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The usefulness and perverse effects of distance learning in a pandemic world

Natalia Bourova, Veronika Choubaeva, Jacques Fontanel

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In 2021, distance learning has become an essential instrument in the training of young pupils and students in a semi-confined pandemic world. At the end of the 20th century, Peter Drucker foresaw the end of professors, to make way for distance learning. This analysis did not have the expected results. In 2019, Jeremy Rifkin had himself considered that distance learning would abolish or profoundly transform the teaching profession, because the economies of scale it offered drastically reduced costs, while providing everyone with a common culture and knowledge. However, this conception had "perverse effects", both in terms of equal opportunities for citizens, the dangers of a conventional pedagogy and the progressive isolation of those being taught.

Keywords: Economics of education, distance education, learning,

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Distance education (also called distance learning, correspondence courses or tele-education) has a long history. In its modern form, the University of London developed it in the 19th century, thanks to the development of postal services. The aim was to provide correspondence courses for British citizens living abroad, mainly in the Empire states. In 1969, with the creation of the British Open University, an important step was taken, as it was no longer just a question of providing education, but also of awarding degrees equivalent to those obtained by those in the classroom. It was no longer a question of providing a university course, but of building a new model of university likely to democratise access to higher education, to partially remove the spatial constraints of permanent presence at the university, to open up training to new types of lecturers who had hitherto been little concerned because of obstacles linked to their professional lives, their social classes, their age or their sex. It was also necessary to adapt the pedagogy to this new audience and to the new constraints linked to the absence of a face-to-face oral course, far from the teachers.

Many countries have taken this approach. In 1939, during the war, distance learning was created in France to deal with the disorganisation of the education system. It was then mainly opened to those specific categories of people, such as sick children, former prisoners and deportees, housewives and detainees. Gradually, the training was generalised, particularly in universities, but in a voluntary way and with limited financial means. It was not until 1996, however, that the electronic campus was born, the first open platform for training services

The hopes of distance learning and its disappointing development

In this context, all the new communication technologies have been used, such as radio, telephone, television and the Internet, with a view to adapting learning to the user's distance. NICTs in education have sometimes even been analysed as particularly effective instruments for transforming the whole of the education system, from school to university, by providing 'calibrated' education, equivalent for all courses, open to all populations without spatial constraints, with reduced personal

and social costs, and, thanks to economies of scale, with substantial profits for the universities or reduced investment for public expenditure. The generalisation of this type of education, adapted to the greatest number of people, allowed each person to learn, from home and on his or her personal computer, all the learning resources available throughout the world. In 1977, Peter Drucker even predicted that universities would disappear within a decade.

In the early 1980s, UNESCO and the World Bank led a programme of economic evaluation of non-traditional educational technologies, including distance learning. In this context, the technology compensated for a structural educational deficit at a limited cost increase. UNESCO indicated that, a priori, economies of scale could lead to lower unit costs than in residential universities, i.e. large enrolments and moderate numbers of courses offered. In traditional education systems, when enrolment increases, new schools have to be built with the same operating costs as existing schools. Unit costs are constant regardless of the size of the system. There are no economies of scale. In distance education, on the other hand (especially with teaching resources such as radio, television or tape-recorded courses), the cost structure is characterised firstly by the appearance of very high fixed costs incurred in the initial production of these resources (course design) or in their distribution (radio, television or satellite transmitters). However, as the number of students increases, there are no additional costs and the cost per student decreases. The principle of economies of scale may apply. However, if we take into account all the costs *ceteris paribus*, with the necessary use of tutors, new technologies (NICTs were not present at the time), this would inevitably lead to an increase in costs without any significant educational contribution in terms of quality. Hostility on the part of teachers and parents alike led to the failure of these systems in African countries.

In the last decade of the twentieth century, e-learning provision has grown considerably, both in state institutions and in providers specialising in continuing education or in companies. This period was also marked by the advent of the Internet and the information superhighway. Universities have sought to follow suit for a variety of reasons including public under-funding for state universities, inter-institutional competition, the

search for funding related to economies of scale and the potential demand from potential learners.

However, the speed of evolution of ICT technologies has often proved to be faster than that of the construction of pedagogical systems adapted to distance education, which creates situations of accelerated obsolescence. At the beginning of the 2000s, the belief in the generalisation of distance learning was strongly questioned in view of the scale of the investment required, the relative scarcity of users, the weakness of the expected economies of scale and the growing deficits of specialised training. E learning has therefore not developed as exponentially as expected, even though the University of Phoenix, which has a strong professional vocation, offers (sells) online training to half its students. It should be noted that the success of the Open University and the University of Phoenix is mainly due to the preparation, by employees with a strong professional motivation, of a degree favourable to their career or retraining. Experience has shown that it is particularly difficult to make business-like structures work within traditional institutions

Thus the development of distance learning has not had the effect expected by its advocates. The new means of communication, widely used in the daily life of citizens, have nevertheless taken a long time to become established and to modify the practices of this type of distance education, because of the new teaching methods to be put in place by teachers, the difficulties of users in integrating them into their cognitive learning processes, the search for economies of scale which are slow to appear and the prior costs of application to be incurred. The results have not matched the return on investment of the universities and the expectations of users. Several reasons were given, in particular the hostility of teachers to engage in a new pedagogy for which they had not been trained.

What is the value of distance learning today?

The essential nature of education and training in the economy is recognised by international bodies, even more so in times of crisis. International competition and economic globalisation lead to the search for a dynamic national economy that can improve the living conditions of citizens. In the measures to be taken to this end, the raising of the level of education beyond compulsory schooling and the development of a system of lifelong learning

were clearly called for. In the language of the economists who advise princes and multinational firms, it is a question of developing "human capital" with a view to encouraging innovation and the dissemination of new technologies, particularly those of information and communication, and of considering private or collective investment socially profitable. The new waves of technology, which continue to modify the nature and skills required by employers, require flexibility in the capacities of people at work, and therefore the implementation of continuous training adapted to people who have a job. In this sense, distance learning can be adapted to these technological and societal changes. In this context, school is no longer simply an instrument for transmitting previous knowledge, but must also "learn to understand" the changes and react in the right time to the developments in technology and market expectations.

In this context, distance learning offers undeniable flexibility, especially as the number of training courses and courses in all languages is now available on most information media. This can result in a learning organisation made possible by the flexibility and accessibility of the tools that are always (at least in part) available, by the absence of a teacher to listen to at fixed times and places and by the possibility of maintaining a professional, family or student activity in parallel.

The candidates must develop several personal qualities, in particular

- Distance learning requires self-discipline, motivation and seriousness on the part of the candidate, as well as the ability to work alone on a distance-learning course (organisation of the timetable, daily discipline to respect it or ability to assess the speed of understanding of the course content).
- Realistic assessment of the time needed for the training, with regard to professional or family obligations;
- The adaptation of the training to the reasons for enrolment. The search for a course adapted to one's profile is sometimes one of the most critical phases when one wants to embark on the preparation of correspondence courses.
- The willingness to go beyond immediate difficulties (in most countries, at university level, almost 50% of those enrolled drop out of their course during the first semester, especially when there is only very episodic contact with the teachers).

- The ability to read, reread and listen to course material at any time, without the pressure of face-to-face teaching without handouts.
- The cost of the training for the student is also reduced if he/she does not need specific, adapted accommodation.
- For non-degree courses, it is possible to enrol throughout the year.

On the other hand, for students, learning at a distance takes time. It is necessary to find a rhythm and to be able to do without the oral memory that face-to-face courses activate, even without the extreme attention of the teacher. Verbal explanations and demonstrations in class are no longer as explicit in written language, in the face of complexity.

The teaching system itself needs to be questioned, particularly with regard to the capacity for interactivity with teachers, tutors or other students on the same course. Similarly, the diversity of training media is important, from written to oral, from screen to book (blended learning). Constant testing is also important for the user, to assess his or her progress or the progress he or she needs to make, especially if he or she wants to obtain a particular qualification at the end of the course. In some forms of distance learning, interactivity allows students to speak up and ask questions. Distance learning is thus a new way of increasing student participation and understanding. In this context, distance learning can be particularly useful for less affluent social classes or particularly disadvantaged regions or geographical areas. There are sometimes close relationships between universities using the correspondence system and other national, language or foreign universities for specific courses. Normally, the principle of economies of scale can work when two conditions are met, a large number of enrolled students and a small number of programmes. The agreement between the Pierre Mendès France University in Grenoble and Paris-Dauphine on economics and FINEC in St Petersburg was a response to this demand for a double degree for students from both countries interested in an economics-management programme involving all three universities and all the teaching resources available, including distance learning or its tools.

Many attempts have been made to create consortia of universities working on a common e-learning project, in order to benefit from common experiences and to obtain economies of scale. The model came up against both the intellectual property

of the modules and the monitoring of students for certification. The question was whether they graduated from the consortium or from a university within the consortium. In France, Canege (Campus numérique et économie et gestion) had started with a dozen universities, but the administrative, financial, academic and industrial property issues were then considered so difficult that the solution of the principle of non-cooperation was adopted. There is now a common platform, run by the CNED, with each university managing their own students.

Distance learning has also proved interesting in some courses, notably the Université Médicale Virtuelle Francophone (30 of the 32 French universities are members), which was established in 2003. There are no students specifically enrolled in distance learning, it is a complementary system available to students and teachers. Thanks to the internet, they have access to free, scalable training tools, scientifically managed by national colleges by discipline, for all levels of medical training. Distance learning allows students to follow their course from home and some educational exchanges are organised between teachers and students during the training year. This tool is also used for continuing education and teleconsultation for all medical staff.

Most universities that have embarked on the development of blended learning are developing a strong focus on improving the quality of their teaching, through easier access to information and flexibility of learning. This results in additional costs, justified by the desire to improve the quality of the education provided. The widespread use of new technologies also constitutes, in itself, a learning process for the modernity of information and communication media. The content of teaching materials is often simplistic, equivalent to that of a handout. This often leads to criticism of the simplistic nature of the information provided, whereas complex products could be developed. However, more complex products are not always the most pedagogical, at least for generations of students who are used to working in a more traditional way. Only a tiny minority of institutions actually implement innovations based on constructive practices. The use of ICT does not necessarily lead to innovative practices on the part of teachers. Some observers even consider that the impact of these technologies is still very limited. Moreover, there has been strong criticism of the possible consequences for the teaching profession, its status and the fundamental values to which it refers.

The evaluation of the cost of distance learning should normally include

- 1) Administrative costs,
- 2) Design costs,
- 3) Production of teaching materials (specific or not)
- 4) Tutoring,
- 5) Administrative follow-up of students,
- 6) Appropriate electronic infrastructure,
- 7) The cost of a computer, Internet connection and maintenance charges (possibly a printer).

The importance of fixed costs predominates, although tutoring can also be both energy and cost intensive. This explains why marginal costs are relatively low and why e-learning courses have a real need for both increasing numbers of students and courses that last over time.

It should be noted, however, that in many universities the labour cost of developing ICT for e-learning is not always accounted for. The larger the number of students, the more profitable e-learning is for the university, unless it cannot control the costs of tutoring. E-learning mega-universities, with a wide range of degree courses using part-time tutors, are both socially useful and profitable. Similarly, specialised institutions offering a face-to-face degree with a few e-learning modules at low marginal costs have a place in the training system. Finally, continuing education for adults remains an interesting target.

Economic, pedagogical and societal resistance to distance education

In particular, experience has shown that it is difficult to run distance education structures on the model of a rapidly profitable training service activity. However, many universities have embarked on distance learning in order to achieve economies of scale and to raise the profile of their training in the inter-institutional competition that exists in the Anglo-Saxon academic world, with Asian and European universities following suit. The aim is to attract new "clients", particularly from abroad, by highlighting the pedagogical innovations available, whether or not they complement their classroom training.) Distance learning seeks to become more 'fun', less difficult than face-to-face, in order to improve the profitability of the training. However, it should be noted that while many universities have developed

distance learning modules and courses, they are not the most prestigious institutions. In this world of prefabricated images, the top-ranking universities, especially the Anglo-Saxon ones, have no interest in developing e-learning, whose economic viability implies accepting as many candidates as possible. Their membership of the first rank is closely linked to the Malthusianism of their recruitment.

In general, in France or Russia, the incentives for universities to engage in the e-learning approach are weak in the absence of external initiatives. Tuition fees are controlled and set too low, which does not always make it possible to set up a teaching team responsible for adapting teaching methods to the course in question. In France, for a long time, it was mainly offered to employees, jobseekers, the disabled, the sick, dual students, pregnant women or prisoners. Overall, the costs per student are about the same as in the face-to-face system, but the examination results are much lower.

There is a wide range of educational information and knowledge available to students through the constant use of the Internet. However, the abundance of information sources must be controlled. It is not a question of having everything at one's disposal to determine the most interesting sources for one's own information. Too much documentation kills information. There must therefore be avenues of reading and research which, in the light of this abundance of information, will reveal the choices to be made with regard to the desired training, depending on the level of learning. *Ceteris paribus*, NICTs constitute a mode of access that is often more costly than traditional print, which is necessary for the desired training. Issues relating to the management of tutoring are holding back the development of e-learning.

Today, most e-learning systems consume more teacher time than previous distance learning programmes. In addition, the e-mail system consumes more time than the oral exchanges of face-to-face teaching, while the latter benefit all the students present at the same time. Moreover, in face-to-face teaching, there are oral exchanges between the student and the teacher, and the responses benefit the whole class simultaneously. It is therefore necessary to develop interactive components, such as chat within a virtual classroom, whose participants are obviously not paid. E-learning is often used in high-level, small-scale training courses, which makes it less cost-effective and reduces

the ability of the course to engage in new learning content and to renew or transform modules in line with changes in knowledge in the scientific subjects concerned. They prevent economies of scale from being exercised, even though they are the basis of the economic viability of introducing ICT into education. Few learners complete a programme and master it properly without human interaction.

Poorly mastered digital technology can assist teachers in the same way that robots assist car workers on assembly lines. Teaching modules can become "educational products", encapsulated and recognised as valid only by the university authorities (or even political authorities in some countries), leaving no freedom of thought or reflection to the teachers themselves. One could suffer the application of commented PowerPoint to asynchronous access (at any time), as a lecture provided uniformly to all learners of a citizen generation. In this case, the teacher's work and values will be controlled, in order to offer lessons that highlight or enhance only political and ideological ambitions, or economic interests. Moreover, the tools used for distance learning are provided by digital platforms that are heavily reliant on advertising and commercial messages, tending to reduce the student's attention span, while conditioning him or her to the commercial world.

While e-learning represents an obvious opportunity for some low-income students to study with reduced accommodation and travel costs, while at the same time allowing them to work, and to continue to work, the conditions for implementing this distance learning scheme make it particularly unattractive in terms of the quality of the computer tools available privately to learners, the white areas in disadvantaged regions and the language suitable for the wealthy social classes, which an isolated student learns only with a delay, particularly in comparison with face-to-face students.

Distance learning, an interesting tool for international university exchanges

The Pierre Mendes France University in Grenoble (now the Grenoble-Alpes University following a merger with other higher education bodies) has developed important international relations, leading to a double degree, The University of Grenoble-Alpes (now the University of Grenoble-Alpes following a merger

with other higher education institutions) has developed important international relations leading to a double degree, notably within the framework of the Franco-Italian University, but also with numerous Brazilian, English, Chinese, Lebanese, Slovakian, German, Swiss, Ukrainian, Argentinean, Romanian, Canadian, Ecuadorian, Indonesian, Beninese, Senegalese, Moroccan and Vietnamese institutions. However, the system has always involved significant costs related to teacher exchanges and student mobility. Within this framework, training was reserved for a very limited number of courses, often for a single year, without ever being able to make use of the economies of scale necessary to reduce costs. In other words, these courses were financed by international agreements between the Ministries of Higher Education of the States or within the framework of broader European or Latin American agreements. Under these conditions, the maintenance of operations could only be temporary, often planned over periods of 2 to 4 years.

Since 1980, the UPMF has had training centres called Régime par Correspondance (RPC), intended for a restricted public such as employees, the sick, prisoners or people living outside French territory. It was gradually agreed with the French Ministry of Higher Education to open up these courses to a wider audience of individuals. The Régime par Correspondance's involvement in international agreements with foreign universities has led to exchanges of specific courses on certain subjects with the Open Universities of Madrid and Hagen, with rather inconclusive results given the limited number of interested users. It has also been involved in joint training courses, using the teaching materials of the RPC in Grenoble, with higher education institutions in Dakar, Saint-Louis and Casablanca.

When Russia regained its independence and abandoned the planned economy system, the training of economics students was turned upside down. The University of Economics and Finance in St. Petersburg therefore had to redesign its economics curriculum to include knowledge of market mechanisms. In 1993, a general agreement was concluded with the University of Economics and Finance of St. Petersburg in Russia. With the support of the Ministry of Foreign Affairs, a 4-year contract was set up to establish an innovative economics and management course, with the organisation of a DEUG by the Pierre Mendès France University, followed by the Maîtrise of Paris-Dauphine. Very quickly, it was decided to use the means of the

Correspondence System to support a training in economics and finance that no longer focused on the planned economy, but involved an analysis of the market economy. It was necessary both to provide the necessary materials and to train the new teachers in the requirements of the economic transition to a market economy. Several Russian teachers came to Grenoble for internships and to prepare a joint thesis, just as Grenoble teachers were able to support the face-to-face teaching, thanks to a grant from the French Ministry of Foreign Affairs.

Gradually, the students were able to have access to the training modules and prepare a double diploma, the FINEC diploma and the DEUG (Diplôme d'Etudes Universitaires Généraux) of the UPMF, in the Economics-Management programme. As the University of Paris Dauphine had the objective of preparing Russian students for their Master's degree in Economics and Management, a tripartite agreement was then put in place. A tripartite agreement between FINEC, UPMF and Dauphine was signed for this purpose in February 1998, with the support of the French Embassy in Moscow. The Grenoble training was based on the UPMF's DEUG teaching materials, while the Paris-Dauphine teachers offered face-to-face training, with pedagogical support from the tutors set up in each of the subjects taught. Even before they were introduced, the UPMF's RPC had initiated procedures for validating modules, which could now be likened to the ECTS label and the diploma supplement. This visibility at the European and international level has become important in the international university competition and increases the reputation of the institution in terms of transparency and quality, particularly in the context of European and international cooperation.

In order for these agreements to be sustainable, it is necessary to provide everyone with the basics of the courses, either in book form or, more commonly, by means of computer files of the courses available online. This enables both the teacher and the tutor to have a common language on what the students must acquire as new knowledge in the context of the course for which they are responsible. There must be a constant search for control of the educational content and internal optimisation of the resources allocated. In this respect, distance learning clearly highlights the course content, which is particularly valuable in the setting up of joint degrees (a joint diploma) or two degrees (each programme keeps its own national diploma, with the same

courses and non-common courses). It allows for constructive discussions, adapted to the public concerned by the course, and the partners then better perceive discussions on the outline of the course, even if they may also be subject to negotiation on the content.

With the restructuring of French higher education around the LMD, agreements have become bilateral once again, within the framework of agreements which are no longer financed by the Ministry, but which depend on the financing of students, at cost, which is reduced by the effects of "economies of scale", the notion of a double degree which also makes it possible to recognise certain credits (UV) given in the other training course and by the quality of the supervision of students by teachers from both countries who have a common training base and an acute knowledge of the functioning of the Universities of the two countries. The Grenoble-Alpes University programme also extends to Master's courses. A few French students have come to Saint Petersburg to follow these courses and several double-recognition theses have been defended since 2005. Overall, for 22 years, at least 2000 student enrolments have been concerned by these courses in economics and management.

With the structural changes of the universities, as well as the progressive modifications of the programmes, the framework agreement implies:

- The exchange of students, professors, researchers, managers and administrative staff;
- The setting up of joint research projects, including thesis co-supervision;
- The organisation of joint education or training (including recognition of diplomas, dual degrees or joint diplomas);
- Exchanges and production of publications and information on the university's activities;
- Development cooperation programmes

Each signatory party has designated a tutor responsible for each of the application agreements within its institution, who is in charge of coordinating teaching activities, drawing up budget proposals, seeking the necessary funding, representing the training and presenting an annual report with a view to improving both relations between the universities and highlighting the educational situation of the system. Thus, the Master's degree "Human Resources and International Competitiveness" was financed by a Tempus, which brought

together, under the direction of UPMF, FINEC, La Sapienza in Rome and the University of Economics in Krakow, Poland. These universities then built a two-year "Master of Business Economics".

Other courses and universities were also involved in this cooperation. The Master's degree "International Economics and Stakeholder Strategies" of the "Economics, Strategies and Enterprises" (ESE) department included several research and professional specialities in economics. The UPMF's traditional openness to international relations naturally led it to develop strong international cooperation for the Master's in Economics. The long-standing relations developed between the UFR, Russia (Kaliningrad, Nijni-Novgorod, Rostov), Ecuador (Quito), Venezuela (Caracas), Colombia (Bogota) and Brazil (Sao Paulo, Pontifical University of Rio de Janeiro) have made it possible to establish mutual trust, a knowledge of organisations and their operating methods that facilitates co-diplomation and the construction of solid projects, based on instruments relating to distance learning.

It is then a question of aiming for academic excellence, links between research centres, joint international projects and joint training in other geographical areas. Courses are taught in French, English and Russian. Thanks to the distance learning system, it is easier to internationalise courses, to engage in co-degrees (especially multilingual Masters) and thesis co-supervision, which are excellent supports for the permanence of double degree courses. Today, in the field of economics and management, the UNECON and UGA Universities are committed to inviting their partner, either face-to-face (such as for a conference on energy organised by Gazprom in Saint Petersburg or the one organised by the UPMF on the transition in Russia) or by video-conference concerning the international organisation of the countries of the Commonwealth of Independent States (CIS).

-The agreement between UNECON (the new name given to a University which also includes FINEC) and the University of Grenoble-Alpes has also been applied in Moscow. Distance learning, particularly in the social sciences, has enabled a redeployment of the French University's international relations, a better international visibility and an increased attractiveness of the Masters. The setting up of delocalised courses (such as in Dakar, Sao Paulo or Ecuador) supported by distance learning has also made it possible to limit the enrolment of first-time foreign

students in the first year of the degree. Today, exchanges with partner universities are maintained, despite increased competition and a redeployment of international training.

In this case, distance learning is included in the training, but it only partially replaces classroom teaching or tutoring. Perhaps in a few years' time, the generations used to working with NICTs will be more willing and free to develop their academic skills on the models offered by distance learning systems. Today, we are not there yet, as evidenced by the difficulties students have in following their courses directly from home during the Covid-19 period. While confinement, curfews and other restrictions on socialising play an important role in the dropout and discouragement of many students, learning is not a linear process. At the end of a course, discussions among the learners give them an idea of the relative importance of the course, of its collective difficulty, which should be related to their own learning quality, and of the follow-up explanations that can then complete a line of reasoning or open a bottleneck in the understanding of the material taught. In fact, fellow learners are also powerful sources of information and explanation, either orally or by example, with a common language whose pedagogical effectiveness is often decisive. Lastly, distance learning also poses an ethical problem if the designer is only concerned with the benefits to be gained from the operation in the case of private training, or to clear his conscience without providing the means for success in the case of public training.

In conclusion, the Covid-19 as an accelerator of distance learning

With the sudden appearance of Covid-19, distance learning has been generalised, supported by the development of new digital technologies, in order to ensure 'pedagogical continuity'. This application has completely changed the ordinary work of teachers and the school institution, in order to rely on modern pedagogical "effective, progressive and adaptable digital tools for each pupil to combat difficulties and to develop certain automatism... The education system is engaged in profound pedagogical and organisational transformations, an opportunity to modernise the education system". Presence in the school is no longer necessary because learning is done at a distance, through private platforms, and teachers, who have been badly treated,

are entering the field of distance learning in no training. The idea of a great educational Netflix is launched. This brings us back to the thoughts of Rifkin, for whom distance learning is a sign of the end of teaching and the use of economies of scale to provide each learner with the same culture and knowledge in the fields of study envisaged. It should be added that the question of digital platforms might also be an issue, with the amount of advertising available, but also the difficulty of having systems that do not fall within the coverage and control of the member companies (without their agreement) of GAFAM (Google, Apple, Facebook, Amazon, Microsoft). Other possibilities could be opened up with the Chinese BATX Baidu, Alibaba, Tencent and Xiaomi, but the protection of information would certainly not be better assured.

In a pandemic situation, distance learning is a particularly useful tool, but regular meetings of students with each other and with teachers must accompany it. However, as Gaston Bachelard reminded us, human knowledge cannot be limited to that of technology and economics, because these can never replace man's existential goals. In other words, distance learning is an effective educational tool, but it can also have perverse effects that could lead to a crisis of humanism.

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