

EDUCATION

Substandard Teachers

➤ MORE THAN 77,500 full-time school teachers in the United States and its possessions have substandard credentials.

This figure represents 6.8% of the total public elementary and secondary school teaching force.

The statistics are revealed in a study by the U. S. Department of Health, Education and Welfare on enrollment, teachers and school housing in the fall of 1955, in full-time public day schools.

The magnitude of the figures, the Department states, must be considered in the light of the fact that the definition of "substandard" varies from state to state. In the survey, the state departments of education listed as substandard all those teachers who did not meet the minimum requirements set up by the individual state for teaching.

Several states report no teachers with substandard credentials.

Arkansas, on the other hand, reports that 30% of its full-time teachers are instructing with substandard credentials.

The survey also showed that 30 states require a bachelor's degree for teaching elementary students, and 42 states require

a bachelor's degree for high school teaching.

"The shortage of qualified teachers and the lack of adequate school housing are among the most persistent educational problems now confronting the nation," Herbert S. Conrad, director of the U. S. Office of Education's research and statistical services branch, states.

Last year, he points out, the number of qualified teachers increased at a more rapid rate than the number of pupils who enrolled. At the same time, fewer pupils in excess of normal capacity for the country's school systems were enrolled.

Despite these facts, he reports, the backlog of need is so great that the nation's educational system still essentially needs "continued and greater improvement."

The number of classrooms (67,098) scheduled to be built during the current fiscal year, Mr. Conrad states, "is more than sufficient to take care of the year's prospective increase in enrollment."

In the fall of 1955, the survey shows, 22,059,688 students were enrolled in elementary schools, 8,472,478 in secondary schools; there were 1,135,093 teachers.

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ENGINEERING

Foresee Control of Cars To Handle Traffic Snarl

➤ CITIES may give up trying to control traffic by lights and other conventional means, turning instead to directing individual automobiles as traffic congestion mounts in future years.

This was suggested by a team of University of Michigan engineers in a report to the Highway Research Board of the National Research Council-National Academy of Sciences meeting in Washington.

Such traffic directing of cars may be done, for example, by directly controlling the movement of each car, or by a broadcast that informs every driver of traffic conditions for blocks around him. Broadcasting might be done by cathode tube displays, Harry H. Goode, Carl H. Pollmar and Jesse B. Wright reported.

Before this happens, engineers expect use of electronic "brains" in all major cities to solve complex traffic snarls. Each large city would have its own digital computer and team of operators in this scheme. Smaller communities might band together, perhaps under state auspices, to use a single large computer.

One of the chief advantages of having an electronic "brain" work out the best patterns of traffic control, besides giving the speediest answer, is that experiments can be performed using mathematical models, and the best traffic changes can be decided on without having to disrupt actual traffic flow as in usual trial and error method.

"The worst aspect of our lack of knowledge of the traffic process today" is lack of a way to get a reasonable estimate of the maximum benefits from traffic control measures, the engineers said.

Thus, we do not know whether to invest money in simple control methods or to try out more radical schemes like moving of sidewalks or even city dispersal.

Use of digital computers should furnish a means for gathering this kind of information, useful now and in the future.

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BIOCHEMISTRY

Mechanism X for Color

➤ A MYSTERIOUS something called "Mechanism X" that apparently plays a part in giving skin its color has been discovered by Dr. Morris Foster of Yale University.

Cancer, gray hair, and certain diseases in which the skin is splotched with white or unsightly colors are problems on which the discovery may have a bearing.

Dr. Foster's mechanism X is found in normal skin. Working with mice, Dr. Foster found that when he places in a solution a piece of albino skin, a piece of normal skin and a chemical called tyrosine, which is the raw material from which pigment is made, the albino skin soon begins to take on the color of normal skin.

Something in normal skin, mechanism X, transforms the tyrosine into pigment which colors the albino skin.

Mechanism X is a relatively simple and subtle substance capable of penetrating through extremely small pores. Dr. Foster has put normal skin and tyrosine in a cellophane bag and placed the bag and the albino skin in a solution. Mechanism X was able to diffuse through the pores of the bag and color the albino skin.

This indicated that mechanism X is a rather small molecule, much smaller and simpler than an enzyme or other protein particle, which albino skin cannot make.

The connection between Dr. Foster's find-

ings and cancer is pointed out by the American Cancer Society, which supports his research, as follows:

The ability of certain cells to produce pigment represents a degree of specialization. Cancer cells are characterized by their lack of specialization even more than by their constant growth. One of the more lethal types of cancer, melanoma or black cancer, is due to the overgrowth of pigment-producing cells.

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