of quantitative benchmarks to other educational contexts – corporate training, continuing professional education – that require additional investigation, particularly in the context of dynamically changing competency requirements from contemporary institutions.

7.2 Directions for Further Research

On the basis of the analysis conducted, several priority directions for further research can be identified.

The first direction is the development of valid and reliable instruments for diagnosing

the five layers of the ecosystem across diverse educational contexts. Existing instruments – in particular, the NSSE for higher education – cover individual aspects of the ecosystem but do not provide a complete picture of it.

The second direction is longitudinal research into the relationship between ecosystem quality at the input stage and professional outcomes over a horizon of 3–5 years following programme completion. Existing studies are generally limited to a horizon of 6–12 months.

The third direction is a comparative analysis of the conditions for transferring ecosystem logic from the academic to the corporate context and back. Conceptual frameworks developed in one context frequently lose their operational value when mechanically transposed to another.

The fourth direction is the investigation of the influence of generative AI on the dynamics of educational ecosystems over the long term. Data from 2022–2025 document short-term effects; however, the systemic consequences of this trend for professional identity and competency transfer remain insufficiently studied.

8. Conclusion

The concept of the educational ecosystem represents not a methodological innovation, but a shift in institutional logic. Its central thesis, supported by the convergence of data from multiple research traditions, is as follows: the responsibility of an educational institution is not limited to what the learner has attended or passed – it extends to whether their thinking and professional behaviour have changed.

The empirical data from the period 2015–2025 paint a consistent picture. The gap between academic performance and professional readiness is not narrowing: according to Gallup and Lumina (2021), only 11% of employers are confident in the competence of graduates (Gallup and Lumina Foundation, 2021). Assessment of educational outcomes remains predominantly at the level of reaction and learning: according to Training Industry (2022), only 8% of organisations systematically measure the fourth Kirkpatrick level (Training Industry, 2022). Institutional agreements on delayed outcomes are the exception rather than the norm: according to Connecting Credentials (2023), only 18% of institutions have formalised agreements with employers (Lumina Foundation and OECD, 2023).

An ecosystem is not a methodology. It is an institutional decision about what, precisely, the educational organisation takes responsibility for. This decision requires:

- Reconceptualising success criteria in favour of delayed, behavioural, and identity-related metrics
- Designing not only content, but also environment, community, feedback, and motivational context
- Institutional alignment of the interests of learners, the institution, and external stakeholders as a precondition for design
- Readiness to measure the third and fourth Kirkpatrick levels with an appropriate time horizon
- Leadership that understands its function as the architecture of an environment rather than the management of content.

This, and nothing else, remains what an educational institution can offer in a world in which access to the content of knowledge has ceased to be a privilege.

References

World Economic Forum (2023). Future of Jobs Report 2023. Retrieved from https://www.weforum.org/publications/the-future-of-jobs-report-2023/

Gallup and Lumina Foundation (2021). Lumina-Gallup Education Consumer Study. Gallup.

European Training Foundation (ETF), (2022). Skills Mismatch Measurement in Developing Countries. ETF Publications.

Biggs, J., and Tang, C. (2011). Teaching for Quality Learning at University (4th ed.). Open University Press.

Hattie, J., and Donoghue, G. M. (2016). Learning strategies: A synthesis and conceptual model. npj Science of Learning, 1, 16013.

Wenger, E. (1998). Communities of Practice: Learning, Meaning, and Identity. Cambridge University Press.
Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C., and Graham, I. D. (2019). Evolution of Wenger's concept of community of practice. Implementation Science, 14(1), 1–8.
Farnsworth, V., Kleanthous, I., and Wenger-Trayner, E. (2016). Communities of practice as a social theory of learning: A conversation with Etienne Wenger. British Journal of Educational Studies, 64(2), 139–160.
Kirkpatrick, J. D., and Kirkpatrick, W. K. (2016). Kirkpatrick's Four Levels of Training Evaluation. ATD Press.
Training Industry. (2022). State of Learning Measurement Report. Training Industry, Inc.
European University Association (EUA). (2023). Learning and Teaching Paper Series: Assessment Practices in European Higher Education. EUA Publications.
Thalheimer, W. (2018). The Learning-Transfer Evaluation Model: Sending Messages to Enable Learning Effectiveness. Work-Learning Research.
Hattie, J., and Clarke, S. (2019). Visible Learning: Feedback. Routledge.
Ryan, R. M., and Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. Contemporary Educational Psychology, 61, 101860.
Meadows, D. H. (2008). Thinking in Systems: A Primer. Chelsea Green Publishing.
Blume, B. D., Ford, J. K., Surface, E. A., and Olenick, J. (2019). A dynamic model of training transfer. Human Resource Management Review, 29(2), 270–283.
Deslauriers, L., McCarty, L. S., Miller, K., Callaghan, K., and Kestin, G. (2019). Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom. Proceedings of the National Academy of Sciences, 116(39), 19251–19257.
Nicol, D. J., and Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. Studies in Higher Education, 31(2), 199–218.
Ibarra, H., Rattan, A., and Johnston, A. (2020). Satya Nadella at Microsoft: Instilling a growth mindset. Harvard Business School Case 9–420–064. [Cf. also: Ibarra, H. (1999). Provisional selves: Experimenting with image and identity in professional adaptation. Administrative Science Quarterly, 44(4), 764–791.]
Edelman. (2024). Edelman Trust Barometer 2024. Edelman.
McKinsey and Company. (2023). Future of Higher Education: How Universities Can Thrive in a Changing World. McKinsey Global Institute.
Association of American Colleges and Universities (AAC andU). (2022). High-Impact Practices and Student Outcomes. AAC andU Publications.
Wenger-Trayner, E., and Wenger-Trayner, B. (2015). Learning in Landscapes of Practice: Boundaries, Identity, and Knowledge. Routledge.
Lumina Foundation and OECD. (2023). Measuring What Matters: Outcome Agreements in Professional Education [Connecting Credentials Report]. Lumina Foundation.
Fullan, M., and Quinn, J. (2016). Coherence: The Right Drivers in Action for Schools, Districts, and Systems. Corwin Press.

submitted 13.04.2026;
accepted for publication 27.05.2026;
published 31.05.2026

Contact: sashalyeon@gmail.com