



From New Brunswick to Tirupati with PSSC

by Peter Lindenfeld¹

Rutgers University had a strong PSSC program, organized by Robert L. “Duke” Sells and Richard Weidner. I had taught some courses for teachers, but I was not part of this effort. I saw the enthusiasm of the group and admired the strong bonds that were formed among the teachers and between them and my colleagues.

One of the participants was David Kutliroff, the New Brunswick High School physics teacher. In the early sixties an extensive series of summer institutes, sponsored by the U.S. and Indian governments was started in India on PSSC and other high school science programs. Dave was there and then gave a talk at Rutgers about his experience. I told him how impressed I was, and he said “You can go too!” That seemed remote, but in April 1965 I found myself on the plane to Delhi, studying the PSSC text on the way.

I met Bryan Swan, a high school teacher from Chicago, who was to be my teammate, and after a couple of days we flew to Madras, where we were stuck for several more days because our destination, Sri Venkateswara University in Tirupati, was closed for protests against the adoption of Hindi as the national language. While we tried to study the local language with material from the U.S. consulate, we had a visit by our host, Professor Bhimasenachar, the head of the physics department. His message was simple: “This PSSC, are we going to treat it as a religion, or is there a chance that we can also do something else? What these people really need is a workshop!”

We were there to teach the PSSC course, and we saw this as an assault on our mission. We rejected his suggestion, and when we finally got going there was no deviation from the original plan.

Today I would probably be more flexible. We did ask ourselves what would be best for the participants, a wonderful group of teachers from two Indian provinces. Some were from cities, others from primitive rural schools. Experience building simple equipment would have been very helpful for them. We decided instead that what they needed was a real physics course, and that’s what we saw in the PSSC program.

As collaborators we had several young faculty members. Professor Bhimasenachar stayed out of the way except for a guest lecture that was irrelevant to the program.

As I look back, I see what we were doing as not so far from what happened at home. The PSSC course represented a revolution. It was a wonderful course. It was real physics, as it had not been seen in high schools. But it was imposed from the outside. It was developed by an outstanding group of people, led by physicists at our most elite institutions. They produced a course with great influence. But eventually, when it came time for it to live on its own, it did not survive.

There were some great features. I was told that it was Rabi who said “you can’t start with mechanics.” The chapter on scaling was born, and it was a terrific introduction. There were many other excellent innovations, including the novel and inexpensive laboratory equipment.



So why did the PSSC course disappear? First of all it was too tough. It was tough for the teachers, who came to it familiar only with a very different approach. The support system with its summer courses and winter meetings was essential, and it disappeared. With it the recruiting of new teachers, the involvement of university faculty members, and the enthusiasm that had been generated, disappeared also. It was tough for the students, and too inflexible to change. It became a course for the elite.

The book changed a little, but not for the better. The introductory chapter was eliminated. The emphasis on 'academic' physics remained. The level proved to be unrealistic.

The PSSC course influenced the courses that followed it, and in time the courses in other sciences. The effects of the revolution that it represented remain. It is not clear, however, that we have learned its lessons, either those of its successes or those of its shortcomings.

I will always remember my involvement and my time with the PSSC course in India as one of the great experiences of my life. It was exhilarating, and I felt that we were making an important contribution. And we did teach a lot of physics.

¹ Emeritus Professor of Physics, Rutgers University