
**DEVELOPMENT OF MODEL DESCRIBING THE ROLE OF
PEDAGOGICAL AND PSYCHOLOGICAL KNOWLEDGE IN
EVOLUTION OF EFFECTIVE TEACHER/TRAINER IN TEACHER
TRAININGS**

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ABSTRACT

The research in relation to teacher training has chiefly focused on the development of personal features of a teacher so that the best way is found to teach content; while lacking emphasis on development of teacher to understand complex teaching process entirely. Educating teacher is a process to execute sense of creativity in a teacher and the process needs clear, evidence based teacher who can be a model in effective teaching. In fact the existing effective teacher models failed to emphasize important elements desirable for development of effective teacher and could not integrate complex components into a coherent whole; and direly needed a discussion medium in a intangible framework for development of effective teachers. This research argues for such elements required for development of a model for an effective teacher. The model provided by this research not only highlights the domains of effective teaching that mainly develops interest in educating teachers, periodical teacher testing for his content and pedagogical knowledge, also referred to as pedagogical content knowledge; but also personal knowledge and knowledge of context of teachers is taken in account. It is suggestible that this should not just be the knowledge that teachers possesses in certain areas comprising overall environment including physical and social environments, intellectuality and emotional environment of the teacher should overlap and interact accordingly. The teacher evaluation is suggested because examining teachers not only challenges teacher trainers to reorganize the techniques they employ for pre-service and in-service teacher trainings; but also assist to assess and reward the teachers accordingly.

Keywords: Teacher Training, Pedagogical Knowledge, Assessment, Learning Process, Motivation

INTRODUCTION

Teaching at in common meant imparting knowledge or course contents to learners, so that they are able to communicate whatever they had learnt. However, it is worth to mention that great teachers are successful to communicate their learners effectively. All of us remember about the great teacher teachers but lacking the sense about the individual teachers that what great teachers they are. This study arises from my Ph.D research based on the in depth interviews of the teachers as well as the students in the field which included science teachers teaching at all school levels. Moreover, the elite sports coaches were also included in these interviews. This materialized that the science teachers and coaches are two quite variable groups of highly effective teachers on the whole showing remarkable similarity. Following are some of the emerged common features:

- Stronger content knowledge and discipline;
- Pedagogical skill parity to the discipline and environment;
- Knowledge and skill enabling to form sturdy association with learners, a relation and anxiety for owing individual learners; an involvement with solid moral code;
- Communicate the context knowledge they teach.

The present study integrates these segments through a rational model and developed this model by using observations and personal interviews with an assorted sample of effective teachers.

IMPORTANCE OF MODEL

A complex phenomenon could be simplified by a rationale model and it makes concrete abstract with necessary fundamentals required for clarifications to be evolved and interpretable observations. The model is a tool that empowers the development of novel ideas and explanations; while production and modification of model is the essence of vibrant and non-linear processes entailed to develop knowledge. This model is being used to produce a rationale plan of effective teaching so that the analyses can be effective ahead of mere behaviours and attributes. The model also provides a language not only to discuss knowledge possessed by an effective teacher but the way this knowledge interacts as well. The model also attempts to be a tool for dynamic analyses of an effective teacher to interact environmentally, socially, emotionally, physical and

intellectually and to describe the extent of effectiveness (Barnett & Hallam, 1999; Brew, 2000; Brockbank & McGill, 1998; Chan *et.al.*, 2000 and Gibbs, 2000).

AN EFFECTIVE TEACHER

How a teacher is judged for his effectiveness? Many evidences have been used in various studies for judgment of effective teacher such as: certification, marks of the students they achieve, colleagues' assessment, the community or the students, from establishment of classrooms, professional status, practical efficacy measured by associating with academic success of the students, and efficiency assessed by communication normally by conception of a better teaching. By nature, this study is normative but developed on the basis of information from realistic studies (Gordon, 1999; Hofer & Pintrich, 1997).

The pragmatic research history correlates sample of an effective teacher in a certain discipline of education or specific educational system having various qualities and practices that has developed many characteristics correlated to effective teachers. Although these components have been developed by integrating many lists of characteristics and examining these as a dynamic feedback system and their reaction to diversified context has hardly ever been explored in a systematic manner (Coaldrake & Stedman, 1999; Howard *et.al.*, 2000).

THE COMPONENTS OF A MODEL

The characterization of components make up an efficacious teacher can be done in many ways; which mainly include:

- content knowledge;
- curriculum knowledge;
- knowledge in relation to general pedagogy
- knowledge regarding pedagogical content
- knowledge of student and their characteristics
- knowledge of teacher in relation to educational ends, values and purposes
- In depth information of teacher in relation to educational contexts.

Some studies have shown characterization of the segments related to professional know-how of teacher as:

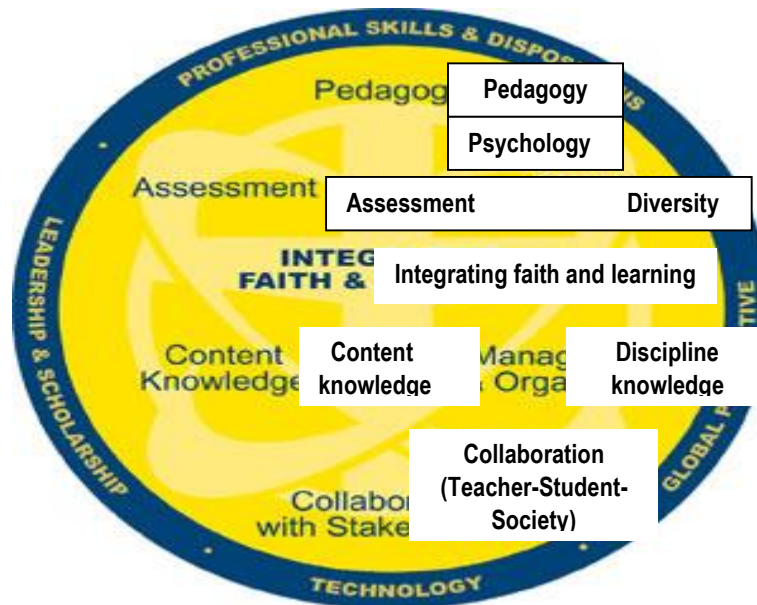
- Pedagogical, theoretical and practical awareness
- Teacher's attention of concern towards students
- Logical reasoning on pedagogical elements
- context perception
- teacher's research and reflection on know-how and follow-up practice
- working alliance with co-workers and society
- area of authority outside classroom
- thoughtful to bring change
- Monitoring of student learning for his improvement

A set of core propositions for teaching may be established by a teacher such as:

- Teachers' commitment to learners and their learn
- The teachers' familiarity with the subjects they deal with and methods to deal with the subjects efficiently
- The teachers should feel responsibility seriously to execute and watch learning process of the students
- Teachers do think systematically on their practice and learn from experience
- Teachers are key members of learning communities

In some studies (Ling *et.al.*, 2001; Maor & Taylor, 1995) the researchers focused picky aspects related to personal qualities of a teacher which mainly include ability to associate with the students, communication, loyalty or honesty. I have classified such characteristics into certain clusters such as content knowledge, skills and know-how in relation to pedagogical aspects, context knowledge as well as personal knowledge. The significant build related to knowledge regarding the pedagogical content is categorized in the connection of content knowledge and pedagogical skills. The other connections include personal epistemology of teacher; his knowledge regarding prospectus and relation that a teacher forms with co-workers/colleagues and the learners/students.

FIGURE-1
FOUNDATION OF A MODEL OF EFFECTIVE TEACHERS



DISCIPLINE KNOWLEDGE

The sense of effective teaching develops with the teachers' great deal of knowledge with the time and a teacher cannot be effective if he relies upon his professional background. A motivated teacher integrates the bits and pieces of his knowledge into a proper context and assesses where these fit well. At mass level the debate in relation to teaching standards and teachers' abilities has reduced the claims of insufficient discipline knowledge. The array and extent of discipline knowledge needed by the teaching staff for their learners of diversified maturity is emphasized in view of rapid increase in knowledge in most disciplines (O'Brien, 2002).

The discipline knowledge covers the perception of salient concepts, association among these concepts, skills and ideas related to subject and acknowledged as fundamental ability requirement to effective teaching of a discipline. The teacher is frequently depicted in terms of discipline understanding specifically. No doubt the discipline know-how is an essential component of teaching theories whether related to conventional communication models, behaviourist

or constructivism. This knowledge related to discipline is typically an important part of teacher training (McCormick & Paechter (1999).

The research scrutinizing the discipline awareness in the process of teaching has differentiated the novice (trainee) and expert (trained) teaching individuals; how these teaching categories layout, access and apply exact information related to discipline. The efficient teaching individual amounts knowledge, access most pertinent one, extract and communicate maximum related information meaningfully. In fact, the research is the process of generating information or knowledge opposing contact on teaching process. The knowledge concerning to discipline aspects vitally required in development self-confidence of teacher. Understanding and ability discipline knowledge application constructs self-confidence, and obviously the self-confidence has the significant role in preparation of an efficient teacher.

Though the knowledge pertains to discipline teaching is a prospect when it is used in the selection and judgment of a teacher for knowledge and personal qualities, it composes highly valued its segments including integration of knowledge related to discipline aspects including interpersonal skills of the teaching individual, motivational style of the teacher and application capabilities. It is increasingly realized that pedagogical skill and discipline knowledge have inextricable links; should emphasize the association between exacting teaching management and subject matter (Pajares, 1992).

PEDAGOGICAL SKILLS

To be organized well is essential for an effective teacher; and in case a teacher is not well organized, the individuals and the communities could not get any impact in sense of effective teacher. It is to mind that the teachers are very organized to show the individuals and communities that they know what the teacher is doing well and they feel that whatever they do might not be purposeless and unnecessary.

Augmenting professional teachers who train students develops dissimilarity of practice under the existing teaching setup and under such circumstances the discipline teaching develops improvement, adjustment and motivation in the skills of existing teaching staff. The pedagogy is an art of teaching science; and the basic concept of pedagogical knowledge is primarily the classroom management skills, classrooms organization, assessment of students, skills and methods

for motivating students for efficient learning, personal information about the students at family level and possessing social interactional skills. The research exploring effective teacher confirms that pedagogical know-how bears a resemblance to proficiency in any of the relevant fields, as it is the most complicated knowledge outline that is not feasible to achieve or to be master of it and not accessible to everybody searching for (Penso (2002).

Separating discipline knowledge and pedagogical knowledge creates tension, and from the sense it is to assess that how one who teaches can be took apart from one who learns. Simply the knowledge cannot be separated from the learning or prospectus; hypothesizes that studying pedagogy separately from knowledge relevant to discipline is likely to overlook understanding of relationship. The attention can also be invited that transferring educational techniques across discipline points out learning of new knowledge is also referred to as pedagogical exercise. The variability of the subjects has parallel variability with epistemologies. Hence, a teacher professionally associated with teaching physical education cannot automatically go to transfer his expertise in teaching English. There are specific, explicit and implicit recommendations and proscriptions of behaviour in each field for teacher as well as for student (Pintrich, 1990).

To separate pedagogical skills and personal qualities is not natural and assumed as an artificial arrangement. The pedagogy may be the coherent know-how about children, and understandable for a child and youth alike such as may be perceptive over youths how they experience things, what the young people think about the global world; how the young people assume what the world is, and how every child is exceptional one. The teaching in developed nations has entirely looked at the implication of the tutorial concern to perform and how teach to learn efficiently; so association among the teachers and students is of significance. The relationships are developed by teacher with the students; he cares them for their future, and adjusts interactions on the basis of situations and student's experiences. In case of a student, teacher offers complex opportunities highlighting his experience, provide them true sense of real growth and development (Prawat, 1992).

KNOWLEDGE OF CONTEXT

The context is mainly described as the classroom management and overall environment available for the teachers and students in an educational institution. The classroom, educational system, school culture, school environment, community and students all are the segments that influence teacher's effectiveness significantly. It is common to say that an expert, who may be effective in one context, may be struggling in another. It is well known saying that that a model of effective teaching may be contingent with the situation. The contingent theory needs involvement of factors of environment volatility, discipline taught, backgrounds of the students, community, organization and philosophy. With the change of context the degree of significance may vary rather than the change in components. The discipline knowledge becomes more important under the highly academic environment while personal qualities come more to the fore for marginalized students. The academically gifted students had rich sense of need for subject information while qualities of effective teachers of special physical education were personal kindness and apprehension (Savin, 2000).

PERSONAL KNOWLEDGE

On the basis of strong personal knowledge, an effective teacher always feels that his existence is to help people in true sense. The significance of a strong character, simple virtues of grace and honesty, dress, caring for friends, doing thing basically right, punctuality, politeness; so a teacher wishes that his students may be the great human beings, and they should improve a lot as compared to the moment first met them. These are stated ambitions of a senior primary school teacher on training in teaching methods. The trainee teacher further described effective teacher that they got teacher training from a great teacher trainer and they initiated from existed skills complex in a person becomes teacher, and then gone through the way when subject matter was represented; so the enthusiasm, dedication, self-discipline, commitment and personal power are the key tools that empower an effective teacher.

The personal qualities of effective teacher are identified that he might be influential in the overall picture of the school and society. The moral code of behaviour included honesty, integrity are described as the components of personal qualities. The role of personal qualities

of a teacher is also to understand qualities of others in addition to address and give insight into the question. The behavioural attitude needs to be taken into consideration that reflects that efficient coaching and guidance are associated with honesty and integrity. These behavioural activities also offer bases for establishment of confidence and a trusting relationship among the teachers and students (Schommer, 1994).

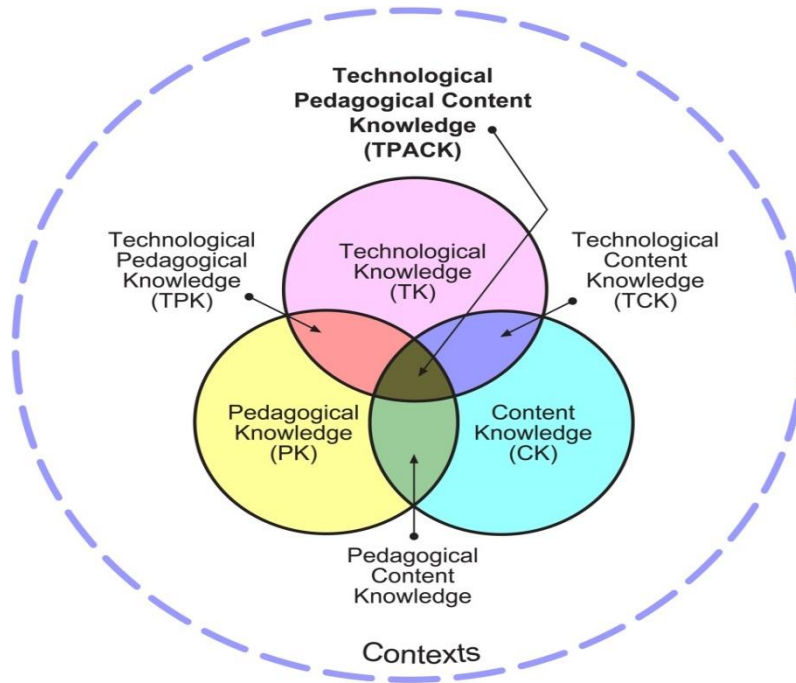
The true leaders and effective teachers are executed by a sturdy and logical philosophy that is influenced by the beliefs related to self-efficacy. The teacher depicts a holistic way of life to center guiding students for successful life. Such guides have optimistic beliefs related to self-efficacy that may comfort with the innovation and taking risk. The beliefs related to self-efficacy are potent behavior predictors and explain the people's choices, their ambitions and determination under tough situations. Developing positive beliefs related to self-efficacy is a steady process that develops over time by gaining experiences, revelation and a deeper self-understanding.

Dealing individually is one on one condition and the teacher spent most time to develop an individual for understanding you can work with for catering their individual educational requirements. It is more psychological to definite level; the teacher has to care for every one of the students individually having diversified list of prerequisites and deal individually with in a group within a time limit (Tilleman, 1995).

THE EMBEDDED NATURE OF TEACHERS' KNOWLEDGE

The teachers are major part of segments in shared information; their knowledge is of no use in isolation; and they have an enduring conversation with it. The fig. 2 is an effort to establish teacher's knowledge within the physical, emotional, social, environment, intellectual that the teacher occupies. Hence, content knowledge is referred to as the subset knowledge related to all disciplines and perhaps constitutes its smaller portion. The academic information is essentially a leap to the societies of practice that a teacher adds to. The knowledge and skill of teacher related to the educational context establishes in a frequent exchange of ideas with the real context such as the classroom, the school and the society. The teacher's personal knowledge is leaps into their emotional and social relationship with those they are related.

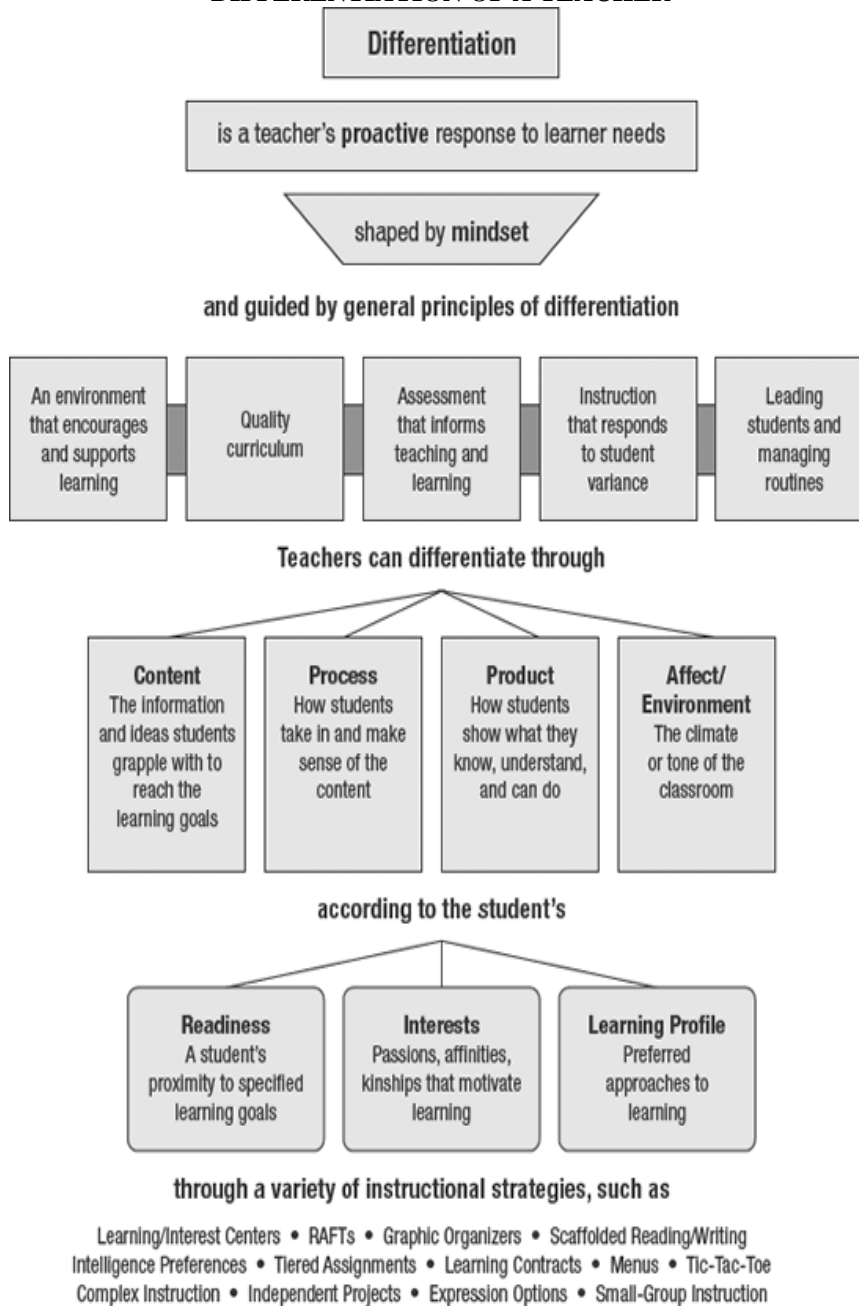
FIGURE-2
THE CONTEXT OF THE COMPONENTS OF EFFECTIVE TEACHERS



DIFFERENTIATION

Dynamics: In the sense of dynamics, the teacher is a person that coordinates activities related to learning and intercede the social environment when observing and correcting the performance of the students. The developed model is not simply the way to conceptually organize the shopping inventory which is generally provided to depict effective teachers. The skills and knowledge subsist in humans not segregating and hence interrelate within the teacher as well as with the teachers' physical environment, intellectuality, social response and emotional environment. The developed model suggested a foundation of analyses and discussion on the proposed dealings in certain teachers (Shulman, 1987).

FIGURE-3
DIFFERENTIATION OF A TEACHER



FROM PERSONAL TO DISCIPLINE KNOWLEDGE (AND VICE-VERSA)

There is a great impact of discipline on the teachers' personal qualities that they are master for and vice-versa. The teachers teach what they are and they become what they love in sense of a teacher. At the trainee level, the self-efficacy is improved with the perception and by the discipline knowledge application; while the context and pedagogy valued relatively less. Once the development of self-efficacy is ensured inside this frame-work, the students or the teachers who are on the training emphasize allied components of knowledge. Even, at a time, the experts and experienced teachers can merely change some part of the teaching; while it is rather significant to maintain confidence when other spheres are stabled. Henceforth, significance of control and use of discipline knowledge among learner teacher is recognized for faster and compact growth of their personal knowledge.

FROM DISCIPLINE TO PEDAGOGICAL KNOWLEDGE (PEDAGOGICAL CONTENT KNOWLEDGE)

The debate on the knowledge related to pedagogical content has speedily recognized particularly in education of science subjects; which is partial because it represents arguing specialized professional knowledge that is possessed by teachers only. However, it is part of intellectualities that happens during discussion of teaching and the teachers. The content knowledge related to pedagogical aspects is basically a connection between discipline and pedagogical knowledge which can be defined in many ways under different phrases such as subject matter to teach potent analogies, examples, explanations, illustrations and demonstrations. In other words, these are the ways that represent and formulate subject to make it comprehensive for others. This reveals that pedagogical content knowledge is the means to think of professional skills and knowledge of the teachers has confirmed difficult to recognize it explicitly. Moreover, pedagogical content knowledge draws on two different aspects of study; and because it is rooted in the teaching process, learning concepts and skills; it is also rooted in the practice community.

FROM PEDAGOGICAL KNOWLEDGE TO KNOWLEDGE OF CONTEXT

This involved the elements related to curriculum knowledge and learners' knowledge as well as their qualitative aspects; it emphasizes the significance of such connection to build teacher expertise. Five stages have been described by the researchers for development of teacher following the way from trainee teacher to trained effective teacher. With the movement of teachers through different stages, the role of context becomes relatively more pronounced in shaping the suitable choice pedagogical knowledge.

FROM KNOWLEDGE OF CONTEXT TO PERSONAL KNOWLEDGE

The context and personal knowledge are bridged by the relationships and associations with students as well as colleagues are specifically imperative because the feedback cycle of change is allowed by these. It intervenes such a satisfaction enabling teacher grow and develop continually. This also provides ability to mould a teacher's teaching performance that may closely aligns with the learning needs of the students. Such ability in teacher may be developed and improved by increasing perceptive understanding amongst teachers and the students. This attitude may entirely be based on motivation to develop personal relations with students individually and as group as well. To know the students personally is of primary importance to help individual struggle and learning for development of understanding. It is need of the time that the teacher should personally know the students individually and must be perceptive for the ways they come in contact and develop relationships within the student group. This is because, with the development of group, strong relations within the student groups develop continuously. Constructing relations starts with the development of real concern with the students to listen them teacher should know the changes in nature of the students and in the classroom context as a whole. The teacher must take entire interest in such changing nature of the classroom context and response accordingly to cater the student needs. The relationships are developed and improved on the basis of trust are imperative when the students learn more than they know and the teacher teaches more than he tells. It is to mention that the trust is the two way process and important from the perspective of learners and teachers equally as well.

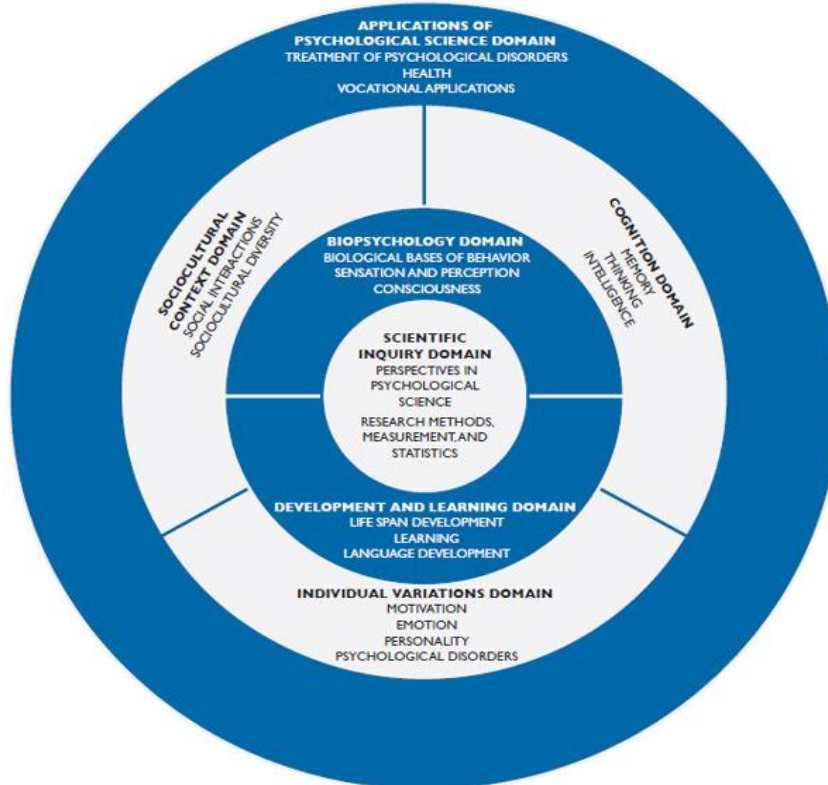
IMPORTANT CONSIDERATIONS FOR TEACHING PSYCHOLOGY

Infusing Diversity Issues: There should be keen awareness of the significance of psychology among high school teachers because awareness of psychology provides the sense to consider significance of cultural diversity for perceiving human behavior and interactions. There should be inclusion of diversity and individual difference issues in the entire course. By infusion of such content in the psychology course, psychological science is presented by teachers by a lens comprehensively which also represents diverse student population of today. The incorporation of psychological Issues such as race and ethnicity, gender and culture, expression and identity, sexual orientation, religion, disability, socioeconomic position, national origin and age in the course.

Representing the Global Nature of Psychology: The psychology is becoming a global discipline of great significance, because teachers deal with the students from diverse backgrounds and multiple cultures. Psychological studies show that psychological phenomena may execute variably in different cultures. On the basis of these findings to students, the teacher reinforces the idea that researcher might be cautious on simplify these findings ahead of the studied populations.

The significant areas of psychology is addressed by standard areas within each domain, but a teacher teaching high school level students may have little time to teach entire psychology units during the school year. According to the APA (2003) model, significant domains of teaching psychology that could efficiently service the purpose so far the high school level students are concerned include: Scientific inquiry domain, bio-psychological domain, development and learning domain, sociocultural context domain, cognition domain, individual variation domain and applications of psychological science (Figure-4).

FIGURE-4
PSYCHOLOGICAL DOMAINS OF SIGNIFICANT CONSIDERATION
FOR HIGH SCHOOL TEACHERS



Source: American Psychological Association: National Standards For High School Psychology Curricula (www.Apa.Org/Education/K12/National-Standards.Asp)

RESEARCH ISSUES

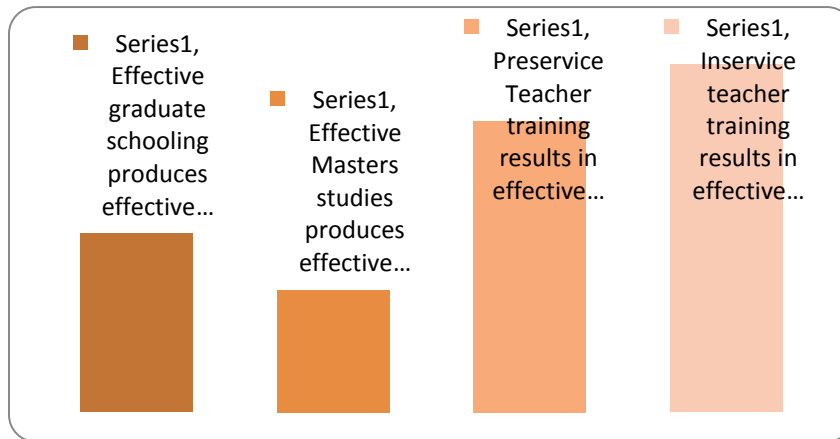
The Research Project: The developed model is evolutionary dynamic but parallel to the knowledge of teacher and is component of an on-going research project of author. It is planned to:

- develop the model and evaluate it critically so that it can be described meaningfully by the effective teachers for the multiple disciplines

- over the succeeding year the developed model needs to be confirmed along-with its components in view of the interviews with certain effective teachers of multiple disciplines
- investigate relationships and subsequent communications among generally recognized characteristics of effective teachers referred to as our data and the literature as well
- examine the role of personal qualities critically in the motivation and production of effective teachers
- investigate the impact of self-confidence on the growth of teacher
- examine the context significance on effective teaching
- Invite teachers to perceive on the development of their knowledge during the career they possess.

The teachers develop over the life span and in addition to such components and associations amongst are change. Giving expression to the developing teacher is a significant challenge for this model of effective teaching. The developed model may be out looked as a frame from a movie of professional life of the teachers in regards to relative significance growing and diminishing of the components over time and in view of the environment. A hopeful, profound pre-service and occasionally in-service training of the teacher develop career knowledge of the teacher from teacher educators and the profession during pre-service practicum and then during their professional life. Fig. 5 guides thinking on this growth of an effective teacher. The effective teachers grow over decades and there is need to acknowledge their services and wisdom and this model offers a language and could be a teacher apparatus and for those who educate teachers and develop teachers to discuss such evolution process.

FIGURE-5
ROLE OF ACADEMIC AND TEACHER TRAINING INSTITUTIONS IN
DEVELOPMENT OF EFFECTIVE TEACHER (PERCEIVED BY 100
SENIOR TEACHERS OF DIFFERENT SCHOOL LEVELS)



Source: Primary data based on survey of teachers of multiple categories during PhD research.

The developed model strengthens the philosophy in certain courses of education selectively of which is quoted below:

What has been achieved from the legion of earlier students which were under training for teacher education course that a few of the teachers were liable to recognize connection between the units they were taught for and their future career until they complete final term/semester of their study? They could not perceive how the teaching types and knowledge is accumulated in the training course sessions and more prominently about their future career. With the introduction of new subjects/courses, there would be an opportunity to settle/adjust with development of new course units. The team involved in the development of courses spent considerable time to make the units interrelated. In first central unit, the course development team expended time revealing the course contents and explained the knowledge type the teacher could expect to evolve from different units, and relations amongst units. The concentrated areas of knowledge include: subject major, skills related to teaching, well aware of the school system, skills related to communication and personal resilience as well. The model also describes that students

with varied level of development join the course with strength in different areas of knowledge; though, they require evolving entire areas and developing connections amongst these areas of knowledge. There are some areas that develop truly when the teachers are in the schools of their posting and such foundation of knowledge develops with the working experience. The significant element tried in this model to explore the students is that the development and the growth in such areas of knowledge could vary amongst them; it may not happen all at universities where they academically studied; but with different schools they could need a varied range of skills. Hence, it would require that such students might be perceptive and develop a promising understanding of the immense image and sought out their destiny at this moment.

Being teacher trainer, our task aimed at producing truly the teacher with high effectiveness and improves the effectiveness of teachers at work. For doing all this, models are very useful tools, implicit generally, and of the challenges to integrate the segments of effective teaching into evidence based model; that may be very useful for making teacher preparation more effective.

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