Staff Development Center

Wayamba University of Sri Lanka

Enhancing Teaching - Learning Environment in Higher Education

Selected Topics

Edited by
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Foreword

It is with great pleasure that I write this foreword to the latest publication of the Staff Development Centre (SDC) under the theme of "Enhancing Teaching – Learning Environment in Higher Education". The launching of this publication is coupled with the Certificate Awarding Ceremony for the 5th batch of the Certificate Course in Staff Development conducted by the SDC.

The SDC has impacted the teaching in higher education not only at the Wayamba University of Sri Lanka but at most of the other National Universities through the training of academic staff participating in the Certificate Course in Staff Development. Enhancing teaching & learning environment is considered a very important area in higher education, which helps both teachers and students for perform at their level best.

I take this opportunity to complement the SDC for their achievements since inception towards the improvement of the staff of the University system and thereby improving the undergraduate education. Thus, the SDC plays an important role in producing quality grandaunts to meet the needs of the country and the region. While congratulating the Staff Development Centre for launching yet another batch of trained academic staff members to meet the challenges of higher education, I wish the participants and the Center well for their future endeavors to reach higher levels of achievement.

Prof. A. N. F. Perera
The Vice Chancellor
Wayamba University of Sri Lanka

Preface and Acknowledgment

This book explores the aspects of strengthening undergraduate teaching-learning environments in order to improve student engagement and high quality learning. As teaching is a multi-dimensional profession, assessing what we do as teachers requires a multi-faceted approach which is imperative in creating a conducive teaching-learning environment. No single instrument can capture all aspects of any individual style or method of teaching.

The first article in this series discusses peer evaluation as a comprehensive instrument which could be used alongside and in conjunction with other methods of assessment of teaching to improve the atmosphere to suit student needs. Teacher plays a responsible role in creating the environment to produce budding scientists for the future in which undergraduate research plays a significant role. Undergraduate research thus can be considered as development of new knowledge or understanding in order to advance science or the idealized undergraduate experience based on two features, creating and communicating knowledge. The second article in the book discusses the role of the teacher as a research supervisor in introducing the research culture as well as the guidance to the students in the application of knowledge.

Stress is inevitable in our day to day busy life dealing with different people, issues and matters. However stress isn't all that bad. Understanding stress is a bit difficult with its available characteristics. The third article gives an insight to managing the stress factor for both students and teachers to create a more learner friendly environment. Teachers feel that they are the most scrutinized professionals in the world as they live in the public eye. Their performance in class and their behavior out of class are evaluated by the public, students, other teachers, and administrators.

The fourth article covers an integral component of the professional life cycle: teacher evaluation and its impact on a positive leaning environment. The fifth article also stresses on this critical factor in improving teacher quality leading to productive and beneficial learning experience for students towards promoting their development as learners as well as that of the teachers.

The sixth article focuses on practical issue in science education of how student feedback could be obtained effectively during laboratory practical. This article provides some useful theoretical underpinnings as well as practical applications of the use of effective methodologies for addressing this problem.

It is only the human being who has the control of knowledge and technology worldwide. But more and more teaching staff is confronted with new challenges, because the competency for teaching is not something that comes easily, it requires practice of core qualities and learning of specific skills for a better teaching environment. But what precisely are these abilities and skills? And how accurately can they be evaluated? The seventh article offers bold answers to these questions describing how ideally the profile of a teacher can be identified through variety of methods.

Discipline in the classroom is one of the most commonly discussed and widely debated issues for teachers today. Moreover, it is one of the most important factors in a classroom which directly affects the teaching and learning environment. The eighth article is, thus, intended to discuss this timely matter of students' classroom. Today, the learning process is gradually becoming learner-centered and it finds more support from the psychological sciences for this improvement. The role of teacher has also been changed from teaching facts to helping students in order find relevant information and assess and organize. The final article

emphasizes the importance of the relationship between the educational programs and their assessment in making learning process more attractive to the students.

We would like to convey our very special thanks first to, **Prof. A. N. F. Perera**, the Vice Chancellor of the Wayamba University of Sri Lanka for his continuance guidance and support extended to us throughout his tenure to accomplish this difficult task. Our sincere gratitude is extended to the **authors of nine selected articles** published in this book for their hard work and commitment. Among many who have supported us throughout the process, we very specifically thank **Mr. Kapila Ranaraja** (Computer Application Assistant) and **Ms. Maheshi Anupama** (Technical Assistant) of the Dept. of Agribusiness Management in the WUSL for their untiring efforts in bringing all articles into one format to produce the book in this fine quality.

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12th December 2011

List of Content

Enhancing Teaching – Learning Environment in Higher Education

THE ROLE OF PEER OBSERVATION IN EVALUATING TEACHER PERFORMANCE

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Peer Observation

Because teaching is a multi-dimensional profession, assessing what we do as teachers requires a multi-faceted approach. No single instrument can capture all aspects of any individual style or method of teaching. For instance, student feedback can be used only to measure whether student perceptions of what we are doing are aligned with what we ourselves think we are doing, but assessing our teaching requires more than student impressions. Peer observation is just one part of a comprehensive assessment of teaching and should be used alongside and in conjunction with other methods of assessment.

Trying to evaluate your own teaching practice is useful, but can be difficult whilst you are in the process of teaching the class. Getting feedback from the students is also very useful, but students are not trained as teachers and their feedback can be very difficult to interpret. Peer observation offers teacher an opportunity

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to get objective feedback from a trained professional who will be able to focus only on what's happening in the lesson.

Who is a Peer?

Peer is a person who has same status or who is in the same level as the teacher. For example, when you were in school your peer is a class mate and in the university your peer is a batch mate. But, in the academic life your peer is a colleague who does not have administrative authority above you. Peer can be a faculty member who is in the same level as you or can be a senior member.

What is Peer Observation?

It is simply the process of observing teaching by a peer and giving feedback to the teacher. In other words, peer observation can be introduced as the observation of teachers by teachers, usually, though not always, on a reciprocal basis. Most of the time, observation takes place pair wise. Pairings may be done with experienced teacher / novice or experienced teacher/experienced teacher.

In the first case, the focus will be more clearly on helping the novice to develop their teaching skills both by observing and being observed by an experienced colleague. In the second case, the objective is to

provide opportunities for experienced teachers to reflect on their teaching in a calm and confidential environment.

Why Peer Observation?

The reason for doing peer observation depends on the purpose of the observation. If the observation is taking place for formative purpose then it is done mainly for the improvement of teaching skills and development of teaching. In summative case observation is done for collecting evidence for making decision on teacher such as promotion and salary increase.

The benefits of peer observation are not only for the teacher being observed. There are many benefits for the observing teacher. The chance to see the inside of another teacher's classroom see how differently they do things and reflect on the differences with your own teaching practice can be very beneficial. Some of the reasons for setting up peer observation include:

- to share expertise and good practice among colleagues

- to provide opportunities, both through observing and being observed in teaching sessions, to reflect on and review teaching skills with the assistance of colleagues

- to provide individual and confidential feedback on teaching and learning

- to support staff in improving/enhancing their teaching and students' learning

- to help colleagues to learn new tricks from one another (old colleagues learn much from new staff and they in turn can teach new colleagues old tricks!)

- to give continuous opportunities to observe students as they learn in colleagues' teaching sessions, and reflect on how you can enhance their learning in your own sessions

- to identify generic development needs, that can be fed into ongoing and future staff development activities.

Those teachers who avail themselves of formative peer observation opportunities on a regular basis may find themselves better prepared for the more formal summative observations that will come further down the way, where career merit raises, promotion and tenure decisions are made. Such observations are evaluative and much more formal.

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With rigor and fairness uppermost in mind, they will be conducted by experienced colleagues who will also review the instructor's teaching materials, syllabi, teaching portfolio and historical records such as end-of-semester student evaluations.

Peer observation can assist a teacher in creating successful long-term professional development strategies. The early years in a teaching career can be particularly challenging, and peer observation serves as a good starting point for bringing the full range of pedagogical strategies into focus.

Who Should Do It?

The choice for who observes the class is up to the teacher of the class if the observation is taking place for formative purpose. If the observation is for summative purpose, there may be no chance for the teacher to choose the observer.

If the teacher is given the opportunity to choose the observer then teacher can choose someone who he/she respects and feels will have something constructive and helpful to say about his/her teaching, but above all it should be someone teacher trusts and feels comfortable with. If the observer intimidates or makes the teacher feel nervous, it is unlikely that the process will be beneficial.

Sometimes this observation takes place in pair wise on reciprocal basis, as far as possible, pairs should have the freedom to choose their own partners. Clearly, if there is trust and respect on both sides, the outcome is likely to be more useful for both participants. When drawn from the same institution, but not the same department, peers should be aware of departmental criteria beforehand.

From one department to another, there might be different values assigned to different aspects of teaching. Generally, it is suggested that those doing summative observation be drawn from among the ranks of senior faculty, i.e. those who are not competing for tenure or promotion.

Primarily, peer observation is useful as a formative, self-assessment tool for those who wish to improve their teaching skills. This is especially so in the case of junior faculty. In the interest of delivering maximum student learning outcomes, it is they who will benefit most from having peers observe them and provide feedback on their pedagogical processes and practices.

For formative observations, it may be best that teacher makes his own choice and invite someone who is like-minded in teaching philosophy, has comparable content knowledge, and similar teaching methods. For instance, one who uses informal discussion rather than

a straight lecture format might be an appropriate choice.

How To Do It?

Peer observation involves with four stages, including: (1) Pre observation meeting; (2) Observation; (3) Analysis by peer, and (4) Post observation meeting. The person observed should compose a 2-3 page description of his/her teaching philosophy and methodology.

In this narrative, the teacher should explain not only what his/her teaching philosophy is, but also why he/she believes in it. In describing his/her teaching methods, teacher should pay particular attention to strategy and implementation (this information could later become part of a teaching portfolio).

Teacher should give the person who is observing the teacher some form of lesson plan, so that he/she knows what the teacher is doing and why teacher is doing it. Often this act of writing out teacher's lesson plan and thinking through, expressing and sharing teacher's rationale with another teacher can be as informative as the observation itself. The teacher is being observed should try to decide what precisely he/she wants your peer to watch for.

This could be anything from teacher's classroom management style and the clarity of his/her instructions to how effectively he/she is interacting with a particular student or the effectiveness of a particular method. Remember that observer can often learn as much and possibly more about the lesson from watching the students, their reactions and what they are doing and saying than observer can from watching the teacher.

The observer will need to be informed in advance by the observed teacher about the students in the class, the content of the lesson, and how the lesson fits into the overall structure of the course. The person observed should write a detailed lesson plan which includes the goals or objectives he/she wants to reach by the end of the class period.

The teacher should not spend an unusual amount of time trying to create the "perfect" lesson for "observation day". Plan the class period just as you would do any other day, or try to re-work a plan that didn't go so smoothly the last time you tried it, or try out a completely new idea. Remember that the peer observation should be an opportunity for learning, not for performing.

Pre-Observation Meeting

Whatever kind of peer observation takes place, it is very useful to arrange a pre-meeting with the observer.

Most probably there is no pre-meeting in summative peer observation. It's best to have the pre-meeting a few days before the observation, rather than try to squeeze it in ten minutes before the observation itself; this gives the observer more time to tune in to the nature of the session, and what the teacher planning to gain from the observation.

The purpose of the pre-observation conference is to review the teacher's teaching plan, including the lesson goal, objective, strategies / methodology, and assessment. The following is a list of questions that the observer might ask the teacher:

- What is the main goal of your course?

- What is the main goal of the course session to be observed?

- What is your specific objective for the course session to be observed? In other words, what do you expect the learners to be able to know and do by the end of your session?

- What strategies/ methods will you use to help the learners to reach this objective?

- How will you assess whether the learners reached this objective? In other words, how will they show

that they know and can do what you expected of them?

- Do you have any concerns that you would like the observer to address?

The teacher should ask the persons observing to make notes. Observer doesn't necessarily have to share these with the teacher, but it's not a good idea to rely on observer's memory. The teacher might find that it's helpful for the teacher to give observer specific areas to make notes about, for example teacher could ask observer to write down all instructions, or to time the amount of time teacher spends talking and the amount of time students spend talking.

In this pre-observation meeting, observer and the teacher can decide which observation instruments should be used in the observation. The three most common instruments are:

- *A Checklist***:** A list of things for the observer to focus upon.

- *Rating Scales:* Similar to a checklist but featuring a relative scale of effectiveness for each category.

- *Written Analysis:* An open-ended document, such as a letter to the instructor, detailing what

was observed, the teacher/student dynamics, and an interpretation and summary that include some evaluative rating terms (e.g. superior, good, adequate) relative to the specific areas of observation.

A combination of tools may be used to maintain a paper trail of the observation process. The main thing is to have something with which to gather and record data for later reflection, and with which to help guide follow-up discussions.

Observation

On the observation day the teacher and the observer has to play two different roles. Teacher should teach the class as if the observer were not present. Above all, the teacher should not be concerned with trying to "impress" the observer, or unduly concerned with following the lesson plan down to the minutest detail. All good teachers know that class periods sometimes do not go as planned.

If the teacher knows it is in his/her students' best interests to change directions, review something more thoroughly, or go to a completely new topic, by all means do so. Teacher can always discuss the new course of action with his/her colleague after the class. When the observation takes place, the teacher should make sure that the students know why the person is

there in his/her classroom and may tell them that the person is there at his/her request to help him/her, not to check up on them. Students can often feel very intimidated by a 'stranger' in their classroom.

The observer should bring the peer observation instrument to the classroom and/or a separate sheet of paper if he/she wish. Of course, the observer can come early, but it's usually best to wait outside the classroom until the teacher arrives. The best place to sit is in the back of the room to the left or right. In this way observer has a clear view of most of the students.

Observer should also be very careful about any facial expressions, sounds or bodily gestures he/she makes during the lesson. Many teachers find being observed very stressful and they could be extremely sensitive to observer's body language. A brief glance at the observer's watch to see what the time is could easily be interpreted by the teacher as an indication of boredom or some form of criticism of their lesson.

When observer's colleague begins teaching observer can fill out the instrument, take notes on a separate sheet of paper or directly on the instrument. Observer may want to keep track of the time and what activities took place at certain time intervals.

As observer is taking notes, he/she should always keep in mind what goals and objectives the teacher is

trying to accomplish. The observer should never interfere with the class, talk to the teacher or the students unless the teacher who is leading the class asks to.

Analysis by Peer

After the class period is over, observer has opportunity to write comments on each observation and summarize observations on the back of the instrument or attached sheet of paper. Observer should be sure to put positive comments regarding strengths of teaching first.

If observer has suggestions for helping the colleague more effectively reach his/her goals, or if observed problem areas, be sure that the comments are phrased in a constructive and helpful manner. Give colleague the instrument and any additional papers with comments. Try to do this within the next 2-3 days at the latest.

When doing this analysis part the observer must remember that what he/she is seeing in a lesson is only a small part of what is a series of lessons. To truly understand a lesson and the teacher learner relationship of that class observer needs to know what has come before the class and what will come after it.

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Observer should be sure not to 'judge' the teacher he/she is watching. Good teachers sometimes have bad lessons, especially if they are nervous and not used to being watched or if they are trying something new. The observer should always be aware that he/she is there to evaluate the method, approach or help with a specific problem, not to judge and evaluate the teacher.

Post-Observation Meeting

This meeting is there to give feedback to the teacher about the observation. The observer must realize that giving feedback to the teacher he/she has watched needs to be handled very carefully. The teacher being observed can be very sensitive and defensive about his/her class, especially if they feel it didn't go as planned so any suggestions for improvement must be delivered in a very constructive way.

It's not constructive to dwell on what went wrong, but better to focus on what was good about the lesson, the teacher's positive strengths and what and how the lesson could be better next time.

It is much better for the observer to begin the conference with a positive comment (i.e., "*I really enjoyed your class…*") and act as a listener during the feedback and allow the teacher to make the suggestions and lead the discussion as observing-peers can often be

too keen to help, by making lots of suggestions and this can be interpreted by the teacher as criticism.

As an observer don't assume that you understood every element of the class and the teacher and learner behavior. If you felt something went wrong or you saw something that you feel critical about, then ask questions of the teacher and try to understand their rationale. In this way, you might help them to realize for themselves what the problem is, or you may discover that you misunderstood the situation.

Both parties need to be sure that their post-observation discussion, what happens within the classroom and any notes on the observations will remain confidential. An observer should never talk about what he/she saw or what happened within the class without the teachers' permission.

Having this guarantee of confidentiality will make teachers more willing to be involved in peer observation and to take risks and experiment within the classes when they are being observed. If teachers feel that their mistakes will be made public and become the gossip of the staffroom, they are much less likely to want to be involved.

Setting up a program of peer observation is risky, especially if the university rather than the teachers themselves initiate this. A bad peer observation

program, in which teachers become overly critical, competitive and defensive, can have a very negative and de-motivating effect on the atmosphere of the staffroom and the teaching environment in general.

If it is done well, however, a good regular program of peer observation can have a very positive effect on the teaching environment, the staffroom atmosphere and really help teachers to improve and develop. It can help to build an environment of openness, experimentation, materials sharing and mutual support that the teachers and students can benefit from enormously. Also, if the formative peer observation takes place regularly it will be good practice for every teacher for the summative peer observation when it is going to be take place.

SUPERVISION OF UNDERGRADUATE RESEARCH PROJECTS

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Undergraduate research is defined in many different ways, for example: it is an inquiry or investigation conducted by an undergraduate that makes an original intellectual or creative contribution to the discipline. It can also be considered a development of new knowledge or understanding in order to advance science or the idealized undergraduate experience as being based on two features, creating and communicating knowledge.

Role of Supervisor

In conducting research, there are two broad roles for the supervisor, including: (1) educational guidance, and (2) psychological momentum. The first, i.e. educational guidance can be divided into four categories as decision making, planning, scientific training and technical training. Psychological momentum can be classed into maintenance of student motivation and development of self confidence.

The educational guidance

This can be outlined as:

- Advise the student about all aspects of the research program with discussing planning, literature, sources, attendance at classes / lectures, techniques and skills.

- Where co-supervisor or part of a supervisory team co-ordinate advice and guidance and to ensure that respective responsibilities are clear both to academic colleagues and to the student.

- Advise at an early stage on experimental design and the effective collection and storage of data.

- Assist the student during the course of the first term with the identification and subsequent development of skills for subject specific, research training and personal and professional purposes.

- Aim to ensure that a student's topic is defined within a reasonable time, that the student is developing the necessary background knowledge for the topic and that the necessary resources are available.

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- Ensure that, where a student undertakes research as part of a team or group, there is full explanation provided of the way in which the student's own contribution fits into the work of the remainder of the group.

- Draw to the student's attention the need to consider any ethical issues which may arise during the course and any requirements for ethical approval.

Also, the supervisors should be in a position to meet with the student and return submitted work with constructive criticism within a reasonable time and be accessible to the students at appropriate times when advice is needed.

Further, he/she should assist the student to work within a planned framework and timetable [in particular by conducting regular reviews of the student's progress] and monitor the student's ability to write a coherent account of his or her work in good English.

Moreover, supervisor who attempts to avoid unnecessary delays in the progress of the research, should pursue opportunities for the student to discuss his or her work with others in the wider academic community (including the presentation of research outcomes where relevant) at university; national and international level and also have reasonable familiarity

with institutional, national and international expectations relating to research environments.

He/she should avoid absence on leave without appropriate temporary supervision having been arranged for the student and is required to co-operate with the student to produce a detailed joint report on progress at the end of each term and to provide the student with regular information as to the student's progress. Also, he/she should provide guidance and assistance where problems arise as to necessary corrective action.

The psychological momentum

The other major role of the supervisor, apart from educationally guiding the students, is to generate the psychological momentum in students' mind in order to maintain the motivation and develop their self confidence. This way supervisor ensures that a student is familiar with the research facilities and activities of a Department or Faculty and aware of the expectations (including those relating to health and safety, research conduct and research ethics) which are incumbent on research students and assisting the student with the preparation.

Also, timetable and submission of material relating to applications for transfer of status and for re-admission after completion of preliminary research

training or other course for the confirmation of status should be provided by the supervisor.

He/she should provide appropriate feedback whenever the student has failed to meet the required standards and advising the student on the timing of the submission of the thesis are required by supervisor. Not only consulting with the student in order to make recommendations for the appointment of examiners, but also encouraging the student to obtain knowledge and information about career opportunities can also be identified as supervisor's duties.

Role of the Student

In order for a research work to propel towards success, contribution of the student is also vital. The early stages of the program, it is important for the student to take ultimate responsibility for the research (including subject-specific, research-training, personal and professional skills) and developing an appropriate working relationship with the supervisor.

The student's program that works according to an agreed timetable keeps relevant records of all aspects of the works. Also, the students must make positive use of the university's teaching and learning facilities and opportunities for personal and professional development and seek out and follow the regulations applying to the research program. As well as they seek clarification

where necessary to raise problems or difficulties with the relevant authority so that appropriate guidance may be offered.

In working with supervisors or other academic staffs, students should recognize the demands made on a supervisor's time and the need to prepare adequately for meetings and to observe deadlines. Also students should accept the importance of constructive criticism within the supervisory relationship and seek a full assessment of the strengths and weaknesses of any work. Students must also give full weight to any suggested guidance and corrective action proposed by the supervisor in the event of problems there by co-operate with the supervisor to produce a detailed joint report on progress at the end of each term.

Discussing their skills training needs with the supervisor both informally during regular supervisory contacts and formally at particular times as detailed in subject handbooks and informing the supervisor immediately of any circumstance which might lead to interruption of study (where the student feels that there are good grounds for contemplating a change of supervision arrangements).

The students should discuss this with the existing supervisor or if this presents difficulty with another appropriate officer in the department, faculty or with a college adviser.

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Responsibilities of the Student

Responsibilities in connection with submission are essential for the student to ensure that the language is in correct form and format with right standards for the submission of the thesis. Students give attention to allow sufficient time for writing up and to pay particular attention to final proof reading.

Deciding when he or she wishes to submit the thesis for examination, having provided the supervisor with sufficient time to comment on the final draft and having taken account of the supervisor's opinion and making appropriate use of any guidance available relating to the student's career after successful completion of a research degree are other significant points which should practiced by the students.

Responsibilities of the Supervisor

Responsibilities of the supervisor can be classified by considering an invitation to supervise a research student. Recognizing and accepting the responsibilities both to the student and to the relevant Department, Faculty and division are implicit in the supervisory relationship. Also, supervisor should responsible for giving early advice about the nature of research and the standard expected and about the planning of the research program.

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Moreover, he/she ensures that where the student's research forms part of a funded research program and sufficient financial support should be available for the duration of the student's period of study, and is ultimately responsible for advising the student about literature, sources, attendance at classes and requisite techniques (including helping to arrange instruction where necessary).

Also supervisors identify the student's any subject-specific skills necessary for the proposed research. A student who wishes in addition to contact with his or her supervisor(s) has limited consultation with one or two other academics the supervisor should try to identify such colleagues and to arrange for an approach to them.

Also, supervisor operates as a co-supervisor or as part of a supervisory team. It is important to clarify the responsibilities of each supervisor and to co-ordinate advice and guidance. The supervisor should arrange for the student to obtain advice at an early stage about the design of any experiment or the collection and storage of data about its subsequent analysis.

The supervisor should ensure that the student works within a planned framework which the student should be expected to have completed at various points in his or her period of study. (The nature of this framework

will of course vary widely from subject to subject. But in all subjects the formulation of the topic, planning and management of time should begin at an early stage.).

The supervisor should meet with the student regularly and supervisor and student should agree a formal schedule of meetings on a term or annual basis. The supervisor should also be accessible to the student at other appropriate times when advice is needed. Also, he should request written work as appropriate and in accordance with the plan discussed with the student. Such work should be returned with constructive criticism and within reasonable time.

The supervisor should tell the student from time to time how well in the supervisor's opinion about work is getting on. It is essential that when problems arise, corrective advice is clearly identified and full guidance and assistance are given to the student. The supervisor is required to report to the board on the student's work three times a year, once at the end of each term.

The supervisor should aim to ensure that the topic or the goal of the student's research is clearly defined at the end of the first two three months and student has the necessary background knowledge and the availability required resources. The supervisor must have ascertained by then that the student can write a coherent account of his or her work in good English. The supervisor should try to ensure that unnecessary delays

do not occur. These have been known to arise for reasons such as:

- Insufficient effort at the outset in choosing and formulating the research topic

- A slow start because of the time taken to adjust to research work

- Distractions from the main line of enquiry

- Superfluous attempts to tie up every loose end and mainly in the sciences

- Inadequate and delayed planning and assembly of apparatus and equipment

- Insufficient collection or recording of data at an early stage so that work has to be repeated in the later stages.

Therefore, the supervisor should arrange for students to have the opportunity to discuss their research with other staff and students in the subject area and to communicate to others in the wider academic community both orally and in writing his or her research findings.

Where a student undertakes research as part of a team or group the supervisor should ensure that this is

in full awareness of the way in which the student's own contribution fits into the work of the remainder of the group. The supervisor should not be absent on leave unless he or she has ensured that appropriate temporary supervision has been arranged for the student.

Report Writing

Report writing on the student's work which is also one of the responsibilities of supervisors is very important. Supervisors are then required to cooperate with the student to produce a detailed joint report on progress at the end of each term. Also, supervisor should provide guidance and assistance to the student with regular information as to the student's progress where problems arise.

Research is a genuine exploration of the unknown that leads to new knowledge that often warrants publication. But, whether or not the results of a research project are publishable, the project should be communicated in the form of a research report written by the student. It is important to realize that science depends on precise transmission of facts and ideas.

Preparation of a comprehensive written research report is an essential part of a valid research experience, and the student should be aware of this requirement at the outset of the project.

Interim reports may also be required, usually at the termination of the quarter or semester. Sufficient time should be allowed for satisfactory completion of reports, taking into account that initial drafts should be critiqued by the supervisor and corrected by the student at each stage.

Guidelines on how to prepare a professional-style research report are not routinely available. For this reason, the following information on report writing and format is provided to be helpful to undergraduate researchers and to supervisor.

The most scientific research reports, irrespective of the field, parallel the method of scientific reasoning. That is: the problem is defined, a hypothesis is created, experiments are devised to test the hypothesis, experiments are conducted, and conclusions are drawn.

This framework is consistent with the organization of a research report such as: (a) Title; (b) Abstract; (c) Introduction; (d) Methodology / Methods and Materials; (e) Results; (f) Discussion; (g) Conclusions and Summary, (h) References.

Problems in Supervision

To outline what are the problems in supervision: the supervisors find it difficult to supervise the students who have *'fixed ideas'* or *'over-ambitious ideas'* and

'who do not take the correct direction with their project when it is offered' and those who can neither *'manage their time well'*, nor cope *'intellectually'* with the deep learning required in project work and *'students who do not know what supervision is'*. These can be set up as certain major problems under supervision.

MANAGING STRESS TO CREATE PRODUCTIVE LEARNING ENVIRONMENT

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Theoretical Foundation of Stress

There is no single definition for stress. Understanding stress is a bit difficult with its available characteristics and with the type of stressors that activate stress, so several theories have been put forward by different research groups to explain stress and its effects, i.e. illnesses and diseases related with stress. A number of theories explaining why stress occurs are briefed below.

Life-event theory

This says that stress can occur when a situation requires more resources than what is available. For example, a person sitting for an exam for which he has not prepared well enough. When a person experiences several such events at the same time, the amount of stress which is felt by that person would be greater.

Hardiness theory

The number of stressful events experienced by a person is not counted, instead, the attitude and the approach of the person towards such stressors are considered. For example, a person can consider some stressors as challenges rather than threats and can work towards producing a quality output while having less amount of stress.

Social support theory

This states that stress occurs when there is not enough social support available to respond to an event effectively. This social support can come up in many forms such as an emotional support, financial assistant or some outside help and this support helps a person to cope with the stressful event and it will decreases the level of stress.

Goals of Managing Stress

Removing all available stress is not a target of stress management. Some stresses are important and can consider them as joyful stressors which motivate us to do something and make us happy by achieving a set of targets. These motivator stressors can push a person to achieve a peak performance. For example, if a person needs to give a speech in front of a group of people and if the person is nerves, he would probably plane and

prepare for a better speech. This would be same for an exam or some similar challenge. So the target should be not to eliminate all stressors even though it may be possible, but to limit the harmful effects of stress. Researchers have found a relationship between the level of stress a person has and the corresponding illness amount with related to that (Figure 1).
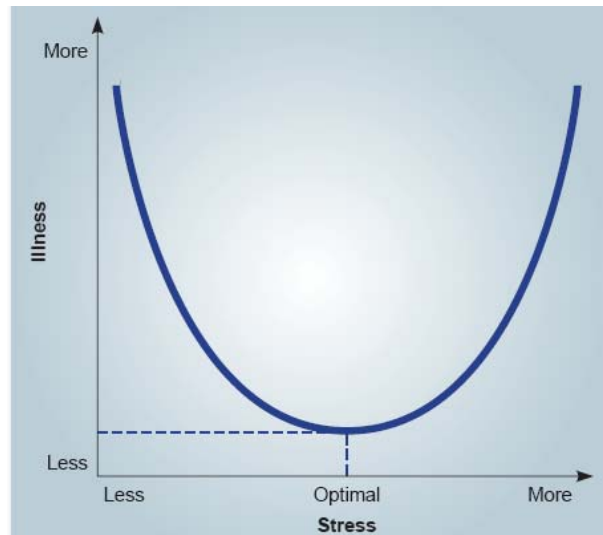
Figure 1 – Relationship between stress and illness

The result shows that with a lot of stress a great deal of illness occurs. However, it also shows that with a little amount of stress also a great deal of illness still exists. This U-shaped curve indicates that there is an optimal amount of stress (not too much and not too

little) with related to a minimum amount of illnesses. This should be highly considered when controlling the amount of stress.

The good side of a stress is termed as Eustress, which would motivate a person to perform well. Stress cannot be avoided at all times and a controlled stress can give a person to be in a competitive position to perform well in a situation like a sport, speech or in an exam. The relationship between stress and performance can be illustrated using a curve diagram, where the highest performance is possible under medium level of stress (Figure 2).
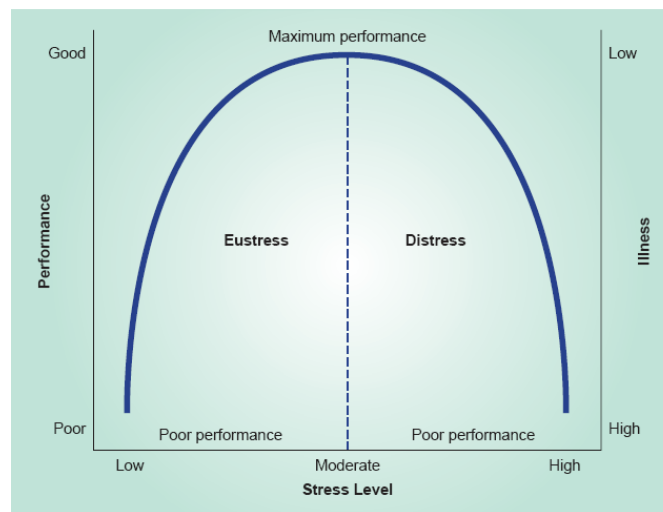
Figure 2 – Relationship between stress and performance

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When either the stress level reduces from this value or increases from this value the performance will get reduced. Based on this diagram, therefore, we can say that stress can be considered as a productive element up to a certain level as it increases the performance of a person. But if a person's stress level is above the optimal stress level he should work towards reducing the excess stress.

Some stressors can be considered both good and bad based on the way how a person grasps it. For example, exercise is considered to be a good stressor in most cases, but if it is used in an incorrect way it may even bring a person some physical injuries.

Stressor

A stressor is a stimulus which creates some stress in a person and a general reaction of such a person is usually a fight or flight response. At the beginning of the evolution of mankind this trigger response was highly important as it train a person to obtain safety.

Only the people who were good on these two actions survived in the past and the new generation which had inherited these, also react in the same way when they face a stressor. These responds will have a physical stimulation in a person, such as a high rate of heart beat and heavy breathing.

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The chemical composition of the body will also change accordingly, so that a reaction can be taken by the person to get away from a sudden danger. But even for a stressor for which a person does not need to have a quick reaction to get away from the danger, this fight or flight response is visible, even though it would be inappropriate to respond immediately or with some action.

For example, if a person gets stressed by moving into a new place, he can either fight with new people he meets or shy away from meeting new people and both are incorrect ways of adjusting to the new environment.

There are many types of stressors such as environmental, psychological, sociological and philosophical but regardless of the stressor type the body would have the same fight or flight reaction.

The pituitary, thyroid, parathyroid, and adrenal glands, as well as the hypothalamus and other parts of the brain, are activated by stressors. The human body has evolved to respond to stressors with an immediate action by producing the necessary chemicals so the body can be moved with much higher strength and speed.

The problem is, even when a person faces a symbolic stressor, the same thing happens in the body.

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But the person may not use the changed physical condition to do some action. The stress products which were built in the body will be unused and the chemical imbalance in the body will stimulate various kinds of physical illnesses and diseases. When these symbolic stressors appear, if a person can prevent developing a fight or flight response then it's going to support a lot towards keeping a healthier body.

Another solution is to learn how to use stress products once the physiology has changed, to prevent illness, disease, or other negative consequences. If not, a person should observe an event to be less stressful so that the amount of chemicals produced would be less.

This can be achieved by training the mind time to time, so that the person would observe the stressors differently. Among such methods meditation is one good technique which can be used to manage stress better.

Stress Among the University Academics

There are various challenges faced by university academics with related to what is expected from them by the country and what they target from their own lives and these challenges may put the academics under pressure and stress. This is especially true if they are dissatisfied with some of the duties that are assigned to

them and if some outputs that they obtain are not up to their expected standards.

In the university education system, each university will be determined to achieve its goals and the academics that work in them may have to cope with things like work overload, homework handling, role conflicts and performance pressure.

Based on the type of work the academics do and based on their career targets, the challenges or the stressors they face can be categorized into several groups such as: (1) Interpersonal relationship with students, academic, administrative and non-academic staff; (2) Research (grants, evaluation, training, links, finding literature and point of dissemination etc.); (3) Teaching (development of course content, planning on suitable teaching methods and exam setting and assessment, and (4) Career development & national contribution (outreach programs, organize symposia, seminars etc.).

In addition to duties and career targets mentioned above and that are common to all the academic staff members, there are many voluntary administrative and other types of positions in a university and many academics give part of their working time for such positions. These additional responsibilities should be balanced properly with their normal duties and if not

the academics may have to face stressors mainly related to bad time management.

Types of Stress

The above mentioned stressors which are faced by the academics can be grouped into three main categories, namely: (1) Situational stress; (2) Body stress, and (3) Mind stress.

Situational stress

This stress is related with the outside environment, i.e. a person's working environment or a situation where a person is travelling in an airplane. As a solution a person can modify the surrounding to reduce the stress, for example, changing the lighting system of a place.

This also improves the communication skills with others, to solve problems with outside people, which will allow them to go for a mutually acceptable solution. A person should know his limits and his health conditions and work with the outside world accordingly.

Learning time management techniques and properly distributing workloads among other people will also help to reduce situational stress.

Body stress

This is resulting from not keeping the body in a proper manner cause this type of stress. Examples include, over consumption of alcohol, inappropriate physical actions to harm the body, excessive exercises or even a situation like work without a rest and/or inadequate sleep. As a solution, a person can work on relaxation techniques like muscle relaxing and breathing techniques and can avoid chemical substances which are available in some food items that have the ability to create body stresses and physical disorders. Doing regular exercises in a proper manner and "yoga" and/or any other form of stretching exercises can help a person to reduce body stress.

Mind stress

This occurs when a person starts thinking in a negative manner and sometimes tries to exaggerate problems and also imagine problems that actually do not exist. These people frequently allow themselves to mentally worry or think negatively. A technique called "star trek" can be used to reduce this problem.

Here a person jumps from the current mind frame to an imaginary environment which is peaceful and relaxing and it would reduce the current stress in the mind. Learning good phrases or sayings and thinking about them time to time will also be helpful. Further,

meditation or praying can have a positive effect on the mind.

Five Quick Ways to Measure Stress

A person should be able to identify the amount of stress he is facing and what type of stressors causing these stresses. Therefore, finally, we will consider some useful strategies for proper management of stress. By following the five methods mentioned bellow, a person can identify if he is in stress and then can find the causing stressors and can try to reduce them accordingly.

Check muscle tension

Different muscles in a body are scanned to check if tension is visible in them. The checking can start at the top of the head and come down while scanning the forehead, eyes, jaws, neck and shoulders while trying to identify a tension or a pain. From there, the checking can move on to the arms, chest, stomach and finally the muscle parts of the legs.

Check hand temperature

By placing a person's hand on the side of his neck just above the collar the relative temperature can be measured. If the person's hand is relatively cooler than

his neck, it indicates that the person is probably under stress.

Check for nervous sweating

Many people tent to sweat when they are under stress. This happens due to certain stress hormones that are created internally and this is also a good indicator showing that a person is under stress.

Check for a rapid pulse rate (>75 bpm)

Under normal conditions the pulse rate of a person is in the 50s or 60s per minute. However, when a person is under stress this rate may exceed the value of 75 per minute and it indicates that a stressor is affecting his body.

Check for rapid, shallow breathing

When a person is relaxed, he will have a relaxed stomach muscle which allowing him to breath slowly and deeply. When a person gets stressed the stomach muscle gets tightened and it will force the person to breathe using his chest. Because the capacity in the chest alone is smaller without the stomach capacity, the person tends to display rapid, shallow chest breathing when the he is under stress. By learning to relax the stomach muscle, a stressed person can reduce this effect.

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EVALUATING TEACHER PERFORMANCE THROUGH TEACHING PORTFOLIO

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Teacher Evaluation: Importance

Evaluation is an imperative constituent of teacher education and it is necessary to verify the quality of education. Teacher evaluation is part of the life of teachers. It is an integral component of the professional life cycle of teachers from the time they decide to join the profession through their process of training, their certification, their employment, and their professional development.

Teachers feel that they are the most scrutinized professionals in the world. They live in the public eye. Their performance in class and their behavior out of class are evaluated by the public, students, other teachers, and administrators. However, teachers generally seem to agree that evaluation is necessary as a way of establishing standards and controls and of being accountable.

In most of the universities in Sri Lanka, however, there is alarmingly lack of interest in teacher evaluation. Very often, poorly designed and administered evaluation procedures are in use at these institutions and, hence, teacher evaluation has acquired a particular and often negative connotation.

The gravity of teaching evaluation for the professional development of an individual during probation period, the period leading up to confirmation in the post, has neglected in many instances. In many professions, probation is a period of professional induction in which novices continue to learn their craft and are rigorously evaluated to determine their readiness for independent practice.

At time teacher evaluation is carried out only for quality assurance purposes to address the demands of outside forces rather than institutionally driven forces. From the point of view of quality assurance, sustainability depends on teacher development evolving from personal growth. Although teacher evaluation has great promise for improving teaching, evaluation practices have been thwarted notoriously by the organizational and professional context of universities.

Generally, teachers are afraid of being evaluated. Despite recent attention provided to teacher peer assistance, such as formal mentoring and coaching for new teachers, collegial and supervisory supports are

generally less available to teachers than to those in other professions. In addition, the isolation of teaching makes it difficult for teachers to assess their effectiveness. Teachers often develop their own methods of monitoring student progress; therefore, the feedback they receive is largely self-originating and contained.

Teacher evaluation as practiced in many institutions has numerous shortcomings and dubious effectiveness. A major reason for the problems in teacher evaluation systems is the lack of agreement on what constitutes good teaching. A second major problem concerns the differing interpretations of evaluation.

According to Champoux (1996)[1], evaluation must focus on a number of things, including: facilitating teachers' positive attitudes relative to professional development; encouraging teachers to work as collegial teams and peer coaches; mobilizing teachers' understanding of the need to re-examine and to rethink their instructional strategies with a possibility of making changes; facilitating teachers' commitment to instructional reforms; helping teachers to meet their needs to use skills they value and to be challenged as professionals.

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[1] *Champoux, J. 1996. Organizational Behavior: Integrating individuals, groups, and process. New York: West*

Teacher evaluation is necessary to verify the quality of education, because it has the potential to improve the institution and teachers' profession, as it is directly relevant to teachers' professional development, which affect on the quality of education provided by the institution.

It is evident that if the quality of teaching drops in an institution it badly reflects on the overall run of that institution. Therefore, it is vital to have a mechanism to evaluate the effectiveness of teaching in an institution. Considering these factors, it can be stated that teacher evaluation is a major determinant of the sustainability of any educational institution.

Evaluation in the context of teaching is a measure of teacher competence based on data collected formally or informally, and may be conducted for several reasons. Teacher evaluation can be divided into two categories depending on the objective of teacher evaluation, namely: (1) summative evaluation, and (2) formative evaluation.

Summative evaluation serves the purpose of making decisions or judgments on the quality of teachers' overall instructional performance. According to Gullatt

& Ballard (1998)[2], summative evaluation is a judgmental decision of the quality and worth of an individual teacher over a special time frame. It provides information on the basis of one or more formal observations and one year's worth of informal assessments in order to summarize a teacher's performance. Summative evaluation is done based on the judgments of the valuator; and it serves organizational purposes. Tenure, merit pay and teaching assignments are given based on the summative evaluation.

Formative evaluation is also called developmental evaluation as it helps the professional growth of the teacher concerned. It helps teachers to diagnose and to solve instructional problems in order to make improvements and to further their professional development. Sustainability of the teacher depends on how far teacher evaluation is integrated with professional development.

Therefore, teacher evaluation should support and recognize individual achievements, provide directions for teacher development, produce opportunity for teachers to develop new skills or at least the ability to use existing skills in new situations, and that the

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[2] Gullat, D. & Ballard, L. 1998. Choosing the right process for teacher evaluation. American Secondary Education. 26(3): 13-17.

outcomes of appraisal should inform further teacher development.

It provides feedback and other information that encourages professional growth and development. Moreover, formative evaluations are not meant to be judgmental in nature; rather, they are intended to encourage teachers to reflect on their own strengths and weaknesses.

It is difficult to identify formative and summative evaluations as two categories because functions of the two types of evaluation are complimentary. Nevertheless, when objectives of both formative and summative evaluations are considered, sustainability of the teacher can be achieved mainly through formative evaluation rather than summative evaluation as former is more concerned about teachers' professional development.

Processes of Teacher Evaluation

There are a number of ways to conduct teacher evaluation. Classroom observation, peer observation, rating of teachers by students, self-evaluation and teaching portfolios are considered as the frequently used tools of teacher evaluation (Wanzare, 2002)[3].

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[3] *Wanzare, Z.O. (2002) Rethinking Teacher Evaluation in the third world. Educational Management & Administration. 30 (2): 213-229.*

Classroom observation by a supervisor is the most common form of teacher evaluation, although it is considered to be ineffective as a process for improving the performance of the teacher.

Classroom observations are generally consists of three stages: (a) pre-conference; (b) observation, and (c) post-conference. Setting objectives is done during the pre-conference stage. Assessing the effectiveness of teacher strategies and techniques is carried out during the classroom observation.

Providing feedback on the effectiveness of the teacher as well as directions for improving instructions is given at the post-conference. Classroom observation results in a superior - subordinate relationship, which is counterproductive. In addition, it excludes teachers from participating fully in matters regarding their evaluation. Thus, classroom observation does not encourage professional development expected through teacher evaluation.

Peer evaluation also consists of three stages analogous to classroom observation. Peer is neither a superior nor a junior. Both, classroom observation and peer evaluation are summative evaluations. Rating of teacher by students is also an example for summative evaluation and it gives an idea about the learners rather than the teacher.

Self-evaluation is, however, more directed towards the teacher's own behavior and an evaluation of it. It will draw the teacher's attention to his/her strengths and weaknesses, enabling the teacher to develop the former and minimize the latter. Teaching portfolios contain the artifacts of teaching and can serve both objectives; grade the teacher and develop the teacher professionally.

Constraints for Sustainability of Teachers

Wanzare (2002) identifies several problems in a teacher evaluation system, which hinder a proper evaluation system and ultimately affects the sustainability of the teacher.

- *Top-down bureaucratic character of evaluation*: normally an evaluation system is a top-down, authoritarian, bureaucratic system. Whenever there is an evaluation of teacher, supervisors are expected to ensure compliance with rules and regulations.

- *Mixed function of teacher evaluation*: sometimes functions served by teacher evaluation can also be a problem as summative and formative evaluations are difficult to separate. So, teachers should be informed of the type of evaluation takes place.

- *Inadequate evaluation*: another problem existing in the university system is the lack of teacher evaluation taken place. Because of numerous reasons, a proper, frequent teacher evaluation does not exist in the university system. Sometimes some teacher evaluations are conducted in order to comply with other outside demands such as a part of quality assurance system, etc. The only frequent teacher evaluation that commonly exists in the university system is the students rating of the teacher, which cannot be considered as an optimum way of evaluating teacher and his teaching. Therefore, to sustain teacher, there should be adequate evaluations frequently carried out at the university.

- *Lack of expertise in teacher evaluation*: teacher evaluation is not something, which can be done haphazardly. The common belief is that not every teacher can necessarily be an effective teacher evaluator. Therefore, one needs to have proper training to be a better evaluator. Hence, in the university system, lack of expertise in teacher evaluation is a big glaring hole. Evaluators need appropriate skills and experience relevant to their role as teacher evaluators. Therefore, to conduct an effective formative evaluation, there should be enough

experts in teacher evaluation in the particular university.

- *Lack of empirical research*: in universities, numerous researches in different disciplines are carried out. However, it is rather strange to notice that there are not enough relevant empirical studies to reveal the current state of the practice of evaluation. There is hardly any research to draw data to identify the best or widely effective process of teacher evaluation. Moreover, comparative study of teacher evaluation systems is lacking. Therefore, there should be a solid empirical background to support the sustainability of the teacher through teacher evaluation.

A comprehensive evaluation policy is crucial in order to help teacher develop their teaching skills. Wanzare (2002) identified philosophy and purposes of evaluation, evaluation methods and procedures, teacher evaluators, evaluation criteria, a statement of feedback & follow-up mechanisms, frequency of evaluation, and legal parameters of evaluation as the major components to be incorporated into an evaluation policy of an educational institute.

If any higher educational institute can formulate a policy identifying these components, teacher evaluation will become more effective in sustaining teachers.

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If any teacher evaluation system is going to develop the teacher professionally, it should be able to help teachers to be deeply grounded in academic, pedagogical and related areas. In addition, it will help them to be more efficient and effective in the delivery of educational services to the learners.

Evaluation systems will provide teachers with opportunities to acquire additional skills to meet the challenges associated with changing environments in the teaching profession and society at large.

Since a comprehensive evaluation policy is a non-existent phenomenon in the present university system, the only way the teachers can be sustained is through the available processes such as classroom observation, peer observation, rating of teachers by students, self-evaluation and teaching portfolios. Out of these existing processes teaching portfolios have a great potential to enhance the professional development of the teacher, which will lead to the teacher sustainability.

Teaching Portfolios as a Tool of Sustaining Teachers

In education, portfolios became popular in mid 1980s as a logical follow-up to writing folders. Teaching portfolios serve as a vehicle for reflection, improvement and achievement. It is a collection of documents that represents the best of one's teaching and

provides one with the occasion to reflect on his or her teaching with the same intensity devoted to research. In other words, portfolio is a selected collection of documents and materials that exemplifies the teacher's theories, development, and achievements because of a continuous process of reflection and self-evaluation.

It is not a one-time collection of documents, but rather a mean of collecting representative materials over time. For teachers to demonstrate their professional growth, development, and teaching performance, they constantly need to revise, add to, substitute, edit, or discard some documents or materials from the portfolio.

The purposes and uses of teaching portfolios are to evaluate, promote and get tenure at university level, to recognize and reward excellence in the field of teaching, to describe the full range of teacher's abilities over an extended period of time, and to stimulate reflection and improvement of a teacher's performance.

Because of the above reasons, it is evident that portfolios can be used both as formative and summative evaluations. The use of portfolio-based teacher appraisals has emerged as an intriguing option to make the time required for teacher evaluation more productive, and, the process more meaningful, comprehensive and accurate.

It has gained acceptance with educators as a tool for a more authentic assessment of teacher growth and an extension of their professional development.

Teachers with varying abilities and experiences have different needs when it comes to supervision and professional development. Applying the "one size fits all" clinical method of evaluation to every teacher, regardless of his or her experience or talent, makes little sense. If the true purpose of evaluation is to improve ultimately the quality of instruction, educators need to consider the merits of alternative forms of evaluation, such as portfolios.

The most significant perceived advantage is the reflection piece of the portfolio. Moreover, the portfolio generates a richer and more in-depth picture of teachers' performance than the typical "snap-shot observation". Therefore, teachers feel that evaluation is not only fairer but also they sense empowerment and control over their professional development, which will ultimately lead to the sustainability of the teacher.

With the current trend towards standards, accountability and authentic assessment, portfolios have emerged as a promising tool to support teacher professional growth and as a measure of teacher performance. Sometimes 'professional growth' is the lacking part in almost all the other processes of teacher appraisal.

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Teachers are expected to employ constructivist theories and develop authentic assessments for students, whereas students are encouraged to be reflective, self-directed learners. In par with that, teachers should be expected and encouraged to engage in similar activities to regularly reflect on their teaching practices, to identify their strengths and weaknesses, and to determine areas of needed improvement; improvement that will have a direct input and significant influence on student learning.

Teaching portfolios expand the lens of the work of teachers for the purpose of accountability and offer a possible avenue for a meaningful professional development, the two touchstones of teacher evaluation.

Teaching portfolios are appealing for many reasons including their authentic nature, recognition of task complexity, active involvement of participants, encouragement of reflection and self-assessment, and facilitation of collaborative interaction. In addition, the inherent flexibility and adaptability of which make them an attractive vehicle for diverse programmatic purposes. Professional development is a secondary and often overlooked purpose of teacher evaluation, but the literature suggests that portfolios have great potential in this area.

TEACHING PORTFOLIO AS A STRATEGY TO EVALUATE TEACHING EFFECTIVENESS

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Concept of Teaching Portfolio

Quality teaching provides productive and beneficial learning experience for students and promotes their development as learners. This experience may include, improve comprehension and the capability of using the ideas that are introduced in the course, change in outlook, attitude and enthusiasm towards the discipline and its place in the academic endeavor, intellectual growth and improvement in specific skills such as critical reading and writing, oral communication, analysis, synthesis, abstraction and generalization.

It is obvious that effective teaching play a vital role in producing complete learners in every aspect. So, it is very important to assess effectiveness of teaching. Because the evidence produced by this can be used for major decisions about future in academe. Decisions can be either formative; which uses the evidence to improve or shape the quality of teaching or summative; which uses the evidence to decide on overall performance of a

teacher. These decisions have an impact on the quality of professional life of an academic.

Assessing teaching is not an easy task. Also, there is no single accepted strategy to do this. The criteria of evaluating the teaching vary between disciplines and within disciplines, and have to consider the level or year of the course offered, the teacher's objectives and style, and the teaching methodology employed. Student ratings were considered as the major measurement to assess teaching effectiveness of past 30 years.

Still, it is widely used in many institutions to evaluate the teacher or teaching. However, now there is a trend of arguing about its use as a single source. Many are keen on other potential sources also. Evidence from several sources can be served to broaden and deepen the evidence base used to evaluate courses and assess the quality of teaching. There are twelve potential sources which can be generated evidence of teaching effectiveness, including: (1) student ratings; (2) peer ratings; (3) self-evaluation; (4) videos; (5) student interviews; (6) alumni ratings; (7) employer ratings; (8) administrator ratings; (9) teaching scholarships; (10) teaching awards; (11) learning outcome measures, and (12) teaching portfolio (Berk, 2005)[4].

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[4] Berk, R.A. (2005) Survey of 12 strategies to measure teaching effectiveness, *International Journal of Teaching and Learning in Higher Education*, vol. 17, pp. 48-62.

Each source has strengths / merits and drawbacks / demerits of its own. Some useful characteristics of these strategies are reported in Table 1.

Table 1: Potential strategies for evaluation of teaching

Source of Evidence	Type of Measures	Who Provide Evidence	Type/s of Evaluation*
Student ratings	Rating scale	Students	F/S
Peer ratings	Rating scale	Peers	F/S
Self evaluation	Rating scale	Instructors	F/S
Videos	Rating scale	Instructors / Peers	F/S
Student interviews	Questionnaire	Students	F/S
Alumni ratings	Rating scale	Graduates	F/S
Employer ratings	Rating scale	Graduates' employers	S
Administrator ratings	Rating scale	Administrator	S
Teaching scholarships	Judgmental review	Instructors	S
Teaching awards	Judgmental review	Instructors	S

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Learning outcome measures	Tests, projects, Simulation	Students	F/S
Teaching portfolio	Most of above	Instructors, Students, Peers	S

* F – formative, S - summative

Teaching portfolio is a relatively new concept to academic field. Teaching portfolio is a coherent set of materials, including work samples and reflective commentary on them, compiled by an academic member to represent his or her teaching practices as related to student learning and development. All the evidence generated from above mentioned other strategies can be assembled systematically to produce the teaching portfolio.

This material is termed as "the dossier" in Canada, in the United States as "the portfolio", in Australia and in United Kingdom as "the profile". It is a factual description of teaching achievements and contains documentation that collectively suggests the scope and quality teaching. Mainly this is produced for the purpose of promotion and tenure decisions. This can be used as an important source of evidence to assess the teaching effectiveness as well.

There are six basic steps in constructing a teaching portfolio: (1) articulate a personal teaching philosophy; (2) gather evidence; (3) organize evidence; (4) write

reflective and summary statements about the evidence; (5) share the draft with others, and (6) revise and rewrite resume/curriculum vitae.

A teaching philosophy is a very broad personal statement about the way of teaching, reason for teaching, teaching goals, methods and strategies. The purpose of this statement of philosophy is to describe the individual's general approach to teaching and learning and their changes in response to changing conditions.

It could include how the individual views about the teacher's role in a range of teaching situations and in general, how the teaching methods are typically used that reflecting the teacher's role, how the teaching methods have been modified in response to changes in students, course materials, the instructor's situation, curriculum changes, and other mitigating factors.

This is a unique statement and should reflect the uniqueness of the teacher. Discussing the content of this statement with colleagues, mentors, advisors, students and others will help to refining this statement and come up with a productive statement. Teaching philosophy is not a solid statement. Always there is a provision to develop advance teaching philosophy as teacher gets developed.

A teacher should collect all the materials related to teaching which comes from variety of sources. The materials that can be incorporated in to portfolio, which can be used as an evidence of teaching effectiveness, are classified under 3 categories. They are material from own and information from others and products of good teaching.

Personnel materials includes statement of teaching responsibilities, including specific courses, and a brief description of the way each course was taught, personal teaching goals for next 5 years, description of steps taken to evaluate and improve teaching, contribution to curricular revisions and new courses, publications on teaching, information on direction and supervision of students and research group activities.

A teacher should collect material related to his/her teaching from others as well. This includes peer ratings of teaching and other activities like research activities, curriculum or course development, student ratings on teaching, participation on workshops, seminars and training on teaching related to own discipline.

Products of good teaching are student essays, creative work, lab books, publications, course related work, record of students who succeed to advanced courses in discipline, statement from alumni.

Elements of Teaching Portfolio

Berk (2005) presented comprehensive list of elements that can be incorporated into a teaching portfolio under these categories:

1. *Description of Teaching Responsibilities* (Courses taught, Guest presentations, One-on-one teaching, i.e. scholarly projects, independent studies, thesis/dissertation committees, Development of new programs or courses, Service on curriculum committees, Training grants)

2. *Reflective Analysis* (Philosophy of teaching, Innovative and creative teaching techniques, Mentorship of students and faculty, Participation in faculty development activities, Scholarship of teaching, Recognition of effective teaching)

3. *Evidence to support above claims* (Syllabi, Handouts, Exams, Student work samples, Use of technology, Student ratings, Peer ratings, Alumni ratings, Videotapes/DVDs of teaching, Teaching scholarship, Consultations on teaching)

After gathering all these evidences teacher must decide how to group them and to summarize the contents. Creativity of the teacher plays an important

role in here. Writing reflective and summary statements about the evidence helps to identify the teaching goals in a specific context.

The teacher's reflections can be focused on questions of student motivation and how to influence it, the goals of instruction, both for individual courses and in general, the development of rapport with students as a group and individually, the assessment of various teaching strategies as they related to the instructional goals, the role of disciplinary knowledge in teaching and how students learn the discipline and recent innovations in the content of the field and their effects on teaching.

Finally sharing the draft with peers, mentors, administrators and revising gives an ideal creation of a teaching portfolio.

Teaching portfolio provide an opportunity for teachers to articulate their teaching philosophy, review their teaching goals and objectives, assess the effectiveness of their classroom practice and the strategies they use to animate their pedagogical values, and identify areas of strength and opportunities for improvement.

They also highlight the teacher's range of responsibilities, accomplishments, and contributions to

teaching and learning more generally within the department, university and/or scholarly community.

It is not an exhaustive compilation of all the documents and materials that show the teacher's teaching performance; rather it should contain set of information and evidences organized in a way that gives a comprehensive and accurate summary of teaching activities and effectiveness.

Use of Teaching Portfolio in Teaching Evaluation

Portfolio is a flexible document which can be used as a development tool for formative purpose to stimulate individual reflection and personal development, or it can be used as an evaluative tool for summative purpose to offer support for tenure and promotion decisions, to supplement job application information, and to offer evidence of teaching effectiveness for teaching awards. Teaching portfolios have the capacity to be used for assessment of teaching quality as well as development of enhanced teaching performance.

Usually formative assessment of teaching can be carried out at many points during an instructional period, in the classroom, to compare the perceptions of the teacher with those of the students, and to identify gaps between what has been taught and what students have learned. Teacher can find out what changes should

be done in teaching methods or style, course organization or content, evaluation and grading procedures, etc., in order to improve student learning.

Assessment is initiated by the teacher and information and feedback can be gathered from many sources such as self, students, and colleagues, consultants using a variety of tools like mini surveys, on-line forms and direct questioning. The data gathered are seen only by the teacher.

Based on the feedback ongoing improvements and development can be done to the teaching. The information on formative assessment, feedback, changes that the teacher did based on these feedback and improvement occur due to these changes can be incorporated in to the portfolio. Summative evaluation, by contrast, is usually conducted at the end of a particular course or at specific points in the teacher's career.

The purpose is to form a judgment about the effectiveness of a course and/or a teacher. The judgment may be used for tenure and promotion decisions, to reward teaching awards, or to enable departments to make informed decisions about changes to individual courses, the curriculum or teaching assignments.

Tools for this evaluation includes survey and comments on teacher's teaching and quality of the learning experience, letters from individual students, assessments by peers based on classroom visits, samples and critical reviews of contributions to course and curriculum development, contributions to scholarship on teaching, evidence of exceptional achievements and contributions to teaching in the form of awards, and committee work. Teaching portfolio is an ideal format for presenting these types of evaluation as a cumulative and longitudinal record of one's teaching.

The increased demand for use of the teaching portfolio by many of higher education institutes as a way to measure and predict teaching effectiveness and to document better teaching proficiency proves that these portfolios work. With the development of higher education and due to new attitudes there is a greater concern on assessments of teaching effectiveness, and teaching portfolios provide a meaningful statement of teaching abilities. A teaching portfolio may be first use as an aid to get the job, but it is also an efficient way to evaluate continually the teaching as teacher gain experience in the classroom.

Teacher can use this as a method to improve skills, show different ideas, and develop new strategies and techniques. Time to time portfolio must be modified as the teacher met with new teaching challenges; rather

than putting off updating the portfolio for job searches, continuous updating and creative thinking about the content of the portfolio, not only improve teaching portfolio itself, it will also change and improve the teaching and enhance the effectiveness of teaching as well.

Preparation of portfolio takes much time. So, its use in assessing teaching effectiveness may be questionable. Also, there is a possibility of over reporting because this is a kind of self-evaluation. Institution should maintain documents regarding teaching accomplishments and practices, which can be used to cross check with portfolio.

Beside this few limitations there are several advantages of teaching portfolio. They are teaching portfolio can capture the complexity of teaching, place the responsibility for evaluation in the hands of faculty or institution, encourage improvements and reflection, and act as rich source of evidence of teaching achievements and effectiveness.

In conclusion teaching portfolio can be used as an important strategy to evaluate teaching effectiveness. Because teaching portfolio can readily accommodate four main dimensions of teaching: knowledge of subject matter, designing learning experiences, interacting with students, course management, which can be used as an evaluation model for teaching effectiveness.

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STUDENT FEEDBACK TO MAKE LEARNING ENVIRONMENT EFFECTIVE

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Feedback has been identified as one of the essential factors underpinning successful learning for higher education students. Feedback used in educational contexts is generally regarded crucial to improving knowledge and skill acquisition. In addition to its influence on achievement, feedback is also identified as a significant factor in motivating learning.

Nowadays most of the Universities are shifting from teacher centered learning to student centered learning and therefore is in this process giving effective feedback by the teacher plays an important role. Indeed, in higher education process, self-learning has been identified as one of the effective ways of learning. Giving effective feedback in time facilitates self-learning.

Today in Universities, teaching about the subject by the lecturers has become part of what they do, but supporting student learning and enabling the students to get the most out of the learning experience, using their

talents to the full, is about main thing they have to do. The student learning doesn't depend only on what the teachers teach them, therefore, teachers need to re-balance the amount of time they give to assessment, and the amount of time they give to directly imparting knowledge as students can today gather knowledge from a wide variety of sources including internet, e-materials, text books etc.

"Lecturers who really care about their students' learning provide feedback."

Most of the surveys done on getting feedback by the lecturers in universities found that only the lecturers who really care about their learning provide feedback. The main reason that academics not providing feedback is because of it is too much of work for them. Not providing students with feedback on their work gives the impression of overcrowded classes, a lack of personal help and encourages cheating. Feedback helps students to improve and prevent them from making the same mistakes again. It is useless if feedback comes back too late in the semester.

Students sometimes wait on the feedback before they feel capable of going onto the next bit. When teachers know how students are progressing and where they are having trouble, they can use this information to make necessary instructional adjustments, such as re-teaching, trying alternative instructional approaches, or

offering more opportunities for practice. These activities can lead to improve student success.

Different Ways of Giving Feedback

Feedback used in educational context can be mainly categorized into two groups: i.e. formative assessment / feedback and summative assessment / feedback.

Formative assessments: are on-going assessments, reviews, and observations in a classroom. Teachers use formative assessment to improve instructional methods and student feedback throughout the teaching and learning process. For example, if a teacher observes that some students do not grasp a concept, she or he can design a review activity or use a different instructional strategy. Likewise, students can monitor their progress with periodic quizzes and performance tasks. The results of formative assessments are used to modify and validate instruction.

Summative assessments: are typically used to evaluate the effectiveness of instructional programs and services at the end of an academic year or at a pre-determined time. The goal of summative assessments is to make a judgment of student competency after an instructional phase is complete. Summative evaluations are used to determine if students have mastered specific competencies and to identify instructional areas that need additional attention.

Guiding Principles of Student Feedback

- Feedback is an essential part of learning. It is necessary in order to help less experienced practitioners of an academic discipline to identify their current strengths and weaknesses and ways they can improve their work in future.

- Effective feedback is timely, in that it is received sufficiently quickly for the work in question still to be fresh in the mind.

- Effective feedback is constructive, in that it helps the student to understand his/her strengths, and weaknesses.

- Effective feedback is detailed, in that it seeks not just to identify ways of improving, and also to give examples of where and how this can be achieved.

- Formative feedback is helpful to students early in their academic studies, in order to clarify expectations and assist in the identification and remediation of weaknesses.

- Feedback usually works best when it is given in the context of clear marking criteria, which help students to understand the basis on which their work is being judged.

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- Students find it useful to receive feedback from a range of sources, including teachers, personal tutors, peers, and, where appropriate, practitioners.

- Encouraging students to reflect on their own performance, as well as receiving feedback from others, is a useful part of the learning process.

- Feedback is particularly crucial for students studying part time or remotely, who have fewer opportunities for direct contact with teaching staff.

Code of Practice on Feedback in Universities

- It is the responsibility of the Head of the Department to ensure that feedback for all modules will be returned to students within 3 working weeks of submission, unless there are compelling extenuating circumstances which make this impossible.

- All undergraduate students will have the opportunity to have received feedback on at least one formative or partially formative piece of written work in good time before the submission of final summative work in at least one level one principal subject module in each semester of their first year in all programs.

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- Universities are required to develop marking criteria for all forms of assessment used on their programs, and articulate differences between marking criteria across levels of an undergraduate program.

- Students are entitled to request informal feedback from the appropriate module, year or personal tutor on any assessment work submitted, including examinations.

- Incorporate peer assessment in assessing process since feedback is associated with peer-assessment. Where groups of learners are assessing each others' work, learners can get a great deal of feedback from their peer-assessors.

Good Practice in Improving Constructiveness of Feedback

- *Being positive*: Acknowledgement of what students can already do well is a necessary companion to suggesting ways to improve, if markers wish to avoid de-motivating students.

- *Avoidance of 'closed' language*: Judgments with such finality as 'weak' or 'poor' cause irretrievable breakdowns in communication between assessors and students. Criticism needs to be accompanied with explanations of how to do things better, or suggestions of places to go for such explanations.

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- *Awareness of the power relations embedded in the marking process:* There is a human being at the end of each comment on assessed work. What could seem like laziness may also reflect fundamental misunderstanding, lack of appreciation of what is required, or life circumstances the marker is totally ignorant of.

- *Face to face feedback*: This is quick, intimate, authoritative and addressed exactly to the individual person.

- *Peer review of feedback:* Giving feedback to students is a routine part of academic practice in the same way as teaching or writing, and is appropriately subject to comparable processes of peer review.

- *Use of generic feedback:* It is possible to provide generic feedback to students in ways that help them to improve their individual performance by learning from the cohort as a whole. For example, making available anonymously a summary of all comments provided to individual students on an assessment task set for a group can help each student to think about how his/her work could be improved, especially if the comments are clearly related to learning outcomes and assessment criteria.

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- *Transparency about the marking process:* Another strategy that can be economical of staff time but that can provide helpful feedback to students is publishing, anonymously, assessed work at different levels showing examples of progression and staff expectations of increasing development.

To facilitate effective learning through feedback, it should provide following benefits to the learners such as: helping learners to make sense of what they have done and clarify and take ownership of the need to learn as defined by the intended learning outcomes they are working toward achieving. Moreover should enhance learners want to lean, by increasing their self-esteem, confidence and motivate them to move into their next episodes of learning by doing.

Hints for Giving Effective Feedback

It is always important to indicate how the student can improve themselves for example by linking their grades with comments and though examples. The teacher must remember to write positive as well as negative comments setting criteria and your expectations for the standard of any future work. It is also important as a teacher never make personal comments in the feedback forms.

Feedback plays an important role when the information is used to adapt teaching and learning to

meet student needs. Feedback given as part of teaching process helps learners become aware of any gaps that exist between their desired goal and their current knowledge, understanding, or skill and guides them through actions necessary to obtain the goal.

Unfortunately, the research findings show that high-quality formative assessment is relatively rare in classrooms, and that most teachers do not know well how to engage in such assessment. Although most of the lecturers know the importance of giving feedback for the learners, still the correct practicing of it is a question. Now in university education process we are shifting from teacher centre learning to student centre learning and therefore it is useful to re-think about the importance of giving feedback for effective learning.

STUDENTS' EVALUATION AND FEEDBACK IN LABORATORY PRACTICAL

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Laboratory activity plays an important role in science education as direct benefits can be achieved by laboratory activities in higher education. The value of laboratory education is recognized by the academic and private sector and also by the students themselves. Investigation of new teaching techniques, evaluation methods and methods for giving feedback are also important to provide more effective learning in laboratory activities.

Laboratory activities, especially in the field of biology are important in promotion and development of generic skills needed for non biological related career opportunities as well. It is also important for creative and critical generic skills such as report writing, data handling, interpretation skills and the ability to evaluate evidences. Designing a laboratory practical with problem based learning is one approach that students move from passive learning to active learning.

Some of the areas that can be developed by the laboratory activities include: use of scientific methods in solving problems; to develop scientific attitudes; to gain practical skills; to understand how science and scientists work; to gain ability to design investigations; to develop an ability to formulate reverse scientific explanations; to develop scientific arguments; skills in team work; to develop imagination and creativeness; to develop skills in use of equipments; observational skills, and time management.

Factors which should be considered in designing and implementing laboratory experiments include, defining learning objectives and outcomes, instructions provided by the teacher and the laboratory guide, availability of equipment, the nature of the experiment, student –student and teacher–student interactions during the laboratory work and assessment criteria. Assessment of student work is an important mechanism to direct and enhance student learning.

In courses with a high proportion of laboratory work, the most widely used method of assessing is a continuous assessment. This has the advantage of providing an on-going and overall picture of each student's performance and ability, and provides the students with regular feedback on how they are progressing.

Commonly Used Methods to Assess Laboratory Practical

Following are some commonly used methods of assessing a laboratory practical.

Pre-practical tutorials / Pre laboratory assessments

Groups of students are given a tutorial on the experiment (with straight forward questions) and their own secretaries are appointed to record their discussions. During these tutorials students are made aware of the practical and its fundamentals. It is important to know how and what they need to report in their lab reports, how the practical session fits with the theory and to build up a confidence in the experimental procedures.

These tutorials also offer a question and answer session. Students can question tutors about the practical which may cause confusion or need further clarification. Lecturers can assess tutorials, and the way in which they involve with the peers. Grades or marks according to the criteria can be given.

Report writing

Students should write a detailed report on the practical which they have completed. Following sections should be included in a report. Separate marks

should carry for each section. Normally the results and the discussion section carry more marks compared to other sections.

1. Introduction – objective and theory. This includes why the experiment should be performed and it may also include the result to be obtained. This is a short discussion of the theory or principle behind the experiment.

2. Safety precautions and disposal procedure

3. Methods

4. Data and Results – graphs, calculations, figures or diagrams

5. Discussion and conclusions – a discussion should tell the major findings, the kind of accuracy that was obtained, discrepancies between experimental and expected results, and should also discuss possible errors which may contribute to poor results.

6. References – All sources which were used as literature should be included.

If the experiment is a team effort, the laboratory report should be a team effort as well. All members of the team should contribute to the report. Late

submission of a report should be considered, when giving marks. Reports which are more than one class late will be graded on a pass/fail basis only. Reports which are more than two classes late may not be accepted. Incomplete reports will be graded with points deducted for missing sections.

Direct observation procedural skills (DOPS)

DOPS is a method of assessment developed specifically for assessing practical skills. It requires a well trained supervisor to directly observe the students performing a certain procedures. The instructors supervising the sessions in this study have to evaluate the students by a checklist developed by the faculty. A checklist consists of a series of questions covering the key stages of the majority of procedures in an experiment. A demonstrator can mention whether each aspect had been completed satisfactorily by the students or not (yes/no).

Lab note book

The laboratory note book is a collection of permanent records of the experimental data and observations that are measured or observed during experiments. During the laboratory period all data and observations are to be recorded directly into the laboratory notebook and not on separate paper sheets.

A lab note book contains: title, date, partners, objectives, procedures, results (color changes, precipitation, calculations, pictures, diagrams) and a discussion (in brief), errors, references, safety measures, disposal of chemicals, changes of the procedures. It is recommended that some information should be written prior to the laboratory experiment.

Note books can be checked at any time and they are expected to be up to date. Grades or marks can be given to lab note books and also feedbacks can be included. Credits should not be given if the note book is not up to date and does not contain the proper information.

Case studies

Each student is given a research paper two weeks before the practical class; two students will be getting the same paper. In the class session students who had received the same paper were 'matched up' and asked to spend 30 minutes to find the key findings of their paper; at the end of the time each pair was asked to give a summary to the whole group. Students should be encouraged to mainly focus on the methodology and the key findings of their article. Students are then required to prepare a 2000 word report. Students should find out required laboratory data, through laboratory experiments to support the findings of the case study and the published literature (Table 1).

Table 1 - Criteria for the report evaluation:

Criteria	Marks	What is looking for with this learning outcome
Critical evaluation of literature		Identify inappropriate conclusions. Identify evidence that might support or contradict a hypothesis. Identify new information that is needed to draw conclusions. Separate relevant from irrelevant information Analyze and integrate information from separate sources to solve a complex problem. Recognize how new information might change the solution to a problem.
Evidence of background reading		Depth and breadth of material appropriate to inform all aspects of the report

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Critical assessment of the finding		Analyze and integrate information from separate sources to solve a complex problem. Recognize how new information might change the solution to a problem. Communicate critical analyses and problem solutions effectively. Identify new information that is needed to draw conclusions. Separate relevant from irrelevant information when solving a problem. Identify evidence that might support or contradict a hypothesis. Identify inappropriate conclusions
Accuracy, analysis, interrogation and interpretation of laboratory data using appropriate		Use mathematical skills in the context of solving a larger real-world problem. Interpret numerical relationships in graphs and separate those relationships from

summary data tables		inferences. Separate relevant from irrelevant information when solving a problem
Originality Academic writing including spelling and grammar		

Computer assisted assessment / Electronic lab books / Micro assessment

An electronic lab book has been introduced to replace the paper lab book. Users can create new pages, to include all the data about the experiment similar to a paper lab report book. The editing tool should provide a simple word processing, creation of tables and insertion of images.

Since all lab members can view and edit all the pages, protocols and data can be easily shared online at any time. The students may access to networked computers at the end of each bench. They are encouraged to plan their experiments on the "e" book, write up the protocol and then print a copy to work with, at the bench. Digital photographs can also be

inserted directly to their pages (examples – microscopic images, colonies of microbes etc).

The students are benefited from a reduction of transcription errors in writing up results, better record keeping, off campus access and secure back-ups. Online access to the student's lab books facilitates the supervision without the need of a physical presence in the lab.

Lab quiz

This assesses confidence and knowledge in terms of specific, basic laboratory skills which could be practiced in the laboratory. It contains a set of simple direct questions based on theory and experiment procedures. These questions can be given to the students to write answers within a laboratory. Before they leave the laboratory, they have to submit the answers. Tutors should correct the answer papers and should handover them to the students before the next practical class.

Spot test

These tests are conducted inside the laboratory. Each student is given a set of questions. Separate locations are located in the laboratory for each question number. A question consists of two types of sub questions, one is based on a theory and the other one is

based on an object placed in a station (or small activity). Students should go to a station and identify the station number and answer the respective question in the given papers. These questions should be very simple and should assess theory and practical aspects. Two examples are given below.

Station A. Compound Microscope

1. Put anaphase in the center of the field and raise your hand. _____

2. What is the approximate size of this cell? _____

3. To what kingdom does the organism belong? _____

Station B. Micropipette

1. What is the total possible volume in this micropipette? _____

2. Pipette 75 micro liters into the tube and raise your hand. _____

Practical exams

A practical exam is mostly an individual exam. Any practical or practices can be used in the final examination, based on learning objectives. Normally a single practical should last for 50 minutes and an

additional 10 minutes can be given to clean the place for the next practical / next student. Students should record their findings in a given exam paper and answer the questions given in a paper based on theory and their findings. Marks can be given to these answers and for the practical skills by observing them.

Giving Feedback to the Students

Giving recommendations, suggestions are important when designing or supervising student practical / laboratory work and various ways are now available to give feedback to students in laboratory practical. Also students should be provided with opportunities for their feedback, reflection, discussion and modification of their ideas.

The role of feedback in the learning process is to inform the student about where and how their learning and performance can be improved. Feedback on learning can come from fellow students, teachers and the staff supporting the learning processes such as demonstrators and student themselves.

We may follow the following common principles in the process of providing the feedback:

- Provide as soon as possible after the assessment takes place

- Encourage / empower a student's confident to have a success in their future work

- Be directly related to the learning outcomes and to the given assessment criteria

- Respect for diversity and individuality, and should rarely be directed at the student, but rather at their work

- Manageable – one student should not be given too many comments on one work. Getting too much feedback could make them incapable of sorting out the important feedback.

- The feedbacks are recognitions of the desired goal, evidence about present position, and some understanding of a way to close the gap between the two.

Handwritten comments on students' assessed work

This is one of the most widely used forms of feedback to students. It includes our written feedback on lab reports, lab note books, lab quizzes and so on. For the laboratory report, the marker should have detailed assessment criteria. Students and peers can also give their feedback by looking at the criteria (Example format is given below). A grade or marks can be given for each student.

Normally results and discussion parts carry out more marks compared to other sections. This method has some advantages. It can directly give feedback on a particular aspect. Students can refer the feedback again and again and can check whether they have changed or not. Also written comments can be kept for record keeping as well. Similarly it has some disadvantages too. One of it is, feedback may be hard to read. Some may be threatening to the students. Time consuming and we cannot compare the comments that we have given to different students unless we keep photocopies of the comments (Figure 1).

Assignment return sheets

These are normally pre-prepared forms. Teachers can provide detailed written comments on it. Separate columns are there to give different comments on different aspects. Students can also ask questions from the lecturer about their work through this assignment return sheets. These sheets should, therefore, be given to the students before they submit the reports. They must attach it with their lab report. Advantages of this method are: teachers can address each of the most important or chronic feedback agendas without having to write out the context. Students can compare the feedback they have received, with those received by peers on the basis of each separate criterion.

Figure 1 – Sample Lab Report Evaluation Form:

LAB REPORT EVALUATION FORM

This Lab Report is completed to the best of my ability.

Students' signature

Student's name: --
Lecturer's name: ---
Title of the experiment: -----------------------------------
Date: --

Teacher	Criteria	Student
0 -5	Clear and Appropriate **HEADING, TITLE, PROBLEM,** and **HYPOTHESIS.**	0 -5
0- 5	**All MATERIALS listed and a summary of PROCEDURE.**	0- 5
0 - 20	Appropriate presentation of **DATA** and **OBSERVATIONS** including graphs(s), chart(s), drawing(s), etc. Accuracy of data	0 - 20
0 - 20	Clear and concise **CONCLUSIONS.** Conclusion addresses problem and states knowledge gained. Answers to all **QUESTIONS**.	0 - 20
0 - 5	Overall – **NEATNESS, GRAMMAR,** adheres to **FORMAT**	0 - 5
	-------Total points = Lab grade ---------	

Teacher's comments**:**
……………………………………………………………………

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Lecturer can keep a copy of the assignment return sheets and keep them for their own records. Disadvantages include: students may question about the differences in their scores or grades. Any pre-prepared agenda is likely to be found to be inappropriate for at least some of the assignments, for example students may do the assignment very well but in an unanticipated way.

Face-to-face feedback

Face-to-face feedback can be carried out with very weak students. It can be memorable, and can help students to change attitudes and approaches. Face-to-face feedback (individuals or groups) carries with it the additional explanation that comes through body language, facial expression, tone of voice, emphasis, and so on. Furthermore, in face-to-face feedback situations, students have immediate feedback on their works.

The teacher can tell a lot about, how they are reacting to the feedback from their expressions, body language, and so on. Moreover, the lecturer can adjust what they say, and how they say it, as a respond to the observations they face with. After direct observation method, face to face feedback system is ideal. A demonstrator can perform some procedures to students where the students' performance is not so satisfying.

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For group practical we must group students by considering their need for feedback on particular content. Feedback is then delivered to those students who all have the same problems as a group. Students may find themselves in more than one group, and may self select or be selected for a particular group.

Electronic feedback

This electronic feedback system provides a "personal response system". At the end of the practical work, students are asked for their opinions of the intervention using a personal response system technology facilitated by a series of online clicker questions.

As soon as the students give the response to the given questions, the lecturers can provide their feedback online. Their responses are individual, without discussion with their peers.

Feedback sheets/questionnaires

A special questionnaire can be used to collect the students' feedback mainly towards the activities, methodologies, equipments, chemicals, test results, new techniques, advanced mechanics and general comments with time allocation, space allocation, staff assistant, group members and safety measures.

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Students are asked to score on 0 to 10 scales. Some open ended questions can also be included. Based on students feedback lecturer can alter the arrangements of the practical if necessary.

Students' advisory group

An advisory group can be formulated for several students to meet periodically to discuss difficulties or dissatisfactions of each practical class. Students can ask any question regarding procedures and theory.

TEACHER EVALUATION: TOOLS & TECHNIQUES

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Core Qualities and Specific Skills

It is only the human being who has the control of knowledge and technology worldwide. But more and more teaching staff is confronted with new challenges, because the competency for teaching is not something that comes easily, it requires practice of core qualities and learning of specific skills. But what precisely are these abilities and skills? And how accurately can they be evaluated? This article describes how ideally the profile of a teacher can be identified through variety of methods.

Regardless of the level of autonomy, it is the teacher's responsibility to help students to learn the best he can. When you strive to become a good teacher and to create a good class, there are two special areas to be improved. They can be named as "*core qualities*" and "*specific skills*". Evaluation identifies core qualities (the essential characteristics needed to be a good teacher) and specific skills (abilities teachers need for this career) have developed in a character.

Core qualities are the four essentials, namely: (1) knowledge; (2) communication (the skills to convey that knowledge); (3) interest (the ability to make the material you are teaching interesting and relevant); (4) and respect (a deep-seated respect for the student). Without these four qualities, good teaching will not exist.

All students have had hundreds of teachers in their lifetime but only a very few of these teachers will they remember to be exceptionally good. These are the qualities that combine to create an excellent, memorable teacher.

A set of specific skills that are developed by good teachers can be identified such as enjoying being with students and the subject taught, having a logical mind etc. to name a few. Hence, it is essential to keep the attention throughout the lesson, be organized and efficient.

Moreover, a teacher must be patient, and be prepared to explain topics slowly, thoroughly, and in as many different ways as possible. Teacher's control, motivation inspires students to do their best at all times.

Teacher needs the "indefinable presence" making him or her, a person whom children naturally respect and admire. Teacher must always set an example of

how to behave in dealings with the students and with other teaching staff. Current evaluation methods find out "how well teaching is done" and "which aspects of teaching are good and which need to be improved" (Graham and Trevor, 1989).[5]

Evaluation can be performed in a variety of ways using different tools. All of them can be basically categorized into four (04) major areas, namely: (1) self reflection; (2) student feedback; (3) peer evaluation / mentoring, and (4) admin/trained evaluators. All evaluation efforts use one or more of these basic sources to get clear clarification of a teacher's role. Each of these four sources has unique values as well as inherent limitations.

Self Reflection

Self reflection is a process in which teachers analyze their own instruction retrospectively. Reflection is not totally a new practice that a teacher has to be familiar with. Reflective practice prevents us from repeating the mistake, prepares us to face the future in a situation if that happens again. It can occur in a variety of ways using portfolio, teaching journal, personal performance, maintaining a file, learning log

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[5] *Graham, G. and Trevor, H. (1989). Preparing to Teach – An Introduction to Effective Teaching in Higher Education, The Cromwell Press. Melksham, UK.*

or an individual professional development plan.

These tools help teachers to determine on how teachers should respond to student needs to make learning process.

Portfolio assessments

Portfolio is simply a collection of work teacher has done, displayed in a visual manner. It can be hardcopy or digital, but it should definitely reflect the best the teacher has done in a relevant work role. It can include important work done in school or even volunteer work, but they should be of professional quality, have a clearly stated purpose and include results, when possible.

Portfolios are useful evaluation tools because they allow evaluators to review non-classroom aspects of instruction as well as provide teachers with opportunities to reflect on their teaching by reviewing documents contained in the portfolio.

Personal pro forma

Teacher can create a simple pro forma which is filled in after each lecture. All the important areas could be included in this document. This can also be electronic. Sample questions to be answered would be:

"What went well and why?" "What didn't go well and why?" "What you wanted to do differently?" etc.

Maintaining a file

This method includes collecting and filling all related documents such as lecture notes, early / mid / final assessments, practical, tutorials, field trips-places-requesting letters. This helps in getting organized for the lecture series and also looking at others' files gives an example in this regards. Predecessors can very easily carry on the work.

Informal notes/ teaching notes

Informal notes are to make notes directly onto teacher's lecture notes to her. When lessons are conducted we come across different important points to be marked. Some of them help us when conducting the same lesson again. They can be memorized easily through informal notes. Teaching notes are the lessons we use in the teaching process checking written notes is also a help in teacher evaluation.

Learning logs/ learning goals and achievements

The purpose of the learning log is to allow students to strengthen learning. The answer can be written during the last few minutes of class or can be assigned as required homework. While these written responses

are not given by the instructor, some pressure arises to be communicative.

Then, students might be called on to share their answers during a brief review at the following class meeting as well as in future small group review sessions prior to an exam. The learning log is also beneficial to the teacher in that valuable diagnostic information can be gained regarding the depth of students' understanding of difficult and new content.

Teaching journal

This is another way of assuring reflective thinking based continuous professional development. Process of recording and analyzing events in a prescribed manner support understanding and develop critical thinking, develop evaluative skills and enhance interaction with others. This practice can be further developed by summarizing on monthly basis and finally at the end of the whole lesson or lecture series. Thereby challenges identified through the process can be tackled with multiple plans and actions.

Teaching diary

Here the teacher records what happens in their classes and his/her thoughts about it. Teacher diaries are used as development tools. For example, after a class that went badly, the teacher makes notes in her

diary about what happened, what she thought the causes were ideas about how to change them and a short action plan.

Reading through the diary at the end of the week provides better understanding about events to be changed to get more effective teaching learning process. In the classrooms, teacher diaries are a good way to start a course of development; a natural second step would be peer observation, i.e. getting another teacher to analyze the class in the same way.

Student Feedback

It is an essential implementation of teacher evaluation at all academic institutions and important to make changes like lecture delivery speed, more clarification on the subject area and also for new researches like group teaching. The outcomes will be positive and diverse as it helps to eliminate the vertical power relationship between teachers and students. The feedback received from students' comments will help them reflect on their performance and this reflection is the main key to teachers' professional development.

Student achievement data

In addition to, or in place of, direct evaluations of teachers' characteristics and behaviors, some evaluation systems use standardized student test scores to assess the

teacher's contributions to student learning. To isolate the effects of a teacher on student learning, such systems use statistical techniques and models to analyze changes in standardized test scores from one year to the next. The use of standardized student test scores enables schools to measure the impact that instruction is having on student performance and builds on an existing investment in student testing.

Student work sample reviews

This method is intended to provide a more insightful review of student learning results over time but differs from subject to subject. Student work samples may help to identify which elements of teaching relate more directly to increase student learning than standardized test scores.

This method suits best for a small no of students. If the number is large, it can be adopted in the random basis. One drawback in using student work samples in evaluations is that reviewing these samples can be time-consuming. Review of student work samples as a means of evaluating teacher effectiveness is more prone to issues of validity and reliability.

Evaluation through LMS

Electronic form of questionnaire evaluation can be done using this method. It gives different statistical data

on areas of development of an improvement of the teacher. Since it is automated more evaluations can be done and statistical reports can be taken easily. But the main limitation in using LMS is that special training should be given to teachers, evaluators as well as students to operate LMS and to obtain results.

Peer Evaluation & Mentoring

Peer evaluation is the professional conversations with other teachers in the faculty or subject area meetings, pre-observation and post-observation debriefings. Mentoring and discussion with department colleagues is a recommended tool to evaluate a teacher.

It is ideal if the academic institution / department are having formal mentorship system or someone nominated by the Head of Institution / Department, who can provide teacher with advice and support especially during the early part of the career.

Colleagues will be able to help you to judge how well you are doing, if you ask them for specific feedback. Another peer evaluation method is "micro-teaching", where videotaping a practice session is followed by discussion with peers.

Teacher can set up the video in the class to give a self feedback. It might make the teacher nervous, but is generally considered as the most useful development

activity.

Trained Evaluators / Administrators

Lesson Plans

Expert guidance such as trained evaluators often suggests the review of teachers' lesson plans as one evaluation method. Lesson plans are a window into a teacher's preparation to deliver content, scaffold the development of student skills, and manage the classroom learning environment.

Lesson plans are more likely to be positively related to improved student outcomes when plans are able to: (a) link student learning objectives with teaching activities; (b) describe teaching practices to maintain students' attention; (c) align student learning objectives with current level, and (d) accommodate students with special needs.

Classroom observations

This is the process of practicing the lesson plan. Although teachers may be able to craft high-quality lesson plans, it is equally as important to link these plans with what occurs in the classroom. It is important to use "formal observations" and "scheduled observations" to get clear understanding. Linking planning to practice can be identified only through this

process.

Without the lesson plans, evaluators may be missing key information about the lesson. Classroom observations capture information about teachers' instructional practices. Observations can be used in formative and summative evaluations. Research suggests that when observations occur more frequently, their reliability improves and similarly, when observations are longer, their validity improves.

Job performance evaluation checklists

Checklists can be used for evaluation purpose, as well as administrative purposes but it is very important to know that administrator does not act as a good evaluator. There are some occasions in giving both services together. Checklist includes items like; overall performance, specific job performance, discusses improvements and strengths of teachers. This is done to get the most from your job performance evaluation sessions and to keep you focused by evaluators/administrators.

MAINTAINING STUDENT DISCIPLINE IN THE CLASSROOM

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Student Discipline: Classifications

The topic 'discipline in the classroom' is one of the most commonly discussed and widely debated issues for teachers today and in much of the past decades. Moreover, it is one of the most important factors in a classroom which directly affects the teaching and learning environment. Therefore, it is necessary to have an understanding of why students behave the way they do in order for teachers to handle situations in an appropriate manner.

Essentially, there are three main types of discipline, namely: (1) *Preventative discipline*; (2) *Supportive discipline*, and (3) *Corrective discipline*. The first – Preventative discipline – refers to the strategies that teachers use to prevent student misbehaviors. Teachers use the second – supportive discipline – when they help students gain back their self-control or when they lead students back in the right direction if they begin to show signs of misbehavior. Third – corrective discipline – involves the implementation of penalties or

punishments for students that have misbehaved or broken the rules of the classroom discipline policy.

Discipline can also be divided into two major components such as: (1) *Indirect guidance*, and (2) *Direct guidance*. The former – Indirect guidance – focuses on the authorization of the student. The later – Direct guidance – is more typical of everyday discipline procedures used in the classroom. This involves describing appropriate and inappropriate behaviors and assisting the students in choosing the better ones.

Researches done by the psychologist and educators on this particular issue identifies many factors affecting students' discipline or behavior. These factors can be categorized in to two categories: (1) *Psychological*, and (2) *Environmental*. Psychological reasons are mostly personal to the student.

The psychological reasons again fall into two categories, namely the psychological reasons caused by heredity or genetically and the psychological reasons caused by the social groups and trends. The heredity or genetic causes are very uncommon as well as very difficult to identify and can be taken very long time to be cured.

These students should be referred to a psychiatrist for treatments and should be handled very carefully with close observation. Psychological reasons caused by

the social groups and trends are most commonly seen in the society. Behavioral reasons such abusive characters, alcohol/drug addicts or who have developed anti-social behaviors fall in to this category. In such cases, the best solution is to refer them to a counselor or to a local social services agency.

There are many environmental reasons that cause students to act inappropriately in the classroom. One of the reasons could be the teacher's style of teaching. If teacher aren't reaching every one of his/her students, they can become bored, disinterested and restless. The teacher must remember that every student has their own learning style, intellectual capacity and an area where they excel. If teachers are reaching these students by using a variety of methods, they are motivated and less likely to cause trouble.

If discipline is not applied in a consistent manner, students may get mixed messages and become confused. They are unsure which rules apply in which situations, and as a result, they often break rules without intent. Consistency in classroom discipline will provide for an environment that is less confusing for students and thus more conducive to learning.

Students will generally perform better in an environment where they feel they are being treated fairly and are contributing members of the school/university community. Students in a

school/university with a positive atmosphere are more likely to be active participants. They are more likely to attend classes regularly, cooperate fully, contribute more frequently and achieve better.

Discipline Models

There are numerous methods or procedures for maintaining discipline in the classroom. The main focus of this article is on the university setting and therefore only those strategies which may be appropriate for this level will be discussed. Many of these models contain aspects of all three types of discipline discussed earlier. While no model could be considered to be entirely preventative, supportive or corrective, some lean more toward one type than the others do.

There are five models discussed here which are more appropriate for the high school setting. These include: (1) Skinner's behavior modification model; (2) Cantor's assertive discipline model; (3) Dreikurs' social discipline model; (4) Gordon's teacher effectiveness training, and (5) Glasser's reality therapy model.

Behavior Modification Model

In simple terms, the behavior modification model was built around the idea that all human behavior could be explained as responses to environmental stimuli. In other words, to achieve the behavior that is desired in a

classroom, teachers must reward and reinforce appropriate behavior while ignoring inappropriate behavior.

This could be accomplished by following three relatively simple procedures; specify rules clearly, ignore disruptive behavior and give praise for following the rules. The idea that if you ignore something long enough it will go away might not always be a good approach, thus, the teacher must decide on each situation based on the circumstances of the misbehavior.

Assertive Discipline Model

This model is somewhat similar to the behavior modification model in that it gives praise and reinforces appropriate behavior. It is different where, with this model the inappropriate behavior is not ignored, but is punished. The model puts the rights and needs of the teacher ahead of the student.

This includes the right to establish classroom rules that produce the best possible learning environment. It also includes the right to insist on behavior from students that meets the needs of the teacher and that encourages the positive social and educational development of students.

Finally, it includes the right for teachers to receive help with discipline from parents and administrators. Inherent in these rights is the rights of students to have teachers that will limit inappropriate behavior, provide positive reinforcement for appropriate behavior, and communicate to students what appropriate behaviors are expected.

Social Discipline Model

A third model that is quite popular in the literature is the social discipline or logical consequences model. This model is based on the assumption that inappropriate behavior is motivated by the desire to gain attention, exercise power, exact revenge, or display inadequacy. As such, discipline is maintained by developing a democratic classroom where students have some input into the rules that are imposed and the consequences that are administered if these rules are not followed.

There are many characteristics that should be present in a democratic classroom which would help eliminate discipline problems. There has to be order, which is necessary for required work to be carried out. Rules, responsibilities, and consequences, in which students have collaborated, must be put in place. Mutual trust between teachers and students is a must. Teachers solicit student help rather than demanding it.

The whole class gets together on a regular basis to discuss concerns that may affect everyone. The teacher is less concerned with personal prestige and more with class progress. Students are encouraged to learn from their mistakes whenever possible.

Teacher Effectiveness Training model

The next model that would be effective for the university lecture room is the Gordon model or teacher effectiveness training. This model is also referred to as discipline through developing self-control. This contains some of the same characteristics as the social discipline model of Driekurs. Specifically, the primary focus of this model is for teachers to forgo the use of power methods that promote resistance, rebellion and blaming.

Instead, teachers should learn to be more flexible, helping students make decisions that affect their own sense of self-control. Influence is better than force in maintaining discipline in the classroom. If teachers work with students to determine what is creating the misbehavior, than they can also work together towards creating positive solutions.

Through doing so, students learn to take ownership of their problems and in turn, learn to find solutions to their problems before they become discipline problems.

Reality Therapy Model

Reality therapy is an approach to psychotherapy and counseling. It was developed by the psychiatrist Dr. William Glasser in 1965. Reality therapy is considered a cognitive-behavioral approach to treatment. This approach to counseling and problem-solving focuses on the here-and-now of the client and how to create a better future. Reality therapy, on the other hand is more of a corrective approach.

This model is centered on the belief that all students have certain needs that must be met in order for them to be cooperative and successful in the classroom. In particular, this model identifies five basic needs that all individuals have. They are the need for survival, love, power, freedom, and fun. Based on these needs, teachers are encouraged to develop personal and caring relationships with students that are exhibiting disruptive behavior.

By maintaining positive open relationships with students, teachers are more receptive to the problems students are facing which may be contributing to the disruptive behavior. Once problems are identified, the development of appropriate solutions can follow, which should lead to reduced discipline problems in the classroom.

APPLICABILITY OF STUDENT RATING IN EVALUATION OF TEACHING

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The process of education, especially tertiary education has been subjected to a massive change during last few decades. Many of the educational institutes are now trying to find better methods of teaching to make learning process more attractive to the students.

Today, the learning process is becoming learner-centered and it finds more support from the psychological sciences for this improvement. The role of teacher has also been changed from teaching facts to helping students in order find relevant information and assess and organize them as a whole.

The importance of the relationship between the educational programs and assessment of those programs are also emphasized in the present scenario. In this context, formative assessments are considered as valuable resources for learning and teaching process and summative assessments are considered as a tool for the motivation of students.

In light of this, innovative methods of teaching and learning are recognized as highly needed. For the identification of effectiveness of modern methods of teaching and learning, sound strategies for evaluation are, therefore, of paramount importance.

Teacher evaluation or evaluation of teaching comes to the context, as a part of improving the learning and teaching process. As teaching is aimed at guiding the student in the correct path, emphasis on teaching makes changes in the learning process too. Evaluation of teaching is also becoming more important in helping both teachers and students. This can be done in many different ways such as peer evaluation, self evaluation, expert evaluation, student evaluation etc.

Students' rating of teaching lies in a very important place since, students are the most interactive and affected part of the teaching process. However, it is natural to feel on the question that: "is it applicable to use student rating of teaching for the evaluation of the teaching process?" considering the wide gap between the students' and teachers' knowledge and experience.

Student Rating of Teaching

Student rating of teaching is a method of evaluating the performance of a particular teacher and the study course with the help of the students. In this method, the

students are supposed to answer the questions given in a specially formulated student rating form or a questionnaire. The applicability of student rating on evaluation of teaching in higher education can be assessed on a number of common issues, including the:

- validity, reliability and capability of students to rate their teachers will vary based on their knowledge and experience;

- effect of the popularity of a particular teacher on student rating;

- effect of grades obtained or expected by students in their course;

- effect of situational variables such as class size, gender of both student and teacher, and

- level of the course offered.

The reliability of student rating is defined as the consistency across raters or the extent to which a given measurement will give similar information in different contexts or time of measurements.

Reliability, in broad, is two folds as: (1) inter-rater reliability, and (2) class average reliability. It should be noted that high reliability of one type does not necessarily mean that the reliability of all types is high.

Reliability is a necessary prerequisite for validity. Inter-rater reliability is determined by the students' evaluation of teaching forms.

The correlation of reliability between two raters was low, whereas the correlation of reliability between class averages was higher and the class average correlations depended on the number of students in a class. Higher correlations were shown in a class with more students and vice versa.

Validity is another factor that should be considered when using students to evaluate teaching for the improvement of teaching learning process. Validity of evaluation was explained as the degree to which a test actually measures what it is supposed to measure. The validity of students' evaluation forms is visible when it correlates with the other teaching evaluation procedures such as colleague rating, trained observers' rating etc.

Student evaluations of teaching give rise to another issue of whether students are capable enough to evaluate their teachers who are expertise in their own fields having outstanding publication records and experiences in teaching.

Teachers should possess the capability to teach, it is evaluated as a selection requirement in the process, been appointed as a teacher and, they have ways to obtain knowledge and to carry out researches and

publish them, therefore in a higher educational institute, persons who are having good publication records and experiences can only be evaluated by their peers. Students are not in a level to evaluate their teachers since they don't have enough experience of what a teacher does.

Next common issue related to student rating is whether student rating depends on the grade expected or obtained in their course evaluations. It is believed that higher grades received by students reflect better learning, thus, a positive relationship could be seen between the grade received or expected and the level of rating received by the teacher.

In the discussion of applicability of student rating for the evaluation of teaching, it is important to understand the effect of popularity of the teacher on the rates obtained. Many studies have been conducted on this issue and a positive relationship between the popularity of teacher, or in other words enthusiastic teaching and student rating, have been reported.

Enthusiastic and expressive teachers receive higher ratings in student evaluations without considering the content they deliver. Further, the higher ratings receive by enthusiastic and expressive teachers who do not deliver appropriate content are only for the enthusiasm but not for the knowledge.

Another issue that had been raised in student rating is whether there is a relationship between student rating and situational variables such as class size, gender of both teacher and students, level of course (whether it is the first year or the final year), rank of the teacher (instructor, lecturer probationary, associate professor etc.), student work load etc.

Common belief among many teachers and faculties is that the teachers who teach small classes (less number of students) receive higher rating because, in small classes a strong student-teacher relationship can be built by paying individual attention. However, most of the research evidences showed that the relationship between class size and student rating is weak or not significant.

Arreola (1995)[6], for example, showed a curvilinear relationship between student rating and class size that is large classes (more than 120 students) and small classes (less than 30 students) rated higher values compared to the middle size classes (student number in between 30 and 120). A weak relationship was shown between student rating and gender of the student or the teacher and that the female student rates for male teachers were

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[6] *Arreola, R. A. (1995). Developing Comprehensive Faculty Evaluation System: A Hand Book for College Faculty and Administration on Designing a Comprehensive Faculty Evaluation System, Anker Publishing Co. Bolton, MA.*

significantly lower than the rates they gave for the female teachers.

Another situational factor that had been considered here is the level of course. A considerable number of studies have shown a positive relationship between the student rating and the level of course. It was recorded that the students who were doing higher level / advanced courses tend to give their teachers better ratings than their juniors. These results can be easily explained as the students doing higher level courses are more knowledgeable and work according to the instructions given while maintaining better interaction with their teachers.

Enhancing Teaching - Learning Environment in Higher Education
Selected Topics

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