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IS THERE ANY HARMONY BETWEEN THE RATE OF REQUIREMENTS IMPOSED ON THE STUDENT BY THE CURRICULUM AND THE STUDENTS CAPACITY?

GIBT ES EINE ÜBEREINSTIMMUNG ZWISCHEN JENEN ANFORDERUNGEN, DIE DAS CURRICULUM AN STUDENTEN STELLT UND IHREN LEISTUNGSMÖGLICHKEITEN

One of the functions of the curriculum is to ensure the possibility for the student to acquire a certain amount of knowledge and skills up to a definite standard. Let us try to reduce this function of the curriculum to one question only, involving the imposition of requirements. The only aspect we are going to study in this context is the tendency of the rate of requirements in the educational process.

By way of introduction we ought to mention that by requirements is now meant the totality of all those elements of the educational process which call for any kind of an effort, any kind of an achievement on the part of the student. The requirements depend on a number of factors, the most important ones being as follows: the volume and the theoretical level of subject-matter to be attained in a certain period of time, the length of this period, the nature of the subject-matter, the extent and thoroughness to which attainment is expected, the required nature of knowledge, etc. From the point of view of our present study, the requirements have two "dimensions": the momentary intensity or level of requirements (r) and the length of time (t) during which they are imposed (Fig. 1.).

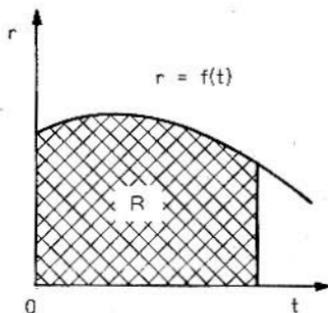


Fig. 1.

The definite integral of the function $r = f(t)$ yields R which represents a certain "amount of requirements" (requirement norm). The student, if he fulfils a certain norm, reaches a certain level of education.

To fulfil a requirement, whatever its amount, the student must first of all have a **capacity**, which is again something of a very complex nature. By capacity we mean all those factors, characteristic of the student, on which depends the level (intensity) of requirements that the student is capable of fulfilling at a given moment. By way of illustration, we only refer to some of such factors: talent, ability, pre-training and grounding, intelligence, routin in learning, diligence, inclination, disposition or determination to learn i.e. motivation, etc. Motivation includes even the momentary level of requirements and probable tendency of the rate of requirements: the higher the rate (up to a certain limit) or the more pronounced its rise is, the more it stimulates the student to further efforts, the more it develops in him the methods of learning, etc.

Utilisation of the capacity results in fulfilment, i.e. achievement. In our case, achievement means knowledge. Consequently, the amount of knowledge (K) is also obtained through the integration of the curve which represents the variation of the capacity (c) as a function of time (t) (Fig. 2.).

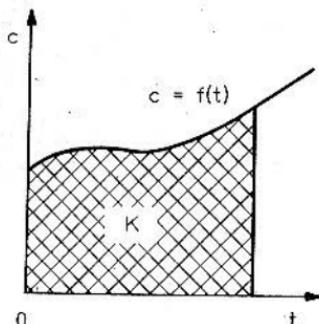


Fig. 2.

Education is efficient if $K > R$. The greater the achievement is than the requirement norm, the more efficient education is.

In principle, both curves, $r = f(t)$ and $c = f(t)$ may assume different configurations; in practice, however, there are only a few typical, to some extent simplified, curve-configurations that are worth studying.

Let us first have a look at the capacity, which, if utilised, yields achievement. It is obvious that the capacity is different in each person's case and that it is variable in terms of time. To illustrate the point, take five students, each of whose capacity is different from those of the others at the time of admission to university (Fig. 3.). It is also shown in the diagram that the capacity as a function of time may increase, remain unchanged or (under

given circumstances, such as, for example, owing to a decrease in motivation) even decline.

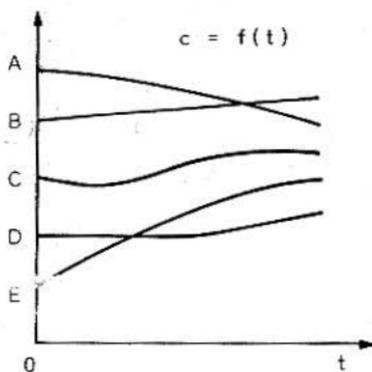


Fig. 3.

Looking at the examination requirements, Fig. 4. presents three typical instances where, the requirement norm being the same, the character of the rate

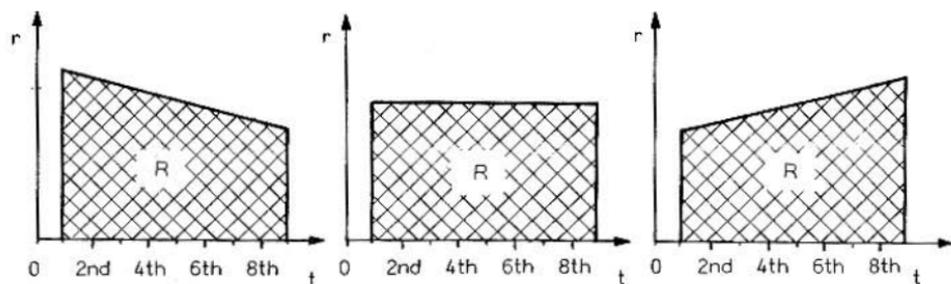


Fig. 4.

of requirements is as follows: **degressive, constant and progressive.** (Here the progress of time is represented by the series of the examination periods.)

In the top of Fig. 5. (next page) we have superimposed Fig. 3. on Fig. 4.

University education, first of all technical education, is today characterised mostly by imposition of a degressive rate of requirements. In such

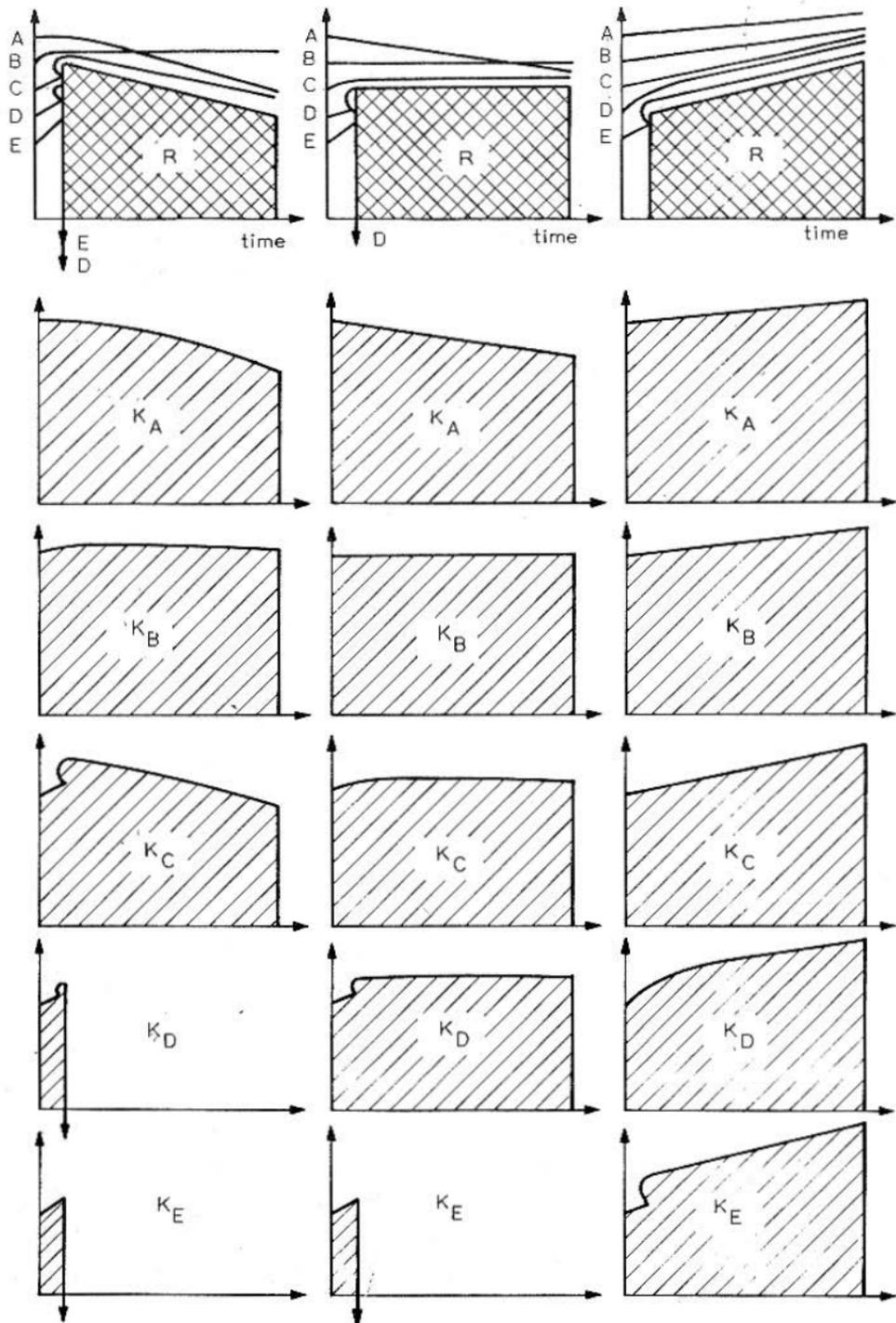


Fig. 5.

a case (left column in the Fig. 5.), the student "A" takes the requirements of the first year easy. Then, noticing a decrease in the rate of requirements, he gradually slacks off in his studies, which results in that his total knowledge **K** lags far behind that what may be expected of him (it scarcely exceeds **R**), his talents being unutilised. The total achievement of the student "B" is similar to that of "A". The student "C", can at best overcome the initial overstrained rate of requirements at the expense of repeating the semester. But only if his ambitions are above average his hopes not fall short of his expectations, otherwise he will fail, just like the students "D" and "E", in the first term examinations. In this case his achievement, his knowledge attained up to that time are not really utilisable socially.

The situation is better in the case of a constant rate of requirements (central column), although here, too, the utilisation of the abilities lags far behind what may be expected. About 20 % of the students fail in their first year.

This is the case in principle only. Experience shows that in Hungary (and I believe in a number of other countries as well) the rate of failure is not 40-50 % (degressive rate of requirements) or 20 % (constant rate of requirements), but much smaller. The reason for this is that, partly on social pressure, the universities (with some notable exceptions) have lowered the requirement norm.

In the case of a progressive rate of requirements (right column), at least three out of five students perform considerably above the minimum requirements, without any particular difficulty. The fourth will also manage to fulfil the minimum requirements, and perhaps only the (possible) failure of the fifth student will have to be reckoned with.

The shaded areas give a visual perception of knowledge capable of being "exploited" in the students (which is clearly a gain of society) and of the considerable differences in knowledge pending the type of the rate of requirements imposed.

The progressive rate of requirements implies one additional, socially very important, feature, which the two other systems referred to cannot in fact have. It is the prevalence of a selection based on competence proved during the student's studies, this being the socially most acceptable means of selection.

To give an idea of this process, let us have a look at Fig. 6. (next page). The tendency of a student's capacity is subject to many different factors. In the course of his studies the initial capacity may not increase, or its increase falls short of what is necessary for the curve **c** to avoid colliding with the curve **r**. (For instance, the reserves of the student's ability are used up by the time when theoretical knowledge becomes the dominant feature in the tendency of the rate of requirements.) Under the circumstances, although the student leaves university at the moment the two curves intersect each other, nonetheless his accomplishment attained till then will qualify him to hold certain posts. Nor is

there of course any reason in principle why the university should not certify this qualification by giving the student a certificate of an appropriate level.

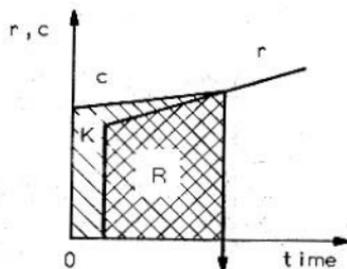


Fig. 6.

To tell the truth, the decisive majority of today's curricula does not leave room for the use of a progressive rate of requirements. Most of them are of a **deductive** structure, where the subject-matter is general, abstract and theoretical at the beginning of the study, and special, concrete and practical at the end.

There are, however, numerous other aspects in respect of which the deductive structure of curriculum is unfavourable. While on the other hand, no such disadvantages are found in **conductive** curriculum where instruction of the general and the special, abstract and concrete, theoretical and practical subjects is carried on simultaneously. As a result, knowledge attained will not separate from application. The discussion of this issue, however, is beyond the scope of this paper.