A FRESH LOOK AT R & D

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Prologue

Much of the current discussion about R & D involves the fallacy that it is **soft** educational practice, not **hard** research -- searching for new knowledge like basic research or answering burning questions about specific problems like applied research. It is unfortunate that too much in our institutes of higher learning is based on **hard** theory, rather than upon **soft** practice! Hence this short article will attempt to do justice to higher education R & D.

Teaching and research are primary functions of a university. Because of their endeavour for academic excellence, most universities tend to put more emphasis on basic and applied research so much so that R & D has been unduly ignored. I submit that better university teaching depends to a large extent on R & D, and better teaching indeed leads to academic excellence.

What R & D Is

R & D is another type of research. Like any other research procedures, R & D has a rigorous design in its own right. The following steps are parts and parcels of educational R & D:

1. Literature review and planning.
2. Development of the preliminary form of the product.
3. Preliminary field test and product revision.
4. Main field test and product revision.
5. Operational field test and final product revision.
6. Dissemination and distribution.

Indeed, R & D projects vary, but a typical R & D project follows a sequence of such major steps as those given above. And this R & D process, if followed properly, will in turn yield a new tested product that can be used effectively in educational programmes.

It should be emphasized at this point that most of the R & D steps are more or less similar to a typical experimental study. For example, the main field test in the R & D process usually employs research designs such as the pretest-posttest control-group design and the product being evaluated is indeed the independent variable manipulated in an experimental research project.

In contrast, however, the goal of R & D projects is to develop products that are fully ready for operational use. Hence repeated cycles of field test, evaluation, and revision are *ipso facto* needed.

Mention should be made in passing here that evaluation is an essential part of every R & D project. Because of the need for better evaluation, a new discipline of **evaluation research** has emerged in order to help R & D specialists and educators make decisions on the worth of educational programmes, products, and techniques. But that is beyond the scope of this paper.

Epilogue

This article describes the R & D process that is currently being used to develop new educational products so that the gap between research and practice can be narrowed, if not bridged. It is believ-

ed that R & D can increase the potential impact of basic and applied research findings upon educational programmes.

Indeed, both basic and applied research have important contributions to make to education--but the situations they study are too removed from the typical classrooms to have much direct effect. This is precisely the contribution of R & D. It takes the findings generated by basic and applied research and put them into practice.

This leads me finally to argue for 'the **hard** theory of **soft** practice,' simply because of the fact that **'theory without practice is indeed futile, and practice without theory is also fatal!'**

References

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