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Teaching Professional Ethics: Comparative Analysis between Blended and Online Learning

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Abstract:

Education system has seen a shift in the structure and pattern of teaching-learning with an establishment of sensible use of new technologies as an important tool for successful learning outcomes. It is the demand of this hour to incorporate technical and innovative aids for better dissemination of knowledge amongst the students. This research deliberates a comparative analysis of e-learning versus blended learning for the engineers. This study aims to compare the outcomes of e-learning and blended learning (a mix of e-learning and face to face sessions) based on experiment conducted on select group of students for the subject, 'Professional Ethics'. It also attempts to identify the gaps in delivering the subject knowledge as well as suggests measures to fill them up. The main findings indicated that the blended learning mode is way better for the students' learning of the subject, especially when it comes to the ethical theories and discussions on case studies in comparison with the completely online learning mode.

Keywords: Teaching, Innovative, Technologies, blended learning and Ethics.

I. Introduction:

With the introduction of technology in teaching-learning curriculum and increased number of enrollments of students in technical courses, there is change in approach seen in delivery of knowledge. Blended teaching is such one aspect which complements the shift from classroom teaching to online teaching, ultimately leading to more challenging as well as interesting mode of learning for the students. During 1990s' the concept of flipped classrooms took a leap and in the present era blended learning has created its own niche for effective teaching-learning outcomes. So the relationship among blended teaching-learning, students' learning experiences and viability in learning outcomes, becomes a matter of investigation. Proceeding in the same direction, this research paper endeavors to bring out the correlation amongst the three variables

mentioned above. Apart from this there is a comparative study showcasing comparison and contrast between complete online interface teaching and blended teaching outcomes.

II. 1. Overview of Blended and Online Learning

India is not the same old place where education meant chalk and duster. Today with steady economic growth and globalization and with the efforts of our Prime Minister's vision our country is evolving into Digital India, which is surely a whole new meaning to our education sector. In 2015, Hindustan Times published an article mentioning that, UK-India business Council report titled Meeting India's Educational Challenges Through E-Learning states that India is the second biggest e-learning market globally after the US.

Colleges and Universities in today's time are opting for Online and Blended Learning for their students as there is rapid internet penetration and the online engagement is becoming very user friendly for the student's learning as well as student's individual growth. IT breaks down the four walls within which students had to learn now the students can study and learn on his own comfort and mindset.

E-learning is of various types, like Online Learning where the student teacher interaction is completely online and the learning experience is made more interactive and better with the help of the technology like webinars, audio-visual sessions recorded by the instructor. On the other hand blended learning is an amalgamation of online learning and our traditional Face to face classes. Here, the instructor has certain number of scheduled classes with the students with online engagements and evaluations making it blended and hybrid based on the time frame decided by the instructor.

2. Functioning of Online teaching-learning

The desired purpose of online teaching and blended teaching can only be achieved by creating an online framework for the students where the instructor can use learning tools to make the sessions interactive and easy to learn from and for this an entire industry has evolved out there in the global world providing us with some excellent Learning Management System (LMS) software like a few examples are given below:

- Blackboard (www.blackboard.com)
- WebCT (www.webct.com)
- Moodle (<http://moodle.org>)
- eCollege (www.ecollege.com)

These LMS software allows the instructors to easily communicate, deliver and evaluate their subjects by using the most common platforms offered by mostly all LMS like, Instructor's Introduction, Announcements, Course Plan, Class Café, Discussion, Weekly Schedule, Blog, Group/Individual Email, References, Quiz, MCQs, Case Studies, Grade Centre etc. All these tools can be effectively used by the instructor which will lead to an effective Online or Blended Learning leading to more stimulated communication between the student and the instructor. This

leads to active participation & learning of the students, prompt feedback by faculty, self-growth, clarity of expectations from both the ends i.e., time & task based activities and overall diversification of talent and modes of learning.(Stern 2)

III. **Investigation:**

This study attempts to reflect the effects of Blende learning on students' achievement. Also it compares the results of complete online learning versus blended learning of the students.

IV. **Objective:**

The objective of this study is to establish the effects of Blended/flipped classroom on the academic performance of students. Blackboard as one of the online learning tool has been used by faculty to collaborate with students and conduct sessions online. This study aims to bring relationship between blended teaching mode and students' learning outcomes.

V. **Research Questions:**

1. Experiences and outcomes of Blended teaching designed for programs (B.Tech IV Semester, no. of students=650).
2. Comparison of the students' performance: through blended teaching with that of completely online teaching.

VI. **1. Outline of this subject, Professional Ethics:**

For the present study, the subject, Professional Ethics has been taken to analyze the learning outcomes. Professional Ethics is one of the relevant subjects to offer to our students in today's era, as our environment is full of conflicts and stress in all the professions, with numerous obligations to be met by every single person in many directions. The study of ethics study certainly improves one's ability of judgement, resulting in refining an individual's actions, decisions and behaviour in performing their duties towards their organization, family, society and Nation. (Naagarazan 1)

At University of Petroleum and Energy Studies 'Blackboard' is used as LMS software for Online and Blended learning. The subject is divided into five units:They deal in the Introduction to Ethics with sub topics as Overview and Definition of Ethics, Objectives of Professional Ethics, Varieties and Types, An Overview of Work Ethics and most importantly Engineering Ethics with good number of examples and case studies. In the first session there is a visual introduction of the subject by me. Second unit is a on the Introduction to Engineering Ethics. It revolves around Senses of Engineering Ethics, Types of Inquiries, Moral Dilemma, Moral Development Theories, Ethical Theories and a case study based on the choice of the theory. This is a very important unit of the subject. Third unit deal with Engineering: Code of Ethics. From Code of Ethics to Industrial standards, a balanced outlook on law and a case study: The Challenger. Unit four is based on Safety, Responsibility and Rights. It has detailed learning for Safety and risk, Risk analysis, Assessment of safety and risk, Safe exit, Confidentiality, Conflict of interests, Occupational Crime and Whistle Blowing. Finally, unit five is about Global Issues. It deals with

Environmental ethics, Ethics & Code of business conduct in MNCs and Ethical dimensions of E-professionalism (Internet ethics, IPR and Privacy issues).

The Pedagogy followed by this subject includes:

Blended	Online
No. of Face-to-face sessions=12 Mind maps, Brain storming sessions, Case Study based Group Discussions, Lectures of Theories and Group Presentation on Ethical Theories with their application as Engineers	Online=36 Complete online content, Online graded discussions, class café Interaction, Tests, Worksheets, Graphical representation of presentations on Occupational Crime and Other Assignments
Online sessions=24 Online content, Online graded discussions, class café Interaction, Tests, Worksheets and Other Assignments	

2. Importance of teaching ethics to Engineers

The objective of teaching Professional Ethics to Engineers is to impart knowledge by Introducing Ethical awareness, to develop understanding on the basis of familiarity with Ethical codes of conduct. Knowledge and understanding will lead to critical thinking by enhancing ethical understanding and judgment, then the Pre requisite for decision making which will help them learn from the understanding influence of ethical thought and action. Another objective is to make them analytically strong by making them aware of the Ethical dilemmas. As this subject is designed for engineers, it's our key role to make them learn about reasoning and problem solving by making them aware of ethical problem solving and decision making, then comes global competency which is taught by making them understand that the societal morals varies with culture. While keeping all the important factors in mind comes the most important objective which is enhancing their communication skills by enabling ethical argument presentation, introducing team skills through working in teams on assignments and improving their skills in both written and oral communication.

The overall course outcomes of Professional ethics are to understand human values and their importance in professional space, to identify professional ethics, to demonstrate an understanding of a need to act in an appropriate cultural and professional environment, to develop foundational skills in critical analysis and reflective ethical practice, to apply professional ethics, to critically evaluate available options to make professional decisions based

on ethical frameworks and to resolve ethical dilemma, to employ verbal and written communication skills relevant to professional ethical issues in human service practices.

VII. Teaching Methodology on Blackboard:

These are some pictures depicting the online teaching on Blackboard. Fig. 1 shows an online lecture video of the instructor, giving introduction and course flow of this subject. Additionally, the pdf files of course-plan, introduction and details of the syllabus are provided in link on Blackboard.

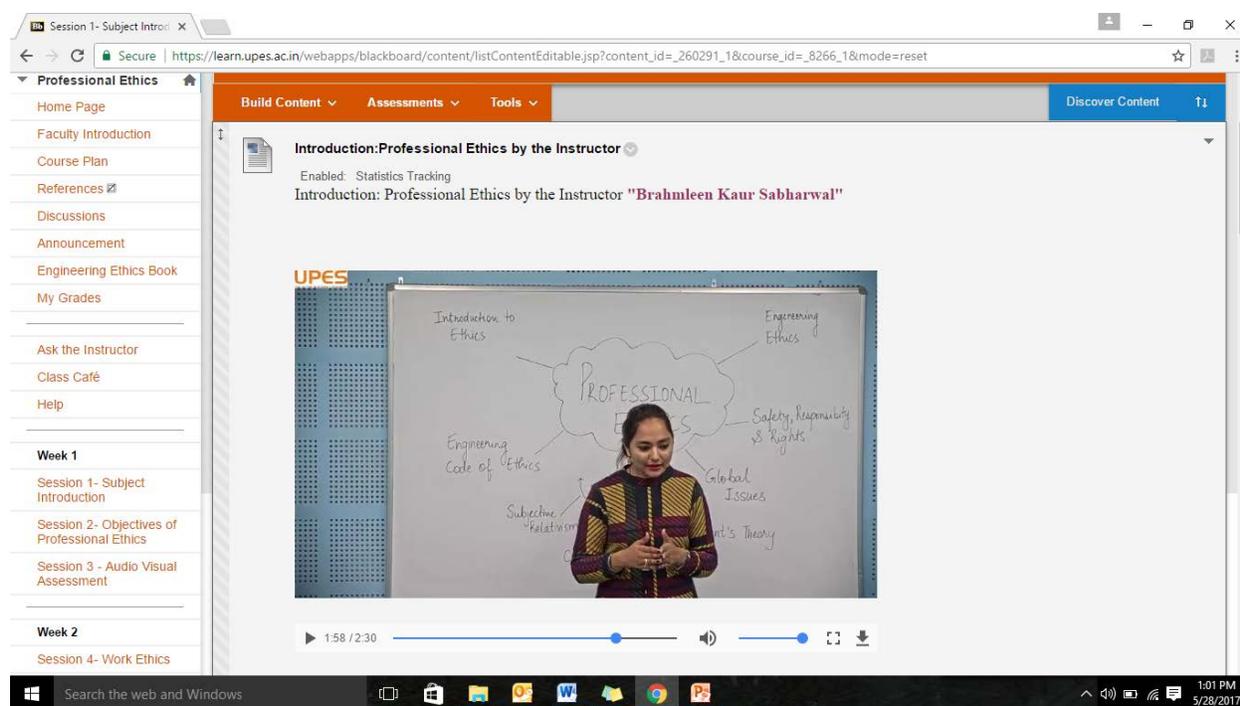


Fig. 1: Audio Visual Introduction of the subject by the Instructor

The figure 2. below shows an important tool of Blackboard, i.e., announcement, through which the instructor sends information regarding any new activity, whereabouts, deadline and other such details, to the students.

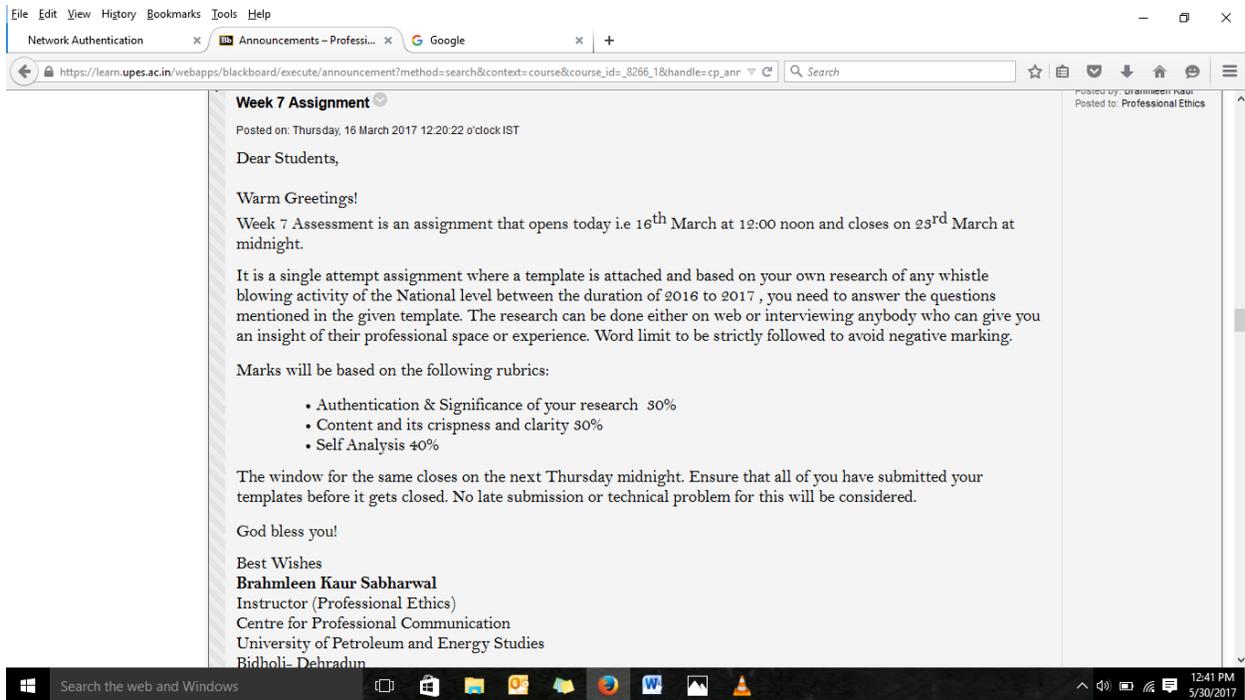


Fig. 2: Announcement of Week 7 on Blackboard

This figure 3, shows a layout pf online Discussion forum where the students are given a topic and are supposed to discuss on it by creating threads (comments on others' posts) and the faculty grades their posts at the same time. This prompt grading and feedback given by the faculty give rise to quality participation of students.

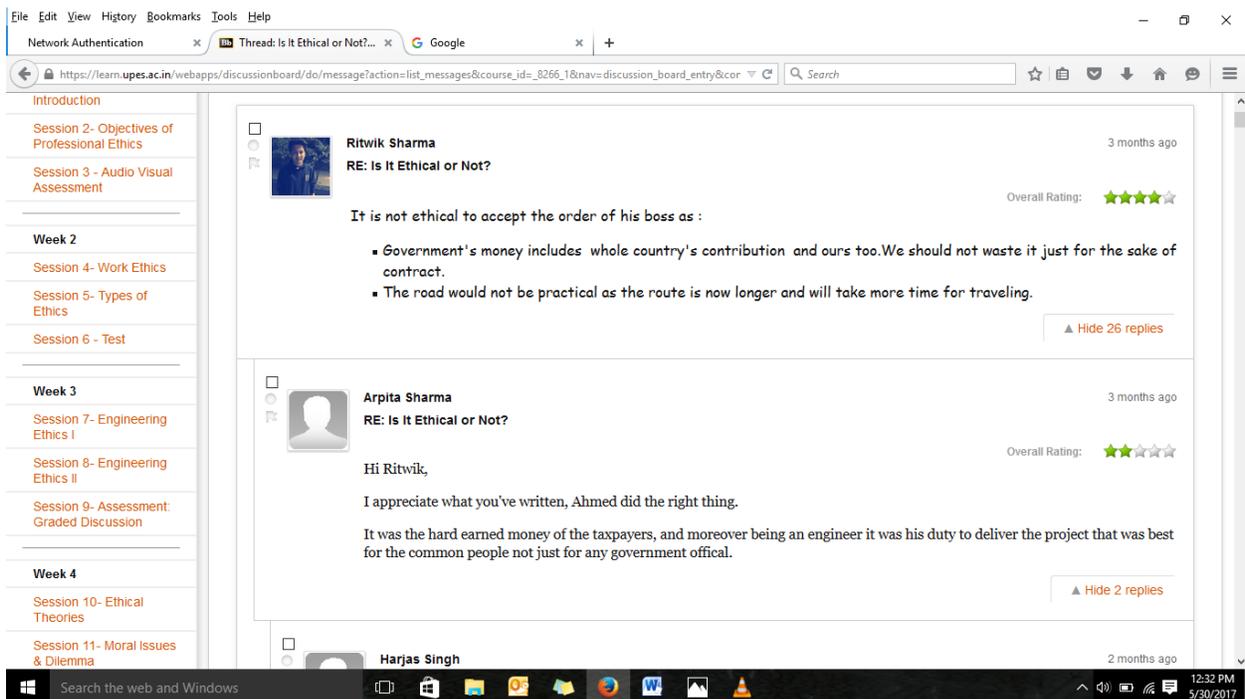


Fig 3: Layout of Graded discussion

This figure 4 is a glimpse of comments given by instructor to the students and also the grades:

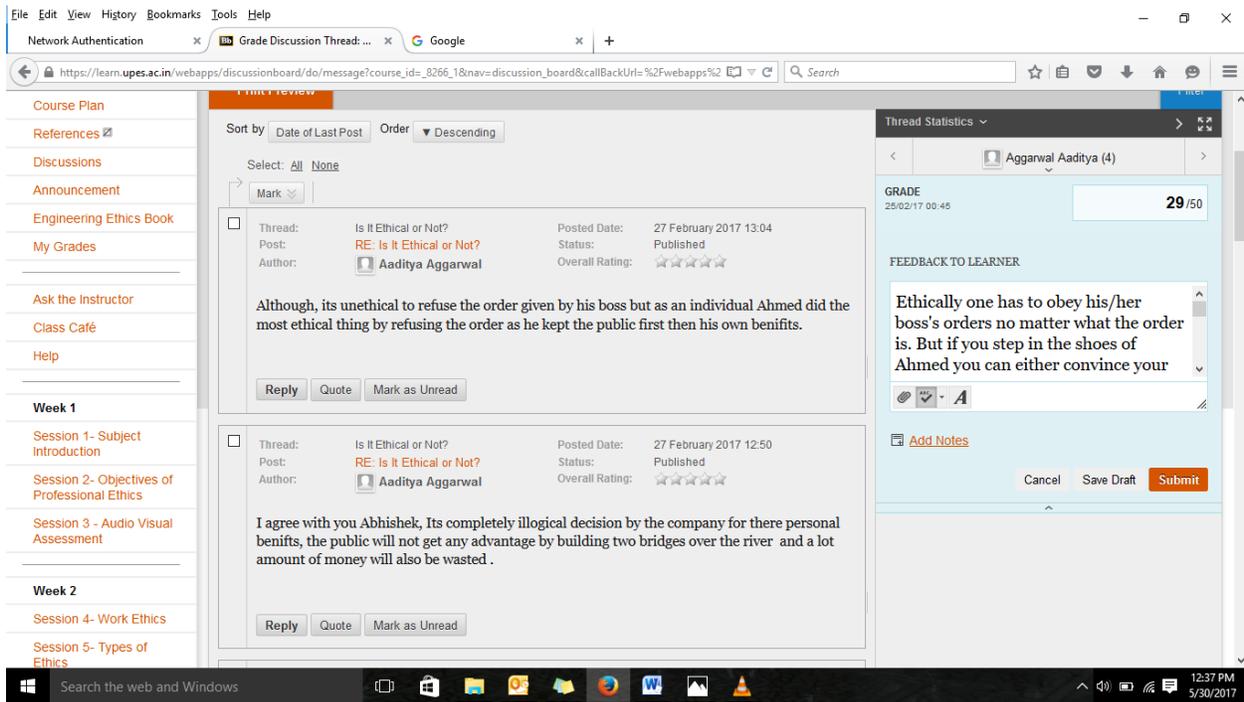


Fig 4: Evaluation of the same Graded discussion with Instructor’s feedback

This figure 5 a & b shows the activity ‘whistle blowing’ given to the students to complete.

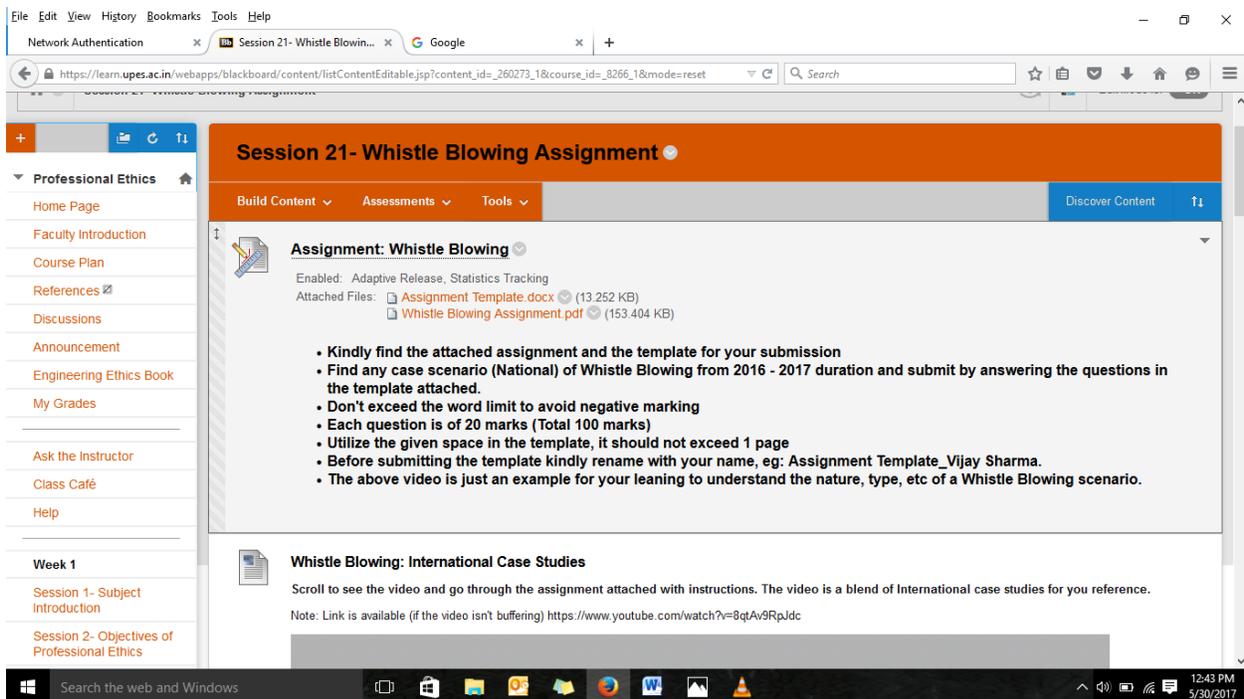


Fig 5(a): Whistle Blowing Assignment (Instructions)

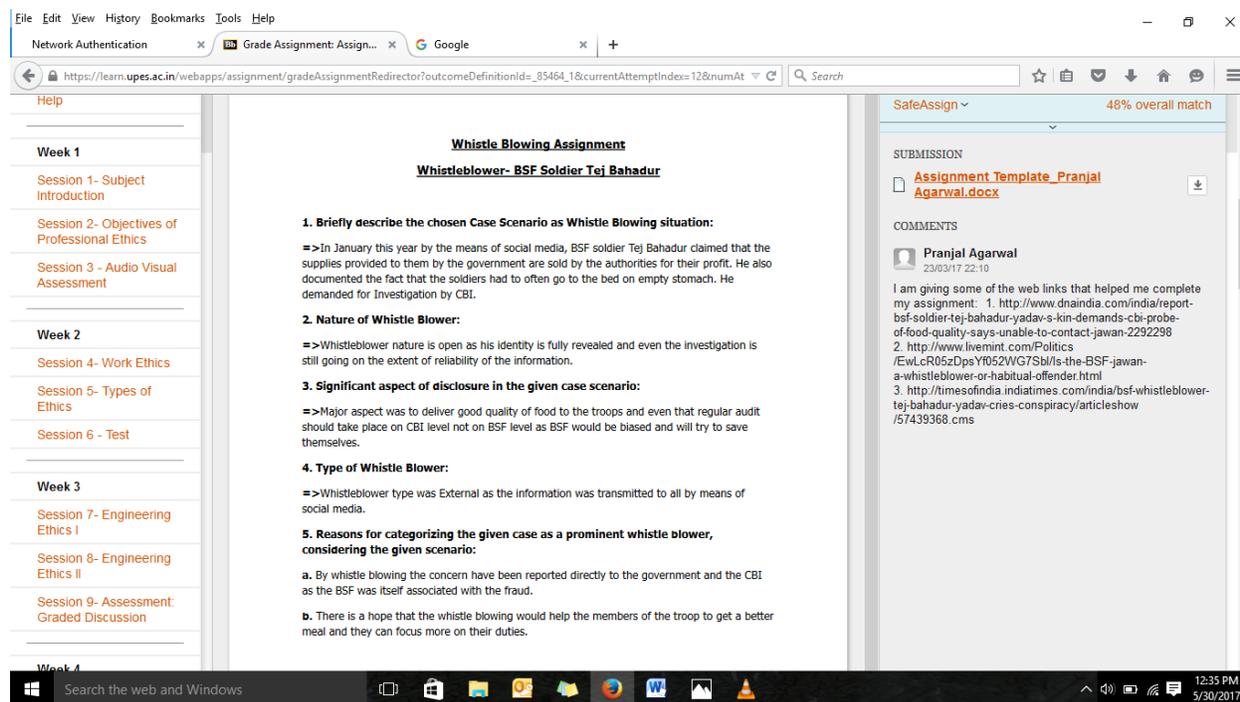


Fig 5(b): Whistle Blowing Assignment (Template)

VIII. Face-to-face teaching sessions:

In blended teaching, a good chunk of course material is taught on Blackboard with the help of technical tools and activities designed for the students. Along with online teaching, a substantial portion is taught in face-to-face sessions which actually improved the delivery of content. The topics that bridged the gap between complete online content and students' learning are:

- Discussion of the need & importance of professional ethics for engineers as individuals by each and every student by a brain storming session.
- Making the students learn about the differences between morals and ethics by giving examples and leading to discussions in smaller groups.
- Discussion about the Code of Ethics by the Indian rules and regulations.
- Discussion regarding the Ethical Theories in detail with comparisons of each theory with practical work life situations and their immediate application to avoid ethical dilemma.
- Many case studies and random real life scenarios were discussed in the face to face sessions to make them understand how to face and resolve professional conflicts.

IX. Students' experiences and inferences for blended learning:

For students in Engineering courses where certain elective subjects are offered online, these courses are stop gap arrangements to earn credits without working for them. Therefore when content demands time and devotion from them it becomes a burden, resulting to poor performance. On the other hand when students are engaged in healthy discussions in the classroom hybrid mode the application of subjects like Professional Ethics and Employment communication; the application and importance of such subjects is better understood and we see better results.¹

After the completion of this course, feedback and Reflections were taken from the students in order to understand their psyche towards blended learning and complete online learning. As quoted by a student in our Reflections at the end of the completely Online Semester,

“This course disrupts the time kept for college and at home. Consume much attention than regular class course. one needs to be more aware of assignments and quizzes posted online.”

The success of completely online course depends heavily on the infrastructure provided by the educational institutions. The LMS like Blackboard and e -college, though user friendly; but require proper orientation and training. The bandwidth of the internet facilities matters the most especially in the large enrollment courses .On the day of test/submission if 450 students are trying to login to submit their assignments, the LMS is bound to crash due to clogging and congestion.

The subjects like Professional Studies when offered to engineering students as part of choice based credit system add depth to the entire academic program.

In the words of a student *“The best part of the Elective is that, through it we came to know many different things not only related to the study but also across the world. It helps to think deeply about any situation and take decision ethically.”*

It helps Students to develop their critical thinking as they are provoked to apply the information gained to real time situations through various case studies.

“The discussions and case studies were quite interesting. We got to learn about ethical and non-ethical aspects of working in the professional realm. Also the class sessions were very interactive.”

“I got to learn many things aside from all my technical subjects, like how you have to behave and take decisions when you are in an organization. The subject is very helpful for in one's “social growth.”

The most loved activity in the entire course came out be Class room Group discussion on various real time cases happening in and around India.

A student aptly remarked in a course satisfaction survey:

1. I would like my university to continue with more such elective and even credits for these types of electives should be increased so that student take it more seriously and it will definitely help them to enhance their personality.

2. Face to face interaction should be given more importance.

Students demanded more face to face interactions in the online survey conducted at the end of the hybrid module.

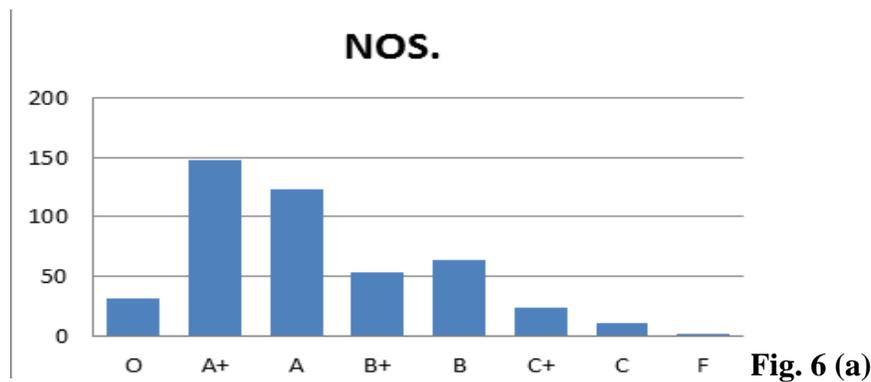
‘More face to face activities should be conducted regarding the ethics and the values followed in an organization.’

X. Comparison of Results (between blended course and complete online course):

Evaluation of students was done based on assessments taken online as well as in face-to-face classrooms, analysis of result shows a big difference between the two sessions. Analysis of students’ assessment shows a distinct leaning towards efficacy of hybrid mode of instruction.

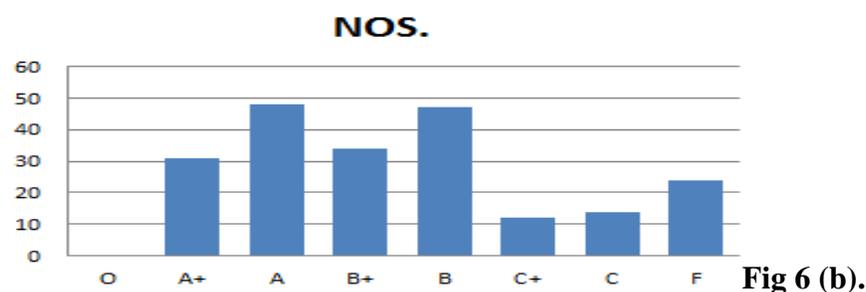
Result of session was undertaken on blended mode.

Number of students enrolled: 202



Result of session was undertaken on online mode.

No .of students enrolled: 452



The analysis of results prepared in two semesters, one semester with blended teaching and the other with complete online teaching, shows good number students flunk in second semester. The most probable reason appeared based on the feedback and refelections is ‘lack of face-to-face’ sessions’ which actually gives scope for better understanding of the subject. This eventually

confirmed the assertion that blended teaching is far more beneficial than complete online teaching. Though there are other reasons responsible for poor performance of the students, equally applicable in blended courses as well as in online courses. These below mentioned are a few observations identified during both the semesters.

XI. Observations:

a. Common mistakes committed by students in both the semesters:

In first semester, which was on blended mode the most common mistakes were less participation in online Discussions, less interaction on Class café, presuming the same discussion has been done in the face to face sessions. Another major lacuna that has been observed was that few students used to skip classes (face to face) which eventually affected their performance in online assessments due to lack of understanding of that particular topic discussed in the class followed by the graded assessment online.

On the other hand, in the second semester which was undertaken on complete online mode, there were more mistakes committed by the students than in the former semester. Students did not go through the online instructions properly before their attempts to any assessments which eventually affected their scores. This includes adhering to instructions like time duration, word limit and due date of the assessment. A specific observation was made on a few cases where the students uploaded x assignment on y platform which created lot of confusion at the time of evaluation by the instructor. (e.g., Whistle blowing template attached to Occupational Crime Assignment)

b. How those mistakes were rectified in online and face to face sessions:

In first semester, which was on blended mode, it was easier to rectify the mistakes committed by the students because of prompt feedback given in face to face sessions. Even if the feedback given by the instructor on Blackboard during Discussion or Class Café interaction is missed out by the students, instructor easily identified the gaps and resolved them. Students had a better scope to rectify and work on their mistakes. There was an observation that these mistakes were not repeated by the same or any other students as well.

In the second semester which was completely online all the mistakes were rectified by detailed feedback to all the students on each and every assessment and discussion of theirs'. Common mistakes and observations were e-mailed to all the students and the engagement of the instructor on Ask The Instructor platform increased on a daily basis. As it was the only medium through which students could ask and sometimes reconfirm their queries.

Conclusion:

The observation of two different semesters helps to conclude that blended learning is better than completely online learning because blended learning creates opportunity for “flexibility, individualization and in the bigger picture greater chances for student’s academic success.”

(Thomson). Blended teaching gave more satisfactory results in terms of students' performance as well as their learning outcomes. Since the faculty was available to take up certain complicated topics in face-to-face sessions, explaining with more live examples and real life scenarios, so the students could feel the connect with the faculty and the topics dealt online on Blackboard.

It allows the students to practice what they are learning by the use of different learning needs and tools. The collaboration of Online tools & content to provide relevant information to get the students involved when merged with face to face sessions where the process of learning becomes more personal is amalgamated, the results are way better than completely online learning. By the end the combination of self-paced education and face to face training can be beneficial, but only when wisely applied. (Khanna 3).

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