

Empowering education: learning from crises to achieve resilient education in Romania

Salem BADAWI¹, Ella Magdalena CIUPERCĂ²

¹ University Politehnica of Bucharest, Faculty of Automation and Computers (ROMANIA)

² National Institute for Research & Development in Informatics (ROMANIA)

ella.ciuperca@ici.ro

Abstract: *Online learning is regarded as a solution that mitigates the risks posed by unexpected events and enhances the education system's resilience to diverse types of crises. Existing studies examining online education systems tend to focus either solely on the educational process or solely on technology. A gap exists for studies that adopt the service system approach, concentrating on both human and technological aspects, and aligning with the value co-creation process. In this paper, we employ the Service-Dominant logic approach to perceive the education system as a comprehensive service system encompassing humans, technology, and the value co-creation process. As such, we posit that a thorough understanding of the service context and the impact of unexpected events such as wars or pandemics on the value-creation process stands as the cornerstone for a resilient education service. While this study centres on the context of the pandemic within Romania, it significantly enhances our comprehension of the subject matter. Future empirical research endeavors may broaden the scope of the study to encompass diverse contexts.*

Keywords: Distance learning, value-creation, Service-Dominant logic approach, Education service resilience.

1. Introduction

During the COVID-19 pandemic, the need for online or distance education became evident. Many educational institutions were caught by surprise. While online education initiatives had already been initiated prior to the pandemic, few educational institutions were adequately prepared. The exceptions were open universities and other open educational institutions. The transition from traditional education to online education necessitated several elements: technical preparedness encompassing equipment and technological proficiency, development of digital content, pedagogical refinement, familial social support, and crucially, the capability to monitor and assess the educational process (Education Sector UNESCO, 2020). A comprehensive vision or strategy to steer this transformation was notably absent (Ciupercă et al., 2022). The repercussions of school closures will continue to influence the educational process even after schools resume operations (Powers et al., 2020).

It is crucial to extract valuable lessons from the crisis that impacted the education system throughout the COVID-19 pandemic. Accordingly, this paper introduces a framework for examining the education system's dynamics during the pandemic, employing the lens of Service-Dominant Logic (SD-Logic) (Vargo & Lusch., 2004; Vargo & Lusch, 2016) and the Service System approach (Maglio et al., 2009). SD-Logic facilitates an understanding of value creation processes, while the service-system approach aids in comprehending the broader context, pinpointing strengths and weaknesses, and fostering the formulation of a visionary pathway for future enhancements. This paper introduces a novel perspective on education, conceptualizing it as a collaborative value-generating service achieved through the integration of resources. Within this context, we outline our viewpoint, setting the stage for empirical validation in forthcoming research.

Therefore, the paper is organized as the following: the next section presents an overview of SD-Logic and the Service system approach. Then a view of the online education service during the COVID-19 pandemic in Romania is presented. In the fourth section we have presented the analysis of online education using the lens of SD-Logic and SSA. Finally, in section five we conclude our findings.

2. Service Dominant Logic (SD-Logic) and the service-system approach (SSA)

This paper investigates the value co-creation process within online education, utilizing the framework of Service-Dominant Logic and the Service System as its theoretical foundation. In the following sections, we provide a comprehensive overview of both approaches and highlight their interrelation:

2.1 Service Dominant Logic (SD-Logic):

Service-Dominant Logic (SD-Logic) was initially introduced in 2004 (Vargo & Lusch, 2004). Since then, it has revolutionized our comprehension of how value is created. SD-Logic perceives the service as the foundational bedrock of exchanges, applicable to both tangible and intangible commodities. Within this perspective, the knowledge and competencies invested in the development and construction of a product are what matter in value creation, surpassing the value of physical products.

Bringing this viewpoint to the context of this paper, let's consider the instance of participating in an online course as an example of a value co-creation process. In this scenario, the accessibility and availability of knowledge and skills hold greater significance than the mere presence of digital infrastructure. Possessing the necessary knowledge and skills enables the exploration of alternative solutions while possessing an impeccable digital platform without the requisite skill set to operate it renders the intended value unrealized.

SD-Logic expands upon the traditional perspective of exchange, surpassing the traditional business-to-consumer or tutor-to-learner relationship. Within SD-

Logic, all involved parties contribute resources to the process of resource integration. Consequently, all transactions within SD-Logic are characterized as Actor-to-Actor (A2A) exchanges (Vargo & Lusch, 2011). Therefore, SD-Logic perceives value as a collaborative creation involving multiple actors, with the beneficiary consistently being part of the equation. In this context, value is not pre-generated and delivered to the beneficiary (Vargo & Lusch, 2016).

For instance, learning is not solely fashioned by the curriculum and digital materials; rather, it is an interactive process that engenders knowledge (Badawi, Carrubbo et al., 2021; Badawi, Drăgoicea et al., 2021) through the dynamic interaction among educators, students, and other entities that contribute to the educational process, such as families and society.

Furthermore, value is consistently distinctive and phenomenological in nature (Vargo & Lusch, 2016). As the combination of resources is inherently unique, the resulting value stemming from their integration is also unique, depending on the integration's contextual circumstances, and established by the beneficiary. This underscores the significance of service assessment. The evaluation of services should be geared toward their beneficiaries and designed with metrics that effectively encapsulate the value generated within the given context. SD-Logic places a strong emphasis on the role of institutions and institutional frameworks in orchestrating the process of co-creating value.

In SD-Logic, institutions are perceived as the norms, rules, and guidelines that facilitate and regulate service exchanges (Vargo & Lusch, 2016). These institutions provide access rights to shared information and establish intentions and limitations. Additionally, institutions establish the contextual definition of value, influenced by the norms of the beneficiaries. What holds value for specific individuals within a particular context might hold less value for a different actor or within an alternative context. In conclusion, both competencies and institutions stand as pivotal elements in ensuring the efficacy of the value co-creation process (Akaka et al., 2019).

2.2 The Service System Approach (SSA)

Within the realm of Service Science, the service system is defined as "a configuration for co-creating value, encompassing people, technology, value propositions that link internal and external service systems, as well as shared information" (Maglio & Spohrer, 2008; Maglio et al., 2009). The service system approach aligns with SD-Logic in its comprehension of value co-creation. However, the distinct value of applying a Service System approach lies in the clear illustration of the value creation elements, coupled with a clarification of the interconnections and governance mechanisms that bind the various service systems together.

According to the Service System Approach, the service system is constructed from the following components: 1) Resources: Resources are categorized as either tangible or intangible, as well as operand or operant.

2) Actors: Actors represent the entities and stakeholders within the service system. 3) Networks: Networks denote the collaborative partnerships formed among the entities within the service system. 4) Interaction: This encompasses the process of value co-creation. 5) Service outcomes: The resultant outcomes of the service process. 6) Evaluation: This facet furnishes metrics to assess the quality, productivity, compliance, innovation, and sustainability of the service system. 7) Institutions: Institutions establish the means by which resources are accessed and governed. 8) Ecology: This represents the service system's capacity to collaborate with other service systems, ensuring its own survival and contributing to the survival of the entire service ecosystem (Badawi et al., 2020; Badawi, Carrubbo et al., 2021).

Both SD-Logic and the Service system approach help develop a distinct theoretical framework. SD-Logic explains the process of value creation within the service system, while the Service system approach outlines the components for accomplishing a fruitful value co-creation process. In the subsequent section, we provide a comprehensive overview of online education in Romania throughout the COVID-19 pandemic.

3. Case Study: Online education in Romania during the COVID-19 pandemic

Due to the COVID-19 pandemic, on March 11, 2020, the Romanian government suspended all in-person educational activities and encouraged and facilitated the continuation of education through online means. In response to the shift to online learning, the Romanian Ministry of Education and Research took several measures, including the establishment of a digital repository for educational materials and textbooks, provision of teacher training on educational platforms and curriculum through the CRED project, development of free learning platforms, and broadcasting of courses on national TV (Holotescu et al., 2020). Although these initiatives positioned Romania fairly well for online education, a study conducted at the University of Petroșani revealed that the country was not adequately prepared for online learning during the COVID-19 pandemic due to insufficient online learning tools and a lack of technical support (Edelhauser & Lupu-Dima, 2021).

During the transition to online learning, students were faced with a deficit in self-confidence, closely tied to their limited technological skills (Edu et al., 2022). Additionally, an analysis of the online education system during the COVID-19 pandemic in Romania underscores the collaborative function of teachers, students, and families in the value-creation process (Ionescu et al., 2020). Parents assume the role of monitoring the educational process, furnishing technological support, and aiding in mitigating the potential repercussions of social isolation (Ionescu et al., 2020). Although the involvement of education managers was pivotal in guiding the shift to online education in many instances, their performance fell short of expectations (Edelhauser & Lupu-Dima, 2021).

The attitudes of both students and teachers toward online learning represent crucial factors in influencing the acceptance and utilization of online learning tools, ultimately fostering productive and efficient collaboration. A study examining students' attitudes toward online learning in Romania highlights that students' perspectives on online education are shaped by their technical proficiency, their capacity to access online courses, and the teachers' aptitude for conducting online classes (Butnaru et al., 2021). Conversely, the digital divide between rural and urban areas emerges as a determinant impacting teachers' motivation to embrace online learning (Petrla et al., 2022).

A study investigating the efficacy of online learning during the COVID-19 pandemic at the School of Economics in Romania discovered that inadequate internet connectivity, distractions arising from family matters, and inadequate study environments are more likely to adversely affect online education (Roman & Ploeanu, 2021). Drawing from (Boca, 2021; Zamfiroiu et al., 2022), it can be inferred that online learning is preferable in scenarios where effective teaching methods, high-quality online courses, and robust digital infrastructure are present. Additionally, ensuring equitable access to infrastructure and digital competencies for both students and teachers constitutes key elements within a prospective education strategy (Nicolau et al., 2020).

4. Discussion

Service-Dominant Logic is founded on the fundamental principle that value is collaboratively co-created within a process (service), involving all contributing parties, including the beneficiary (Vargo & Lusch., 2004; Vargo & Lusch, 2016). To apply this perspective to the online education context, the value derived from online learning is co-created through a process encompassing, though not limited to, educators, technology suppliers, internet providers, families, and most significantly, the students themselves. Technology and internet suppliers function as service facilitators or providers (Polese et al., 2021), playing a crucial role in the educational process. Their absence can significantly impact the potential of the service to generate value. This situation was particularly evident in certain rural areas in Romania during the COVID-19 pandemic, where conducting online lectures posed challenges due to limited internet accessibility (Petrla et al., 2022).

Education aligns seamlessly with the service perspective in SD-Logic. Within SD-Logic, service is conceptualized as an exchange of competencies (comprising knowledge and skills) that are exchanged to provoke value creation (Lusch & Spohrer, 2012). The presence of knowledge and skills stands as the key determinant of learning success, consequently shaping the resulting value (Caridà et al., 2019).

In SD-Logic, much like in education, the concept of value is perceived as co-created, rather than predefined or predetermined. In the context of learning, the creation of value involves the exchange of knowledge and the application of skills.

Within this perspective, the emphasis lies primarily on the process itself, with resource availability at the right time, or resource density (Akaka et al., 2012), serving as a vital component. Resource density acts as the driving force propelling both the learning process and the co-creation of value (Akaka & Vargo, 2014).

As mentioned earlier, the value co-creation process is inherently collaborative, with families playing a significant role in the learning journey. The availability of families equipped with digital skills posed a challenge for online learning during the COVID-19 pandemic. According to 2019 Eurostat statistics, only 34% of households with children under 16 possessed basic or higher-level digital skills in Romania (EUROSTAT, 2020). This challenge subsequently impacted the ability to deliver equitable and satisfactory education to all students.

To comprehend learning as a service, it becomes essential to adopt a broader perspective and understand the service system that underpins the exchange of resources. This service system is perceived as an arrangement involving people, resources, and technology, which interconnects with other service systems to collaboratively generate mutual value (Maglio et al., 2009). This conceptual view inherently complicates the task of demarcating definitive boundaries for the service system. The focal point of the service system is rooted in the value creation process. Every instance of value co-creation initiates with a value proposition (representing the promised value from interaction). Upon the acceptance of the value proposition, the resource exchange commences, transforming the involved entities into integral components of the larger service ecosystem (Quero & Ventura, 2019; Vargo & Akaka, 2012).

While it could be argued that defining boundaries is not strictly necessary, such demarcations do aid in the allocation of responsibilities. However, it's worth noting that these boundaries can inadvertently limit our perspective, potentially causing us to lose sight of the broader context and our responsibilities in supporting others to fulfill their roles (responsibilities).

In scenarios where conventional educational services face disruption due to unforeseen circumstances such as COVID-19, the significance of assessing the resilience of the service system becomes paramount. Resilience within a service system is defined as its capacity to react and adjust in the face of disruptive events while upholding the continuity of services (Polese et al., 2021). This resilience is exemplified by the service system's ability to restructure its existing resources (both tangible and intangible) or to incorporate new resources promptly, in order to sustain service delivery and mitigate the impact of ongoing stress factors.

Moreover, comprehending the context exerts a significant influence on attaining service resilience (Badawi, Carrubbo et al., 2021). There is no universal solution that can be uniformly applied across all contexts. Each educational service system operates within its unique context, which encompasses varying levels of skilled participants, availability of resources, and degrees of technological advancement. Throughout the COVID-19 pandemic in Romania, the sole

contextual aspect that garnered attention was the infection level. During that period, this focus was rational given the primary aim of safeguarding public health. However, as the pandemic subsides, a broader perspective must be adopted when formulating a strategy for enhancing service resilience. This perspective should encompass tailored strategies that cater to the specific parameters of each context, ensuring equitable opportunities for a comprehensive education.

5. Conclusion

Amidst the COVID-19 pandemic, the majority of countries suspended in-person education and transitioned to online learning. However, this shift encountered challenges shaped by the readiness of each country. This investigation recognized a disparity in the planning and execution of this transformation, arising from an inadequate grasp of the intricacies of the educational process. This study introduces a theoretical framework grounded in SD-Logic and The Service System Approach, designed to analyze the educational system both prior to and amidst unforeseen crises. Comprehending the service context empowers policymakers to formulate strategies for seamless adaptation in the face of similar future events, thereby ensuring service resilience.

The findings underscore that perceiving the education service as a value co-creation process highlights the critical significance of resource availability, particularly competencies (knowledge and skills). A notable challenge hindering effective transition to online education is resource density. While this study's scope was confined to the context of online education in Romania during the COVID-19 pandemic, and relied on available empirical data, it significantly enhanced our comprehension of the phenomenon. To validate the framework and assess its applicability in various contexts, further empirical research is imperative.

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