

Individual Educational Trajectories: from Educational Supermarket to Sensemaking to Blended Values

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Abstract—Bringing the idea of students' individual educational trajectories into focus, Russian universities employ an 'educational supermarket' model and take for granted that universities are capable of incorporating any novelty. This paper proves the opposite, i.e. universities use specific 'filters' to minimize external influence. New filters introduction is able to destabilize the system and make it sensitive to outside cues. This phase, with its sensemaking potential, is the most efficient for building educational trajectories. However, this phase is short, for universities tend to reduce volatility and complexity. They are 'autopoietic'. Genuine individualization stems from a person's understanding of value that he or she can create over the trajectory of their lives, which is above autopoietic frames of one university. This paper discusses a shift in focus – from individualization to blended value – with the central premise that value is itself a 'blend' of economic, environmental, social, political, and personal factors. This notion shifts the focus from a university as the center for a person's individualization to a university as an equal stakeholder and actor that identifies and maximizes blended value.

Keywords—individualization, educational trajectories, filters, educational supermarket, sensemaking, blended values

I. INTRODUCTION

Over the past 30 years, information and communication technologies have drastically changed the society. Education system has always encountered difficulty in living up to the society's expectations and complying with the authorities' requirements. Now, with ever-increasing pace of change, it has become a truly global challenge: *"Indeed, the network of social, communication, and economic links make individuals, organizations, machines and even ecosystems across the world ever more dependent on each other, and ever less capable of acting purely on their own without considering potentially faraway consequences"* [1].

While the analysis of higher education in Western Europe shows that quality control and assessment criteria have significantly contributed to the improvement of the higher education system [2], European experts speak about *"an ever-widening gap between the education that people*

need for today's complex world and the education they receive" [3].

Shifting perspectives from education to economics, we see their leaders explain how disruptive forces can be positive. They talk about *transformative power of impact investing*. They bring about new understanding of how to maximize value: *"What is needed is a re-visioning of our personal and professional understanding of the notion of the value we create over the trajectory of our lives. With this new understanding of value in place we may then – each one of us – be in the best possible position to change our organizations, our investment practices and the legacy of the life we have lived"* [4].

Russia, in this regard, has been massively adopting European policies and models. Although many of them are still *inconsistent and not framed systematically* [5], it has implemented a complex modernization plan in education *to make a decisive contribution to the 'breakthrough' in economic, social, and technological spheres* [6]. Russian universities work out various forms of investment in human capital: new technologies, early talent development, flexible study system, majors & minors, etc. In other words, individualization has become an integral part of educational requirement and is now claimed in all state educational standards of the Russian Federation.

Individualization in Russian universities does not take the notion of shared value, or distributed value, or blended value as leading businesspeople suggest. Rather, Russian universities employ an 'educational supermarket' organizational model that offers students 'ready-to-eat' abundance of educational practices. While Open Strategy is *"a dynamic bundle of practices that affords internal and external actors greater strategic inclusion"* [7], carried to universities, this strategy is accompanied by different forms of resistance stemming from lack of understanding, little involvement, and few incentives, which raises a number of research questions. What is the difference between the spheres of education and consumption, and who chooses learning content in the 'educational supermarket'? Do teachers enjoy the freedom of individualization and development opportunities in this

model? How does educational environment change under the influence of choice? Whose values are embraced? What managerial support do universities need in order to make a shift from 'educational supermarkets' that manipulate students' educational needs to a meaningful communication and sensemaking, which is a basis of a multidimensional human world?

II. METHODOLOGY

To explore these questions, we conducted a three-year experiment in Tomsk State University (TSU), Russia, 2015-2017. This experiment involved key educational stakeholders: students, teachers, university management, and employers. We assumed that no matter how overlapping stakeholders' interests might be and no matter how open their strategies might be, in day-to-day university contexts they could act like multidirectional forces and hinder desired development outcomes.

Bringing the concept of *individualization* into research focus, we aimed to identify the conditions under which multidirectional interests could resonate with one another and create mutual positive reinforcement. We tried to identify the potential of students' individual educational trajectories as capable of motivating *meaningful communication, sensemaking, and foresightful development*. We looked for the unfolding dynamics and prototypical cases that would allow us to study our subject in depth and over time.

Our theoretical assumptions are derived from Niklas Luhmann's social systems and communication theory. Luhmann proposes that all social systems have their *distinctive identity*. Communication within a system operates by selecting only a limited amount of all information available outside. That is, a social system *filters information* from the environment, making a series of *logical distinctions*. It is its identity that captures exactly what can and what cannot be sustained in its continuous *autopoiesis* (literally: self-production, self-creation) [8]. It draws our attention to *various categories of filters* proliferating in such complex systems of communication as universities that either clog or open up communication process.

M. Lenartowicz further develops Luhmann's ideas and claims that universities, being open social systems, are *yet operationally closed*. She says we mistakenly take for granted that universities are open systems deeply embedded in the larger socioeconomic reality, busy with the constant exchange with their environment as their survival depends on their continuous re-adaptation to it. Lenartowicz questions *"the sustainability of even the seemingly most basic 'use of the university': the adequate education of students for the job market"* [9]. From her perspective, national and international systems of higher education, the system of science, each scientific discipline, institutes, departments, research centers, chairs, and project teams are all *autopoietic social systems*. Thus, it sheds new light on universities' resistance to change.

Research conducted by D. Seidl and F. Werle provides us with more data on *sensemaking processes* and clearly demonstrates the filters at work. That is, when organizations face problems of strategic significance, they open up their internal strategy process and seek inter-organizational collaboration as a way of increasing their *requisite variety*. In an ongoing iterative manner, actors shape each other's meanings in repeated cycles of communication with the aim of developing a "shared sense of meaning" [10]. *The first filter* concerns *cues* – surprising or confusing issues – that organisations get from the outside world and try to make sense of. *The second filter* concerns the *frames or "knowledge structures"* to interpret these cues. The interests and politics of collaborators are *the third filter*. While collaborative advantage fosters requisite variety, it brings about the danger of introducing more complexity than can be handled. This leads to the selection of who joins or withdraws from the collaboration – *the fourth filter* – and identifies a mechanism that accounts for changes in the dynamics of the sensemaking process over time. Parties with redundant information might not seem necessary and might be excluded as well – *the fifth filter*. This data gives us a solid ground to question the abundance of sense-making and decision-making opportunities for all stakeholders, but admit the prospects to be filtered.

Mass-market teaching and dominant teaching, guided learning and teacher-directed learning are different names of *the same filtering challenge* experts think of when they speak about education environment design, i.e. when selected decision-makers take relevant decisions and then make students follow them. All the above mentioned clearly shows the hierarchical top-down decision-making model with one-sided understanding of *individualization*.

To address this problem, E. de Corte suggests focusing more on *competences* that empower students. Since learners are not passive recipients of information, *constructive competences* will stimulate their effortful involvement in the processes of knowledge and skills acquisition; *self-regulation competences* will facilitate monitoring of an ongoing learning process by providing one's own feedback and by keeping oneself concentrated and motivated; *collaborative competences* will guide learners from a 'solo' activity to a 'distributed' one [3]. In agreement with this approach, G. Prozumentova suggests implementing *sustainable managerial mechanisms, capable of eliminating anthropological and humanitarian deficits and facilitating 'a personal action in a person's education'* [11].

III. HYPOTHESIS

With the premise that operational closeness of a university, its hierarchical decision-making, and multiple filtering hinder meaningful communication among educational stakeholders, we put forward the following proposal. In order to move education to a new stage, it is necessary to introduce *an adjustment element – an additional specific filter*.

A new educational platform, open for all educational stakeholders and legally authorizing educational collaboration, can become such a filter capable of creating new types of connectivity at the university – teams, partnerships, expert groups, project groups, and so on. Preferences, expectations, capabilities, competences, interests and needs can stimulate stakeholders' involvement and *sensemaking*, and over time, they can boost an abundance of educational content and formats, which is the basis for *individualization*.

Of course, students' individual educational trajectories, stemming from that abundance, will break the stability of the system, but they will bring about *meaningful communication and leaping development*.

Since high quality and sustainability of education are within the university's identity and key priorities, our main research focus is to distinguish a *regulatory balance* on this educational platform. That is, to introduce a regulatory mechanism that will efficiently balance the *variability or entry-exit openness* of the system with the *institutional control or filtering* within the system.

IV. EXPERIMENT DESIGN

The implementation of this new educational platform started in 2015, shortly after the launch of Tomsk State University Competitiveness Improvement Programme supported by the Ministry of Education and Science of the Russian Federation. Today, this platform can boast having had more than 330 teachers and more than 4400 students enrolled throughout these 3 experiment years, but in 2015 it started with a welcoming idea communicated by several professors who initiated this project. The idea was to fill the campus environment with innovative or interesting educational courses that might be in demand among students and stimulate teachers' development. The idea was transmitted not only to the university teachers, but to external university partners, industry, and businesses as well. These courses were called "*TSU Campus Courses*" [12].

Teachers and other stakeholders were free to provide courses from various knowledge areas that they considered impactful and worthwhile. Students from all faculties were granted the right to start any course in any field, and then either complete it if they liked it, or leave it if they disliked it.

Since the courses were to be included in students' individual educational trajectories, they became of great interest both for students as they could master interdisciplinary content, and for teachers as they could try various contents and formats. The project was financed by the TSU development program.

A. Stage 1 (2015-2016):

This stage was characterized by the creation of a local space for new communication; goals and potential participants were manifested. The focus was on introducing *this new element* to the educational

stakeholders and to the university management. This resulted in:

- 1) formation of a pool of modules and courses for students' selection;
- 2) creation of a framework for administering students' selection procedures;
- 3) creation of an electronic system for the student contingent;
- 4) promotion of courses among students, information support;
- 5) integration with existing university digital services;
- 6) creation of an educational groups constructor;
- 7) implementation of communication regulations and the basic documentation.

B. Stage 2 (2016-2017):

This stage was characterized by hosting the mechanism for assembling students' individual educational trajectories. The focus was on creating *new filters and tools for selecting information* based on the distinctions advocated by the participants. This resulted in:

- 1) formation of indexes, subject-headings, and other digital search markers;
- 2) creation of various forms of course clustering – unified competencies, fields of study, evaluation based on students' feedback, etc.

C. Stage 3 (2017-2018):

This stage was characterized by consolidating mechanisms for communication regulation. The focus was on *maintaining new communication channels and controlling the system through decision-making algorithms*. This resulted in:

- 1) introduction of a position of 'the TSU Campus Courses systems administrator';
- 2) introduction of a secretarial position to ensure the educational process running;
- 3) gradual transfer of all Campus Courses activities and algorithms to TSU educational department (February, 2018).

V. RESULTS AND DISCUSSION

The first stage – 2015-2016 – showed high demand for courses that had practical orientation or developed specific skills. The most popular ones turned out to be oil painting, swimming, and felting. Students' priorities caused mixed reactions among teachers and management. Mostly, it was the criticism of choice: evaluation of choices as immature or inappropriate for high spiritual and intellectual requirements of the university. In our experiment, the rise of such discussions – what is valuable, what is essential, and what makes sense – was very important. Heated discussions clearly demonstrated that '*information filter*' and '*sensemaking filter*' were at work.

At this stage, public organizations, industries, and businesses actively manifested themselves. Their short-term educational offers took the form of engaging students

in communication relevant to their areas of activity. They perceived university as a powerful source of intellectual capital. University teachers were also very active as they anticipated plenty of opportunities for themselves (Table 1).

TABLE 1 COURSES OFFERED BY THE PARTICIPANTS

Course offered by	Stage 1 2015-2016		Stage 2 2016-2017		Stage 3 2017-2018	
TSU teachers	80	27	44	11	32	14
External partners	10	5	8	5	4	0
Graduates and PhD students	0	0	1	2	3	5

Abundance of random offers, on the one hand, freedom of choice, on the other hand, and open entry/exit barriers for all the participants framed an ‘educational supermarket’ model where every side sought to satisfy their needs. Sensemaking was observed at this stage, but the massive wave of curiosity and mismatched expectations appeared to be predominant.

The second stage – 2016-2017 – revealed teachers’ attempts to break traditional institutional barriers (departments, faculties, and disciplines) and organize courses to develop complementary competences. Various groups of teachers, partnerships between internal and external stakeholders started to offer interdisciplinary, practice-oriented, and meta-content. At that time, we tried to elicit and highlight key competences and ideas that disclosed educational priorities of the university. To this end, we introduced additional filters on the platform. Unsurprisingly, interdisciplinary content as well as project, research, communication, and intercultural competencies were among the top priorities. At this stage, we received course proposals from graduate and PhD students – one in the first semester and two in the second semester (Table 1). The percentage of courses that were successfully completed increased as well (Fig.1). We can interpret these results as *the rise of meaningful communication and aspirations for relevant market-oriented development.*

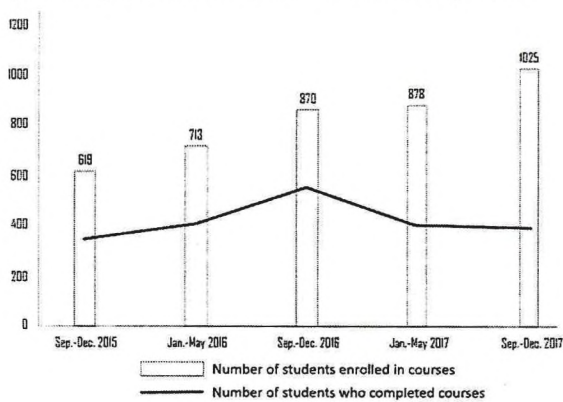


Fig. 1 Phases of students' activities on the platform

During the growth phase, the platform ensured effective consumption of educational content, introducing supply and demand mechanisms. ‘Quasi market’ began to emerge, information exchange dynamics increased, the number of courses offered and teachers involved increased as well.

During the decline phase, participants changed their focus and started to choose high quality content. We assume that the system began to work not for consumption purposes, but rather for responsible choices and meaningful collaboration. We attribute it to active sensemaking process.

The levelling phase, which stemmed from sensemaking and which corresponds to the third stage of the project – 2017-2018 – revealed two opposite trends: while the number of courses from graduates and PhD students grew and the number of courses from teachers remained approximately the same, proposals from external participants gradually declined and disappeared (Table 1). In other words, we observed the presence of internal educational stakeholders and the absence of external ones.

Such results go in line with our theoretical assumptions. That is, universities with their old and new structures and platforms gravitate towards autopoiesis. When they lose their stability, they are very receptive to external cues. It happened when we introduced the platform. On gaining stability, universities tend to intensify filtering processes and move to their recursive wave of self-production, widening the gap between the education the students receive and the solutions the world calls for.

From practical perspective, this experiment brought about many positive results as the platform greatly contributed to the overall educational process. New communication filters provided new forms of collaboration and new content. Plenty of courses and modules based on new principles were introduced to everyday educational practice. And if we look at the World University Rankings (Fig. 2), we can see some correlation between the experiment indicators growth and TSU's education indicators growth in independent rankings:

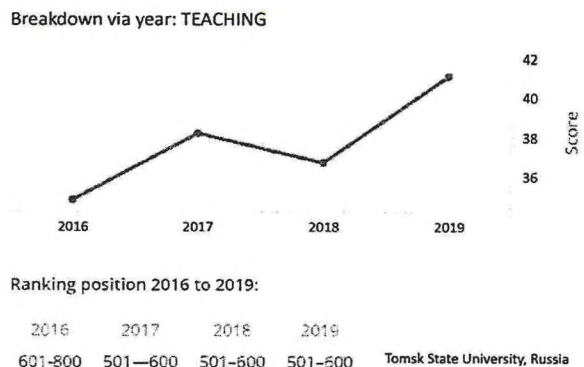


Fig. 2 World University Rankings: Education

VI. CONCLUSION

“TSU Campus Courses” – a new educational platform implemented in 2015 and currently functioning according to its algorithms – created a precedent for the implementation of flexible educational trajectories in TSU and added some insights to the educational and managerial fields.

The system has shown its ability to monitor and control produced and consumed educational content. It has significantly enhanced information exchange among such educational stakeholders as university management, industries, businesses, public organisations, teachers, undergraduates, graduates, and PhD students. Participation on this platform encouraged real inclusion and new content creation. Regular feedback within the system allowed the participants to adapt their proposals and make relevant choices; it intensified collaboration.

In fact, it was for the first time when TSU managed a self-organizing content exchange system based on individual choices of the participants. Moreover, the experiment clearly showed that the very concept of a student’s individual educational trajectory does not exclusively refers to students, but rather to teachers with their interesting or innovative courses, or to agile project teams.

In general, the most significant practical outcomes were tangible improvements within the university education system, with real impact of key stakeholders and with communication filters permanently open. In fact, we can speak of human capital at work.

The main insights concerning methodological aspects are as follows. The experiment clearly demonstrated that the university acted, on the one hand, as a *powerful educational stakeholder*, on the other hand, as an *autopoietic system* with many activities of educational stakeholders gravitating towards the university’s *recursive self-production*. In this regard, a university cannot serve as the center for someone’s individualization, for genuine individualization stems from a person’s understanding of value and impact that he or she can create over the trajectory of their lives, which is above the identity, interest, and operations of one university. Thus, we tend to see more sense in the ‘*blended value*’ logic, taken from business environment [4]. The central premise of the blended value proposition is that value is itself a

combination, a “blend” of economic, environmental, social, political, educational, and personal factors, and that maximizing value requires taking all elements into account. This logic shifts the focus from a university as the center for a person’s individualization to a university as an equal actor and stakeholder that operates to identify and maximize blended value. Individualization does not disappear; instead, it becomes more impactful, more grasping, and more nuanced.

Exploring university educational activities in the frames of blended value will be the next step of our longitudinal experiment.

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