Students' perceptions of gained and lost value: a case study of a summer school that had to suddenly move online

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Abstract

In 2020, the early Covid-19 lockdown induced the abrupt migration of traditionally presential learning activities to online domains, as it was the case of inter-institutional summer schools. The following research corresponds to a case study in which our organization had to reformulate, in less than three months, one of its traditional summer schools while trying to keep the original goals. Through qualitative and quantitative surveys, we aimed at identifying the impact of our reformulation by analyzing students' perception of gained or lost value regarding four topics: a) online teaching, b) pre-recorded business cases, c) online social events, and d) technical solutions. With an emphasis in knowledge and learning experience, the analysis revealed that students' background and expectations may lead to identity and performance tensions. Our results may be of interest to those institutions which are currently turning traditionally face-to-face events into hybrid models.

Keywords: Online learning; reformulation; Covid-19; assessment; perceived value; innovation education.

1. Introduction

After Covid-19 was declared a pandemic by the World Health Organization (WHO) on March 11, 2020, the teaching-learning process of more than half of the world's student population was affected by the sudden shutdown of facilities. At short notice, educational organizations were pushed to take crucial managerial decisions to reconfigurate their traditionally face-to-face activities, including internships, conferences, and summer schools (Cullinane, McGregor, Frodsham, Hillier, & Guilfoyle, 2022). In this new normal, in the economic, social-political, and technological spheres of life, a vast number of solutions involved migrating to fully online platform systems to comply with the sanitary regulations.

The reconfiguration of the educational field, often defined as a "pedagogical shift" (Rafi, Varghese & Kuttichira, 2020), an "online transition" (Priyadarshini & Bhaumik, 2020) or "emergency remote teaching" (Watermeyer, Crick, Knight & Goodall, 2021), has been marked by strategic managerial decisions at organizational (e.g., funding institutions and partner universities) and individual levels (e.g., teachers, course designers and students). Generally, in this research we describe a case study in which our organization, a post-graduate unit at the University of Rennes 1, France, had to react, at the start of the pandemic in 2020, to reformulate quickly one of its most acknowledged educational activities in less than three months, i.e., a two-week international summer school on the topic of "smart cities", which would have normally hosted around 50 engineering students from all over Europe. Specifically, we assess the impact of the managerial decisions taken to pivot the event so that the goals of the European activity leading coordinator, the European Institute of Innovation and Technology (EIT-Digital), could be attained.

Managerial decisions in 'fast-changing environments' constitutes a large body of inquiry. In this context, some research has proposed the notion of "improvised decisions" (Kamoche & Cunha, 2001), which accounts for a resolutive action when no plans are available (Moorman & Miner, 1998). A key feature of this academic research is that 'improvised decisions' are often approached from the point of view of decision makers, i.e., how members behave (individually, interpersonally, organizationally) towards an unexpected situation.

While keeping distance from the so-called 'improvisation' perspective, in the present study we put emphasis on the *user* (students attending the educational activity), considered here as the stakeholder which is mostly affected by the managerial decisions of our organization. Although all summer-school-related stakeholders are in some way impacted by decisions (e.g., instructors, business case providers, etc.), students, as users, are particularly vulnerable since they have little or no formal negotiation power in decisions (Jamieson & Thomas, 1974).

To understand the impact of the organization's reformulation decisions on users, we analyze how the proposed (emergent) functionalities deployed in the abruptly-shifted-to-online

summer school were perceived by the students after they finished their learning activities. Such assessment is conceptualized and analyzed in terms of negatively or positively perceived value, i.e., if the online functionalities are positively assessed, then value is gained, while if some of its features are negatively evaluated, value is lost.

Among the quick reactive actions taken by our organization, four main decisions can be found: 1) defining and collecting pre-recorded business case presentations instead of having real time face-to-face conferences from experts; 2) offering online coaching sessions instead of presential workshops; 3) preparing online social events instead of presential socialization activities; and 4) using convenient technological solutions for delivering the activities.

In line with the four managerial decisions for reshaping an education event and with emphasis on students as users, we aim to learn about the impact of decision-making by exploring perceived value from two dimensions, i.e., didactics and pedagogics, where the former is related to knowledge production and content learning, and the latter is related to experience or learning conditions (Zambrano, 2016). The identification of students' value perception will allow us to acknowledge the impact of our organizational pivot by concretely mapping the possible 'tensions' at stake.

2. Theoretical background

In our case study, students' knowledge (didactics) and students' experience (pedagogics) are used as proxies to account for value perceived as gained or lost in the improvised activity.

The knowledge dimension suggests that student's prior or ongoing academic training may lead participants to give a certain value assessment (positive or negative evaluations) in relation to a reformulated event. This idea has its roots in at least three common claims found in the educational field: a) students' prior knowledge may affect learning performance (e.g., Johnson & Lawson, 1998); b) designing engaging lessons, taking into account student's interests, may encourage more active learning participation (Mandernach, Donnelli-Sallee & Dailey-Hebert, 2011); and c) differentiated instruction, according to students' background and readiness, may have a positive impact on student achievement (e.g., Hall, 2002). The second dimension to observe the perception of value is materialized in terms of students and teachers' interactional experience (i.e., involving the interactions of the different participants). Recent literature framed in the pandemic context has paid attention to experience mainly through three aspects which are commonly assessed by students or teachers: practices (Priyadarshini & Bhaumik, 2020; Hornsby, 2020), feelings (Priyadarshini & Bhaumik, 2020; Watermeyer et al., 2021), and accessibility (Dube, 2020).

3. Methodology

In the next section, we describe the methodology that will allow us to learn about the impact of our four reactive decisions.

3.1. Participants

The summer school event, organized by the Université de Rennes 1 and coordinated at a European level by EIT Digital, was held online in 2020. The general objective consisted in providing students with knowledge on innovation and entrepreneurship. Of the 26 participants who agreed attending the shifted-to-online version, two groups were distinguished: firstly, the 'Computer Science' group (CS), made up of 18 students, including those with an academic background in electronics and computer science; secondly, the 'Social Science' group (SS), composed of 8 students, including those with a background in management and human sciences.

3.2. Decisions

The first decision consisted in defining, selecting and collecting pre-recorded business case presentations to replace real time face-to-face coaching interventions. After contacting at least twenty international entrepreneurs, business cases ranging from +/- environmentally oriented and +/- practical, were recorded with Zoom, lasting around 25min. The second decision consisted in offering online coaching sessions instead of presential classes. In these training sessions, instructors strive for highly interactive discussions with students while participants have the possibility to interact among them effectively. Online courses were delivered 6 hours a day via online. The third decision consisted in preparing online social events instead of presential socialization activities. In normal times, social events (e.g., attending restaurants and visiting touristic hotspots) would have been one of the main motivations to attend the summer school. In the context of Covid-19, these social events were replaced by three online social events in which participants had the opportunity to play a game and solving trivia. Finally, the fourth decision consisted in choosing the most convenient and practical communication platform for administrating the learning activity. In the reformulated version of the summer school, Zoom was chosen for training sessions. The assessment of the four managerial decisions were explored through didactics and pedagogics.

3.3. Analysis of data

The 26 students, after the event, were asked to voluntarily answer two surveys whose data would undergo a process of identity anonymization. The first survey aimed to collect data about the learning experience while the second one, including quantitative questions using a 5-point Likert scale (1: Very Poor, 2: Poor, 3: Fair, 4: Good, 5: Excellent), aimed at collecting specific evaluations about the event, such as content, program and organization.

4. Results and discussion

We have aimed to learn about the impact of the decisions taken to reformulate an international summer school. To meet this general purpose, we have explored how students assessed the re-configured event in relation to four managerial decisions: a) preparing pre-recorded business case presentations; b) offering online coaching sessions; c) preparing online social events; and d) defining the most convenient technological solutions. Students' assessment of the managerial decisions allowed us to identify some tensions mainly in relation to *identity* and *performance b*etween organization and users.

The assessment of the first decision related to pre-recording business cases helped us learn about identity and performing tensions in relation to didactics and pedagogics, respectively. Regarding the former, it is worth noting that prerecorded business cases, consisting in projects including IoT or artificial intelligence, were included in the activity to target student's disciplinary background. However, they were poorly assessed probably because they were too technical and context-dependent (i.e., based in Rennes). Instead, participants assessed business cases according to personal motivations that could not be anticipated by the organization, for example, solving environmental issues, such as transport problems (*Keolis is about an everyday-life topic, that is to say transportation. Something necessary and not to be left, and something that needs to be improved to have a better ecosystem*). This identity tension might be generated since the user was mainly considered as a "student", not as a conscious "citizen". In relation to the experience dimension, it was possible to find a performing tension, in which the strategy to maintain the original topic clashed, in some degree, with the business topics finally incorporated in the reformulation. As some users suggested, some business cases were considered unrelated with the overall topic of the summer school, i.e. Circular Data (*A huge difference in the name of the course and what I found in the brochure before enrolling led me to think that the course was focus mainly on creating a link between technologies and policies applying it to cities. The course had a totally different thematic good also, I learned a lot, but it differs from my initial expectations*). This tension may be due to the fact that the business case portfolio was finally conformed based on providers' availability during the pandemic crisis.

The assessment of the second decision related to the online training sessions helped us learn, from the didactics viewpoint, that coaches allowed students to take advantage of their backgrounds (i.e. academic identities). Interestingly, CS students claimed that their backgrounds allowed them to *analyze technical questions*, decide *projects' feasibility*, *apply the technical expertise to another field* while SS students claimed that their knowledge allow them to *use soft skills to quickly grasp the unknown contexts* [in relation to hypothetical scenarios], and *present and brainstorm in the creation process*. From pedagogics perspective, it was possible to find performing and identity tensions regarding experience and goals. In relation to experience, CS users claimed that it was difficult to work with classmates having

no "technical or scientific background" (*I did not expect most of the people from my team were from outside EIT. Many of them did not have technical scientific background, so it was difficult for them to participate; Most of the team members did not have a technical background, so it was difficult to communicate some of the ideas*). In terms of goals, CS students followed the summer school with the purpose of developing a business projection (*Personally from the summer school I am taking away lots of technical tips and tools which I could use to start a start-up as successfully as possible*) while SS participants took the summer school to learn new concepts (*It was fun to learn about the steps of developing a business idea*). Workload was negatively perceived by all participants (*I thought it wouldn't be tiring, was supposed to be a lot of fun while studying and doing a project. And the reality is we are going to build up our project from day 1 with intensive sessions every day*).

The assessment of the third decision related to social events accounted for two important *performing* tensions among participants from the didactics viewpoint. On the one hand, the organization considered social events as opportunities for students to meet new friends. With this in mind, short games and trivias were offered. In a normal context, however, social events are not just for "meeting people", but to do strategic networking. This performing tension led CS and SS students to think of social events as one more task to finish at the end of the day (*it is difficult to achieve the same level of interaction online as in real life*). From pedagogics, social activities that started some minutes late and took place late in the afternoon (after 5pm), were negatively perceived by both type of students.

Lastly, the assessment of the fourth decision related to the technical solutions allowed us to identify, from a didactics viewpoint, that students, given their academics backgrounds, felt pretty conformable with both Zoom and Moodle (*I've been using Moodle in the university for several years now, so I'm familiar with Moodle*). From a pedagogics view, however, participants admitted that they had to find alternative means, such as WhatsApp, Facebook, Telegram and Google Drive, to keep a more fluent communication with their partners. Finally, one common trigger of dissatisfaction among students (similar to that found by Cullinane et al., 2022) was related to the fact that they missed certain interaction elements of the physical version, such as meeting people from other groups (*there was no problem with teamwork and coaching on zoom although we couldn't interact much with people outside our group*), watching people's expressions (*of course it is not like real life so unfortunately for the coaches, it was difficult to see our reaction, even us when we present, we cannot see the reactions*), and networking (*although I think in general the whole experience was positive, I was missing some face to face networking and interaction after the sessions*).

Based on our analysis and the tensions found among participants, Table 1 synthesizes the aspects that triggered a perception of gained and lost value according to the reformulation decisions regarding business cases, training sessions, online events and technological solutions. Gained value was identified when assessments ranged from "fair" to "good" (3-4);

and "good" to "excellent" (4-5). Lost value was identified when assessments ranged from "very poor" to "poor" (1-2); "poor" to "fair": (2-3); and "fair": (3).

Table 1. Perception of gained and lost value according to managerial decisions.

	Users' assessment (a selection)	
Decision	**Gained value** **(fair to good: 3-4; good to excellent: 4-5)**	**Lost value** **(very poor to poor: 1-2; poor to fair: 2-3; fair: 3)**
1. Business cases	• Inclusion of environment-related business cases	• Inclusion of technology-based cases • Inclusion of context-dependent cases • Inclusion of cases not related with the summer school topic (*circular city data*)
2. Training sessions	• Participation of engaging coaches • Sessions integrating computer science and social science knowledges	• Activities implying teamwork among students with no affinity among them
3. Online events	• Activities lasting not too long (1 hour approx.)	• Time of the day was too exhausting (after 5pm)
4. Tech. solutions	• Use of familiar tools (Moodle and Drive)	• Groupwork in Zoom prevented students from meeting people from other groups, watching people's expressions (cameras off), and networking • Use of Zoom's breakout rooms (difficult to come back if out for some reason) • Moodle as submission platform (instructors used email instead)

5. Conclusion

Our analysis allows us to understand the impact of our reformulation decisions and identify those aspects that triggered a positive assessment from CS and SS students, e.g., considering business cases related to solving environmental challenges, hiring engaging coaches able to integrate students with different backgrounds, organizing short social events, and using well-known platforms. Interestingly, our research also allows us to identify those performing and identity tensions leading to a perception of lost value, e.g., working with technology-based and context-dependent business cases, finding no direct link to the general topic of the event,

doing teamwork activities among students with no intellectual affinity; attending social events after 5pm, using Zoom breakout rooms for teaching; and using Moodle as an assignment submission platform. These results may be of interest to those institutions which are currently turning traditionally face-to-face events into hybrid models.

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