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THE THIRD LEARNING SPACE IN DUAL HIGHER EDUCATION: A SYSTEMATIC REVIEW

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Abstract
Dual higher education seeks to integrate academic learning with workplace-based experience; however, research has consistently reported persistent structural, curricular, and didactic discontinuities between higher education institutions and workplace learning environments. These challenges are frequently described as weaknesses in learning place cooperation rather than as a lack of genuine pedagogical integration. In response, the notion of a third learning space (Dritter Lernort) has emerged as a promising but under-theorised approach for moving beyond dyadic university-workplace models. This article presents a conceptually guided systematic literature review that synthesises research on third learning spaces relevant to dual higher education. Structured searches across international and German-language databases, supplemented by repository searches and citation chaining, yielded a documented corpus of n = 74 publications covering the period 2000-2026, of which n = 71 were included in the conceptual analysis and n = 3 served as methodological references for the review design. Inclusion was based on conceptual relevance rather than terminology alone and captured adjacent strands such as learning place cooperation, boundary crossing and boundary spaces, and work-integrated learning (WIL). An iterative coding and synthesis procedure mapped the literature in terms of educational sectors, disciplinary perspectives, functions, modalities, learner roles, and curricular integration. Across the strands reviewed, the third learning space emerges as a functional, learner-centred intermediary that supports theory-practice integration through reflection, competence development, standardisation, and innovation, often in hybrid learning arrangements. Building on this synthesis, the article proposes an integrative zonal model and discusses its implications for curriculum design, assessment, and future research in dual higher education.

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1 Introduction

Dual higher education has become one of the most visible and dynamic formats for linking higher education and professional practice. Particularly in Germany, but increasingly also in other international contexts, dual study programmes are regarded as an attractive response to demands for employability, relevance, labour-market orientation, and closer cooperation between higher education institutions and professional fields (Wissenschaftsrat, 2013; Nickel et al., 2022). The promise of these programmes is compelling: by systematically combining academic learning with workplace-based experience, students are expected to acquire disciplinary knowledge, apply it in authentic contexts, and develop professional competences in ways that neither higher education institutions nor workplaces could achieve alone.

However, this promise of integration has long been accompanied by critical debate. Research has consistently shown that the coexistence of academic and practical learning phases does not automatically result in meaningful theory-practice integration. Instead, many dual programmes are characterised by parallel structures, loosely coordinated expectations, and discontinuities in content, pedagogy, timing, and assessment. In this regard, the central problem is not only that universities and practice partners do not cooperate sufficiently, but also that the relationship between the two contexts often remains organisational rather than genuinely educational. Learners are expected to move between these two worlds, yet the connective pedagogical structures that would enable them to integrate their experiences are frequently weak or missing (Langfeldt, 2018; Gerstung & Deuer, 2021a).

This challenge has often been discussed in German-speaking literature under the heading of *Lernortkooperation*, that is, cooperation between learning places. While this discourse has generated important insights into governance, coordination, and curricular alignment, it tends to focus on the relationship between institutions rather than on the learning processes through which students construct coherence across contexts. As a result, the question of how integration occurs at the level of learners remains comparatively underdeveloped. The recurring observation that theory and practice often remain insufficiently connected suggests that dual higher education needs a more nuanced conceptual vocabulary to describe intermediary learning arrangements.

This is where the notion of a **third learning space** becomes relevant. The concept points to learning environments, practices, and arrangements that are reducible neither to the higher education institution nor to the workplace, but that mediate, connect, and transform experiences from both. In German-speaking vocational education and training (VET) research, the idea of a *Dritter Lernort* has mainly referred to supplementary institutional settings such as inter-company training centres within the dual VET system (Dehnbostel, 2002, 2017; Landwehr, 2002). These settings fulfil compensatory and standardising functions, especially where companies cannot provide the full range of learning opportunities required for occupational development. When applied to dual higher education, however, the concept becomes more complex. Here, the third learning space is rarely established as a fixed third institution. Instead, it appears in fragmented and often implicit ways: in integrative project formats, reflective seminars, hybrid digital learning environments, cross-sectoral collaborations, or pedagogical arrangements that help students relate academic learning to professional learning.

Internationally, related ideas are discussed under a variety of labels. Work-integrated learning (WIL) research has long emphasised the need for structured mediation between academic study and workplace experience (Billett, 2011; Jackson, 2015; Ferns et al., 2022; Zegwaard & Pretti, 2023). Boundary-crossing research analyses how learners navigate different social and epistemic worlds and how learning emerges in the spaces between them (Akkerman & Bakker, 2011). Third-space approaches in higher education describe hybrid environments in which academic and professional, formal and informal, institutional and participatory practices intersect (Whitchurch, 2008; Barnett, 2014). Although these strands of literature often address similar phenomena, they remain only loosely connected, and there is still no systematic synthesis that brings them together for the specific case of dual higher education.

This article addresses that gap. It argues that the concept of a third learning space offers a productive lens for rethinking theory-practice integration in dual higher education beyond binary institutional models. Rather than treating university and the workplace as two poles that are already

integrated, the article proceeds from the assumption that integration must be pedagogically supported, reflectively mediated, and actively constructed by learners. From this perspective, the third learning space becomes a conceptual tool for identifying and designing those intermediary arrangements through which learners connect heterogeneous experiences, develop professional judgement, and form coherent competences across contexts.

The article pursues three objectives. First, it clarifies and differentiates conceptualisations of the third learning space across disciplinary and educational contexts. Second, it synthesises research strands that are relevant to dual higher education, even where different terminology is used. Third, it derives an analytical framework that can support future empirical research and curriculum development, especially in the context of the Baden-Wuerttemberg Cooperative State University (DHBW). The DHBW is particularly suitable as a reference context because its institution-wide model of alternating academic and workplace learning across programmes makes it a paradigmatic case for analysing third learning spaces in higher education (Ternes & Schneckenburger, 2020). At the same time, the insights generated extend beyond this institutional setting and contribute to a broader theoretical advancement of dual higher education research.

2 Conceptual framework: The third learning space in dual higher education

In this article, the **third learning space** is understood as a cognitive, virtual, physical, and/or hybrid space in which learners actively integrate, reflect upon, reinterpret, and further develop competences acquired in academic and workplace contexts. Unlike the first learning space, represented by the higher education institution, and the second learning space, represented by the workplace or professional field, the third learning space is not primarily defined by a single institutional location. Its defining feature is instead its **integrative function**. It is the space in which discontinuous experiences are related to one another, where theory and practice become mutually interpretable, and where learners engage in reflective and boundary-crossing meaning-making.

This definition deliberately moves beyond a narrow institutional understanding. In vocational education, the third learning place has often been conceived as an additional organised setting that complements company and school-based learning, for example, through inter-company training centres. Such settings remain highly relevant as historical and conceptual reference points. Yet in dual higher education, the phenomenon appears in more differentiated forms. It may take the shape of reflective seminars, practice-linked research projects, digital platforms, mentoring structures, portfolios, cross-institutional workshops, communities of practice, innovation labs, or self-organised learning settings in which students connect their experiences across contexts. The third learning space therefore cannot be reduced to a “third place” in the literal sense; it is better understood as an **intermediary pedagogical arrangement** that may be materialised in multiple ways.

This broader conceptualisation is supported by several strands of literature. Research on learning place cooperation highlights that successful dual learning requires more than administrative coordination; it requires meaningful connections between learning goals, content, and responsibilities across settings (Dehnbostel, 2017; Langfeldt, 2018). Work-integrated learning research similarly argues that workplace experience becomes educationally valuable only when it is intentionally integrated into academic learning through reflection, supervision, and curricular design (Billett, 2011; Jackson, 2015). Boundary-crossing theory contributes the insight that learning occurs not only within practices but also at the boundaries between them, where learners encounter difference, tension, and a need for translation (Akkerman & Bakker, 2011). Third-space research in higher education adds a focus on hybridity, participation, identity formation, and the breakdown of conventional institutional divisions (Whitchurch, 2008; Barnett, 2014).

Taken together, these perspectives suggest that dual higher education should not be conceptualised merely as the alternation of two already coherent learning worlds. Rather, it involves learners moving between different epistemic cultures, organisational expectations, temporal rhythms, and assessment logics. Academic learning may privilege abstraction, disciplinary reasoning, and systematic inquiry, while workplace learning often emphasises situated action, tacit knowledge, productivity, and context-specific judgement. The relationship between these modes is not self-evident. Students must actively connect them, often under conditions of asymmetry and

tension. This is precisely where the third learning space becomes important: it names the space in which such connections are made possible, supported, and educationally deepened.

The concept also implies a specific understanding of learner agency. Integration is not something that institutions can simply provide as a finished product. As Dehnbostel (2017) and Nickel et al. (2022) indicate in different ways, learners themselves must participate actively in relating knowledge, reflecting on experience, and developing coherence across learning contexts. However, the emphasis on learner agency should not be misunderstood as transferring responsibility from institutions to individuals. Rather, the third learning space foregrounds the interplay between **institutional design and learner activity**. Students need support structures, pedagogical scaffolding, time for reflection, and tasks that invite translation across contexts. At the same time, such structures only become effective if learners use them as spaces for active mediation rather than passive reception.

In the context of a fully integrated dual higher education model such as the DHBW, this perspective can be operationalised through a **zonal understanding** of third learning spaces. Instead of assuming one uniform format, the third learning space may consist of multiple zones that differ in the degree to which they are curricularly structured, institutional anchoring, learner autonomy, and relation to practice. Some zones may be strongly supported by higher education institutions, such as reflective modules or theory–practice seminars. Others may emerge more strongly from workplace or project contexts, while still others are self-organised by learners themselves. What unites them is not their format but their integrative function: they create opportunities for learners to connect, reinterpret, and further develop experiences gained across heterogeneous contexts.

In this sense, the third learning space is best conceptualised as a **meta-level construct**. It is not simply another place added to an existing system, but an analytical and pedagogical perspective that helps to identify those conditions under which theory–practice integration becomes possible. It moves beyond linear ideas of transfer and instead emphasises mediation, reflection, and the active production of coherence. This makes the concept particularly relevant for dual higher education, where the educational challenge lies not merely in linking study and work administratively, but in enabling learners to build meaningful bridges between them.

3 Methodology: Conceptually guided systematic literature review

3.1 Review design

This study uses a **conceptually guided systematic literature review** (Booth et al., 2016) in order to synthesise a fragmented and terminologically heterogeneous body of research on intermediary learning arrangements between higher education and workplace contexts. The choice of design is grounded in the nature of the field itself. The notion of a third learning space is neither stable nor consistently used across educational sectors and disciplinary traditions. Relevant publications often discuss comparable phenomena under adjacent concepts such as learning place cooperation, boundary crossing, connectivity, work-integrated learning, practice-based learning, or hybrid learning spaces. A narrowly keyword-based review would therefore risk omitting precisely those contributions that are most important for understanding the concept in a broader analytical sense.

The review was thus designed to combine systematic search procedures with conceptual openness. Rather than searching only for exact occurrences of “third learning space” or “third learning place,” the study aimed to identify literature addressing functionally similar arrangements and theoretical problems. This approach makes it possible to reconstruct a broader discourse field and to compare perspectives that have often evolved in parallel. It also aligns with the aim of the article, which is not only to map terminology but to clarify the conceptual terrain relevant to dual higher education.

At the same time, the review retains systematic procedures. Search strategies, inclusion criteria, coding categories, and synthesis steps were explicitly defined. Database searches were complemented by citation chaining and targeted repository searches in order to ensure sufficient depth and conceptual saturation. The review therefore follows a logic of systematic comprehensiveness within a conceptually broadened scope.

3.2 Search space and inclusion criteria

The search space was defined along three dimensions in order to capture the breadth of relevant literature while maintaining a clear analytical focus.

First, the review covered different **educational sectors** in which the concept or related intermediary arrangements are discussed: vocational education and training (VET), dual higher education, higher education more broadly, and continuing education. This was important because the concept of a third learning place has strong roots in VET, while comparable integrative arrangements in higher education are often discussed using different terminology.

Second, the search addressed several **disciplinary perspectives**, including educational sciences, vocational education research, higher education research, workplace learning, organisational learning, and work-integrated learning research. This reflected the assumption that the problem of connecting theory and practice is not confined to a single field, but appears in different theoretical languages.

Third, the review focused on a wider range of **conceptual labels**. These included explicit references to third learning space/place, but also adjacent framings such as learning place cooperation (*Lernortkooperation*), boundary crossing and boundary spaces, connectivity, work-integrated learning, cooperative education, work-based learning, and related notions of hybrid or intermediary learning environments.

Searches were conducted in both English and German using clustered query strings that combined these conceptual labels with sector-specific terms such as dual study, higher education, vocational education, workplace learning, and continuing education. The database search included multidisciplinary international databases such as Scopus, Web of Science, and ERIC, as well as German-language educational databases such as FIS Bildung. These searches were supplemented by exploratory Google Scholar searches, targeted repository searches including peDOCS and BIBB-related collections, and backward and forward citation chaining from central publications.

Publications from **2000 to 2026** were prioritised in order to capture both the consolidation of dual higher education and the evolution of related theoretical debates. Included publication types comprised peer-reviewed journal articles, monographs, edited book chapters, policy reports, and empirically grounded conceptual papers. The corpus comprised different publication types, reflecting the conceptual and interdisciplinary nature of the field. It included peer-reviewed journal articles, monographs and research books, edited book chapters, policy or institutional reports, and empirically grounded conceptual or framework papers (see Annex 1). This heterogeneity was considered appropriate for the purpose of the review, as the third learning space is discussed not only in peer-reviewed research but also in policy-oriented, vocational education, and institutional development literature. At the same time, the heterogeneity of publication types was taken into account in the interpretation of findings: the review does not treat all sources as equivalent forms of empirical evidence, but uses them to reconstruct conceptual patterns and functions across different knowledge traditions.

Literature was included if it either (a) explicitly used a third-space or third-place framing in relation to learning across academic and professional contexts, or (b) developed a clearly articulated intermediary, connective, or integrative arrangement that fulfilled comparable functions. This second criterion was crucial, since many highly relevant contributions in WIL or boundary-crossing research do not use the third learning space label, yet address the same underlying educational problem.

The final documented review corpus comprised n = 74 publications, all of which are listed in Appendix 1 together with their analytical labels and codes. Of these, n = 71 were included in the conceptual frequency analysis, while n = 3 methodological sources informed the review design itself. Appendix 1 therefore functions not merely as a reference list but as the underlying coded data table for the review. The results reported below draw directly on this coded corpus, especially the categories educational sector, disciplinary origin, conceptual label, function, modality, learner role, and curricular integration.

3.3 Analytical procedure

The analysis followed an **iterative coding and synthesis procedure** informed by systematic review methodology and qualitative comparative analysis (Gough et al., 2017). The coding was conducted at publication level. Each included source was assigned one or more codes in the predefined categories of the review matrix. Codes were entered into a structured data table and subsequently used for two analytical purposes: first, to generate descriptive mappings of the corpus, and second, to support the interpretive synthesis across research strands. The coded data table is provided in Appendix 1, where each publication is listed together with its sectoral, disciplinary, conceptual, functional, modal, learner-role, and curricular labels. Each publication was first screened for relevance and then coded deductively using a predefined review matrix. During the coding process, categories were refined inductively where necessary in order to accommodate divergent terminology and conceptually hybrid cases.

A central methodological decision was the use of **non-exclusive coding**. Publications could be assigned to more than one educational sector, conceptual label, or functional category where this was analytically justified. This reflects the fact that many texts operate across boundaries: for example, a publication may address both VET and higher education, combine WIL with boundary-crossing perspectives, or discuss both competence development and innovation. The aim was therefore not to force mutually exclusive classification, but to map patterns of conceptual engagement.

The coding process focused not only on terminology, but also on the functions attributed to the intermediary arrangements described in the literature. Particular attention was paid to whether texts conceptualised the space in question as primarily compensatory, reflective, standardising, innovative, identity-forming, or learner-centred. Additional coding dimensions captured modality, learner role, and curricular integration. These dimensions were chosen because they allow systematic comparison across strands that otherwise differ strongly in theoretical language and institutional context.

The synthesis proceeded in two steps. First, descriptive patterns in the corpus were mapped. Second, these patterns were interpreted comparatively in order to identify recurring functions, shared assumptions, and important differences between research traditions. This procedure ultimately enabled the development of an integrative conceptual model of the third learning space in dual higher education.

For transparency, Table 1 reports the distribution of conceptually relevant publications across educational sectors and dominant conceptual labels. Because publications may be assigned to more than one label, totals are not mutually exclusive. The table therefore indicates patterns of emphasis within the reviewed corpus rather than field-wide prevalence in a strict bibliometric sense.

Table 1. Included corpus by educational sector × conceptual label

Educational sector	*Third learning space / place*	*Learning place cooperation*	*Boundary crossing / space*	*WIL / Co-op / placements*	*Total included*
VET	3	8	4	2	**17**
Dual Higher Education	2	5	1	1	**9**
Higher Education (broad)	12	4	9	15	**40**
Continuing Education	1	1	2	1	**5**
Total	**18**	**18**	**16**	**19**	**71**

Publications may be assigned to more than one conceptual label; therefore, column totals exceed row totals.

Table 2 provides a second overview of the coded corpus by dominant analytical categories. It shows how the reviewed literature frames intermediary learning arrangements in functional, modal, and pedagogical terms. As with Table 1, codes are non-exclusive where publications address more than one category.

Table 2. Dominant analytical categories

Analytical category	*Main codes used in the review*	*Function in the analysis*
Function	Integration & reflection; standardisation & innovation; competence development	Identifies the pedagogical purpose attributed to the intermediary space
Modality	Physical; digital; hybrid	Describes how the intermediary space is operationalised
Learner role	Active designer; passive recipient; mixed role	Captures whether learners are positioned as agents of integration or mainly as participants in pre-structured arrangements
Curricular integration	Mandatory; project-based; optional/informal	Indicates how strongly the third learning space is embedded in formal programme structures
Conceptual label	Third learning space/place; learning place cooperation; boundary crossing/space; WIL/co-op/placements	Shows which research tradition or terminology frames the phenomenon

3.4 Review matrix (analytical framework)

A structured review matrix guided data extraction, coding, and synthesis. The matrix was applied to all n = 71 publications included in the conceptual analysis; the resulting labels are documented in Appendix 1. It included the following dimensions: educational sector, disciplinary origin, conceptual label, function, modality, learner role, and curricular integration. These categories were chosen to support systematic comparison across heterogeneous strands of literature and to make visible the different ways in which intermediary spaces are framed and operationalised.

Table 3. Review matrix

Dimension	*Categories*	*Guiding Questions*
Educational Sector	VET, Dual HE, HE, Continuing Education	In which educational contexts is the third learning space addressed?
Disciplinary Origin	VET research, Higher education research, Workplace learning/WIL, Educational sciences	Which theoretical traditions inform the concept?
Conceptual Label	Third learning space/place; learning place cooperation; boundary crossing/space; WIL	How is the intermediary space named and framed?
Function	Integration & reflection; standardisation & innovation; competence development	What purposes does the third learning space serve?
Modality	Physical; digital; hybrid	How is the space operationalised?
Learner Role	Active designer; passive recipient	What agency is attributed to learners?
Curricular Integration	Mandatory; project-based; optional/informal	How is the third learning space embedded in curricula?

The matrix first asked in which educational contexts the third learning space or related phenomena are discussed. Second, it examined which theoretical traditions inform the concept. Third, it considered how the intermediary arrangement is named and framed. Fourth, it analysed the functions attributed to it, such as integration and reflection, standardisation and innovation, or competence development. Fifth, it captured whether the space is realised physically, digitally, or in hybrid form. Sixth, it assessed the degree of agency attributed to learners, ranging from passive participation to active design. Finally, it considered how strongly the third learning space is embedded in curricula, distinguishing mandatory, project-based, and optional/informal forms.

This framework allowed the review to compare literatures that are often disconnected. It also supported the development of a synthesis that is not limited to nominal similarities, but instead focuses on underlying pedagogical functions and structures.

This review deliberately follows a **conceptually guided** rather than a fully database-exhaustive protocol. This allows a nuanced synthesis across heterogeneous and partially overlapping research traditions, but it also implies certain limitations. The corpus reflects conceptual relevance and theoretical saturation rather than complete coverage of every potentially related publication. Quantitative distributions should therefore be interpreted as patterns within the included corpus, not as a definitive measure of field-wide frequency. Future research could complement this approach through bibliometric or database-exhaustive studies in order to trace the historical development and disciplinary diffusion of the concept more comprehensively.

3.5 Trustworthiness and ethical considerations

As this study is based exclusively on published literature and publicly available documents, no human participants were involved and no ethical approval was required. Nevertheless, ethical and quality-related considerations remained relevant to the conduct of the review. Trustworthiness was addressed through transparent documentation of the search space, inclusion criteria, coding categories, and synthesis procedure. The review corpus is documented in Appendix 1, including the analytical labels assigned to each publication. This allows readers to trace how the synthesis is grounded in the reviewed literature.

Given the conceptual heterogeneity of the field, the review did not aim at statistical representativeness or exhaustive bibliometric coverage. Instead, it followed a conceptually guided logic of relevance and theoretical saturation. To reduce the risk of arbitrary interpretation, the analysis focused on recurring functions and patterns across different research traditions rather than isolated claims from individual sources. The use of non-exclusive coding further supported analytical sensitivity to publications that cut across sectors, concepts, or pedagogical functions.

A limitation of the review is that the coding and synthesis involve interpretive judgement. This is inherent in conceptually guided reviews, especially where terminology is fragmented and partially overlapping. The review therefore makes its analytical decisions explicit and treats the resulting model as a conceptual synthesis rather than as a definitive empirical taxonomy.

4 Results: Systematic synthesis of literature on the third learning space

The following synthesis is based on the coded corpus documented in Appendix 1. The results are organised by major literature strand rather than by individual publication, because the aim of the review is to reconstruct conceptual patterns across heterogeneous research traditions. Where appropriate, the synthesis refers to exemplary sources that are particularly representative of each strand.

4.1 German-speaking research on dual studies and learning place cooperation

In German-speaking research, dual study programmes have primarily been analysed through the lens of **learning place cooperation**. This literature focuses on the relationship between higher education institutions and companies, especially with regard to coordination, responsibilities, curricular alignment, supervision, and the design of practice phases. It provides important evidence

that dual higher education cannot be understood simply as the juxtaposition of study and work, but requires systematic cooperation if students are to benefit educationally from alternating contexts.

At the same time, this body of research repeatedly shows that cooperation often remains limited in scope. What is formally presented as integrated theory-practice learning often proves to be loosely coupled organisational coexistence. Langfeldt (2018), for example, shows that universities frequently have only limited influence over the design of workplace learning, while companies often prioritise productive integration into operational routines over explicit educational reflection. Gerstung and Deuer (2021a, 2021b) similarly demonstrate that students experience discontinuities between academic and practical learning, especially when expectations, tasks, and feedback structures are insufficiently aligned. These findings suggest that the main challenge is not simply the existence of two learning places, but how their relationship is pedagogically mediated.

This literature is highly relevant for the third learning space debate because it identifies the structural problem that the concept seeks to address. Yet explicit conceptualisations of a third learning space remain comparatively rare in dual higher education research. Even where intermediary or extended formats are mentioned, they are often treated pragmatically rather than theorised systematically. Projects, digital platforms, additional seminars, or reflective assignments may function as integrative elements, but they are seldom analysed as distinct pedagogical spaces with a specific role in theory–practice integration.

Comparative analyses of dual and vocational pathways further highlight this point. Kuhlee and Irmscher (2018), for instance, discuss trial models in which vocational schools or additional institutions take on complementary roles. However, these models often remain tied to institutional supplements rather than to a learner-centred, process-oriented understanding of integration. Policy-oriented documents such as those by the Wissenschaftsrat (2013) also emphasise the need for stronger curricular coordination, but stop short of elaborating a distinct pedagogical model of an intermediary space.

Overall, German-speaking dual higher education research provides a strong diagnosis of coordination deficits and theory–practice tensions. Its limitation lies less in identifying the problem than in lacking a consolidated conceptual vocabulary for describing and analysing intermediary pedagogical arrangements. This is precisely the gap into which the third learning space perspective can intervene.

4.2 Vocational education research and trial models of learning places

In vocational education and training research, the concept of a third learning place has been more explicitly developed and is historically more firmly anchored. Here, the discussion is closely linked to the structure of the dual system and to the question of how learning opportunities can be stabilised across heterogeneous workplaces. Dehnbostel (2002, 2017, 2023) is particularly important in this regard. His work on learning sites, learning place cooperation, and changing learning environments provides an influential conceptual backdrop for understanding how intermediary settings can compensate for limitations in company-based training and support broader competence development.

Within this tradition, third learning places are often conceived as **supplementary institutional arrangements**, such as inter-company training centres, that make up for deficits in workplace provision. Their functions include standardisation, the broadening of occupational competences, access to technologies or procedures unavailable in specific firms, and the pedagogical structuring of learning processes that cannot be left entirely to workplace contingencies. While these settings are more institutionally defined than the broader concept used in the present article, they offer valuable analytical insights. In particular, they show that intermediary arrangements become necessary when learning cannot be sufficiently guaranteed by existing institutional sites alone.

This is highly relevant for dual higher education. Although the institutional structure differs, the underlying issue is similar: workplace experiences vary significantly in quality, scope, and pedagogical guidance. Students do not encounter uniform learning conditions, and universities cannot assume that practice phases will automatically generate those forms of professional understanding that curricula require. The vocational education literature therefore contributes a strong awareness of the **compensatory and standardising function** of third spaces. It shows that

intermediary learning arrangements can help equalise opportunities, broaden access to relevant practices, and create more consistent conditions for competence development.

Recent developments such as **Netzwerk Q 4.0** further expand this perspective by showing how digitalisation transforms learning place cooperation. Hybrid and network-based learning arrangements increasingly supplement or reconfigure traditional institutional settings, allowing new forms of connectivity across sites. These developments resonate strongly with current debates in higher education on digital and hybrid learning environments. They suggest that the idea of a third learning place can no longer be restricted to a physically separate institution, but must also include digitally mediated and networked forms of integration.

Although VET research cannot be transferred directly to higher education, it contributes a crucial conceptual layer: it treats intermediary spaces not merely as optional enrichments but as structurally significant responses to the limits of existing dual arrangements. This insight strengthens the argument that third learning spaces in dual higher education should be seen as educational necessities wherever theory–practice integration cannot be left to chance.

4.3 International work-integrated learning research

Internationally, research on **work-integrated learning (WIL)** provides one of the most substantial and conceptually mature bodies of literature relevant to the third learning space. WIL research generally addresses the intentional integration of academic learning with workplace or community-based experience. Although the specific term third learning space is not always used, many WIL approaches describe intermediary arrangements that are functionally equivalent: reflective seminars, integrative assessment tasks, project hubs, learning centres, mentorship structures, and digital platforms that help students connect workplace experience with academic study.

A core insight of WIL research is that participation in work settings alone is not sufficient for educational integration. Rather, the relationship between experience and learning must be deliberately designed. Jackson (2015), Billett (2011), Ferns et al. (2022), and Zegwaard and Pretti (2023) all stress in different ways that effective WIL depends on intentional curricular architecture, structured reflection, and opportunities for students to articulate, evaluate, and transfer what they learn across contexts. This resonates strongly with the third learning space perspective, because it foregrounds mediation rather than mere exposure to practice.

WIL literature also places strong emphasis on competence articulation and employability. From this angle, intermediary spaces help learners identify and name what they have learned, especially when important forms of professional growth remain tacit or implicit in workplace settings. Reflection, dialogue, and documentation become key practices through which learning is rendered visible and academically meaningful. This is particularly important in dual higher education, where students may engage in rich workplace experiences without necessarily developing the conceptual tools to analyse or communicate them.

Another strength of WIL research is that it conceptualises integration as part of a broader **learning ecosystem** rather than as a bilateral exchange between university and workplace. This ecosystem perspective allows for multiple actors, support structures, and learning environments. It therefore aligns well with the argument that third learning spaces may take multiple forms and need not be concentrated in one institutional site. At the same time, WIL research sometimes remains more pragmatic than theoretically explicit: it often identifies effective practices without always developing a broader conceptual language for hybridity, boundary work, or epistemic mediation. Here, the third learning space perspective can offer additional interpretive depth.

Overall, the WIL literature contributes a strong emphasis on curricular intentionality, reflection, competence development, and ecosystem thinking. It shows that intermediary spaces are essential for turning workplace participation into higher learning. For dual higher education, this is particularly relevant because it underlines that the educational quality of alternation depends on connective pedagogical design.

4.4 Third space and boundary-crossing perspectives in higher education

A further important strand derives from higher education research on **third spaces** and **boundary crossing**. Unlike the more coordination-oriented discourse on learning place cooperation, this literature is particularly attentive to hybridity, role negotiation, identity formation, and the productive potential of crossing institutional and epistemic boundaries. Whitchurch (2008), Salden (2011), and later contributions on hybrid academic roles describe third spaces as environments in which established boundaries between academic, administrative, professional, and social domains become blurred. Although much of this research focuses on staff roles and organisational change, it provides valuable conceptual tools for thinking about student learning in dual contexts.

Boundary-crossing theory, especially as developed by Akkerman and Bakker (2011), is even more directly relevant. It conceptualises learning as emerging at the boundaries between social practices, where differences in language, norms, tools, and knowledge systems require translation and coordination. Boundaries are not only obstacles; they can also be productive sites of learning because they expose learners to difference and compel them to engage in perspective-taking, reflection, and reconstruction. This is particularly applicable to dual higher education, where students move between the epistemic world of academic study and the situated logic of practice.

Higher education research on third spaces also expands the picture by highlighting participatory, project-based, and digitally mediated learning communities. Examples include law clinics, community partnerships, co-creation initiatives, and online or hybrid learning environments in which learners engage with actors and issues beyond conventional curricula. These arrangements show that third spaces are often associated not only with integration but also with innovation, identity work, and civic or professional transformation. They are spaces in which learners are not merely recipients of knowledge, but active participants in meaning-making and design.

For the present study, this literature is significant because it adds a richer understanding of the **qualitative character** of intermediary spaces. Whereas VET and WIL research often foreground structure, competence, and coordination, third-space and boundary-crossing perspectives highlight ambiguity, hybridity, negotiation, and learner subjectivity. They remind us that integration is not only a curricular task, but also an interpretive and developmental process through which learners form professional identities and negotiate belonging across contexts.

This makes the literature highly relevant for dual higher education. Students in dual programmes do not simply apply theory in practice; they move between different expectations about what counts as valid knowledge, competent performance, and legitimate participation. Third learning spaces can therefore be understood as environments that enable learners not only to connect content, but also to develop a more reflexive relationship to the different worlds in which they participate.

4.5 Cross-strand synthesis

Across all literature strands, the third learning space emerges as a **functional rather than a purely institutional construct**. While the terminology varies significantly, a common pattern becomes visible: the literature repeatedly points to the need for intermediary arrangements that help learners connect academic and practical experiences, reflect on differences between contexts, develop competences across boundaries, and turn fragmented experiences into coherent learning trajectories.

Four recurring functions stand out across the corpus. First, third learning spaces support the **integration of theory and practice** by creating opportunities for translation and connection between heterogeneous learning contexts. Second, they enable **reflection and competence development**, often by making tacit experience visible and open to analysis. Third, they can serve **standardising and compensatory functions**, especially where workplace learning opportunities are uneven or incomplete. Fourth, they may foster **innovation and transformation**, particularly in project-based, hybrid, or co-creative environments where boundaries become sites of experimentation and new forms of participation.

Table 4. Conceptual zones of the third learning space and their theoretical foundations

Element in the model	*Corresponding literature strands*
Zone 1: Self-organised learning	Learner agency; self-directed learning; informal and lifelong learning
Zone 2: Higher-education-induced learning processes	Curricular work-integrated learning (WIL); research-based learning; reflective assignments
Zone 3: Practice-induced learning processes	Workplace learning; service learning; practice-based and experiential learning
Zone 4: Integration of higher education and practice	Boundary crossing; connective learning; integrative theory–practice frameworks
Formal, non-formal, and informal learning	European and international VET, WIL, and lifelong learning frameworks
Learner ownership and agency	Boundary-crossing theory (Akkerman & Bakker); third-space and hybrid-role perspectives (Whitchurch); learner-centred WIL research

At the same time, the strands differ in important ways. Vocational education research is more strongly oriented towards structural compensation and standardisation. Research on learning place cooperation focuses on coordination between institutions. WIL literature emphasises intentional curricular mediation and competence articulation. Boundary-crossing and third-space research foreground hybridity, learner agency, and identity work. These differences are not contradictory; rather, they highlight complementary dimensions of the phenomenon. The central synthesis of the review is therefore that the third learning space should be understood as a **multi-dimensional integrative** construct that combines pedagogical, institutional, epistemic, and developmental functions.

Based on this synthesis, the reviewed literature supports the development of a **Third Learning Space Conceptual Model (TLSCM)**. This model does not describe a single uniform institutional format. Instead, it conceptualises the third learning space as an integrative field made up of different but related zones of learning activity. These zones vary in their degree of institutional support, learner self-organisation, relation to practice, and role in curricular structures:

- **Zone 1** comprises self-organised learning processes in which learners actively initiate and shape their own integrative activities beyond direct institutional control.
- **Zone 2** includes higher-education-induced learning processes, such as reflective seminars, supervised projects, and academic assignments explicitly designed to connect study and practice.
- **Zone 3** refers to practice-induced learning processes, for example workplace-based projects, service learning, and other professionally situated formats that nonetheless generate structured integrative learning.
- **Zone 4** represents the core of integration, where learners actively coordinate, reinterpret, and connect academic and professional learning across institutional boundaries.

The zones should not be understood as separate containers with fixed boundaries. Rather, they describe analytically distinguishable but dynamically connected regions of integrative learning activity. Learners may move between zones over time: for example, a workplace problem may first emerge in a practice-induced setting, then become the object of academic reflection in a higher-education-induced seminar, and later be further developed through self-organised inquiry or peer collaboration. The boundaries between the zones are therefore porous. What matters analytically is not where a learning activity is institutionally located, but how it contributes to the mediation of academic and professional experience. Zone 4 represents the integrative core of the model because

it captures the moments in which experiences from the other zones are actively related, translated, and transformed into coherent professional understanding.

This zonal model makes visible that the third learning space is neither identical with informality nor reducible to formal curricular provision. It spans formal, non-formal, and informal learning; physical, digital, and hybrid arrangements; and varying degrees of learner ownership and institutional scaffolding. Its analytical advantage lies in capturing the diversity of integrative processes without collapsing them into one rigid organisational typology.

The review therefore shows that explicit and empirically grounded models tailored specifically to dual higher education remain underdeveloped, but that the conceptual resources for such models are already present across adjacent literatures. The TLSCM is proposed as one way of bringing these resources together into a coherent framework.

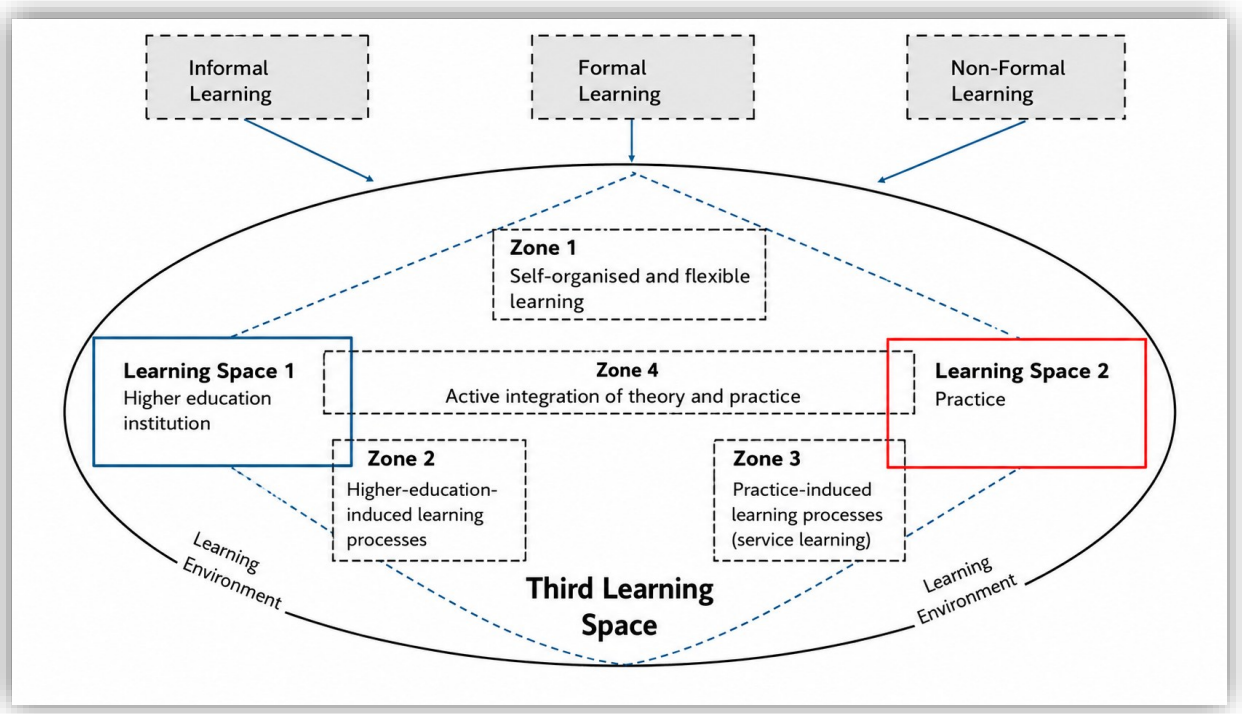

Figure 1. The Third Learning Space Conceptual Model (TLSCM) as an integrative zonal model[*]

5 Discussion: Implications for dual higher education and research

5.1 Conceptual contribution

The synthesis demonstrates that although notions related to a third learning space are present across vocational education, higher education research, work-integrated learning, and boundary-crossing theory, they remain fragmented, context-dependent, and rarely consolidated into a coherent framework for dual higher education. The main conceptual contribution of this review is therefore not simply to identify an additional concept, but the clarification of a broader analytical perspective: theory–practice integration should be understood as an active, mediated, and pedagogically supported process rather than as an automatic outcome of institutional alternation.

This matters because much of the debate on dual higher education continues to focus on organisational arrangements. Cooperation agreements, alternation structures, contractual partnerships, and curricular coordination are all important, but they do not in themselves explain how

* The zones represent analytically distinguishable but porous and dynamically connected learning regions. The model emphasises transitions, overlaps, and mediation processes rather than fixed institutional locations.

students integrate heterogeneous experiences into coherent competences and professional understanding. The third learning space shifts the analytical focus towards those spaces, practices, and arrangements in which this integration work becomes possible. It therefore complements and extends existing models of learning place cooperation by bringing the learner and the learning process more clearly into view.

A central insight of the review is that the third learning space cannot be adequately described as a single additional institutional learning site. Such a reading would be too narrow for the context of dual higher education and would risk reproducing the very spatial logic the concept seeks to overcome. The reviewed literature instead suggests that the third learning space is best understood as a **meta-space of mediation**. It is a functional and relational space in which learners engage with differences between academic and practical contexts, reflect on them, and develop new forms of coherence. This makes the concept more flexible and analytically more powerful. It allows the inclusion of physical, digital, hybrid, formal, informal, self-organised, and institutionally scaffolded arrangements, as long as they serve integrative purposes.

At the same time, the concept should not become so broad as to lose analytical sharpness. Not every hybrid environment or practice-linked project automatically constitutes a third learning space. What is decisive is whether the arrangement supports the active mediation of heterogeneous knowledge, experiences, and expectations across contexts. In practical terms, an arrangement can therefore be regarded as a third learning space only if it fulfils at least one strong integrative function: it must enable learners to relate academic and professional knowledge, reflect on tensions between contexts, translate experience into conceptual understanding, articulate competence development, or negotiate professional identity across boundaries. This functional criterion prevents the concept from becoming a generic label for any hybrid or practice-related learning format. In this sense, the review suggests that the core criteria of a third learning space are not spatial or institutional, but functional: integration, reflection, translation, competence development, and learner agency.

5.2 Implications for dual study models

For dual higher education institutions such as DHBW, the concept of a third learning space provides a productive framework for rethinking curriculum design, pedagogical support, assessment practices, and cooperation with practice partners. The literature suggests that meaningful theory–practice integration does not emerge automatically from alternating phases, but depends on intentional design. This has several consequences.

First, curricula need to include **explicitly integrative elements**. These may take the form of reflective seminars, portfolios, practice-linked research assignments, case-based learning, mentoring conversations, project work, or digitally supported reflection and documentation formats. The key point is that such formats should not merely accompany dual study programmes administratively, but be designed as pedagogical spaces in which learners actively relate academic concepts to professional situations and vice versa.

Second, assessment practices need to recognise integrative learning more clearly. If dual higher education values the capacity to connect theory and practice, this capacity should become visible in the ways students are asked to demonstrate learning. Traditional academic assessments often privilege disciplinary reproduction, while workplace evaluation may focus on performance and adaptation. Third learning spaces point to the need for assessment formats that capture mediation, reflection, transfer, and professional judgement. This may include portfolios, reflective reports, integrative presentations, research-based case analyses, or dialogic assessment formats involving both academic and practice perspectives.

Third, the review implies a stronger role for **pedagogical support structures**. Learners should not be left to undertake with the task of making sense of divergent expectations, knowledge forms, and institutional rhythms alone. Supervisors, mentors, lecturers, and practice partners all have a role in supporting this work. This does not mean controlling student learning in a rigid way. Rather, it means creating opportunities for guided reflection, feedback, and dialogue across boundaries.

Fourth, the third learning space perspective also redefines cooperation between higher education institutions and employers. Cooperation is not only about planning practice phases or ensuring organisational fit. It also entails creating shared pedagogical responsibility for integrative

learning. This includes discussing learning objectives, recognising reflective formats as relevant, and aligning expectations in ways that support rather than fragment student learning.

For the DHBW, these implications are especially relevant because the institution is built around the system-wide alternation of academic and workplace learning. This makes it particularly suitable for the development of structured third learning spaces across programmes. At the same time, it also means that deficits in integration may have system-wide consequences. The DHBW context therefore highlights both the urgency and the opportunity of moving from a coordination-centred model towards a more explicitly integrative educational architecture.

5.3 Tensions, limits, and risks of institutionalisation

At the same time, the review suggests that the implementation of third learning spaces is not without tensions. One of the most important findings across the literature is that the educational value of intermediary spaces often lies in their openness, hybridity, and flexibility. They become productive precisely because they are not fully absorbed into one institutional logic. This creates a paradox for dual higher education: the more intentionally third learning spaces are designed and institutionalised, the greater the risk that they lose the very qualities that make them effective.

If intermediary spaces are transformed too quickly into standardised curricular units, they may become just another formally regulated component of the programme rather than a genuine space for translation and reflection. In such cases, their connective function may be weakened. This is particularly relevant where reflective formats become bureaucratic exercises, where portfolios become compliance instruments, or where integrative seminars are overloaded with formal expectations but underdeveloped pedagogically.

A second risk concerns the distribution of responsibility. The emphasis on learner agency is one of the strengths of the third learning space concept, but it can also be misunderstood. There is a risk that institutions invoke learner self-direction while effectively shifting the burden of integration onto students alone. Yet the review clearly indicates that learner agency only becomes educationally productive when supported by adequate structures, guidance, and recognition. A third learning space should therefore not be interpreted as a space in which institutions withdraw, but as one in which institutional support and learner activity are held in productive balance.

A third tension concerns inequality and variation. Because workplace learning opportunities differ significantly across contexts, students enter third learning spaces with unequal experiences and resources. Some may benefit from rich, reflective practice environments, while others encounter routine tasks or weak supervision. This means that third learning spaces may also have a compensatory role. If this role is neglected, integrative formats may unintentionally reproduce rather than reduce disparities.

These tensions suggest that the implementation of third learning spaces requires careful design. The goal should not be maximal formalisation, but a balanced architecture that combines openness and structure, autonomy and guidance, institutional support and learner ownership. In this sense, the third learning space is not merely a new curricular element, but a pedagogical balancing act.

5.4 Research implications and future directions

The review reveals a substantial lack of empirically grounded and systematised research on third learning spaces in dual higher education. Future research should therefore proceed in at least four directions.

First, further work is needed on **conceptual differentiation**. The relationship between third learning space, learning place cooperation, boundary crossing, connectivity, work-integrated learning, and related concepts should be clarified more systematically. This does not require reducing everything to one label, but it does require a more explicit understanding of how these approaches overlap and differ.

Second, future studies should investigate the **effects of different forms of third learning spaces** on competence development, professional identity formation, academic achievement, and

employability. Comparative studies across disciplines and programme types would be particularly valuable in this regard.

Third, there is a need for stronger research on **design and governance**. Which institutional arrangements, support structures, and partnership models make third learning spaces sustainable? How can academic and practice actors share responsibility for integrative learning? How can reflective and connective formats be embedded without becoming over-formalised?

Fourth, the review suggests that **design-based and practice-based research approaches** may be particularly suitable. Because third learning spaces are not only theoretical constructs but also educational designs, research should accompany their iterative development in real institutional settings. The DHBW offers a promising context for this, since its structural model creates favourable conditions for studying how such spaces can be embedded systematically across programmes.

Overall, the review indicates that the third learning space is a concept with strong theoretical and practical potential, but one that still requires further empirical grounding. Its value lies in providing a more nuanced language for analysing and designing integration in dual higher education. Future research should therefore not only ask whether such spaces exist, but under which conditions they become educationally productive, equitable, and sustainable.

Statement

The peer-review process and editorial decision were handled independently by members of the Editorial Board who were not involved as authors. The authors took no part in the review or decision-making process

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Appendix 1: Complete list of literature used for the systematic analysis, including labels and codes

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