

Acharya: A Catalyst

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Abstract:

Science is knowledge and it has to be spread and circulated for the better quality of life. The duty of transmitting and decrypting the language of science into the minds of students falls upon the shoulders of teachers. They are the one who paves the way for making the future generation. Role of a teacher is extended far beyond of mere imparting stereotypical bookish concept, theoretical knowledge and developing routine protocol of developing skills. Teachers' duties include framing of professional and personal growth, sense of responsibility and requisite ethical standard. The expectations on the present century teachers are often too many and unrealistic but they constantly strive towards filling their roles. The present paper pays a tribute for the entire persona along with the highlighted unique characteristics.

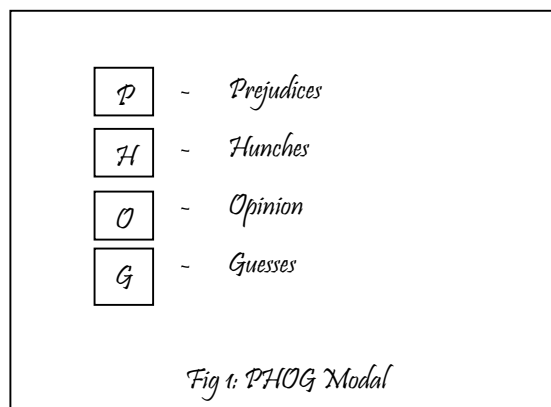
Key words: Teachers, ideal, education, classroom and skills.

Introduction:

Teaching is a profession that makes all profession conceivable. Teaching is an implausible adventure. It is challenging but gratifying career that have all sorts of twists and turns. Teaching is like being on one of the greatest thrill rides at the favourite amusement park. Each day is different from the other day but for so many reasons that makes it so special.

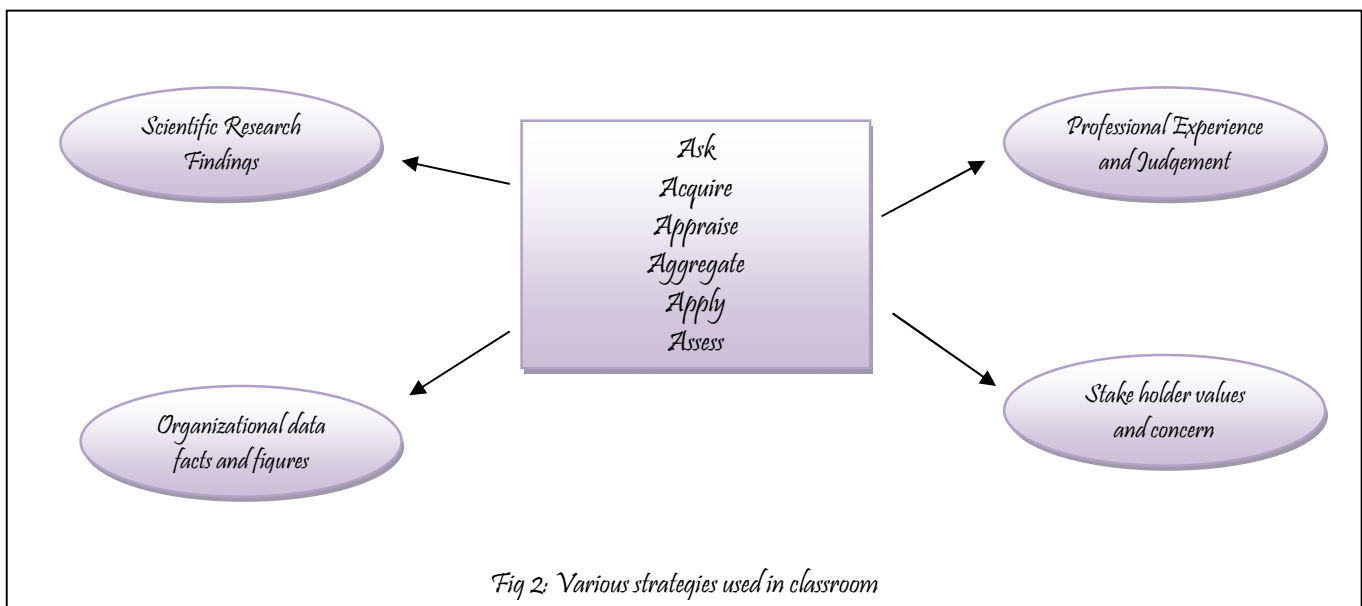
The PHOG Method:

Mostly decision about Teaching-Learning methods, assessment, curriculum planning is based on "PHOG" approach. The "PHOG" approach is based on the prejudices of teachers, hunches – what works in class best, teacher's personal opinion and guess the most suitable approach. (Fig-1)



I worked with the academic researchers, who have some academic values and make me comfortable to discuss about the academic issues. Academic attitude of the researchers change dramatically. Critical appraisal and scientific scrutiny is replaced by believes and personal experience and traditional values and dogmas. The evidence for informed teaching has been recently increasing and accepted but is not fully implemented in practice.

The classroom is an active environment that brings together the learners from diverse backgrounds with numerous abilities and personalities. Effective teachers implement creative and innovative teaching strategies in order to meet student's individual needs.



Informed teaching-evidences:

It is well accepted fact that an effective teacher needs a set of teaching competencies, passion for teaching and the basic understanding of the educational principles. It is not the end of the matter- there are some other factors to consider. A teacher must openly and heartily accept the fact that there are different, more possible, more effective, efficient, impactful and successful methods of teaching theories that are presently practiced in the classroom. It doesn't mean that the presently practicing method is not appropriate but one must update to the changes in the school educational system.

In actual life we make decision on job or at personal life on the basis of the evidences of what would work and not on what does not work. This is the key principle behind evidence based teaching or evidence based learning. In general instruction based on evidence is more appropriate. A teacher should make concise, obvious and judicious teaching method based on evidence in the classroom situation and must know what will work and what not. It involves teacher's amalgamation of their individual experiences with best available external evidences.

Teachers need to question whether a new method advocacies will prove much better or not than the traditional approach of teaching and how present approach of teaching is improved.

The promotion of the evidence base and informed discussion is not only about instructing teachers what to do. In practice it is opposite. It is about emancipating and empowering teachers to make independent evidences and informed decision which works for generating quality evidences and apply it to class room situation. It has a huge potential gain. More efforts are made to generate evidences for individual learning about what works and why this is so? Much less attention is paid to transform the evidence from the researcher to the class room. Teachers must be aided with up-to date class room changes but at the ground level there are no equivalent source of information about evidences related to class room and education. This challenge is being addressed for producing best evidence/outcome based learning.

What is called evidence?

Learning is concrete, observable and understandable evidence of what students have and haven't learned. The question about Evidences in education is difficult to answer. The most relevant answer comes from a very difficult and uncommon source. It includes professional judgment and experience and it also comes from quasi-experimental and experimental research studies. There are two forms of evidences:

Direct evidence (Examples):

- Written work, artistic performance, products, presentation, scored with rubrics.
- Observation of field work, service learning.
- Student's portfolio.
- Scores of summative and formative assessment and achievement test.
- Value added and scores gained.
- Observations of student's behaviour such as group discussions, undertaking system actively and logically and records of notes.
- Class-room responses.
- Feedback
- Student's reflections on their values, attitudes and beliefs.

Indirect Evidences (Examples):

- Percentage of class time spent in active learning.
- Number of hours spent on home work.
- Number of hours spent on service learning.
- Number of hours spent on cultural/intellectual activities of subject.

- Course grade/ grade distributives.
- Assignment of grades.
- Alumni perspectives.
- Students rating of knowledge, skills and reflections.
- Honorary awards and scholarships earned by students and alumni.
- Annual report of the institutional bench marks.

Evidences of teaching involves the following uses:

- Establish where students are in their learning.
- Decide an appropriate teaching strategies and interventions.
- Monitor students' progress and evaluate teacher's effectiveness.

Teachers use evidences to apprise their decision or it comes from the following:

Personal experience:

A teacher always contemplates on what works for them in their class room and how the teaching-learning process can be improved. For example, the experience I gained from my previous institution. Though the institution is situated in the rural area and has relatively very less number of students, their success rate is very high and students easily clear their Pre Medical Entrance exam and National Talent Search Exams also. This experience acts as a useful evidence, motivate teachers and serves as a model for teaching in a small set ups. Teaching experience is positively associated with students gain through teaching career. Gains are effective and are very steep in the initial years. The effective teaching rate increases at greater level when they teaches at understanding and uncompetitive working environment and when they accumulate experience in teaching same grade and same subject. More the experience teacher's gain, greater they support in students learning.

Experience of colleagues:

A teacher learns from the experience of their colleagues and collaborates with them learning from colleagues and sharing the experience with everyone wins and they become better teachers. School should have collaborative environment rather than competitive working environment.

Published guide/reviews/editorial/Associations:

There are several associations - such as Association of Chemistry Teachers, Association of the Biological Science Teachers and other reputed journals which provide good articles on the experiences of the faculty and many effective faculty development programmes have been delivered thorough them.

Systematic review on the topic:

Systemic reviews are published by highly reputed journals, on the use of the systematic and transparent pedagogical teaching. One can draw from the collective findings from basic research on a specific topic to better informed educational class-room practices. Kendra Vidyalaya Sangthan Public Journal called papers for the best innovative teaching methodology and the review committee looked not only at the approach but also the implication and the working process in the class-room situation. This recent review has identified ten features that improve learning when put into practice.

Hunger for evidences:

It is complex to understand the search for evidence and to inform the best practices in school educational system. It requires review of literature, bibliography, data base and grey literature.

Evidences assessment:

The most common question on how the published evidences can be assessed and associated with regard to relevance in the classroom is raised by most of the teachers and the “QUESTS” criteria for evaluation of evidences help teachers with this task. The norms are as follows:

- **Quality of evidences:**

The type of evidences or research method and the intensity of the study, both qualitative and quantitative is the best for produced evidences. Good evidences are gathering a broad range of piece of students’ work that can be used beyond assessment. Gathering good evidences of teaching-learning is an iterative process; it is a process of evaluating and adjusting. Teachers persistently repeat and build on it. It is the substance of teaching and good teachers do every day.

- **Utility of evidences:**

The utility and the extent to which the innovative approach need to be adopted in the class room practices. The problem based learning is the best method of teaching-learning for the small group remedial teaching. The conclusion of the result is interpreted with caution with its significance in large classroom size. Effective teachers use quality evidences to establish the point of an individual students where they have reached in their learning. It aids teachers to identify the starting point for further teaching-learning and

ensures that each learner has given an equal level of learning opportunity at the appropriate level of challenges.

- **Extent of evidences:**

The evidence from the case study method is that the innovative approach is very useful but it requires more replication of the study. The number of students and sample size is more relevant.

- **Strength of evidences:**

It is very much important to make the difference practically and statistically significant. For example if the students in the control group score 62.9% and the students in the experimental group score 65.8%, it is statistically significant but not practically significant.

- **Target:**

The expected outcome must match with what is assessed. Evidences may be less relevant because the questions addressed in the study are totally different from the area of interest. For example, research objective is to evaluate the effect of assessment on students learning in Science and the teacher is interested in logistics and cost of implementation of new technology based assessment.

- **Setting of the study:**

The phase of the school curriculum and the geographical settings are the key element in interpreting the result. Findings of the research are interpreted in relation to the context. There is no context free of evidences. The conclusion and the evidences are the sum of evidences of the strength and quality to extent and relevance of utility to the target settings.

Best evidences in school education:

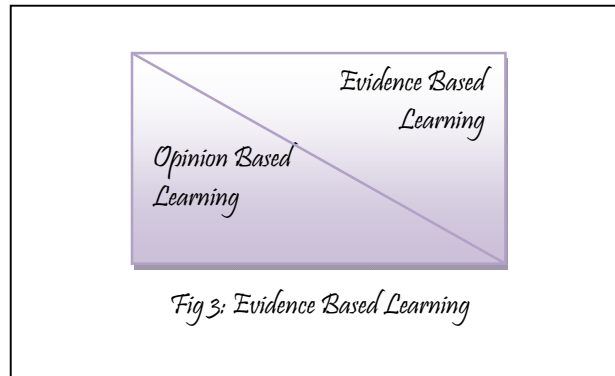
The evidence based school teaching has two elements:

First: It is essential that the school teachers should not assume that the present teaching practice is of optimum use and that they do not require any change.

Second: A teacher should seek evidences and informed decision as it is the most effective and efficient teaching approach. Ample evidences should be available for evidence based learning practices. Feedback is an effective tool for stimulation and assessment method is used as evidence in this present study.

The evidence based teaching practices is the most effective practice. Reading of systematic review on evidence based classroom teaching is important. It helps leaders to

understand the basic class-room practices that are available and to verify the available informed decision about day to day class-room practices. One should not move on to the extreme left (i.e Evidence based learning) or to the extreme right (opinion based learning) as shown in the *Fig 2*.



Judgment and Intuition in Teaching-Learning:

It is appreciable that currently available evidence from research in school education does not provide a dictate on precisely how to teach in practical setting when diversity is too much. A teachers use their judgment about teaching-learning in the classroom. There is no straight answer to identify the best way of teaching-learning in classroom and for students' assessment. It depends on a particular student, subject or context.

Assessment is a combination of Art and Science. The evidence based approach in teaching is instituted by teachers, by their values, in their personal teaching practice and are significantly important but actually at class-room level it is not well recognized part of the play. The classroom teaching involves the performance of diverse and complex skills and in context that are few times unpredictable and constantly evolving. Experienced teachers are not able to often explain what they do and why they are doing. Mostly, what teachers do in the classrooms are intuitive- a reaction at time to the situation and for students response. Intuition is a tacit knowledge that is acquired by the teacher out of the accumulated experience and information. All teachers are required to use this intuition at times, when taking decision about their teaching practices.

Conclusion:

- Teaching is not definitely the adaptation of a “cook book of recipes” developed by other teachers. The judgment and intuition are needed to integrate with the understanding of the best evidences available, so that the teachers may arrive at the perfect decision and take the most appropriate action. A teacher must be a continuum between evidence based and opinion based teaching-learning approach.

- A teacher must use QUESTs criteria to assess the implication of evidences published in research papers.
- Education policy should be based on the clear evidences of “what were” rather than prejudice or whimsical. It is obviously attractive and the basic underlying logic should be sound.

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