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"New Math" Sparks Lively Debate

Four eminent Canadian scholars fought to a draw in a lively battle over the merits of "New Math" that highlighted the annual convention of the Saskatchewan Mathematics Teachers' Society (SMTS) in Regina on May 14-15.

The distinguished combatants were *Professor Ralph A. Staal* of the Department of Pure Mathematics, University of Waterloo; *Professor A. D. Booth*, Dean of Engineering, University of Saskatchewan, Saskatoon; *Professor Roger Servranckx*, Department of Mathematics, University of Saskatchewan, Saskatoon and *Professor James Beamer*, Department of Curriculum Studies, College of Education, Regina.

Dr. Staal, in his keynote address to the conference, conceded that "New Math" had produced valuable fall-out in the '60s, notably the development of the inquiry approach at the elementary level and some first-class writing on teaching techniques. But he claimed these gains were outweighed by disadvantages in the "New Math" approach, including a decline in rigor and discipline, an over-emphasis on notation and the neglect of performance in "New Math's" overthrow of rote learning in favor of understanding.

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Dr. Staal conceded that "New Math", 10 years after its conception, "is still alive and well but a little wiser," but the "ultimate verdict is in favor of its opponents". He concluded that "New Math" had suffered "transplant rejection" from its proper environment at the university level to lower educational altitudes.

The most unequivocal opponent of "New Math" on the SMTS panel proved to be Dr. Booth, who asserted that "new math will never be useful to society". As an engineer who had "to apply my math", Dr. Booth championed classical mathematics. Claiming that the present secondary school curriculum does not produce engineering students who can either "read, write or do math", he declared himself as a "missionary who wants to remove Christianity in the form of new math from the curriculum". Dr. Booth said the amount of time spent on math studies in Canadian high schools was "hopelessly inadequate". Whereas Swiss and British students spend 1,400 hours on math, Americans devote only about 1,000 hours and Canadians 840 hours, just above the "banana republic level". He agreed with Dr. Staal that "New Math" had produced too much icing and not enough cake and a "nibbling" at math that resulted in "an absence of any necessity of real thinking". He criticized current math texts for posing math problems in such a way as to make "the answers immediately obvious". "The whole of mathematics is being taught at much too superficial a level", Dr. Booth concluded. "There is not enough discipline to achieve any respectable mathematics. New Math involves too many words, exactly what mathematics is not."

Dr. Booth's stubborn defense of Euclid later produced a brilliant blackboard battle with Dr. Roger Servranckx who defended "new math" procedures for bringing enhanced "clarity and simplicity to classical problems". However, he joined Dr. Booth's assault on the "textbook racket", claiming that new texts dealt with slogans but left content unchanged. The Belgian-trained mathematician claimed that "new math" was actually a myth, in that most math dates from 1850. "There is really no new math to remove from the curriculum." He agreed with Dr. Staal's contention that modern math procedures had involved themselves too much with notation, but that this was not the fault of the procedures, but the manner of using them.

The fourth panelist, Professor James Beamer, also recognized that "New Math" had not achieved its objectives but he disagreed with contentions that "it has failed to improve the school curriculum". He quoted recent studies that showed "significant gains in math ability" because of "New Math".

Professor Beamer said that the secondary school math curriculum must strive to serve more than university-bound students. He suggested a multi-level math curriculum which would include options that would serve the abilities of top students as well as a lab-oriented program for low achievers.

The stalemate produced by the panel discussion was summed up later by Harold Leibel, vice-principal of Regina Central Collegiate, who observed that "the experts can't agree if we have New Math, and if we have it, what it is". Mr. Leibel's remarks were made in a progress report on the Division IV math curriculum revision committee, as an example of the difficulties facing that committee.

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