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When Educational Technology Theories Fail: Crisis, Practice, and the Temporary Loss of Theoretical Guidance

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Abstract

The study analyses two significant situations regarding the applicability of educational technology – the emergence of COVID-19 and the artificial intelligence (AI) revolution – and demonstrates that it is precisely in these contexts that theories are being fundamentally set aside. In contrast to the conventional approach, novel and alternative methods of resolving these issues are currently being sought. The study identifies common aspects of both situations – crises – and demonstrates that commercialisation, a focus on short-term success, reactivity and a resignation from seeking good solutions lead to a temporary setting aside of theories and the development of different practical strategies. The study further argues that the failure of theories does not imply their irrelevance. Rather, theories function as a framework for understanding crises in two complementary ways: through a horizontal dimension that traces how theoretical conceptualisations evolve across crisis events over time, and through a vertical dimension that captures interactions among multiple theories and conceptual frameworks operating within the same educational environment.

Keywords: theory; AI revolution; emergency education; COVID-19; crisis; artificial intelligence.

1. Introduction

Theories concerning how to utilise and implement technology in education constitute a relatively robust and distinct branch of educational science, and research and publications on this topic appear in highly prestigious journals such as *Online Learning* (OLJ), *Computers & Education*, *the British Journal of Educational Technology* (BJET) and many others. Nevertheless, when major educational challenges arise in connection with digital technologies and their implementation, educational settings, policy-makers, and individual practitioners often deviate significantly from the research discourse and seek new, often highly intuitive approaches to addressing these situations (West, 2023).

This study offers insight into how the academic environment and pedagogical practice respond to two major educational challenges, each of which is structured differently and is rapid, systemic, or complex. Nevertheless, in both cases, we observe a systematic approach that does not draw on edTech theories and, when faced with a new challenge, seeks radically different strategies and ways of working with technology. The first situation we will analyse is emergency teaching during the COVID-19 pandemic (Adnan & Anwar, 2020; Albó et al., 2020; Beseda et al., 2021; Burns, 2020), when schools were closed, and a large proportion of teaching

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worldwide was moved online. The anticipated ease of implementing educational principles for conducting webinars or connectivist approaches (Downes, 2017; Siemens, 2005) in education largely proved elusive, and a highly autonomous approach to online learning gradually developed (Reuge et al., 2021). The second scenario will be the advent of generative AI(Abdullah et al., 2022; Baidoo-Anu & Owusu Ansah, 2023; Pavone et al., 2025), which was in many respects more gradual: it did not lead to the need to create entirely new organisational procedures, but once again, the core tenets of connectivism diverged significantly from practice. A completely new branch of pedagogy is emerging, focused on working with generative AI and, by extension, on transforming educational practice as a whole – from the use of individual tools to online testing.

By 'failure', we mean a situation in which educational actors depart from theoretical conceptual frameworks and adopt strategies for educational interactions other than those suggested by theory. These are therefore not 'crises' as discussed by Latour, who emphasises the need to find a new interpretative framework for reality because existing approaches are failing (Latour, 2018, 2021), nor are they 'paradigm shifts' as discussed by Kuhn(1996), because – as we shall show in this analysis – crises do not lead to the abandonment or replacement of theories, but rather to their deepening and development. Crises are shown here as time-bound situations in which theories temporarily lose their capacity to guide educational practice and are replaced by alternative pragmatic frameworks.

The concept of failure is inspired by Šíp's monograph (2019) *"Why the education system and those involved in it are failing"*, but is developed in a different direction in this study. Whilst in Šíp's work theory fails and the crisis escalates, here theories are set aside during crises and then re-adopted once the crisis in a particular educational segment has ended. The failure of theories, therefore, refers to the temporary loss of their guiding function in specific educational practices. Failure in the study will refer to two interlinked aspects – the first is that, in times of crisis, education will cease to make use of edTech theories and will seek its own intuitive paths; however, these may lead to a range of problems which subsequently turn against edTech theories as well as their practical application. This creates a paradoxical situation in which the failure to utilise theory leads to its criticism. The second interlinked aspect of what we shall refer to as a failure is the disconnect between theory and practice. From a pragmatic perspective, this constitutes a failure in the true sense of the word, because thought and action, theory and practice, form an interconnected whole, and theory without practice is meaningless (Johnson, 2007, 2017; Šíp, 2019). We therefore use this term in a specific sense, not, for example, in the

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sense of leading astray or an inability to offer a suitable solution. Failure is the disconnection between practice and theory.

The study poses a provocative question: *Why do edTech theories fail?* In other words, why do situations that may appear to an outside observer as archetypal opportunities turn out to be difficult to implement in practice? One possible answer may be teachers' unpreparedness or an infrastructure that does not facilitate this response. This may be one cause, particularly prevalent in emergency teaching during the COVID-19 pandemic, but it represents only one possible perspective on this issue.

The second question, which emerges more clearly from this analysis of both cases, is: *What role can these theories actually play in an educational setting?* In other words, whether the theoretical conceptualisation of education makes any sense at all in an environment with the characteristics we can observe in both cases.

1.1. Theory in edTech

In this paper, the term "edTech theories" is used broadly to encompass theoretical, conceptual, and design-oriented frameworks that guide technology-supported educational practice. Generally speaking, education in digital or hybrid environments(Floridi, 2015; Howell, 2022; Jiménez-Cortés & Aires, 2021) has relatively robust theoretical underpinnings. The theory of connectivism (Cormier, 2008; Downes, 2008; Kop & Hill, 2008; Siemens, 2005) emphasises that learning takes place dynamically within a network, that it requires individual activity and the creation of a personal learning environment, which enables each individual to explore and learn according to their own needs within the network. Closely linked to this theory is rhizomatic learning(Cormier, 2008), which emphasises the gradual construction of knowledge through working within an information environment and the importance of community in the collaborative process.

The emphasis on elements of community-based and social learning can be seen in social constructivism(Berger & Luckmannn, 2016; C. H. Liu & Matthews, 2005; Vygotsky, 1980) in online environments, where working with online communities, blogs or social networks acts as a specific form of scaffolding that enables individuals to learn within the context of social interactions(Behnagh & Yasrebi, 2020; Lemay & Doleck, 2020; Martin, 1999). Similar principles can be found in the Community of Inquiry theory (Garrison et al., 1999, 2001), which emphasises that high-quality online teaching requires cognitive presence (the ability to construct meaning), social presence (the ability of participants to present themselves as real individuals) and pedagogical presence (the design and management of teaching by the teacher).

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Similarly, the HyFlex model (Howell, 2022; Miller et al., 2021) strongly emphasises high-quality preparation of the entire learning environment and the interactions within it, so that physical presence, synchronous online learning, and asynchronous online learning yield equivalent learning outcomes and quality of experience.

A large proportion of theories focus on cognitive load and the cognitive processes involved in online learning. Cognitive Load Theory (Paas et al., 2010; Sweller, 2020) analyses the complexity of students' cognitive load and seeks to minimise elements that distract students or divert them from their studies, or make the learning process unnecessarily complex (F.A.O., 2021). Similar considerations regarding limited cognitive capacities and the need for their effective allocation in online environments are also addressed by the Cognitive Theory of Multimedia Learning(Cavanagh & Kiersch, 2023; Mayer, 2020, 2024).

The literature also includes studies focusing on more specific aspects, such as working with learning objectives and their taxonomisation in digital environments(Amin & Mirza, 2020; Hamilton et al., 2016; Krathwohl, 2002.; Sindi Alivi, 2019) or on learning design(Allen, 2006; Branch, 2009; Burgstahler, 2002), online courses(Anderson, 2001; Brown, 2012) or MOOCs(Al Oraini, 2024; Albelbısı & Yusop, 2019).

However, there are also studies on webinar creation(Ismail et al., 2021; Pedroso, 2021), digital competences(Benediktová et al., 2023; Bilbao Aiastui et al., 2021; Carretero et al., 2017; European Commission, Joint Research Centre et al., 2025) or digital wellbeing (Burr et al., 2020; Vanden Abeele, 2021) and other topics. It is therefore clear that the underlying theoretical framework is sufficiently robust to address specific practical challenges.

2. Methodology

The selection of two cases, given the study's subject matter and the complexity of the chosen situations, requires a reductionist, simplifying perspective. It is not, nor can it be, the aim of the study to describe the entire scope of emergency teaching or the whole issue of AI implementation in education, but rather to use these examples to develop model perspectives that can, where appropriate, be extended to other analogous situations.

The selection of the two examples is not random, but it should be emphasised that it is eclectic. These are topics which, for a relatively long period (on the order of several years), have been a feature not only of the academic sphere but also of real-world educational practice; they are genuinely pedagogically significant and require an educational response that cannot be transferred to other stakeholders. Another reason for this choice is that these are relatively isolated examples which, in certain respects, may have similar implications for the research

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questions we are investigating. However, it would certainly be possible to carry out this kind of analysis in other situations as well.

Emergency education during the COVID-19 pandemic and the AI revolution share commonalities that we will highlight in this study, despite their fundamental differences in many respects. The COVID-19 pandemic was primarily a health crisis with an exceptionally rapid onset, leading to school closures; in the case of the AI revolution, whilst the onset has been dynamic, it has been unfolding over years. These are not identical crises, but it is precisely the diversity of crises and the need to conceptualise them that constitutes a key characteristic of the society in which the contemporary world finds itself (Bauman & Donskis, 2016; Beck, 1992; Latour, 2018). The diversity of crises is a methodological approach for analysing crisis failure in a sufficiently comprehensive manner.

This study employs a comparative conceptual case approach. The two cases were selected through purposive sampling because both represent periods when educational systems faced rapid technological disruption that required immediate pedagogical responses. The analysis followed three steps: (1) identification of educational technology theories that were frequently discussed in relation to the phenomenon, (2) examination of literature describing practical responses during the crisis period, and (3) comparative synthesis of recurring themes. The analytical categories presented in Table 1 were developed through iterative reading and thematic comparison of the literature associated with both cases.

The selection of literature was conducted purposively rather than systematically. The objective of this study was not to provide exhaustive coverage of emergency teaching or AI adoption, but rather to identify influential publications that have shaped academic and professional discussions regarding technology-supported education during the periods under study. Priority was given to peer-reviewed literature, influential conceptual texts, policy reports, and studies that are frequently cited within their respective domains.

3. A case of emergency teaching during the COVID-19 pandemic

In the spring of 2020, schools at all levels were closed in several countries around the world due to the COVID-19 pandemic; in the Czech Republic, the closure of universities lasted until spring 2021 (with several minor exceptions); universities in other European countries, and elsewhere, operated under similar conditions until autumn or spring 2021(Buonsenso et al., 2021; West, 2023). What characterised this crisis, which rapidly led to a digital semester, emergency teaching due to COVID-19, or a major surge in hybrid forms of education, was a combination of two key factors: the absolute unexpectedness of the crisis and its impact on

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society as a whole. COVID-19 brought much of the economy and social ties to a standstill. It transformed travel options and politics, so that the crisis in education was – even in the face of existential anxiety and loss of life – perceived by society as secondary.

The closure of universities essentially raised questions about technological readiness almost immediately. The absence of systemic policies and tools led to a high degree of improvisation, which, on the one hand, confronted the technological unpreparedness of universities and, on the other, that of lecturers and students (Bao, 2020; Beseda et al., 2021). This multifaceted crisis thus led to a certain creative ferment, in which improvisation became the dominant feature. Instead of deliberations on distance learning and its principles, a largely new concept of emergency distance learning has emerged, characterised by the search for ad hoc solutions that would typically work in the short term, fundamental experimentation and, above all, the conviction that this is not full-fledged education, but a form of emergency education whose quality cannot compete with real education(Burns, 2020). This leads to a certain form of ontological separation between online and offline teaching – the former being of poor quality and undesirable, the latter of high quality but inaccessible – whereby education ceases to be a journey in a particular direction, a leading outwards (as suggested by the Latin 'educare' – to lead out or direct someone outwards), but rather a treading of water whilst waiting for the epidemiological situation to improve.

It is precisely the creation of the concept of emergency education that is characteristic of this situation, and we should characterise it accordingly. Generally speaking, it is not a coherent set of approaches – different universities, their levels, and stakeholders approach emergency teaching in different ways (Leigh et al., 2020; Nadeak, 2020). On the contrary, a typical feature is reactivity, which stems from the classical Herbartian triangle, whereby the teacher perceives themselves and their own capabilities, the needs and capabilities of their students, and the specific characteristics of their subject area. This often leads to the choice of individualised educational approaches based on the notion of the uniqueness of the educational content and the capabilities of both teachers and students. The return to the Herbartian concept of pedagogy is significant because it demonstrates an almost complete rejection not only of edTech theories and concepts but also of pedagogical approaches in general. However, there are exceptions (Vlachopoulos, 2020). This is a key point for understanding the response to the crisis, which may be linked to the rejection of all theories that have not been sufficiently internalised.

Another important aspect of emergency teaching is the recognition that the situation does not permit a sufficiently high-quality solution, and therefore, it is permissible to abandon it. It appears that if a theory is too demanding and teachers are unable to meet its requirements, rather

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than attempting to align with the so-called ‘ideals’ of these theories, they prefer to adopt a more certain approach. Adhering to a demanding theory requires a safer, more supportive environment than was available during the pandemic.

Equally important is the response from university centres, which are gradually pursuing two sets of objectives – the first is technical and legislative support, i.e. ensuring the appropriate software and hardware for delivering online education and establishing the rules for its implementation. The second is a methodological role, which, however, is to some extent reduced to recommendations, advice, tips, and tricks that are minor, piecemeal, and may help make teaching at least a little better. A compromise on quality and high standards, weak support from leaders and, indeed, the abandonment of theories because they are too demanding, have become part of the makeshift nature of teaching.

West (2023) carefully critiques the consequences of this in his report for UNESCO – the emphasis on reactive and short-term perspectives has led to the failure of education over longer time scales, ranging from the psychological impact on students and deteriorating academic results to the fundamental influence of commercialisation in the educational environment, accompanied by a neglect of genuine critical thinking and students’ interests.

If we are to draw a lesson from this crisis, it is that short-term effects and needs do not necessarily lead to a better educational situation. It is, in fact, a natural psychological reaction to an extraordinary event for which the individual (or the entire system) was unprepared. Short-term, reactive solutions are tempting and may be linked to the epistemic shortcut that technology in education is merely a mediating phenomenon, rather than an environment that necessarily leads to a redefinition of procedures and educational strategies.

Another interesting aspect of this crisis is that even in the specialist literature there is almost no attempt to examine these theories in greater depth; instead, there has been a shift towards a set of individual recommendations, technical tools and procedures, thereby creating a narrative around teaching in emergency conditions, upon which university infrastructure is then built, including selected tools (Teams, Zoom, Meet) and related legislative measures.

4. Case: The AI revolution in education

In many respects, the AI revolution is different; its beginnings can be traced to the turn of 2022-2023, when large language models were made available to ordinary users and no longer required highly specialised skills. The generation of text and images proved to be highly appealing. Rapid, massive investments, coupled with effective marketing, began to raise the question across almost all areas of human activity: what will become of them following the

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advent of AI(Adams et al., 2023; Hui et al., 2023; Chiu, 2023; Oschinski, 2023). Education finds itself in a remarkable position in that it generally ranks among the fields least threatened by the AI revolution(Frey & Osborne, 2017), as the personal relationship aspect is absolutely crucial to education; yet at the same time, the labour market for which education prepares students is undergoing rapid transformation, and a discourse is emerging – essentially the same as that surrounding the advent of MOOCs(Clarà & Barberà, 2013; Ratnasari et al., 2024) – that university education can easily be replaced by technology. Economic and social pressures are also gradually entering the wider debate, emphasising the need for efficiency and the role AI tools can play in ensuring it.

The AI revolution has arrived relatively quickly, not as a crisis threatening life in its biological form, but as a phenomenon transforming the skills required in the labour market(Eloundou et al., 2023; Lou et al., 2023; Synowiec, 2020). This is an unprecedented change that has prompted a large proportion of professions to focus their further training on working with AI, resulting in two phenomena. A group of new experts has emerged who provide training in generative AI and prompt engineering. Whilst many possess substantial practical experience with AI tools (Eager & Brunton, 2023; V. Liu & Chilton, 2022), their activities are often only weakly connected to established educational theories, pedagogical research, or broader discussions concerning learning and teaching.

A process is underway in which a specific ‘introduction to’ theory is emerging, around which a core group of tutors is forming—one whose expertise is frequently grounded in practical familiarity with AI tools rather than in educational research, curriculum design, learning sciences, or teacher education, but with a strong presence in the marketing sphere. This again involves the use of a reactive model, whereby demand arises in society through various social interactions; this demand is not met by competent practitioners, but by rapidly created ‘AI tutors’, in a manner which may, once again, be effective in addressing immediate educational needs, although questions remain regarding its long-term pedagogical value (Balaskas et al., 2025; Zhao et al., 2026). Whilst critical approaches are frequently invoked in AI training, these discourses may also function as mechanisms that sustain continuing demand for educational services and training programmes.

The AI revolution brings yet another important aspect to the development of the theory of the ‘Introduction’ – theoretical approaches are often perceived as obstacles to rapid implementation – on the one hand because the subject is evolving and changing rapidly, which allows for a somewhat chaotic drive to ‘do at least something’, reflected in a lack of context and monitoring of long-term impacts; and, at the same time, because the field is increasingly shaped by highly

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visible media actors whose influence on public discourse often exceeds that of academic experts. Theory hinders rapid applicability.

The AI revolution thus essentially divides groups of exceptionally interesting theorists and lecturers who cannot find a common language or engage in dialogue – a dialogue which, for quite understandable reasons, neither side is interested in. This gives rise, on the one hand, to ‘slow science’ that builds robust theories(Cox, 2024; Floridi, 2025; Ng et al., 2021; Peters et al., 2024) and, on the other, a practice that essentially ignores these theories and appears in a way that Liessmann (2012) has long criticised.

However, it would be too simplistic to say that, on the one hand, there is academia, which is incapable of taking action, and, on the other, lecturers who are uneducated, as if this were primarily their fault. Here, once again, we can see strongly reactive demands on education that theory does not seem to take sufficiently into account in a way that is feasible and easy to implement. At the same time, as during the COVID-19 pandemic, the crisis must be managed, leading to a focus on short-term goals that will be crucial to the impact of this form of education, yet creating a sense at the individual level that there is no other choice.

The theory of the ‘Introduction’, as discussed above, is linked to three important conceptual elements. The first is instilling a sense of certainty – learners become convinced that nothing terrible is happening and that some ways and approaches will not jeopardise their working lives. The second is an emphasis on practice and efficiency – trainers demonstrate what a person can do to be more efficient, which means ‘saving time’. This approach may take the form of automating existing processes or emphasising the careful planning of new activities. Still, the key point is that it reduces training and the work involved to a matter of efficiency and practical applicability. The third component is the emphasis on impact – the trainer demonstrates something appealing, surprising or extraordinary to the learner – technology takes on the role of a ‘game-changer’ that radically transforms everything. Crucially, for this structure to work, there must be a narrative that anyone who does not immediately embark on training in this field will face problems, since there is currently a window of opportunity to be seized.

5. Comparison

Following an iterative comparative analysis of the literature about both cases, it is possible to identify a set of recurring analytical dimensions observable across different forms of educational crisis. The objective of Table 1 is not merely to compare the two crises, as any such comparison necessarily simplifies complex phenomena, but rather to illustrate, through two analytically distinct examples, the structure of the characteristics associated with crisis failure

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as defined in this study. The categories presented in the table should be understood as conceptual constructs derived from the comparative analysis rather than as empirically measured variables. Consequently, Table 1 establishes a conceptual framework that facilitates the analysis of future crises and the exploration of conditions that could promote greater integration of theory and practice during crises. Categories were retained only when they appeared in both cases and were relevant to the study's understanding of theoretical failure. Categories unique to a single crisis were excluded to maintain comparability.

Table 1 compares how the two visible crises deal with various aspects of their relationship to theory. It analyses common features, namely the objective presence of usable edTech theories which are, however, ignored or rejected, and an emphasis on short-term, reactive strategies which, driven by a sense of urgency, lead to the creation of solutions that all stakeholders in education know are not good, yet which are rapidly developed due to the framing of the impossibility of inaction. Typical of both crises is the inability of experts to contribute their perspectives to the discussion in a sufficiently clear and practical manner to enable positive outcomes for the target group.

Analytical dimension	**Emergency teaching**	**The AI revolution**
Reactive / Proactive	Reactive	Reactive
Are there any edTech theories available?	Yes	Yes
Relationship to edTech theories	Rejection and adherence to certainties (Herbart's triangle)	Detachment from them, disregard; the breakdown of practice and theory
Sense of threat	Existential	Employment and economic
Change	Efforts to maintain the status quo, a return to the way things were	Everything is changing; we need to adapt quickly
Potential losses	Educational continuity	Labour-market relevance
Urgency	There is no other choice	There is no other choice

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Time frame	Short-term	Short-term
Relationship to abstraction and context	Reduced emphasis on broader theoretical reflection	Reduced emphasis on theoretical contextualisation
Approach to practice	Ad hoc fix	Ad hoc fix
Integration into existing theoretical discourse	Emerging retrospectively	Developing in parallel but weakly connected to practice
Target group of the educational intervention	Students and pupils, and to a lesser extent, teachers	A large proportion of staff and participants in lifelong learning

Table 1: *Comparison of selected characteristics of the failure of theories during emergency teaching in the era of COVID-19 and the AI revolution.*

The dimensions presented in Table 1 were consistent across both cases. The concepts of reactivity and short-term orientation have been subjects of discussion in the academic literature on emergency remote teaching (Burns, 2020; West, 2023) and in analyses of rapid AI adoption (Chiu, 2023; Eager & Brunton, 2023). Similarly, both cases are distinguished by educational theories that exhibit only a limited degree of correlation with practical application during the crisis period. It is therefore important to note that the categories do not represent empirical measurements, but rather recurring interpretative patterns that have been identified in the reviewed literature.

Both crises share three further significant features. Firstly, there is the fundamental influence of corporations, which appears to be entirely decisive in the behaviour of education systems (West, 2023). In the case of the COVID-19 pandemic, this influence was not itself so pronounced, but this shortfall was offset by state education policies (Andrew, 2024; Waller & Wrenn, 2023; Weller, 2022). One of the key features, therefore, is the corporatisation of education. In the AI revolution, there is also the privatisation of education, which grew much less visibly during the pandemic and focused more, for example, on supporting exams or other forms of tutoring. In the AI revolution, we can see the privatisation of education (Adetayo et al., 2024; Rahm, 2023). A second important feature is the notion that the aim of education is an ' ad hoc fix’: solving specific problems and delivering clearly visible results that can be achieved

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immediately. The emphasis on the effectiveness and productivity of solutions rather than on the process and context is a second common feature. The third is a distrust of theory as such, which manifests itself both in the marginalisation of experts and the emphasis on methodologists, and in the need to formulate various 'ten commandments' or simple principles and procedures.

6. Discussion

We will structure the discussion below by progressively seeking possible answers to two research questions.

6.1. Why do edTech theories fail?

The analysis suggests that at least three components can be identified that lead to the failure of edTech theories. It is interesting to note that the crises we have analysed suggest that they cannot be interpreted through Kuhn's (1996) usual lens – that is, understood as the consequence of a theoretical conceptualisation incapable of gradually resolving accumulated problems – but must be understood differently. It appears that the very fundamental structure of edTech theories does not account for three types of problems in which it is particularly vulnerable.

Theories are not resistant to the corporatisation of education. It appears that theories are ill-equipped to withstand three interlinked forms of the corporatisation of education. Firstly, there is the situation in which companies develop solutions and can deliver them effectively to the educational sphere. To a certain extent, there is little vigilance regarding the influence of these companies, which may see great potential in education. This is a problem already described by Freire (2014; 2001), namely that robust education systems underpinned by state power are not very resilient to large corporations, even in the absence of direct intervention. Educational theories thus engage with the issue on the one hand, often describing it, yet fail to address it effectively when confronted with it.

The second aspect concerns marketing, where neither educational theories nor institutions are sufficiently effective or comprehensible in addressing society's current challenges. This gives rise to a group of lecturers who gradually construct a narrative for themselves as experts, delivering quick training courses that offer a basic insight into the issues. In this space, theories are defenceless, because their proponents and advocates are unable to engage with them effectively in the public sphere – and quite possibly do not even wish to.

The third dimension of commercialisation is that the entire edTech sector is dependent on technology – primarily commercial technology. Whenever development accelerates or changes dramatically, existing theories become inadequate, creating space for the reactive approaches we describe in the second component.

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Theories are not resilient in the face of a reactive paradigm with a short-term perspective. A characteristic feature of pedagogical theories, methodologies, and indeed the entire edTech sector is the quest for solutions that are more enduring and sustainable: a suitable combination of short-term studies that suggest certain perspectives, coupled with more robust frameworks that view the whole from a broader perspective. What is crucial for both crises under examination is the abandonment of theories – not because they are inadequate, but because of a fundamental shift in perspective: from a long-term to a short-term view, and from a formative, active approach to a reactive one. In other words, what happens is that, at certain moments, practice rejects the very way in which theories are traditionally formulated and seeks simpler solutions. In a sense, reactivity and a focus on short-term goals can appear credible and understandable, whilst also being linked to a sense of threat.

This means they respond to situations that are entirely different from those considered important in the construction of conventional theories and in research conducted in accordance with research ethics. The conviction that something needs to be done may be grounded in pragmatism, whereby, through action, we can understand what we are doing and iteratively move forward within the context of the action research paradigm; however, abandoning the goal as such appears unsustainable within the very constructs of theory. In light of potential losses, those involved in education therefore decide to try something at least.

Such an approach would be humanly understandable were it not for the third key component of the failure of theories, namely, **a lack of resistance to compromising on quality**. This component is difficult to reconcile with common notions of educational theory. In both of the crises mentioned, education practitioners realise that their actions and approaches do not lead to quality, long-term benefit or comprehensive development, and over time it becomes increasingly clear that their actions are not only unproductive in the long run, but also give rise to a range of specific problems – from mental health issues during the COVID-19 pandemic to AI burnout, security threats or the erosion of a sense of autonomy in the AI revolution.

Both crises (implicitly) engage in this reflection and respond to it by constructing self-justifying theoretical frameworks. During the COVID-19 pandemic, we speak of ‘emergency teaching’, which explicitly distinguishes itself from the pedagogy associated with online education by abandoning several aspects essential to high-quality education and establishing its own form, operating on the belief that something is better than nothing. The AI revolution essentially posits the same thing; structural problems very quickly become apparent (ranging from reduced agency, AI burnout, AI bias, reduced job satisfaction, to epistemic errors), and the response is that there is no other choice; that development is so dynamic that an ‘Introduction to AI’ framed

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by terms such as ‘critical’, ‘creative’ and ‘effective’ represents the appropriate and functional path. Time and again, information will emerge on how to prompt effectively, how to configure agents and how to simplify one’s work, in the belief that this narrative will justify one’s own ethically and economically problematic conduct.

This is something to which theories, as they emerge, are inherently unable to respond, because the inherent nature of transcendental concepts (goodness, beauty and truth) forms the basis for the formation of theory, the aim of which is to seek ways or paths to educate well, not to justify deliberately substandard education. At the same time, it must be acknowledged that for many people, abandoning quality can be liberating and appealing.

Other factors may also contribute to the failure of a theory – technological unpreparedness, a lack of digital literacy amongst certain stakeholders in education, regulation and legislation, economic and human resources, leadership that is limited or focused on other issues, or specific institutional constraints. These factors may provide strong explanations, particularly at the level of individual institutions and educational systems. However, their relative importance differs across contexts, making it difficult to treat any single factor as a universal explanation for the temporary loss of theoretical guidance. Crucially, they may collectively contribute to the application of theory becoming too costly or slow, so that it may be easier for an institution – given its reactive nature and the feeling that ‘there is no other choice here’ – to align itself with the prevailing discourse. These are therefore important elements that reinforce the phenomenon we are investigating.

6.2. What role can these theories actually play in an educational setting?

Previous analysis suggests that stakeholders – or at least some of them – are familiar with these theories yet fail to apply them in times of crisis. This inevitably raises the question of whether theories in edTech are productive or useful, and what role they might therefore fulfil. To understand this phenomenon, we shall attempt to proceed in four steps.

EdTech theories are designed for normal times. They are unable to provide a sufficiently effective response to a crisis because the very components that cause them to fail – and that lead stakeholders not to work with them – are the very foundations on which they are built. A crisis requires approaches constructed in an entirely different way, and we consider it essential to attempt, in future, to devise emergency forms of edTech frameworks; however, these must be linked to the long-term, systematic preparation of education stakeholders. This means that, in light of this analysis, the failure to apply these theories appears to be a logical consequence of the design of the scope of their applicability.

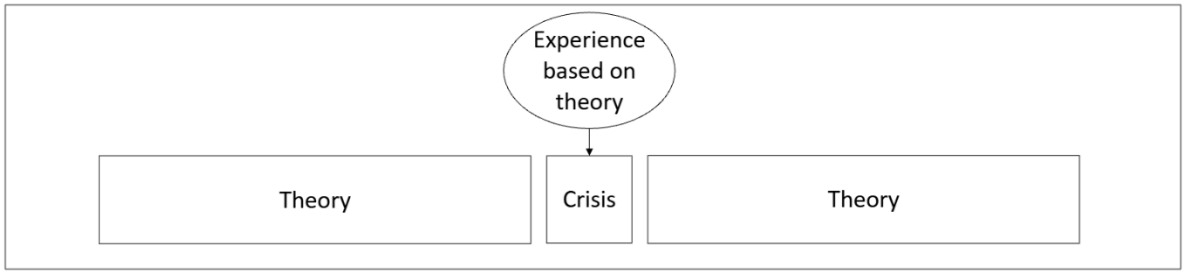
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It seems – when looking at the further development of distance learning – that theory functions as a framework for the crisis: it is applied before the crisis begins and, with some hindsight, also after it has ended. Theories thus serve as tools for processing the crisis, gaining perspective, and engaging in critical reflection. This is only possible once the crisis has ended, or rather, once it ceases to be understood and reflected upon as a crisis by those involved in education. This study demonstrates that, in the context of its relationship to theory, a crisis is not primarily an objective phenomenon, but a social construct. Theories, therefore, influence both how we enter crises and how we understand and shape the field's future development. It is thus both a capacity that enables us to start from a better position than we would without theory, and a form of therapy or processing of the phenomenon as a whole.

The third level may be less apparent in this analysis, but it is fundamental. Rejecting theory – in a relatively overt manner – does not mean that one can rid oneself of one's experience, and this applies to all actors. The explicit setting aside of theory does not preclude implicit engagement with the experience that stems from theory. Those involved in education do not (in most cases) emerge in a crisis, but rather before it, and they enter it with a set of experiences shaped by theory during normal times.

The fourth level is because crises may vary in scope but are never total; thus, alongside the visible and reflected 'crisis nodes', there are many other strands of normally functioning theories and situations within the entire edTech field. Theories are cast aside within the crisis, but they intervene from a space outside it. Neither the AI revolution nor emergency teaching signified the collapse of information literacy, digital competencies, or the demise of virtual reality in education. Theories, thus, on the one hand, create a certain stabilising anchor whilst simultaneously intervening in crisis-related areas. While institutional constraints, leadership capacity, digital competence and resource availability cannot, in isolation, provide a comprehensive explanation for theoretical failure, the present analysis posits that they may act as mediating conditions that accelerate the shift towards reactive crisis responses.

Figure 1 shows a model of a single crisis and its theoretical framework. This model illustrates one specific crisis and its theoretical framework.



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Figure 1: *Diagram illustrating the relationship between theory and crisis.*

This model of theories and crises is illustrated in Figure 2. The model captures that crises may occur at different times in various areas, and that the mutual interaction of individual conceptual frameworks—whether affected or unaffected by crises—creates space for a certain form of intervention or stability. Theory thus constitutes an essential developmental and stabilising construct, even though, at the moment of crisis, it may be – and typically is – rejected.

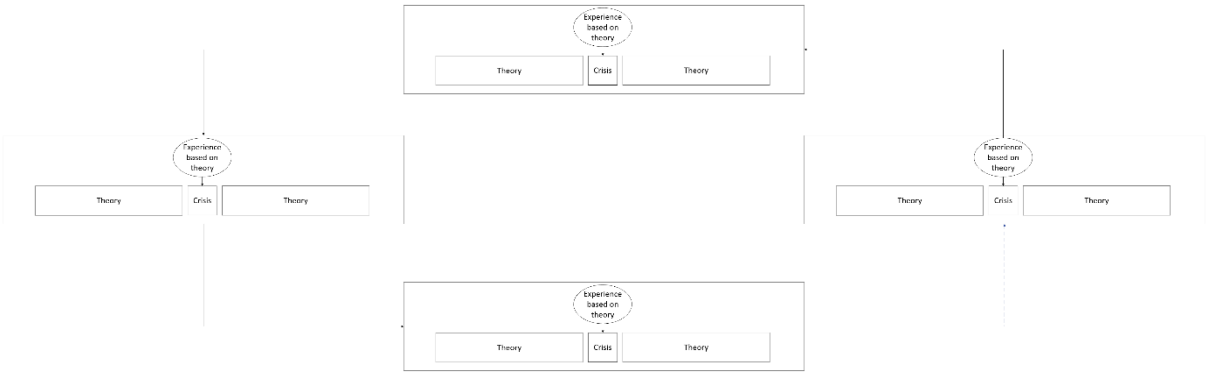


Figure 2: *Diagram illustrating the relationship between set of theories and crisis interactions.*

Figure 2 illustrates that experience gained from one crisis and a revised theory enter the field of experience. It is precisely this transfer of experience between crises that is crucial to the development of edTech as a whole. The number of four 'crisis packages' is merely illustrative. The final line is dotted, as it may be updated if the previous crisis still exists as a phenomenon under investigation based on current experience, or it may enter the field of experience, which will be updated the moment the phenomenon re-emerges (e.g. another pandemic leading to emergency teaching will be enriched both by the experience of emergency teaching itself and by experiences with AI tools and interactions with them).

This conceptualisation highlights two dimensions of the relationships between theories. The horizontal dimension relates to the chronological development of theoretical conceptualisation, whilst the vertical dimension relates to interactions between theories operating within the same educational environment.

The horizontal dimension is underpinned by the following structure: existing theory – crisis – ad hoc reactive solution – integration and conceptualisation of a new theory. As the entire analysis demonstrates, the failure of theories is not absolute, but rather their abandonment or non-utilisation in a crisis. Once the crisis has passed, it is possible to integrate the lessons learnt from crisis-based approaches to problem-solving into broader theories, thereby enriching and strengthening them.

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The vertical dimension reflects the fact that educational technologies are rarely informed by a single theoretical framework. Rather, multiple theories coexist, interact, and influence one another. A crisis rarely affects all theoretical domains through which edTech operates to the same extent. Consequently, the formation of crisis-specific responses is shaped not only by immediate practical needs, but also by concepts, assumptions, and insights derived from adjacent theoretical traditions. Interaction with other theoretical concepts is therefore part of both the formation of crisis theory and the emergence of a new phase of 'normal science'. The two dimensions are complementary: whilst the horizontal dimension explains how theories respond to crises over time, the vertical dimension explains how other theoretical resources shape and moderate that response.

7. Conclusion

This study analysed the failure of theories in the edTech field, which stems from the fact that, in times of crisis, these theories are rejected by the practising community. We have succeeded in analysing three components that lead to this rejection: corporatisation, or rather, the division of competences between the academic and private spheres; an emphasis on reactive, short-term approaches; and a compromise on quality, often linked to the narrative that nothing else can be done. At the same time, however, we demonstrate that this is an inherent characteristic of theory-building, and it does not appear academically sound to proceed fundamentally differently in this area unless we can develop specific theories and capacities for crises in general. The analysed cases suggest that some crises may temporarily reduce the practical influence of educational theories regardless of their intrinsic quality. This 'failure' takes the form of a temporary loss of a theory's relevance to practice.

At the same time, it is becoming apparent that crises are merely visible, easily detectable nodes in the educational continuum. Theories form a kind of framework around crises; they enable us to avoid certain crises altogether, or alter the dynamics of the crisis itself, whilst offering the opportunity to respond to it, reflect on it critically and incorporate it. At the same time, other areas of human life and of edTech as such remain unaffected by the crisis, and this vertical concept of an interacting 'shell' creates an important anchor and an intervening structure. Failure is visible but not total; crises are specific, minor episodes rather than permanent constructs, so whilst the failure of theories appears inevitable, this does not mean that theories are insignificant or play no role in shaping the educational environment.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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