

TOWARDS A MORE EQUAL ACCESS TO HIGHER EDUCATION: HYBRID LEARNING

Elisabeth-Gabrielle ŞATALAN, Postgraduate student,
University of Bucharest, Faculty of Political Science, Bucharest,
Romania. betty.satalan@uyahoo.com

Abstract: *This paper explores a possible solution that aims to alleviate the unequal access to education. Face-to-face learning has been the norm for a long time and is the incumbent system. However, the pandemic was a turning point. This paper discusses how this change in the world's landscape can lead to the strengthening of a niche system – namely, hybrid learning. By continuing to offer hybrid education in a post-pandemic world, the average number of students from lower socio-economic classes will increase. This paper first looks into the education systems map – exploring the in-flows and out-flows for the number of students at a time in university. Then, system traps are mentioned, where the problem with the incumbent system becomes clear. A S.M.A.R.T. goal is thus formulated, followed by an explanation of how to achieve this. The appendix offers two figures that add a lot of crucial information to this paper.*

Keywords: *Systems theory; systems thinking; hybrid learning; education; pandemic.*

Introduction

Like most systems, the education system is not flawless. One important issue tackled in this paper is the unequal access to education. As will be discussed below, the 'success to the successful' archetype has been identified as a problem in this system. This refers to, for instance, how those from the lowest socio-economic class will receive lower quality education (if at all), which will lead them into low income jobs – beginning the process all over again.

This paper considers a solution that could help alleviate this problem, namely hybrid learning. The pandemic offered a unique opportunity for changing a long-standing tradition of face-to-face learning referred in this paper as the 'incumbent system'. I hypothesize that a more easily-available

hybrid education (should this option survive in a post-pandemic world) will significantly contribute to the access to education of lower socio-economic classes. This will increase by 15 percent the average student enrollment number of lower socio-economic classes in Eastern Europe by 2032.

To facilitate comprehension, a system map for the education system – in figure 1 - and a Transition Model Canvas – in figure 2 - were created (see Appendix). Reference to the system map will be made to show how, ultimately, different connections within the education system lead to increases or decreases in the number of students at one time. Figure 2 will be used to depict the information important to the transition from the incumbent system to the new, proposed one.

The theoretical basis of this paper is systems theory and systems thinking.

System map

The higher education system is a complex one, composed of various behaviours that persist over time - also known as feedback loops. They can be categorised into two groups - reinforcing loops and balancing loops. The former are self-enhancing loops that can lead to either exponential growth or runaway collapses, while the latter are sources of stability in the system that seek to reach a certain goal (Meadows, 2008, pp. 17-34). The causal connections shown in figure 1 are self-intuitive and arguably do not require much further explanation, but some will be elaborated on throughout the essay. As a side-note, the student population can be seen as the stock of the system (see figure 1), which is the memory of changing flows, with applications being the main in-flow (increasing the stock) and graduations being the out-flow (decreasing the stock).

Beyond the mentioned elements in figure 1, there are others that could have been explored further that are represented as cloud shapes. These, nevertheless, go beyond the boundaries of my system as it would have distracted from the sustainability problem I wanted to arrive at. For example, an ageing population is most definitely going to affect the size of the student population over time, but it is too unrelated to the issue of unequal access to education (to be elaborated on later).

System Traps

Unfortunately, the higher education system is not free from traps and an often met one falls under the ‘success to the successful’ archetype. According to Meadows (2008, pp.127-130), this occurs when a reinforcing feedback loop is created that systematically rewards the winners of a

competition with the means to win in the future again. Hence, we see ‘winners who go on winning, and losers who go on losing’ (Meadows, 2008, p.127). For education, the consequence of this is a perpetuation of inequitable education and opportunities. Meadows (2008, p.128) identified this problem as well, arguing that ‘the poorest children receive the worst educations in the worst schools, if they are able to go to school at all’, which will lead them into low paying jobs. This applies to higher education as well (see R4 in Figure 1). Those from lower socio-economic backgrounds are less likely to apply to a university in the first place. When one is concerned with sustaining their family and surviving from one paycheck to the next, they are more likely to seek a job than get an education and pay tuition costs. However, without a university degree, they are much more likely to get a lower paid job, which in turn means that obtaining a higher education will be just as hard for their children, if not harder (Indeed Editorial Team, 2021).

This exclusion of people belonging to lower socio-economic classes can also arise from another reinforcing loop in the system - namely, R1 in figure 1. As can be seen in the map, this loop leads to an increase in the prestige of universities, which in turn feeds back into increasing the number of applications. However, this increase in prestige is very likely to be accompanied by an increase in competition for the available entry places. Consequently, the meritocratic approach used for admissions means that there will be unequal access to education since academic achievement is linked to family income and social class (Nahai, 2013).

Multi-level perspective

S.M.A.R.T Goal

As has been seen above, unequal access to education is a significant issue. With the aim of working towards more inclusive and equitable education - which is in line with the sustainable development goals (United Nations, 2021) - , a goal for this project has been reached: *To create a higher education system that increases by 15 percent the average student enrollment number of lower socio-economic classes in Eastern Europe by 2032* (i.e. other than the change we would have seen regardless). This was reached by looking at the levels of low-income people enrolling in tertiary education throughout Europe between 1970-2020 through the World Bank database (UNESCO Institute for Statistics, 2022). Through calculations of said student enrollment in various countries, it became clear that Eastern Europe on average is much more in need of an improvement. In 2019, they were 13 percent behind Western Europe in the tertiary enrolment of low-income people. This vast difference in levels would make it very difficult to set the same goal for the

whole continent (e.g. think of how much more difficult it is to move from 90 percent to 95 percent than from 50 percent to 55 percent). This is the reason for Eastern Europe being the focus of the goal, despite the whole continent standing to benefit from changes in the incumbent education system. Additionally, the 15 percent and the year of 2032 were chosen by studying past patterns. This is the hypothesis of this paper that were considered to be within reason.

The Transition

The goal represents a shift from the incumbent system, where the student population consists of those who can afford to pay tuition and living costs and those that cannot, but receive scholarships or financial aid. These are some of the system's vulnerabilities seen in figure 2. The transition would be made towards a newly developed socio-technical system (i.e. a niche system) that would help level the playing field. Such a change has been extensively argued for, however it was not until there was a change in the landscape that a path to disrupt the system revealed itself (Chamorro-Premuzic & Frankiewicz, 2019). The landscape is the broader context in which systems are located and it can put pressure on the incumbent regime to change, creating opportunities for niche systems (Smith et al., 2010, pp.440-441). The change that was seen was the COVID-19 pandemic, which acted as an exogenous shock on the incumbent system, changing its behaviours. There were large decreases in overall university enrollment rates throughout the world for the academic year 2020-2021, especially for international students (Marinoni et al., 2021). The incumbent system was also forced to adapt to online learning as the default. Online universities have existed for decades, making for a fairly well-established niche system. Alternatively, hybrid learning (a combination of on-campus and online learning) is newer. If this niche system could survive post-pandemic, it would provide the transition necessary to increase the number of people that are able to obtain a higher education. Its survival can be facilitated, but also inhibited through various strategies as can be seen in figure 2.

The unequal access to education in the incumbent system could be understood to be a point of intervention in the system (i.e. a leverage point) to work towards more inclusive and equitable education. Meadows, 2008 (pp.159-161) talks of one leverage point called "self-organization", where a system is able to evolve through experimentation and -in this case- technological advance. So, one could argue that the incumbent and the niche system will continue to stay merged post-pandemic due to the technical advancements and the recent digitalization of education.

Offering the possibility to study online would enable a larger number of lower socio-economic classes to attend university mainly for three reasons: 1) the flexible schedule would enable students to work one (or more) jobs on the side; 2) not having to travel to campus every day would decrease travelling costs and could considerably decrease living costs; 3) those studying online should enjoy lower tuition costs (e.g. due to not consuming resources on campus). As an argument in favour of the latter reason, one can think of the Dutch Government halving tuition costs in 2020 due to the pandemic and the shift to online learning (Seveno, 2021). To understand the second reason, consider the differences in wages across countries. A Romanian (average wage of 788 euros per month) would find it much more difficult to live in an expensive country like the Netherlands than a Dutch person (average wage of 3,445 euros per month) (Numbeo, 2022). Being able to study online would altogether remove this factor from the discussion as the Romanian could study from their home country. There are other advantages (and disadvantages) to the niche system that can be seen in figure 2. This figure further elaborates on similarities and differences between the systems as well.

Conclusion

This paper has looked into a solution that could help decrease the unequal access to higher education. The incumbent system that focuses on face-to-face learning has created stark differences in the population when it comes to education and the consequences of its quality. However, the pandemic created a leverage point as the education system fought to rapidly learn how to function in a world of online and hybrid learning. This paper argues that by continuing to offer hybrid education in a post-pandemic world, a significant increase in the access to education of lower socio-economic classes will occur. More specifically, this paper hypothesises that a 15 percent increase in the average student enrollment number of lower socio-economic classes in Eastern Europe could be seen by 2032.

Appendix

Figure 1
Higher Education System Map

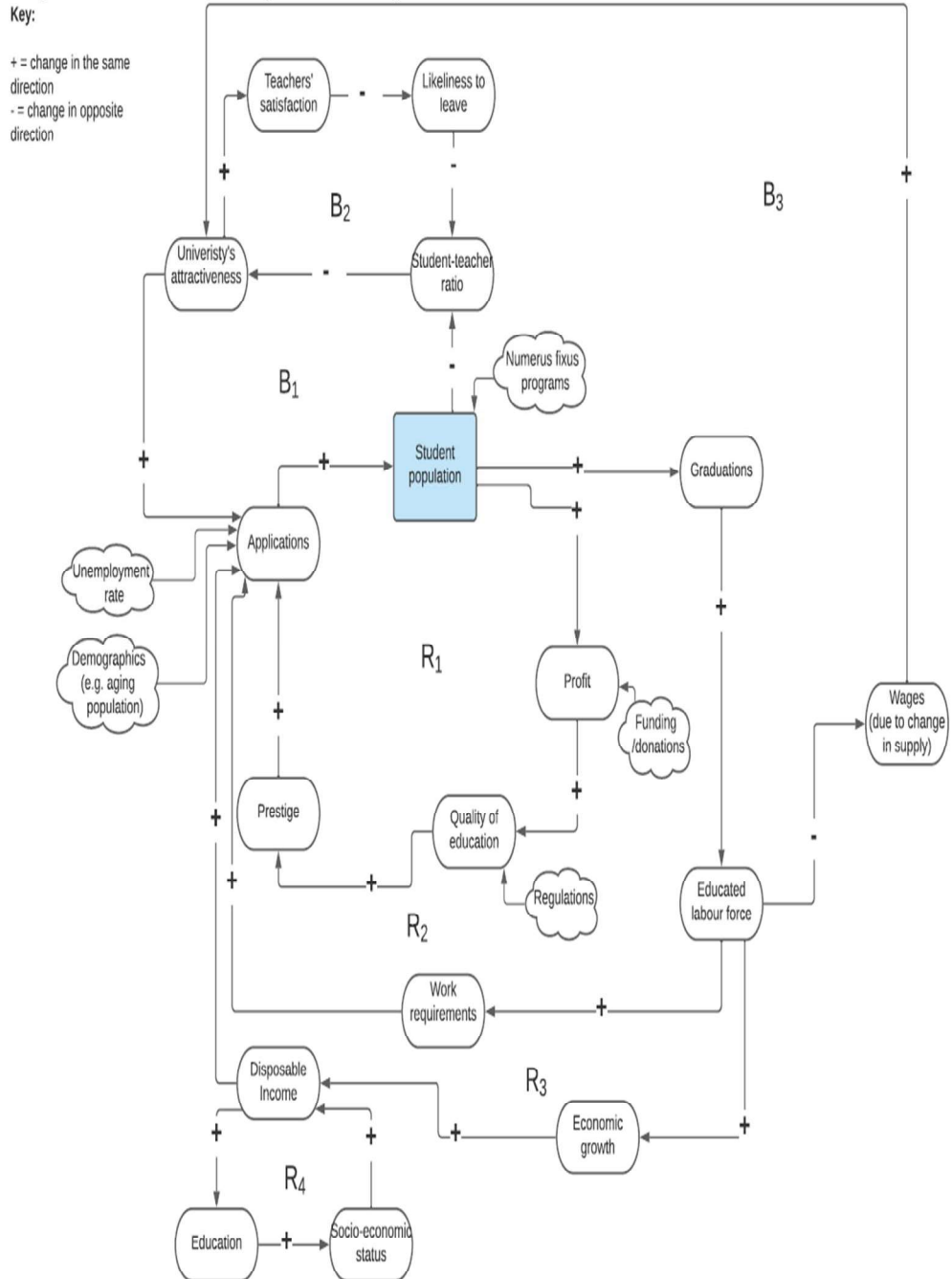


Figure 2

Transition Model Canvas - Higher Education System

Transition goal	
To create a higher education system that increases by 15% the average student enrollment of lower socio-economic classes in Eastern Europe by 2032.	
Incumbent system	Niche System
<p>Key elements & interactions</p> <p><u>Actors:</u> Universities; consumers (students), research institutes, government, teachers, donors</p> <p><u>Institutions:</u> Formal: laws, standards Informal: norms, values (e.g. university isn't important, work is - especially when low income)</p> <p><u>Infrastructure:</u> Buildings, roads, teaching facilities (e.g. in labs), financial resources (e.g. wages, scholarships, R&D)</p> <p><u>Interactions:</u></p> <ul style="list-style-type: none"> - financial resources attract teachers & can offer more scholarships & can lead to more R&D - strong teaching facilities will attract students - since university degrees are generally associated with greater success, students will keep applying - Subsidies from governments can lead to improvement across all elements of the infrastructure. 	<p>Focus, key elements & interactions (present & missing)</p> <p><u>Focus:</u> Behavioural change in the structure of higher-education classes with the aim of offering hybrid courses even after the COVID-19 pandemic.</p> <p><u>Actors:</u> Incumbent education regime, students, universities, research institutes, donors</p> <p><u>Institutions:</u> Formal: laws, standards Informal: demand for more accessible education (values)</p> <p><u>Infrastructure:</u> Online video platforms (e.g. Zoom), buildings, roads, teaching facilities, financial resources</p> <p><u>Interactions:</u> Universities must have knowledge regarding hybrid learning (online platforms)</p>

<p>Strengths & vulnerabilities</p> <p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Profits enable the improvement of the quality of education - Education system and teaching helps educate the next generation - Education is available to a much higher number of students whereas in the past only the very privileged could <p><u>Vulnerabilities:</u></p> <ul style="list-style-type: none"> - lower socio-economic classes are less likely to apply to university due to a low/inexistent disposable income - meritocratic based admissions are likely to lead to the exclusion of lower socio-economic classes - lack of funding can lead to a decrease in quality of education & number of applicants - Students are not able to learn at their own speed, which is crucial in reaching their maximum potential. Instead, the current system is adapted to the speed of the classroom as opposed to that of the individual. 	<p>Strengths, vulnerabilities & uncertainties</p> <p><u>Strengths:</u></p> <ul style="list-style-type: none"> - those from lower socio-economic classes that cannot afford to study at their abroad university of choice will be able to do so. i.e. decreased living costs - flexibility, easier to have a job on the side if necessary. - convenience - investments made during the pandemic can be further made use of in restructuring the system - students that want a traditional, on campus, learning experience are still able to receive this. - students have the option of choosing whether they want to take part in a class online or not; - prepared in case of a future similar crisis. <p><u>Vulnerabilities:</u></p> <ul style="list-style-type: none"> - Either teachers will have a more difficult time incorporating group activities in class OR online students will not be able to participate as much in class (less support for these students) - technical difficulties - sense of isolation - lower motivation to pay attention <p><u>Uncertainties:</u></p> <ul style="list-style-type: none"> - will graduates that participated solely online be treated differently by the job market?
<p>Strategies from the incumbent system</p>	<p>Strategies from the niche system</p>

<p><u>To defend the incumbent system</u></p> <ul style="list-style-type: none"> - Increase the number of scholarships provided so that more lower-income students can attend. - advertise the existence of (solely) online universities 	<p><u>To destabilize the incumbent system</u></p> <ul style="list-style-type: none"> - advertise the importance of education (present) - direct advertising toward lower socio-economic classes to present them with the new ability of going to university (online) - Emphasize human right against discrimination based on socio-economic factors.
<p><u>To inhibit the niche</u></p> <ul style="list-style-type: none"> - argue that hybrid learning will take away the attention of the teacher from students on campus - facilitate the participation of lower socio-economic classes in vocational training (not requiring as much money as university) 	<p><u>To strengthen the niche</u></p> <ul style="list-style-type: none"> - provide teachers with resources and training needed to manage a hybrid class in a good manner (existing but limited) - implementing feedback opportunities from students (present) - offering the possibility of having a teacher assistant to ensure the engagement of the online students (e.g. announce questions in the chat) - invest in better technology (if haven't done during the pandemic) to facilitate online learning - provide those with low-incomes studying online with laptops for the period of study if needed (for a certain, discounted cost)
<p>Landscape (optional)</p>	
<p>Exogenous shocks - COVID-19 pandemic Context: right to education & protection from discrimination</p>	

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