



REASSERTING IMPROVED PEDAGOGICAL PRACTICES FOR ENHANCED QUALITY INSTRUCTION AT HIGHER EDUCATION

Dr. Sajida Zaki

Associate Professor, Department of Humanities,
NED University of Engineering & Technology Karachi - Pakistan



Dr. Sajida Zaki has a Ph D and an MA in Applied Linguistics. Her professional career spans over a decade during which she served leading public and private sector institutions as faculty in English and Communication. She is involved with various organizations, including SPELT & ERDC, where she extends her materials' development, and assessment and evaluation expertise. She is an active researcher and is presently supervising and teaching Research to MS & Ph D students at English Dept Karachi University, Hamdard University, SZABIST and Baluchistan University. She has been a facilitator for the NAHE- HEC faculty development programmes and is a member of ELTR Project HEC. She is regularly invited as Guest Speaker at numerous academic and professional forums including PAF- Air War College, School of Army Air Defence, National Institute of Management, and SZABIST. She is a member of editorial board, Journal of Independent Studies & Research (JISR).



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Dr. Sajida Zaki¹, Mr. Mohammad Zaki Rashidi²

¹Associate Professor, Department of Humanities,
NED University of Engineering & Technology Karachi – Pakistan

²Assistant Professor, Department of Management Sciences,
SZABIST, Karachi – Pakistan

ABSTRACT

Purpose

The major purposes of this paper are (1) to reflect on the basic framework of instructional process with the teacher and students' roles, and to probe the teaching philosophy that ultimately shapes the instructional input and the classroom practices of individual teachers; and (2) to suggest replacement of existing traditional methods with updated and authentic approaches which would enable the teachers to carry out instructional process as suggested by the basic educational framework.

Methodology

Critical literature review related to Effective Instruction with special reference to higher education settings, that aims at teaching and learning to produce students who have sufficient technical knowledge and skills to undertake their careers, along with the capacity to exhibit higher order thinking skills for solving myriad of complex problems emerging in the professional, social and economic spheres of life and who remain lifelong learners. The approach of the research is purely qualitative and exploratory in nature while the results are validated through secondary sources.

Findings

The paper provides an insight into the teaching learning process undertaken in the local contexts, draws attention towards the teacher- student contribution and relationship during this process, and defines the teaching philosophy required to be consciously adopted by the teachers while planning their instructional plan at the tertiary level education. The discussion reveals the conventional methods currently in practice within higher education settings and elaborates the effective instructional techniques, also justifies the need for shifting to newer methods.

Implications

Higher Education commission and academia with Quality Enhancement Cell (QEC) or ISO Certification have initiated efforts to emphasize upon the need to induce quality in education through faculty development. Several NGOs and private organizations are currently offering services to facilitate the teachers in both updating their knowledge and developing new skills-set which have become increasingly essential to acquire owing to the changing global and professional demands. The teaching practices in the local context reflect a traditional outlook on the methodology used for imparting education; consequently, the students' performance and outputs need a lot more desired for the higher education institutes to be able to produce the professionals who can assume the future roles and responsibilities. The recommendations carry important implications for the faculty and academic heads of institute of higher learning; also, for all those concerned with policy making of instruction and teacher education within higher education.

Keywords: Teaching at higher education, teaching learning process, teaching philosophy, quality through instructional improvement.

Paper Classification: Conceptual Paper

HIGHER EDUCATION & THE QUEST FOR QUALITY

With the rapid expansion in higher education in the past decade coupled with a rising emphasis on accountability, teaching and learning quality has moved to centre stage worldwide. (Ho et al. 2001). The quest for excellence in college and university teaching is now a worldwide concern. Universities pay increasing attention to the quality of the pedagogy practiced in their classrooms (Hativa et al. 2001). "Quality, outcomes and cost-effectiveness of methods of teaching and learning in colleges and universities are being scrutinised more closely" (Topping, 1996). The university and college teachers are perceived as transmitters of excellence in higher education by improving undergraduate teaching and learning (Ramsden, 1987). Quality in Education heavily rests with the 'Quality of Teachers' and their 'Quality of Teaching' (Zaki, 2006). Academic literature and research have clearly identified Teacher as the primary agent of quality and any attempt to enhance the academic standards or students' learning need to focus on the 'Teacher Factor'.

Academic institutes have undergone major changes in infrastructure, as well as their academic philosophies and modalities due to the happenings in the socio-economic arena globally. The workplace, for which the workforce is trained in these academic institutes, has completely changed with the professional work becoming more technical and scientific. These environmental changes have ensued serious consequences to the way academia prepared their students for various professions. Today, graduates entering job market and pursuing professional careers require a completely altered list of knowledge, skills and attitudes which on one hand serves as the eligibility criterion for starting their professional lives and as their competitive on the other. Contemporary educational research and analysis of education, in general, and of higher education, in particular, stress the need for the traditional pedagogical practices to be aligned productively with the environmental changes and demands. Academic and professional institutes bear greater responsibility in

training students for addressing economic, political, societal and global problems and providing better solutions for improving quality of work and life , theirs and of others around them . This implies that universities must be connected with their larger environments and “should produce human resources trained to meet the needs of the economy, to concentrate on practice and on lifelong learning” (Commission of the European Communities, 2005). The prospective employers, especially from the corporate world and industry, are insisting academia and university faculty to stop considering students as ‘passive recipients of theoretical information’ and instead train them on the application of acquired knowledge on work related and actual methods for the development of the crucial professional skills; also to train them on the processes of enquiry, problem-based learning skills. Globally, the academic quarters are receiving calls for developing higher order thinking skills, problem solving abilities and educational experiences of students to revolve around responsibility and judgment. Consequently, “Institutions of higher education have come under increasing pressure to change their instructional practices”. (Kozma, 1985)

Today, higher education contexts reveal a greater realization of the fact that desired outcomes of education and the quality of the product is impossible with the present conventional methods; and the awareness that the improvement of undergraduate education heavily depends on the faculty and their instructional input (Chickering & Gamson, 1987).The need to align pedagogical practices with the changes in the demands of the professions, the developments in science and technology, the advancements in the teaching – learning methods is both imminent and inevitable. Also, “the social background of the students has become more heterogeneous, as has their academic preparation, and these changes challenge traditional teaching practices” (Kozma, 1985). The traditional teaching practices can no longer achieve all the objectives of higher education, nor the specialized content or skills that are to be imparted in engineering, medicine and business education. The outdated pedagogy practiced by the faculty of higher and professional institutions and the undertaken academic activities having no link with the wider world came under attack and these words can provide an insight on the status of higher education, “the reality is that better teaching methods exist. The literature in general education, technical education, and educational psychology is replete with methods that have been shown to facilitate learning more effectively than the traditional single-discipline lecturing approach. Unfortunately, these developments have so far had relatively little impact on mainstream engineering education. Although their content has changed in some ways and the students use calculators and computers instead of slide rules, many engineering classes in 1999 are taught in exactly the same way that engineering classes in 1959 were taught” (Felder et. al, 2000, p.26).

The academic contexts have started to resonate with the idea of academic interventions which could improve the current teaching –learning practices since, “developing the quality and effectiveness of teachers has joined standards, testing, and accountability and market mechanisms as a primary policy instrument for educational reform” (Murphy & Datnow, 2003, p.8). Research and literature is replete with the fact that educational innovation, instructional advancement and academic improvement largely depends on the teachers’

attitude towards teaching and their skills in carrying out this activity (Newmann & Wehlage, 1995; Fullan, 2001, Smiley et.al., 2004). A study regarding the analyses of 13 lists of characteristics of effective professional development, published over a decade, reported that enhancement of Teacher's content and pedagogical knowledge was the most frequently cited trait (Guskey & Kappan, 2003). A number of studies and projects have been carried out to improve higher education through improvement in teachers pedagogical knowledge and skills like a model for the improvement of university teaching was carried out at Physics Department at Tel Aviv University in which a specialist worked with teachers in need of teaching improvement and the results of the study show an increase in quality of instruction and in faculty motivation and attitudes toward both instruction and students (Hativa, 1995). Owing to the far reaching consequences of teaching and the possible benefits effective teaching can bring to the various stakeholders of higher education, the need for teachers to engage in conscious and reflective teaching is all the more emphasized, as indicated by these words "society expects its teachers to care for students, to care about their learning, to be knowledgeable about curriculum content and to know how to induce learning in others" (Jeans, 1992). This view, then, holds teachers largely responsible for ensuring students' learning, "in recent years the emphasis in both research and government policy has been on improving the quality of teaching with a view to improving learning (Johnston, n.d.). It is evident that teaching needs to coincide with learning implying that the way teaching is carried out, the learning naturally assumes similar shape; and the way learning occurs the teaching must conform to it. This fact was further endorsed by Ramsden (1987) that it is important for the teachers to understand the learning process and consider the way students learn, their perceptions and competencies related with the learning process, which will surely help teachers in devising a suitable instructional strategy.

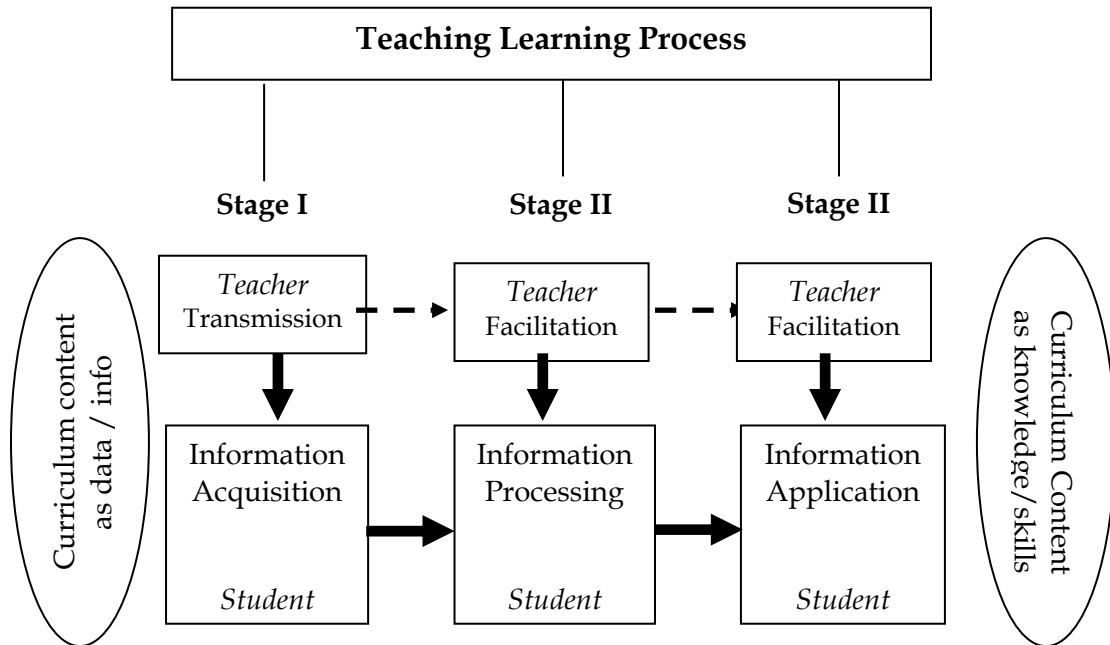
REFLECTING ON TEACHERS TEACHING PHILOSOPHY

Understanding of the Teaching Learning Process

Any improvement of teaching- learning needs to carefully analyse the teachers' teaching philosophies as "all teachers bring to the classroom or lecture theatre an inbuilt informal theory of teaching. This theory, which may be either consciously stated, or implicit in what the teachers do, has implications for the way in which students learn" (Johnston, n.d.). Thus, teachers' professional development is not merely concerned with equipping them with improved instructional methods; rather it has more to deal with fundamental changes to be brought about in their concept of teaching and teaching excellence. Every teacher has a unique conception about teaching based on the experiences he or she goes through as a student or teacher. Therefore, teaching philosophy under which a teacher approaches the curriculum and the learners varies tremendously from individual to individual. (Bowden 1988; Biggs 1989; Ramsden 1992, Fox 1983; Martin & Balla 1991). Hence, it is extremely vital for the teachers at higher education to take a fresh look at the individual and collective pedagogy that is ultimately shaping up the academic output and outcomes. The evaluation of instruction at any level begins with analysing whether the teaching-learning routine conforms to the basic process of the teaching -learning as established in the literature of

educational psychology. The teaching learning process (see Figure.1) is a journey from the information reception to knowledge formation which is carried out in three stages.

Figure-1: Complete teaching-learning process with teacher and student's roles at each stage of the process.



It is a common occurrence and observation that teachers and students during teaching learning experience concentrate their efforts mostly around the first phase only. This practice gained currency owing to the traditional assessment systems which are revolving around the assessment philosophy of testing of learning instead for learning. When the major objective of teaching and testing revolves around “how much”, then the comprehension and application of the transmitted information for the teacher and acquired information for the learner becomes an insignificant matter. Thus, when in an education setting teachers’ energies and time are spent largely on the completion of the course outline and the transmission of information through handouts, notes and books etc. using direct teaching method, it can be taken as an indication of the teaching learning confined to the first stage only. This can be further established through the student-behaviours of passively receiving information in the class and later rote memorization of the concepts for exams. As long as the teaching learning process is limited to the first stage, there will remain a dearth of instructional strategies and classroom procedures that enable students to understand and apply the acquired information for the ultimate knowledge conceptualization and skills development.

Mapping Lower & Higher Level Cognitive Skills on the Teaching Learning Process

The teaching- learning process (illustrated in Fig. 1) is undertaken to achieve certain objectives which are targeting the development of certain “skills that cover a broad level of

spectrum of complexity and difficulty” as indicated in the Table .1 below which illustrates the taxonomy of educational objectives (Bloom et.al., 1956 as described in Ormrod, 1998).

Table 1: The taxonomy of educational objectives (cognitive domain)

Cognitive Level	Skill Targeted
1.Knowledge	Rote memorizing of information in a basically word-for-word fashion. <i>e.g.</i> Reciting definitions of terms, remembering lists of items.
2. Comprehension	Translating information into one’s own words. <i>e.g.</i> Rewording a definition, paraphrasing a rule.
3. Application	Using information in a new situation. <i>e.g.</i> Applying mathematical principles to the solution of word problems
4. Analysis	Breaking information down into its constituent parts. <i>e.g.</i> Discovering the arguments underlying a point of view
5.Synthesis	Constructing something new by integrating several pieces of information. <i>e.g.</i> Developing a theory or a process or presenting logical argument in defending a viewpoint
6. Evaluation	Placing a value judgment on data <i>e.g.</i> Critiquing a theory

Levels 1–3 are commonly known as *lower-level skills* and Levels 4–6 are *higher-level skills*. If these cognitive levels are mapped on the teaching learning process above, the three stages and the six cognitive levels as below

Stage 1 is concerned with *Knowledge* level

Stage 2 is concerned with *Comprehension*

Stage 3 incorporates *Application, Analysis, Synthesis and Evaluation*.

This alignment of cognitive skills with the stages of teaching learning process provides an at a glance opportunity to review the educational context to see the level at which the entire teaching learning efforts are being made. Quality of Instruction at higher education depends on ensuring that the teachers and students complete the process and pass through the three stages, which then becomes the only way to ensure development of the six levels of cognitive abilities in students. Teachers for effective instruction that will benefit all the stakeholders of higher education should plan their pedagogical input across all the stages and levels.

Four Instructional Philosophies

As pointed out earlier in the paper, every teacher carries out classroom teaching by consciously or unconsciously following a teaching philosophy (see Fox, 1983; Baird, 1992; Svensson and Hogfors, 1988). The Table 2 below presents four teaching philosophies as coined by Fox (1983), the ideas have been extended further to vividly portray the differences; and to enable teachers to identify the philosophy they are currently practicing,

and the direction in which they are required to invest efforts in order to improve their instructional plan.

Table 2: Comparison of four Teaching Philosophies

Parameter	Transfer	Shaping	Travelling	Growing
Underlying Philosophy	Teaching is transferring a commodity and students are treated as empty vessel	Teaching is training of students' mind in a predetermined form	Teaching is a journey of exploration both teacher and student explore it together	Teaching is flexible in its outcomes, direction and process
Teacher's Role	Master who controls and owns teaching learning process	Master Artisan who controls the process, determines the shape of the finished product by setting outcomes	Mentor who guides the students throughout journey	Adviser who responds critically to the contextual issues where learning takes place
Student's Role	Passive waiting to be "filled" without an idea about "with what"	Passive but knows the "outcomes" of the learning process the "finished shape"	Active and reflecting upon the content and teaching process	Active and makes decisions about the direction and outcome
Approach	Linear	Circular	Spiral	Hybrid
Process	Done once	Repeated	Repeated by changing strategies	Combines different modes of teaching and learning

The comparative features and the role of teachers and students in each of the four philosophies clearly point out that in order to execute effective instruction at higher education the teachers need to shift towards the Travelling and Growing philosophies. This shift will enable them to complete the three stages of the teaching learning process and also enable their students to develop higher order thinking skills.

THE WAY FORWARD: IMPROVING INSTRUCTIONAL TECHNIQUES

The first section of this paper was about rethinking the basic parameters of education that govern the instructional environment. The discussion draws the conclusion that the effective instruction at higher education is directly related with the completion of the teaching learning process with the attainment of all the cognitive levels, which is a possibility only if the teachers develop their instructional plans under the travelling and growing teaching philosophies. This conclusion opens the discussion on the ways to

achieve this desired outcome and to consider instructional techniques which would facilitate the teacher in equipping the students with a thorough understanding of the learnt content and the skills to apply it in their domain related activities. This section presents instructional themes around which numerous techniques can be outlined for achieving the targets (as above) of the teaching learning at higher education. These themes are delineated briefly and are presented along with their contrastive approaches.

Surface Vs Deep Learning Approach

Students during a teaching – learning process are either engaged in rote learning for passing the exams or are seen developing an understanding of the content they are studying. The former attitude is an indication that a superficial approach to learning is adopted whereas the latter reflects a deeper learning approach. The surface approach to learning is characterized by poor understanding and retention of the learnt matter, and low student motivation and passive involvement in the teaching learning process. In contrast to this approach, deep learning involves students to actively and consciously go through the learning experience with an aim to deepen their understanding and to retain it longer which ultimately enhances students’ motivation. Table 3 presents a comparison of the two approaches, as developed by Harlen & James (1997). This comparison reasserts the recommendations made under Fig.1 and Tables 1&2 above. This “learning with understanding” (Harlen & James, 1997) has been strongly suggested (see Ausubel et al, 1978; Saljo, 1979; Broudy, 1988; Entwistle & Ramsden,1983, Marton et al,1984; Entwistle & Entwistle, 1991; Crawley et al, 2007) since it provides students a chance to attain both knowledge and skills and to develop greater confidence in applying them in their professional fields

Table 3: Comparison of deep and surface learning approaches

Deep Learning Approach	Surface Learning Approach
An intention to develop personal understanding	An intention to be able to reproduce content as required
Active interaction with the content, particularly in relating new ideas to previous knowledge and experience	Passive acceptance of ideas and information
Linking ideas together using integrating principles	Lack of recognition of guiding principles or patterns
Relating evidence to conclusions	Focusing learning on assessment requirements

(Source: Harlen & James, 1997, p.368)

Isolated Vs Integrated Learning Approach

At Higher education level using Integrated Learning Approach can be useful instructional technique since it can help in accomplishing a number of academic objectives and can overcome the limited time constraint. Integrated Learning Approach replaces the surface learning with deep learning, ensures that knowledge and skills are attained simultaneously,

and involves students' actively in the learning process. This approach can be used in "a wide variety of disciplinary settings. Integrated learning means that students practice and learn personal and interpersonal skills, and product, process and system building skills, simultaneously with disciplinary knowledge" (p 130) and "Studies indicate that students are more likely to achieve intended outcomes and are more satisfied with their education" (p 131)

Integrated Learning at Mechanical Engineering programme

In the Mechanical Engineering program at Chalmers University of Technology, oral and written communication skills are integrated into three courses in the first three years of the curriculum: the introductory course in the first year, a design-implement project course in the second year, and as an integral part of the thesis work at the end of the third year. During the first three years, the development of communication skills is focused mainly on academic writing, even though there are strong elements of reflective writing, that is, writing in order to learn. On the Master's level (4th and 5th years of the program), communication skills are further developed with emphasis on improving learning of the technical content. The intended learning outcomes are that students should be able to write both technical (design) reports and scientific reports, to give oral presentations using presentation tools, and to be able to make poster presentations. Project reports also include presentations of course projects and assignments. From the table, we can see that assessment is carried out through feedback on the different activities, where language and communication teachers are working together with engineering faculty to assess content, form, and language. On the Master's level (4th and 5th years), communication skills are integrated mainly into project-based courses. However, even in some lecture-based courses, we highlight the importance of effective communication. For example, in a course on Internal Combustion Engines, students give oral reports of their assignments. Feedback is given on the presentation, both on the delivery, and the quality and relevance of slides (*Crawley et.al. 2007, p.135*).

The excerpt above clearly establishes the need to integrate multiple content items and learning outcomes to provide an integrated learning experience. This is also justified considering the fact that in real world settings the technical and personal and interpersonal skills are applied together; and teaching them in isolation does not allow our graduates to apply very confidently a variety of knowledge and skills collectively in their careers and work place settings. Hence, the classroom context must adopt teaching and learning techniques that allows for integration of skills with the domain knowledge.

Teacher Vs Students centric education & Active Vs Passive learning

Educational practices, under developments in the educational psychology research and literature, have shifted from the teacher-centric to student-centred. The teacher centric

education did not provide any opportunity to students for active involvement in the teaching learning process. The students neither have ownership of and responsibility for their learning, nor a deep learning experience which can allow them to understand fully the discipline knowledge and have the ability to apply it in real world settings. On the other hand, student centred education coincides well with a variety of beneficial academic trends, highlighted earlier part of this paper, and sets the stage for much desired active learning instead of the well criticised passive learning for the learners. Under the Student focused active learning, learners are engrossed in deep learning which requires mental involvement and effort of the students as they proceed from simple level of cognitive abilities to higher levels. Teachers have started actively involving their students in the teaching learning process through activities like short structured exercises, conceptual questions, MCQs, tests and quizzes, reflections, case studies, project based learning, simulations, team projects, peer critiques, students lead seminars, workshops in academic subjects, discussion and learning groups, acting as a junior research colleagues or forming a resource groups with faculty members, internships, Independent studies, etc. (Crawley et. al. 2007; Felder et.al.1996; Chickering, 1987). The Round I project of Pew Grant Program in Course Redesign reports that out of all the quality improvement techniques used the most effective were: continuous assessment and feedback, increased interaction among students, online tutorials, undergraduate learning assistants, online course management systems, online automated assessment of exercises, quizzes, and tests, and shared resources. (Twigg, 2003). This list very conveniently leads us to the fact that it is the students' active involvement which is desirable. To sum up the need and benefit of using active learning, this quote from Felder et. al. (1996) is quite comprehensible and adequate: "In the traditional approach to higher education, the professor dispenses wisdom in the classroom and the students passively absorb it. Research indicates that this mode of instruction can be effective for presenting large bodies of factual information that can be memorized and recalled in the short term. If the objective is to facilitate long-term retention of information, however, or to help the students develop or improve their problem-solving or thinking skills or to stimulate their interest in a subject and motivate them to take a deeper approach to studying it, instruction that involves students actively has consistently been found more effective than straight lecturing. The challenge is to involve most or all of the students in productive activities without sacrificing important course content or losing control of the class. The literature supporting the notion that active, student-centred learning is superior to passive, teacher-centred instruction is encyclopaedic. People acquire knowledge and skills through practice and reflection, not by watching and listening to others telling them how to do something. Straight lecturing may succeed at promoting short-term factual recall, but active approaches have consistently been shown to be superior for promoting long-term retention of information, comprehension, problem solving skills, motivation to learn and subsequent interest in the subject" (p.8)

This quote cited above echoes well with the ideas presented earlier in the paper about evaluating the teaching learning process and aligning it with the current development in the field of education. This is among the basic steps needed to be taken to transform the educational practices, and to induce much desired & anticipated quality in higher education which has been summed up in a comprehensive list by Chickering & Gamson

(1987) in "The Seven Principles of Good Practice in Undergraduate Education". These principles are: (1) contact between students and faculty, (2) reciprocity and cooperation among students, (3) active learning, (4) prompt feedback (5) time on task, (6) high expectations, (7) respecting diverse of talents and learning styles. These principles combine all the desired objectives and characteristics of effective education and this has been clearly indicated by Chickering & Gamson in these words: "These are intended as guidelines for faculty members, students, and administrators...to improve teaching and learning....They rest on 50 years of research on the way teachers teach and students learn." (p.3)

CONCLUSION

The quality of higher education is heavily dependent on the quality of the teaching learning process, which in turn heavily relies on the teachers' teaching philosophies and practices. The ideas discussed in this paper advocates strongly the need to work upon teachers basic understanding of the teaching activity in order to help them in addressing the demands of teaching at higher education by assuming the right philosophy. Their orientation to the approach, which is essential to execute this job, needs to then look at the technicalities of the instructional process and its targeted objectives. This realization would force them to use instructional techniques which can produce results and enable them to achieve the objectives of education and fulfil the demands made on them. The tertiary level education community, as well as the concerned individuals and organizations that are concerned with stating the norms and developing the policies regarding instruction and teacher education have several implications on their current activities based on the ideas presented in this paper.

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