## **EXCELLENCE AND EQUALITY IN EDUCATION Kenneth J. Arrow**

I am very pleased to be able to participate in the inauguration of a new university, a new institution for the dissemination and development of knowledge old and new. This is the latest in a long list of similar organizations that, with their innovation and knowledge, have constituted a particularly important contribution to the Western world since the especially creative period that was the Middle Ages. The image that we have of that period tends to be negatively conditioned by the Renaissance, a great and necessary revolt that took place against it. The need to find new paths, the maximum representation of which was the careful founding of the scientific view of the world, led to ridicule, antagonism, and problems of interpretation in the world prior to 1500. Thus the new architects made fun of their predecessors by calling them "Goths," as if they were the barbarians who had destroyed Rome. Today, especially due to the influence of our nineteenth-century ancestors, "Gothic" cathedrals are recognized as one of the most glorious products of the human spirit and craftsmanship.

In that period, technology was more progressive than it had been during the classical period, and even science took great steps ahead. But one of the greatest innovations of all was undeniably the university, the bringing together of students and professors. Evidently, these schools considered that their duty was to transmit what had been learned and known in the past, in the classical period, but they also added new discoveries and knowledge that was being discovered in the fields that they considered most important. It must be said. however, that their priorities were not ours. Theology, logic, and in some places, the law, were the new subjects, in which the works of Aristotle and Roman jurists were reinterpreted and enriched; natural science did not form a part of the curriculum—in fact, it was just beginning to be developed at that time. Of course technology, although it was respected in its area, was transmitted and improved within the structure of apprenticeship and practice, but not through instruction given by an erudite professor. Although medieval equivalents of business and engineering did not appear at the university, other professional fields did; the function of the university was, after all, to train professors.

The university has turned out to be more flexible than its creators had imagined. It has survived and grown as the contents learned have changed. Galileo and Copernicus acquired their mathematical knowledge in universities, and Galileo himself became a professor. The more inherent the systematic creation of new knowledge became to the higher culture of the Western world, the more the role of universities changed; at times it was very important (as is the case now almost everywhere), and at other times it wasn't as important as other institutions such as public research centers, chemical and pharmaceutical company laboratories, or even studious individuals. The truth is that both universities and their members should be somewhat modest when we see the amount of research that is carried out outside of university walls. Economist David Ricardo and biologist Charles Darwin had to finance their studies with their own private funds; John Stuart Mill, Karl Marx and Gregor Mendel took advantage of their free time, after the jobs with which they earned their living, to

do their own work. Albert Einstein, finally, was only a professor for six years in his entire life, and the most important writing that he did was done in a patent office and in a research institute to which he was entirely dedicated.

Even so, the university has maintained, and even reinforced, its mastery in the field of research, without losing sight of its undeniable role as a transmitter of knowledge to the elite. Despite the criticism that it has received over time, from Adam Smith's caustic observations regarding the inertia of Oxford in his day to the student upheavals of 1968, its role has never been called into question. This importance is precisely the reason why the occasional attacks against it have been so fierce.

It is not surprising, then, that the university has benefited so much over the course of history from the investment of resources in it. The first universities responded to the need to provide instruction to students, but ecclesiastical authorities almost immediately began to offer lodging to students and classrooms for teaching.

Later, a time came when it was well thought of for bishops or monarchs to create a university, donating their buildings and the maintenance of faculties and students. Some years ago, I visited the University of Aix-en-Provence, which was founded by the governor of the region known by the name of "the Good King René"; it seems that the creation of a university was one of the actions that made him worthy of this title. This favorable attitude towards the university and its right to benefit from public generosity survived even after the erosion of its religious function. German monarchs fought over the creation of the most prestigious universities, and attracted distinguished scholars. Only four years after colonists had arrived in Boston and had begun to set up their farms and port in the wilderness of North America, they were already creating a university that was financed with taxes and the donation of land.

It would be very pleasant to congratulate ourselves for this great respect for universities, earned, no doubt, by their great, evident merits. But I would like to raise some issues that are never raised clearly enough. I would like to analyze the conflicts of value that are hidden behind normal political processes. An economist following the tradition of Adam Smith will tend to ask: "why doesn't the market determine the destination and amount of expenses assigned to universities?" The economist may perhaps fear the lack of signals guaranteeing the efficiency of these two aspects when there is a considerable amount of financing provided by the government, or even by private donations. But I see an even more serious problem: the conflict existing between the idea of a selective university and the ideals of equality and democracy.

Effectiveness, properly understood, is a position that never gives rise to many arguments. It has been and is called into question with respect to many specific concepts, such as the current subject of environmental values, but also and perhaps fundamentally in relation to moral values, as in the case of the treatment of pornography or that of the existence or inexistence of laws to control human reproduction or medical care. But in education, the problem of effectiveness consists more of knowing what we have to be effective about,

rather than whether we need to be effective or not.

Equality, on the other hand, seems to be a more controversial value. Some would deny that considerations of equality have any role in public policy. I do not wish to enter now into a general discussion about this. I would only like to express my values, or scale of values, on which equality occupies a very high position. I would even dare to say that if efficiency or freedom were not lost during the redistribution of goods, the object of society should be complete equality. But of course it tends to be the case that efficiency and possibly freedom tend to be lost when drastic measures are taken to attain equality. (And logically we must not forget that there are losses of freedom when there are serious inequalities).

I also recognize that problems arise regarding the meaning of the term "equality" when people are different. But these are problems that can be worked on once the ideal of equality has been accepted.

In the course of this discussion, I would like to analyze some of the conflicts between the value of equality and the efficient fulfillment of the purposes of the university. I will refer to it basically as a teaching institution, assuming that universities admit students selectively based on certain criteria, the purpose of which is to identify the students that can benefit the most from attending classes. Let me explain a situation that is frequent in the United States, but which without a doubt has become universal in the Western world, where the number of students who want to enter into an elite university is considerably larger than that institution can admit. At Stanford University in California, the number of applicants who want to enter has been between eight and ten times larger than the number of places available. Of course, understanding these numbers can be a bit complicated, as students apply to more than one university the fiercer the competition is to get in.

The contradiction with the ideals of equality is evident. Only a small number of men and women receive the benefits of a higher education. On top of that, in practice, this small number is subsidized afterwards, as almost all of the universities in the world are public institutions, financed in part by tax money. Even private universities tend to receive certain tax advantages and other aids from public spending. How can this inequality be justified? As I have said before, the only acceptable justification is in terms of greater efficiency. But efficiency in what?

At the risk of oversimplifying, we can assign three purposes to a university education: (1) to satisfy society's need for prepared people; (2) to develop individual talents and people as much as possible; (3) to inculcate social values. The first is one of the ones that economists study and analyze the most; they have spoken of it in terms of the accumulation of human capital, parallel to the material capital that we use to produce other goods. The second is a classical point of view: students go to the university to become better people, by way of a liberal education and the act of learning new knowledge in depth in a certain field, setting aside the use that they will make of this knowledge in subsequent productive activity. The third purpose was taken before as a normal quideline;

and it is still so, in one way or another, although the values that are intended to be inculcated and the right of the university to leave its neutrality behind are a constant source of controversy.

In theory, then, the university seeks to select the students who enter in order to maximize the value of the three aforementioned goals for society. We want to gain the maximum benefit for society in these three areas: training for productive use, the total development of individual talents, and the transmission of social values, with the resources disposed of. In other words, we give the few places available at the university to those who have the most to gain there.

Allow me to suppose for a few moments that the selection process is perfect—something which you know very well is far from true. We have clearly increased any inequality that there may be in the world, instead of reducing it. We have chosen a series of people and we have made them more capable of occupying the good work positions; we have made them better people; and we have possibly led them to acquire better values. The good places have the reward of greater buying power, and in general also greater political power. Normally these people are precisely those who would have had the greatest advantages even if they had not received an education—although it must be said that this is not always the case. The ability to get good results at the university has a positive correlation with other criteria of success in the modern world.

Logically, the students who are admitted gain from the existence of universities. Thus, from what we have seen so far, the students are the beneficiaries of it. So why is it necessary to provide resources to universities instead of assigning them to other purposes? Many are those opposed to redistribution through the tax system, both taxpayers and some philosophers and economists. I don't know the political situation of Spain in general and Catalonia in particular, but in the United States, a taxpayer revolt began about fifteen years ago (and which has not ended by a long shot). But universities, whether public or private, have managed to hold their own, and have not been seriously harmed.

If students are the ones who benefit, why can't university education be treated like any other product? We could halt all aids for this type of education and let it be offered privately. Universities would have to charge what is necessary to cover expenses; a university that has an especially good reputation and with a high level of demand could take advantage of this. A university could simply raise its prices until the number of applicants is the same as the number of places that it wanted to offer. By the same token, a more sophisticated point of view could be taken, recognizing that the attractiveness of a university for students will depend on the presence of other students. Since the needs of the slowest students, or at least those of the majority of students, must be satisfied in order to teach a class, if the general quality of the students is lower, this tends to negatively affect the learning of the best students. So among the best students, demand will depend, in part, on setting admission guidelines based on something other than simply the money in students' pockets. In any case, we may suppose that somewhat intelligent university administrators will be able to figure out a way to capture a market, and we need not refer to all of the ingenious systems that they have.

To the extent that students seek to prepare themselves for productive professional careers, they should invest rationally in education up to the time that it no longer produces more than the money that they have had to borrow in order to pay for it. They could invest more in order to obtain the additional advantages mentioned above, the consumer value of being a more liberally educated person, and superior values, if the university has them and they are acquired.

I imagine that the majority of you listening to me don't very well like this portrait of an economy of competition in the world of education. Allow me to go to the roots of this general unease. Objections may be found from various points of view. Egalitarians have to admit that in this way, fewer resources are taken away from the average taxpayer. But they would also have the right to say that increasing the price of education for students means that access is restricted to the rich—or better yet, to the even richer. This is exactly the same reaction that takes place in my state, California. When there is a drought, economists propose raising the price of water; invariably, people oppose this saying that this discriminates against the poor, without realizing that the rich have become less rich because of having to pay for their water. The alternative policy is to apply some type of rationing, but because rationing is based on previous use, this leads to as much inequality as a rise in prices.

Those who are most concerned about efficiency in the widest sense of the word might say that the students who could take the most advantage of education are excluded in favor of those who can pay more. The products of higher education lose a part of their excellence.

The image of what students may choose in these two points of view does not agree with the rational behavior foreseen by economists. To the extent that students benefit by obtaining better-paying jobs, they should ask for loans rationally in order to pay for their university education, as would be the case with any other investment. In this sense, their desire should not be conditioned by the money that their parents may have. Although the desire to fulfill oneself personally does depend on money, this money includes the students' future income, and they can ask for a loan with themselves as a guarantee. Therefore, the amount of education sought will not depend so much on the current wealth of the parents or students themselves.

I have set out this example of an economic analysis in order to suggest that in this case, the non-professional opinion is in general better than that of simple economic theory. The capital market for students already exists to a certain extent, but it is far from being perfect. Students coming from poor homes don't want to weigh themselves down with debts. They don't know how much they will earn in the future, and it is logical that they are reluctant to take on fixed obligations. Those who come from the lowest social rungs also tend to underestimate their possibilities, and what is even more important, those who grant loans don't like to accept risks when the only guarantee is the uncertain future income of reluctant creditors. In the United States, there is a high rate of student failure to repay loans.

But the economic focus is more valid when it comes to suggesting new guidelines. The idea that I am about to set out is similar to one that was already set out by the American economist James Tobin almost twenty years ago now. Let us allow the government to lend the financial support necessary to attend the university, supposing that students will return the money with interest during the period when they are earning money. The amount that each student will pay will depend on his or her income, possibly proportionally. The proportion will be established so that the investment in education is compensated by the final sum, where those who earn a good living will pay more and those who earn less, or choose to enter socially-valued, but low-paying professions will pay less. The most practical way to guarantee the return of the investment consists simply of slightly increasing the income tax of those who have used public money to pay for their university studies. There will not be a set debt for students, but rather a debt that will weigh more on those for whom returning the money will not cause major problems. We will not end inequality in university selection in this way, but at least we won't increase it by distributing the resources of the entire population among the few chosen ones.

There is another, possibly even stronger objection with respect to the competitive market in higher education. Analyzing it, we see a bit better why the role of achieving excellence in education is so special. I think that many of you shrink from the idea of university competition because of the effects that it may have. A university that wants to obtain the greatest profits will change their attitude. It will replace rigorous requirements with more popular courses. Professors who appear on television will make the university more widely known. With most products, we are of the opinion that the buyer should be the boss. But when it comes to education, we have our doubts. Considering that the educational process consists of changing students' knowledge, it is necessary that the university be better-informed about the desired results and the ways to achieve them.

I don't mean by this that the market isn't informed at all. Without a doubt, there must be a demand for education with high requirements, but I think that many of you will agree with me that there is increasing pressure to satisfy popular and uninformed demands. We don't want universities to feel motivated to satisfy these demands, but rather to fulfill the requirements established within the community.

What we have set out shows the existence of an inherently elitist aspect of the contents of university education and those who leave with university degrees. The subjects taught and the system for selecting students, and the faculties, should be determined by those who already form a part of the institution. This has been the tradition of the university since its creation. Admission, the curriculum, and the license to teach are decided by those who have previously been admitted, have passed the established curriculum, and now have a licence to teach.

By the way, notice that I have been insisting on the protection of the university against the market, which I consider to be the primordial threat nowadays. In

another period, not more than thirty years ago, I would have insisted more on academic freedom, on the threats of public authorities to make everyone conform to the political and ethical guidelines of the time. I am happy to say that this is no longer the problem.

Returning to the speech, it must be admitted that the value of universities depends on their ability to select and the way that they adhere to elitist values. We want to protect these values from the temptations of the market. The university is not the only social subsystem that finds itself in this situation. I believe that in the political process, leaders also depend on similar criteria. In both areas, elitist characteristics, although they might be necessary, also imply certain dangers.

It is clear that any elite constitutes a threat to equality. This is true because of the evident fact that only a few receive the rewards of income, power, and personal fulfillment. But there is a second way that the elite are not egalitarian. Any elite group is always very tempted to use its powers with a view to its own growth, to assure itself of more income and more power. These possible corruptions also reduce efficiency. An elite group of professors and university degree holders who are self-satisfied will not know how to respond to new ideas or to new styles of students.

Democracy has a basic function when it comes to making the elite take responsibility for their actions. Taking responsibility with respect to a democratically-chosen authority can have a useful effect: to remind the university elite of their obligations to the outside world and, especially, to keep it on its toes regarding its duties of progress and openness. A certain democratic vigilance should not degenerate into a meticulous control of the university, a task that it cannot competently perform.

Another essential factor for efficiency is sufficient egalitarianism in the process of selecting students and faculty. Any elite can tend to make everything easier by choosing those who are like its members, or even those who have ties of family or friendship. Selection has been limited by criteria of compatibility such as race, religion, ethnic origin, sex, and social class. Although many of these barriers have been torn down, many still remain. It is evident that following these inappropriate selection criteria lowers the level of efficiency and of equality in education.

I will return to a point dealt with earlier. You will remember that I told you that selection was made without any error, that the students with the greatest possibility of benefiting from higher education were those chosen. In the point that I just mentioned, about the efficiency of elites, though, I have already set aside that assumption. Let's consider the implication of imperfect selection a little bit.

Remember that imperfection in selection means choosing someone who doesn't take the greatest possible advantage of the university. Imperfect selection could be the result of deliberate attempts to control access to the university carried out by the institution itself, as I have suggested before, or by

other elements of society. But perhaps it is more important to mention the enormous intrinsic difficulty of the selection process. I have known many students who were refused access to some universities and who later showed to what extent those selections were mistaken. These are fortunate cases in which other universities have righted the mistakes of the first. I suppose that there are many talented people who have never reached higher education because of errors in the selection process. It should be said that among the students admitted to a university, those who obtain the best marks on the entry exam do not necessarily achieve better results than those who got worse marks, which makes one wonder about the lack of precision in the entry criteria. It is also a fact, by the way, that university marks never predict the future income of the student. It is your job to decide if that means that university marks are less important than they seem, or whether later income is due to flaws in evaluation by the labor market.

The criteria that we use for admission are based on output and secondary educational testing, which are heavily influenced by family precedents and by the difference in quality between different primary and secondary schools, as well as by other motivational factors. Some of these variations end up affecting students' ability to take advantage of the university. But there are many students who will make up for defects in the family and school world in a favorable university setting.

Obviously we should pay attention to any defect in the selection process that can be solved. To decide on admission, the influence of position and family assets should be eliminated, for example, as well as stereotypes based on race, clothing, or accent. But nothing will make selection ideal. There will always be a considerable number of students excluded who would have taken better advantage of a university education than some of those admitted.

This is a fact, and thinking about it ought to serve to communicate a bit of humility to those who hold university degrees. They must recognize that their superior positions have much to do with luck: luck in admission, in family and school environments, even luck in genetics, which is a luck that is difficult to boast about. Those who hold university degrees should take their position to be an obligation, not a reward.

Let me finish by summarizing the points of view expressed here: (1) Access should not depend on parents' social position or money, or incidental details such as clothing or accent. (2) In the long run, students should pay all of the cost of their education, through some plan like that I suggested earlier. (3) Those holding university degrees should create a common awareness of social administration. Their natural superior talents, reinforced by the university, must be considered as the legacy of the average person, and especially of the disadvantaged. It is, above all, a question of values that those who hold degrees must conserve, even though society may impose more specific requirements.

The relationship between equality and the purposes of higher education is more complex than I have managed to outline here. But I hope that we can initiate a

dialogue to recognize that there is a dilemma and to try to maintain it within the framework of the equality and democracy of our heritage.