

DUT Guide: Learning Design as an educational development methodology

Mikkel Godsk, Centre for Educational Development, Aarhus University

Abstract

This guide focuses on Learning Design as an educational development methodology for enhancing teaching and learning and is intended for educational developers and educators with special educational development tasks in higher education. It addresses educators' often implicit design for learning processes and how they can qualify their designs and learn from and support peers' design choices. Learning Design involves incorporating pedagogical theory, making explicit design choices, emphasising student learning, utilising design aids and promoting reusability. The guide offers five practical tips for adopting Learning Design in higher education with the ultimate goal of empowering educators to design and share effective and efficient teaching.

Practical tips

1. **Identify** opportunities to organise a Learning Design process.
2. **Prepare** the toolkit to suit the purpose, participants' roles, teaching approach and subject area.
3. **Facilitate** the process and strike a balance between structure and openness in the facilitation.
4. **Foster** design by allocating time for designing and peers to share ideas and experiences.
5. **Focus** on sustainability by identifying actions to increase the reusability and efficiency of designs.

Background

Designing for learning, in terms of creating teaching materials and organising learning activities, is typically an integrated part of the role of educators. However, this process is often implicit and taken for granted, and educators' teaching practices and plans are often only superficially described in lesson plans, course descriptions and intended learning outcomes. This is a shame, as there is much to be learned about effective teaching practices from the choices that educators make, and educators can benefit from being familiar with their peers' teaching practices, relevant and practical pedagogical theories and models for realising specific pedagogical aims, as well as sharing knowledge and reusing effective designs (Conole, 2013).

The underlying ambition of Learning Design is to learn from and support educators in designing for students' learning. At present, there is no common definition of the concept, but it is frequently referred to as an educational development methodology:

'... the act of devising new practices, plans of activity, resources and tools aimed at achieving particular educational aims in a given situation' (Mor & Craft, 2012, p. 86).

However, sometimes the concept is also used to refer to a product, e.g. a teaching plan, template or a design representation (e.g. Agostinho, 2006). To avoid confusion, this guide focuses on the methodology and distinguishes between the design methodology and the design product by applying upper case to the former.

As the common definitions are vague, it is often more fruitful to understand Learning Design according to its six core characteristics (see also Dalziel et al., 2016; Dohn et al., 2019):

1. **Pedagogy-informed teaching**
The educator utilises pedagogical theory in their teaching practice through various practical pedagogical and didactic models and frameworks and thereby bases their teaching on pedagogy theory.
2. **Design-centred**
Educators are active designers, making explicit pedagogical choices and implementing designs in their teaching practice, fostering a sense of ownership and knowledge of how to use the materials.
3. **Learning-centred**
A focus on students' learning, emphasising their learning process and outcomes rather than just developing materials and teaching practices.
4. **Design aids**
A range of tools, resources, models, methods, workshops and other design aids support the design process and qualify the designs.
5. **Reusability and sustainability**
By offering a 'language' and aids to talk about, represent, share and reuse teaching practices, Learning Design contributes to quality assurance, efficiency and sustainable educational development.
6. **Technology-enhanced learning (optional)**
Learning Design is also geared towards developing as well as transforming traditional face-to-face teaching into technology-enhanced, blended and online learning.

What these six characteristics entail and how they can be supported in practice are covered in the following five tips.

Since this guide focuses on Learning Design as a methodology, the facilitation of the design process is at the forefront. For educational developers, this means that the guide can be used as a checklist for organising a Learning Design process. At the same time, educators with special educational development tasks or with roles on competency levels 2 and 3 according to the Danish pedagogical framework (Universities Denmark, 2021) can use the presented methods, aids and ideas in Tips 2, 4 and 5 to support their design and collaboration with colleagues and/or students.

Tip 1: Identify opportunities to organise a Learning Design process

The first step in adopting Learning Design is identifying an opportunity to organise a Learning Design process that is justified in relation to a current need, such as concrete educational or professional development needs. This justification may be:

- revising an existing course due to new syllabus or format requirements;
- transitioning to blended or online learning;
- implementing a new educational technology, e.g. a Learning Management System (LMS);
- developing a new programme;
- a specific pedagogical aim or course-specific challenges;
- professional development programmes, e.g. university pedagogical programmes.

For example, the widely used ABC Learning Design from University College London (UCL) was specifically developed to support educators in designing 'rich' blended and online courses (Young & Perović, 2016; 2020), whereas the OU Learning Design Initiative (OULDI) had a dual purpose of capturing, sharing and reusing effective design aids and practices at OU as well as ensuring a systematic link between strategic decisions, curriculum design and course design (Cross et al., 2012).

At Danish universities, Learning Design is often used for designing technology-enhanced, blended or online learning (e.g. CDUL, 2023, at Aalborg University, COBL, 2023, and Neutsky-Wulff et al., 2016, at University of Copenhagen); however, it is also applied as a general educational development methodology in the context of professional development programmes (Godsk & Kærsgaard, 2023) or with the specific pedagogical purpose of promoting problem-based learning (Davidsen & Konnerup, 2016).

Tip 2: Prepare the toolkit to suit the purpose, participants' roles, teaching approach and subject area

A core concept of Learning Design is the 'toolkit', broadly understood as practical materials and activities to support the design process and make pedagogically informed decisions according to the specific context (Conole & Oliver, 2002; Conole et al., 2004). A toolkit consists of two main parts:

1. Aids for pedagogically informing the designs and the process.
2. A flexible descriptive framework ('language') to represent designs.

The contents of the toolkit should take into account the concrete purpose of the design process, the participants' roles and competency levels, their approach to teaching and educational development, the subject area and how the process is facilitated (see also Tip 3).

Aids for pedagogically informing the designs and the process

It is essential to have a clear idea about who the participants are (i.e. the educators, managers, students, learning technologists, etc.) and compile the toolkit according to characteristics of their subject area and its dominating epistemology to ensure buy-in (e.g. Conole & Oliver, 2002; Donald, 1990; Schraw & Olafson, 2003). In the worst case scenario, the participants consider the provided aids as irrelevant and do not know how to use them to inform their teaching practice.

For instance, science educators may be concerned about evidence-based designs and models that have been quantitatively proven to have a positive effect on students' learning. In this context, it is often relevant to include validated didactical models, design patterns and concrete teaching methods that are well known from the science subjects to pedagogically inform the design process. This may include pedagogical models and methods such as Flipped Classroom (Schell & Mazur, 2015), STREAM (Godsk, 2013), Peer Instruction and Just-in-Time

Teaching (Novak et al., 1999) or validated design patterns (see e.g. Stockholm University's database: <https://su.figshare.com/DesignPatterns>)

Humanistic educators may be preoccupied with pedagogical ideas and principles on how students' learning can be scaffolded in a constructivist manner. In this context, models such as the 'didactical triangle', flexible frameworks like the 5-stage model (Salmon, 2011) and digital portfolios (Dysthe & Tolo, 2003), and the concept of constructive alignment (Biggs et al., 2022) are often useful. In addition, resources for supporting educators' design thinking may be effective in pedagogically informing the designs, such as Open University's (OU) Course Features Cards for clarifying the pedagogical priorities of a given course or programme (Cross et al., 2012); guides on specific skills, such as employability, digital literacy, skills development and inclusive curriculum (e.g. OU's Learning Design blog, http://www.open.ac.uk/blogs/learning-design/?page_id=457); inspirational cards combined with curated design patterns for increasing students' digital competencies (e.g. the STAK project, <https://open-tdm.au.dk/blogs/stak/aktiviteter/>, Nørgård, 2022); or methods for identifying and mapping activity and learning types (Figure 1; Young & Perović, 2020).

Business and social science educators may have a more eclectic and mixed approach that requires aids that build on both quantitative and qualitative data and models. In this context, educators may benefit from both concrete models and more flexible frameworks, case stories and pedagogical ideas. For instance, the educational development unit at Copenhagen Business School promotes Learning Design through four carefully selected course design models (see CBS, 2023).

Figure 1 shows an example of a template in which the educators can reflect on their current teaching practice and map their future practice according to six 'learning types' and a 'blended graph' during a workshop. The purpose is to stimulate an 'aha' experience leading to a peer discussion and an optimum balance of learning activities.

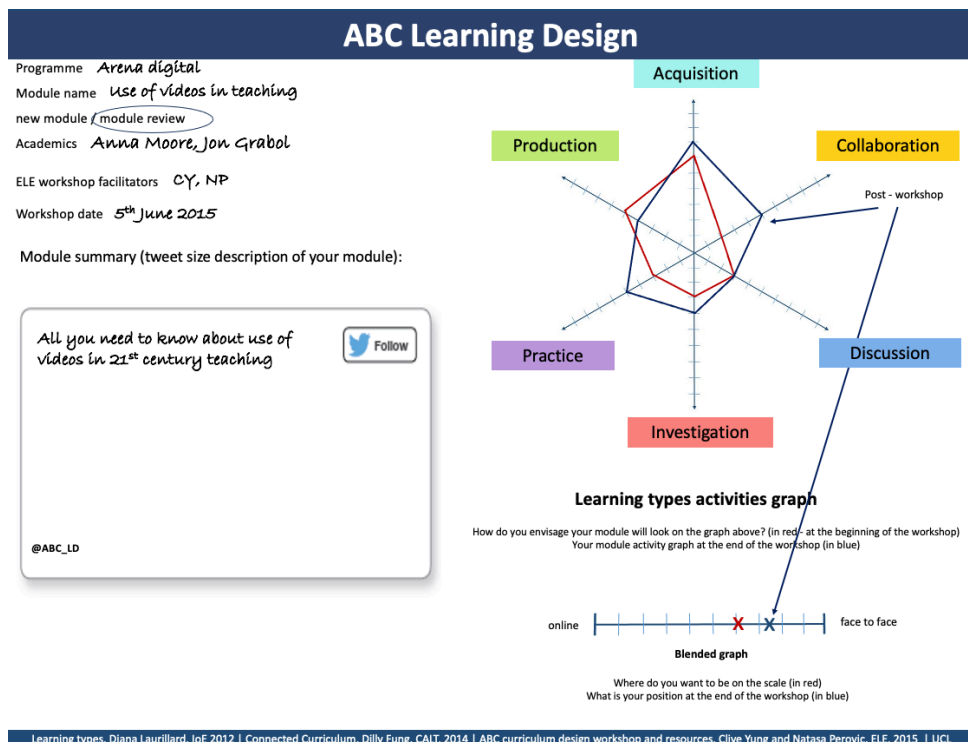


Figure 1: ABC's Tweet and Shape template to clarify the balance of activity types and modality of a course.

A flexible descriptive framework ('language') to represent designs

Another aspect of the toolkit is the 'language' provided for talking about, representing, sharing and reusing designs. Some of the more widespread languages are ABC's storyboard with six 'Learning Types' (Young & Perović, 2020), Carpe Diem's blueprint and Storyboard (Salmon, 2020), Learning Sequence Visualiser (sometimes referred to as 'LDTool', Figure 2; <https://needle.uow.edu.au/ldt>), Learning Designer (<https://www.ucl.ac.uk/learning-designer/>) and various tools based on standards for design patterns (e.g. IMS Learning Design). They each differ in their level of granularity, focus and the availability of an online tool for representing and sharing designs. For instance, Carpe Diem, Collaborative E-Learning Design (CoED, Ryberg et al., 2015) and ABC include educational technology as an explicit component of the design representation, whereas LDTool is not explicit about this aspect.



Figure 2: Design represented and shared by an educator in the online LDTool

Choosing the appropriate language for representing designs should take into account the purpose of the design process and be realistic. For instance, if there is an explicit desire to include more technology in education or develop blended or online learning, it may be relevant to consider languages with an explicit focus on technology, as they prompt educators to think about how they will integrate technology. If the purpose is research and evaluation of effective designs, it may be relevant to consider highly detailed representation languages such as in the Learning Designer tool (see above). However, if the main purpose of the language is to provide educators with a way to talk about and share their design with peers, it is recommended to use a lightweight, flexible and pedagogically neutral language that works both online and on paper and strikes the balance between being practical, accurate and comprehensible (Dalziel et al., 2016).

Tip 3: Facilitate the process and strike a balance between structure and openness in the facilitation

When the toolkit is in place, it is time to think about the process facilitation: the duration of the process, its main purpose, its participants and the role of Learning Design – in particular, whether it should be framed as a Learning Design process (which signals that it may take time) or not; the ‘pedagogical freedom’ (is there a particular pedagogical model or idea being promoted?); and the level of orchestration (the participants’ influence on the process and its contents).

Open-ended or orchestrated process

When deciding on the level of pedagogical freedom and orchestration of the process, it is important to avoid the two counterproductive extremes: (1) a highly orchestrated process with limited pedagogical freedom and (2) an open-ended process without a specific pedagogical model or idea being promoted (Conole & Oliver, 2002). The first extreme is where the facilitator is promoting a specific didactical model or design pattern and the educators are ‘hostages’ with no influence on the process or how it is implemented in their teaching practice. This approach does not foster ownership of the design, knowledge of how to use the materials, nor benefits from the educators’ first-hand experience with delivering the course. The other extreme is an open-ended process without a specific pedagogical model or idea being promoted. This ‘anarchistic’ approach may not qualify as Learning Design due to the lack of methodology and random adoption of pedagogical ideas. As a minimum, the process must be orchestrated to a degree that ensures that the educators come up with pedagogy-informed designs.

Figure 3 shows the agenda of a 3.5-hour start-up Learning Design workshop as a part of a semi-open-ended one-year process with a high level of pedagogical freedom. The workshop involves six items: (1) an introduction to the purpose and Learning Design as the methodology, (2) an initial clarification of the participants’ teaching practices using an activity profiler (similar to Figure 1), (3) an introduction to three pedagogical models relevant to the educational purpose and groups of educators, (4) an identification and discussion of the core educational qualities of the courses using OU Course Features Cards (see also Figure 4), (5) allocated time for designing and representing their designs using the LDTool (Figure 2) and (6) self-assessment of their designs according to steps 2– 4 and online sharing of their designs for later follow-up.

• 9:00	Learning Design as a methodology
• 9:15	Profiling your course (Activity 1)
• 9:30	Design models for TEL: STREAM, discussions, and e-portfolio
• 10:00	Identifying core educational qualities (Activity 2)
• 10:30	Break
• 10:45	Designing for learning with the LDTool (Activity 3)
• 12:15	Quality in learning design — self-assessment and sharing (Activity 4)
• 12:30	Lunch
• 13:15	Upcoming modules, evaluation, and goodbye

Figure 3: Agenda of start-up Learning Design workshop for architects, March 2023

Referring to a 'Learning Design process' carries the risk of making the task more bombastic than it really is. Educators may not be interested in educational development methodologies but, rather, interested in having concrete methods for developing and delivering good teaching that supports their students' learning, regardless of the process and its systematic nature. As a facilitator, it may be more useful and viable to adopt a subtle approach, where the Learning Design methodology is understated and remains in the background. Specific methods from the toolkit can be introduced as needed, allowing them to function independently of a formal Learning Design process.

Tip 4: Foster design by allocating time for designing and peers to share ideas and experiences

A powerful aspect of Learning Design is the 'language' it provides to talk about, represent, share and discuss designs between educators. To support this aspect, it is recommended to include sufficient workshop time for educators to develop their ideas and share practices, ideas and observations with peers. Furthermore, it is recommended that group educators teaching the same or similar courses support their collaboration and align expectations as well as to invite students as co-designers to ensure 'a constructive and learning-oriented teaching and study environment' (as promoted by the Danish pedagogical framework, Universities Denmark, 2021, p. 7). Figure 4 shows two educators who teach the same course discussing and aligning their teaching approach based on OU's Course Features Cards by deciding on the ten most important features for their course (Cross et al., 2012). The pack consists of approximately 100 cards of features related to course format and access (e.g. 'problem-based learning'), collaboration and support (e.g. 'student autonomy'), communication and interaction (e.g. 'collaborative'), and assessment (e.g. 'peer review'). The prioritised cards then serve as a frame of reference for the later design and evaluation process by assessing how the features described on the cards are supported in the design and obtained in practice.

Figure 4: Educators discussing the core pedagogical features of their common course



Dialogue is relevant during both the initial design process and later follow-up. During the initial phases, some educators may have existing experiences related to the design opportunity (see Tip 1) that are worth sharing as well as important knowledge about the context, subject area, etc. In later follow-up, educators have usually gained valuable first-hand experience and even actual data on impact that other educators can learn from and use to help clarify future refinements (see Tip 5).

Tip 5: Focus on sustainability by identifying actions to increase the reusability and efficiency of designs

A core challenge of educational developments and interventions is sustainability. Often, developments in teaching practice rely on the individual educator, last for only a few course deliveries despite a high design effort or the balance between design effort and impact on teaching and learning is unfavourable (Bates, 2005; Godsk et al., 2023). Thus, it is highly recommended to acknowledge that educational development takes time and that educators' time is limited, and include this aspect in the design process by discussing the ideal balance between efforts for designing and delivering teaching and its impacts on students' learning (Godsk, 2022). This discussion may take place both early on and later in the process and be facilitated in various ways. At Aalto University, as a part of the ideation process ideas are sometimes ranked by the participants early in the process according to educator workload and learning results (Huhtanen, 2019). However, by having the discussion later in the process, when the educators have had some experiences with how the design influenced their teaching and learning and access to actual data (e.g. the course evaluation and LMS statistics), there is a greater chance the design will have a strong and persistent impact on educators' teaching practice (Guskey, 1986). At Aarhus University, interventions are discussed and classified by the educators after the first delivery of the design according to the concept of Efficient Learning Design (Figure 5; Godsk, 2022). This involves asking educators to classify the effort and impact of their interventions (marked with circles and squares in individual colours in Figure 5), their desired outcome (marked with diamonds), and identify what it takes to reach this (if they are not already there).

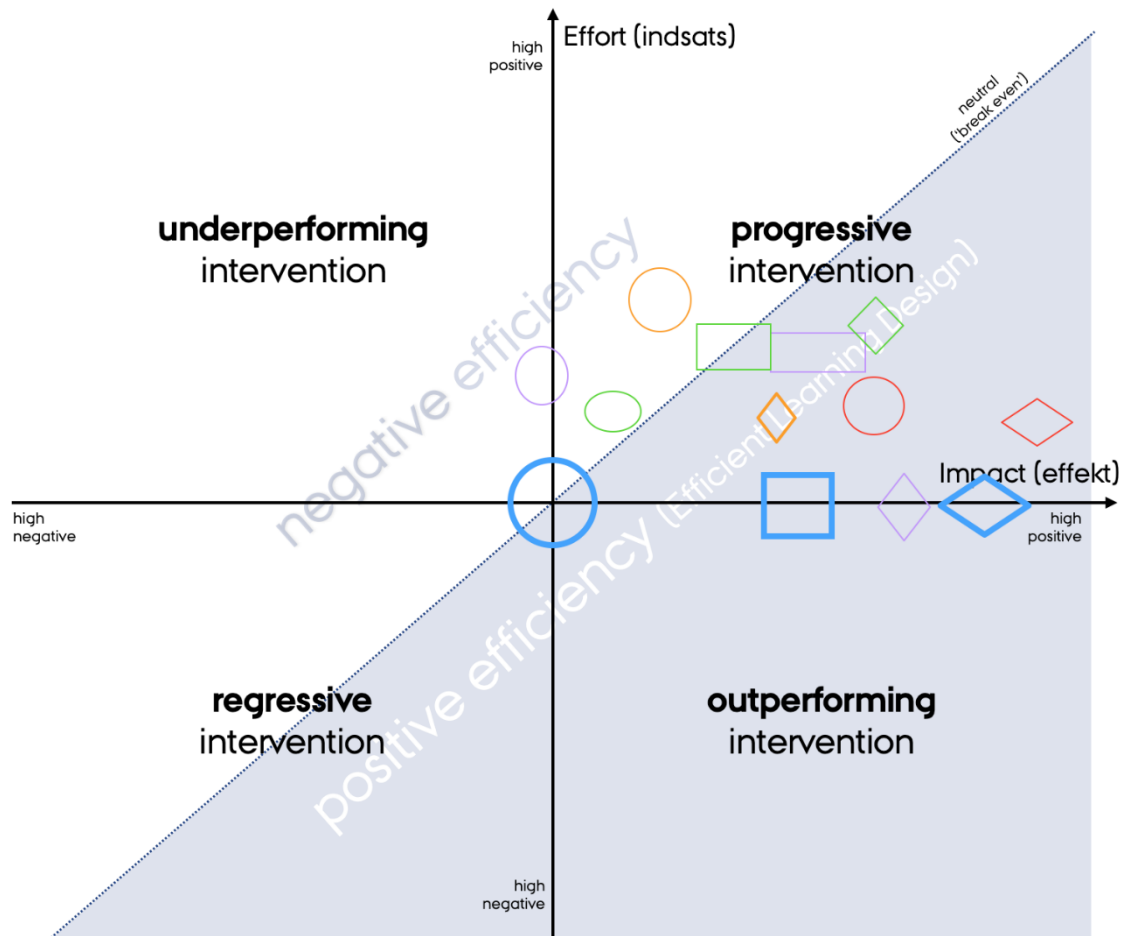


Figure 5: Five educators' self-assessment of the efforts and impacts of their design interventions

A recent study identifies that educators who have a keen eye for and commitment to the institutional perspective are often better at realising designs where the impacts are higher than the efforts over time (Godsk et al., 2023). This is an important reminder that first movers and other intrinsically motivated educators may develop effective designs but at the same time spend a disproportionate amount of effort on the process.

Another aspect of sustainability relates to the sharing and reusing of designs and ideas. Despite the inherent potential of tools for representing, sharing and reusing effective designs (see Tip 2), this does not happen automatically. Thus, it is recommended that educators are encouraged to consult existing designs as a part of their process, as well as share their own designs.

Conclusion

A fundamental ambition of Learning Design is to bring educational development processes to light and support educators in their design decisions. This guide supports educational developers, educators with special educational development tasks and educational leaders in facilitating a Learning Design process for educators. Five concrete tips for adopting Learning Design as an effective educational development methodology have been presented in this guide, which involve identifying opportunities for Learning Design, utilising toolkits according to the context, having a balanced process, supporting educator dialogue and ensuring sustainability.

References

- Agostinho, S. (2006). The use of a visual learning design representation to document and communicate teaching ideas. *Proceedings of the 23rd annual ascilite conference: Who's learning? Whose technology?*
- Bates, A. W. (2005). *Technology, e-learning and distance education (2nd ed.)*. London: Routledge.
- Biggs, J., Tang, C., & Kennedy, G. (2022). *Teaching for quality learning at university*. McGraw-hill education (UK).
- CBS (2023). Course design models – Teaching & Learning. <https://teach.cbs.dk/resources/course-design/course-design-templates/>
- CDUL (2023). Learning design - Aalborg Universitet <https://www.cdul.aau.dk/learning-design>
- Centre for Online and Blended Learning (COBL) (2023). ABC Learning Design – University of Copenhagen. <https://cobl.ku.dk/course-development/course-design/abc-learning-design/>
- Conole, G. (2013). *Designing for Learning in an Open World*. Springer.
- Conole, G., Dyke, M., Oliver, M., & Seale, J. (2004). Mapping pedagogy and tools for effective learning design. *Computers & Education*, 43(1-2), 17-33.
- Conole, G., & Oliver, M. (2002). Embedding theory into learning technology practice with toolkits. *Journal of Interactive Media in Education*, 2002(2).
- Cross, S., Galley, R., Brasher, A., & Weller, M. (2012). OULDI-JISC Project Evaluation Report: the impact of new curriculum design tools and approaches on institutional process and design cultures. https://oro.open.ac.uk/34140/1/OULDI_Evaluation_Report_Final.pdf
- Dalziel, J., Conole, G., Wills, S., Walker, S., Bennett, S., Dobozy, E., Cameron, L., Badilescu-Buga, E., & Bower, M. (2016). The Larnaca Declaration on Learning Design—2013. In J. Dalziel (Ed.). *Learning design: Conceptualizing a framework for teaching and learning online* (pp. 1–41). Routledge. <https://doi.org/10.4324/9781315693101-6>
- Davidson, J., & Konnerup, U. (2016). Revitalisering af PBL i videregående uddannelser gennem Learning Design. *Læring og Medier (LOM)*, 15, 1-21.
- Dohn, N. B., Godsk, M., & Buus, L. (2019). Learning Design: Tilgange, cases og karakteristika. *Læring og Medier (LOM)*, 21, 1-20.
- Donald, J. G. (1990). University professors' views of knowledge and validation processes. *Journal of Educational Psychology*, 82(2), 242.
- Dysthe, O., & Tolo, A. (2003). Digital portfolios and feedback practices in a traditional university course. EARLI 10TH BIENNIAL CONFERENCE, PADOVA, ITALY August 26–30, 2003. Assessment and e-learning. Threats, challenges and opportunities.
- Godsk, M. (2013). STREAM: A flexible model for transforming higher science education into blended and online learning. In T. Bastiaens, & G. Marks (Eds.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*, (pp. 722–728)
- Godsk, M. (2022). Learning Design as an efficient educational development methodology: conceptualization, assessment, and practice. *Handbook of Digital Higher Education*, 38-50. Edward Elgar Publishing.

- Godsk, M., Hougaard, R.F., & Nielsen, B.L. (2023). Sustainable Learning Design: A Case Study of Eight Undergraduate Science Module Interventions. In: Dohn, N.B., Jaldemark, J., Öberg, LM., Håkansson Lindqvist, M., Ryberg, T., de Laat, M. (eds) *Sustainable Networked Learning. Research in Networked Learning*. Springer, Cham. https://doi.org/10.1007/978-3-031-42718-3_6
- Godsk, M., & Kærsgaard, J. L. (2023). Learning Design på Universitetspædagogikum: hvorfor, hvordan og hvilken metode er bedst? In *Læringsmiljøer: Relationer & Rammer*. DUNK 2023. https://pure.au.dk/portal/files/323377184/07F1AD33_E6C7_ED11_84C1_00155D0B0940.pdf
- Guskey, T. R. (1986). Staff development and the process of teacher change. *Educational researcher*, 15(5), 5–12.
- Huhtanen, A. (2019). Learning Design Toolkit. FITech. <https://fitech.io/app/uploads/2019/09/Learning-Design-Toolkit-v2.pdf>
- Mor, Y., & Craft, B. (2012). Learning design: reflections upon the current landscape. *Research in learning technology*, 20.
- Nørgård, R. T. (2022). Students academic digital competencies in higher education: development of a cross-institutional model. In *Handbook of Digital Higher Education* (pp. 271-285). Edward Elgar Publishing.
- Neutsky-Wulff, C., Rosthøj, S., Harker-Schuch, I., Chuang, V. J., Bregnhøj, H., Henriksen, C. B., & May, M. (2016). A pedagogical design pattern framework for sharing experiences and enhancing communities of practice within online and blended learning. *Tidsskriftet Læring og Medier (LOM)*, 9(16).
- Novak, G. M., Patterson, E. T., Gavrín, A. D., & Christian, W. (1999). *Just-in-Time Teaching: Blending Active Learning with Web Technology*. Upper Saddle River, NJ: Prentice Hall.
- Ryberg, T., Buus, L., Nyvang, T., Georgsen, M., & Davidsen, J. (2015). Introducing the collaborative e-learning design method (CoED). In *The Art & Science of Learning Design* (pp. 75-91). SensePublishers Rotterdam.
- Salmon, G. (2011). *E-moderating: The key to online teaching and learning*. Third edition. Routledge.
- Salmon, G. (2020). Module Carpe Diem Learning Design: Preparation & Workshop. Retrieved 29 August 2023 from https://www.gillysalmon.com/uploads/5/0/1/3/50133443/carpe_diem_planning_process_workbook_webversion1june2020.pdf
- Schell, J., & Mazur, E. (2015). Flipping the chemistry classroom with peer instruction. *Chemistry Education: Best Practices, Opportunities and Trends*. Willey Online Library.
- Schraw, G., & Olafson, L. (2003). Teachers' epistemological world views and educational practices. *Journal of cognitive education and psychology*, 3(2), 178-235.
- UCL (2020). ABC_LD Toolkit 2020 UCL. Toolkit 2020 Resources. Retrieved 8 August 2013 from <https://abc-ld.org/download-abc/>
- Universities Denmark (2021). Danish framework for advancing university pedagogy. <https://dkuni.dk/wp-content/uploads/2021/03/danish-framework-for-advancing-university-pedagogy-1.pdf>
- Young, C., & Perović, N. (2016). Rapid and creative course design: as easy as ABC?. *Procedia-Social and Behavioral Sciences*, 228, 390-395.

Young, C. P., & Perović, N. (2020). ABC LD–A new toolkit for rapid learning design. In *European Distance Education Network (EDEN) Conference* (Vol. 22, pp. 10-38069). <https://doi.org/10.38069/edenconf-2020-ac0041>

Betingelser for brug af denne artikel

Denne artikel er omfattet af ophavsretsloven, og der må citeres fra den. Følgende betingelser skal dog være opfyldt:

- Citatet skal være i overensstemmelse med „god skik“
- Der må kun citeres „i det omfang, som betinges af formålet“
- Ophavsmanden til teksten skal krediteres, og kilden skal angives ift. ovenstående bibliografiske oplysninger

© **Copyright**
DUT og artiklens forfatter

Udgivet af
Dansk Universitetspædagogisk Netværk