

BRIDGES SYMPOSIUM-4 2021 EDUSCOPE

TECHNO PEDAGOGICAL SKILLS FOR SUSTAINABLE DEVELOPMENT



Presenter:
Dr. Sonam Bansal

INTRODUCTION

Techno-Pedagogy is an essential part of our education system today in our classroom teaching and learning. However, the role of technology-mediated pedagogies for realizing sustainable education needs to be explored by the teachers and future teachers. For imparting the right sustainable education, the focus needs to be on the acquisition of techno-pedagogical skills.

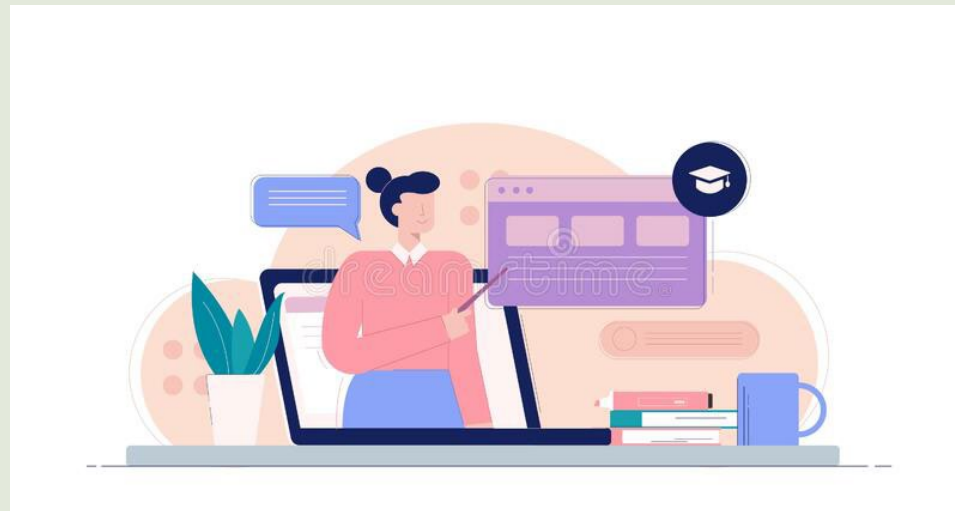
Due to COVID-19 all of us suddenly shifted towards online teaching. However, the transformation couldn't be done in just one or two days. One could learn how to inculcate techno-pedagogical skills for sustainable development among learners.



THE NEED

There is frequently a struggle in online teaching between the value of technology and pedagogy. For some, technology is merely a medium, and education is the primary interest. Others would instead make use of the opportunities provided by technology than wait for theory to catch up. It's probably better to conceive of the two of them as having an interactive conversation.

Technology opens up new possibilities and is put to use in ways that its inventors never imagined, driving theoretical development, which in turn gives feedback into technological development, and so on.



NOW THE QUESTION IS

Do you think there is a time in school when technology might be the driving force behind learning?

What would happen if pedagogy were to take a back seat, even for a short period?

These are essential questions to ponder.



WHAT DO WE NEED TO CHANGE?



1. CHANGING THE TECHNOLOGY OR THE PEDAGOGY?

**2. WHAT IMPACT DOES TECHNOLOGY HAVE ON HOW PEOPLE TEACH
AND LEARN?**

There is frequently a struggle in online teaching between the value of technology and pedagogy. For some, technology is merely a medium, and education is the primary interest. Others would instead make use of the opportunities provided by technology than wait for theory to catch up. It's probably better to conceive of the two of them as having an interactive conversation. *Technology opens up new possibilities and is put to use in ways that its inventors never imagined, driving theoretical development, which in turn gives feedback into technological development, and so on.*

BASIC INFORMATION

Techno-Pedagogical skills For Sustainable development



STEM Hub Coordinator
Dr. Sameer Sahasrabudhe
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Yashwantrao Chavan Maharashtra Open
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Mumbai, Maharashtra, India



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Dr. Fawzi Baroud
Assistant Vice President for
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Developer
Dr. Sonam Bansal
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Sidhrawali, Gurugram
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UNESCO SDG

SUSTAINABLE DEVELOPMENT GOALS



The Motivation



RESEARCH QUESTIONS

This paper covered the learning experiences of the participants enrolled for the MOOC from India and out of India and how it helped in their understanding for the enhancement of techno-pedagogical skills among learners. Broadly the present paper covers the following questions:


- 1. In what ways was the massive open online course (MOOC) designed and organised?***
- 2. What was the degree of participation and involvement of the participants while going through the different activities of the course?***
- 3. What were the participant's perceptions of the effectiveness of the course and their professional perspectives they gained from it?***



COURSE DEVELOPMENT

After an Open call, in total 1236 participants were enrolled from various geographical regions of India and abroad and 338 participants have completed the course successfully and received course completion certificate although 567 participants were active participants and they did effectively respond to the obligatory assignments.


The total number of participants
registered in the course = 1236
The Active Users = 567
The course was completed = 338

 **RAO LAL SINGH COLLEGE OF EDUCATION,
SIDHRAWALI, GURUGRAM, HARYANA, INDIA**
PRESENTS A 4 WEEK MASSIVE OPEN ONLINE COURSE

**TECHNO-PEDAGOGICAL SKILLS FOR
SUSTAINABLE DEVELOPMENT**

**A PART OF UNESCO INTERNATIONAL ONLINE MENTORING
PROGRAMME**

UNESCO CHAIR ON OPEN TECHNOLOGIES FOR OPEN EDUCATIONAL RESOURCES AND OPEN LEARNING

 **OPEN EDUCATION
for a BETTER WORLD**

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COURSE CONTENT

Module 1	Module 2	Module 3	Module 4
Use of technological in teaching and learning	Integration of Technology into learning Theories for Better understanding	Pedagogical approaches for technological Integrated Teaching And learning	Implementati on of techno-pedagogical skills for sustainable development.

DESCRIPTION OF THE MOOC

Modules	Topic	Learning Outcomes
Module 1	USE OF TECHNOLOGY IN TEACHING AND LEARNING	Explain the use of Synchronous and Asynchronous mode of teaching and learning. Differentiate between synchronous and asynchronous modes of online teaching. Apply the uses of the synchronous and asynchronous modes of online teaching. Illustrate the importance of flipped classrooms in the development of learners. Discriminate among different types of online learning. Analyze the importance of bichronous mode of online teaching and learning.
Module 2	Integration of Technology into learning Theories for Better understanding	Understand why we need to integrate technology in teaching and learning Awareness about learning theories and its key aspects. Analyze the integration of technology in to learning theories. Incorporation of various software's of technology in to learning theories.

DESCRIPTION OF THE MOOC

Module 3	Pedagogical approaches for technological Integrated Teaching And learning	Interpret the role of Pedagogical approaches in teaching and learning Elaborate TPACK theory of pedagogy in teaching and learning. Explain the role of different pedagogical models in teaching and learning. Select appropriate techno-pedagogical skills to improve learner's engagement in teaching and learning. Incorporation of various techno-pedagogical skills in preparation of lesson plans.
Module 4	Implementation of techno-pedagogical skills for sustainable development	<ul style="list-style-type: none">• Elucidate the use of ASSURE model in techno-pedagogy.<ul style="list-style-type: none">• Enlist the different collaborative tools of online teaching• Elaborate the benefits of techno-pedagogical skills for sustainable development among learners.• Apply various techno-pedagogical approaches in the preparation of lesson planning.

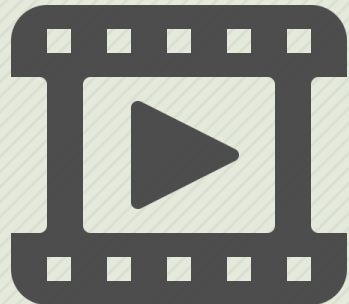
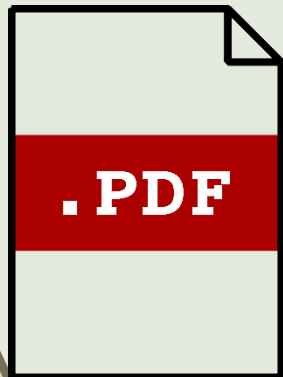
PRE-COURSE SURVEY

S.NO.	STATEMENT	Responses				
1.	How comfortable are you working in online mode?	71%	21.7%	3.7%	3.5%	0%
		Find working in online mode is interesting	Don't like online mode, but I understand this is important today.	always seem to mess up my online settings.	not sure how feel about online mode	Even don't like to work in online mode
2.	How would you rate your current level of knowledge on online modes of teaching and learning?	50.3%	33.4%	13.8%	1.4%	1%
		Reasonable knowledge	Basic Knowledge	Advanced Knowledge	Expert	No knowledge
3.	How would you rate your current level of knowledge on techno-pedagogical skills for sustainable development?	32.5%	43%	8.6%	0.7%	15.2%
		Reasonable knowledge	Basic Knowledge	Advanced Knowledge	Expert	No knowledge

PRE-COURSE SURVEY

4.	why are you taking this course? (Select as many or few as you like)	<p>I am curious to learn. 68%</p> <p>I'll develop skills I can apply to teaching in fully online mode. 62.1%</p> <p>I'll develop skills I can apply to teaching in blended mode. 63.5%</p> <p>I want to be more comfortable with techno-pedagogical skills. 58.9%</p> <p>I want to apply techno-pedagogical skills in my job. 47.4%</p> <p>Techno-pedagogical skills help me to enhance my job opportunities. 46.7%</p>				
5.	How much time do you expect to spend studying for this course (Per week)?	37.2% 2 to 4 hours	22.2% 4 to 6 hours	11.4% 6 to 8 hours		
6.	Have you ever done an online course on Canvas?	57.7% Yes		42.3% No		

MATERIAL DEVELOPED AND USED



COURSE DEPLOYMENT

The course was offered on an online Learning Platform.

Joining Link of the Course.

Canvas <https://canvas.infrastructure.com/enroll/4WEDX8>
<https://canvas.instruture.com/register>



CANVAS

BY INSTRUTURE



COURSE GLIMPSE

The image displays four screenshots from a Canvas LMS course, arranged in a 2x2 grid. Each screenshot shows a different page from the course, with a sidebar on the left containing navigation options like Home, Announcements, Assignments, Discussions, Grades, Syllabus, Quizzes, Modules, Attendance, Pages, People, Files, Outcomes, Rubrics, Collaborations, and BiBlueButton. The top right of each screenshot shows the course title and a 'Published' status.


- Top Left:** The page is titled "REFLECTION POINT OF TEACHER". It features a video thumbnail with the text "In this video real example of four students is being taken. Watch the video carefully." The video title is "REFLECTION POINT OF TEACHER ON FLIPPED CL...".
- Top Right:** The page is titled "INTEGRATION OF TECHNOLOGY IN TO LEARNING THEORIES". It features a video thumbnail with the text "Dear Friends, In this video integration of technology into learning, theories are shown by taking different examples. So, watch the video carefully." The video title is "Integration of Technology in to Learning theories".
- Bottom Left:** The page is titled "mindmaps online, choose to work alone, or collaborate in groups (in the link to create a self-made tutorial for Mindmeister mind map." It features a video thumbnail with the text "Tutorial of Mind Mapping". The video title is "MindMeister tutorial by Dr. Sonam Bansal, MindM...".
- Bottom Right:** The page is titled "CHALLENGES OF BEHAVIORISM, COGNITIVISM, AND CONSTRUCTIVISM". It features a diagram with three colored boxes (yellow, green, blue) containing text about the challenges of these theories. The text in the boxes is: "These theories were developed at a time when technology had no impact on learning at the level that it does today.", "These theories were developed when knowledge grew slower. These theories do not address learning that occurs outside of people.", and "They also fail to describe how learning happens within organizations."

COURSE GLIMPSE

canvas.instructure.com/courses/3207876/pages/case-study-of-two-teachers?module_item_id=52084841

CASE STUDY OF TWO TEACHERS

CASE STUDY OF TWO TEACHERS



Watch on YouTube

Hello Friends! I am giving you the case studies of two teachers. Select one option which you think best describes the integration of technology in learning theories.

Teachers want to teach a lesson on Indian Paradise the beautiful islands you can visit in India.

CASE A

canvas.instructure.com/courses/3207876/pages/case-study-of-two-teachers?module_item_id=52084841

REFLECTION

Hello Friends! I am discussing case studies of two teachers of subject English of iv Grade. Select one option which you think best describes the integration of technology in learning theories.


Both the teachers taught a story of subject English (Don't Give up)

Case I (First Teacher)	Case II (Second Teacher)
<p>The first teacher teaches online the story of "Don't give up" by elaborating the theme of the story (showing a picture related to the story). She also explains the difficult words of the story on a whiteboard by sharing a screen. The teacher has given the assignment to learners to write the complete story with morals in their notebooks. She told the learners that tomorrow a class test will be given to them on this topic of the story.</p>	<p>The second teacher teaches online the story of "Don't give up" by using digital story software and by showing a small animated video clip to the learners. Learners were excited and try to visualize the story. The teacher acts as a facilitator and put reflecting questions to learners in between. The teacher explains the meaning of difficult words with word association gaming software. Learners were reinforced by giving stars, badges to participate actively in the gaming puzzles. After the class, the teacher posts the related content and video, at LMS. Also, the teacher has given an assignment by creating four small groups of learners and by sharing a collaborative tool with instructions and ask the learners to discuss and give their reflections about the story. She also told them to prepare a story related to a similar theme (by creating a situation). Learners interact with each other through the collaborative platform, discuss their ideas and prepare their assignments collaboratively. The teacher also shares small gaming quizzes on the respective platforms (group-wise) of learners so that they could do practice and understand to the best of their ability. On</p>

canvas.instructure.com/courses/3207876/pages/introduction?module_item_id=53543089

INTRODUCTION

In the previous Module II, we have learned about how to integrate technology into various learning theories. In this week, we will learn about pedagogical approaches for technology-integrated teaching and learning and the scope & competency of techno-pedagogical skills. This week, we will also learn about various technology integrated models in pedagogy that influence our learning.



Module III: introductory video

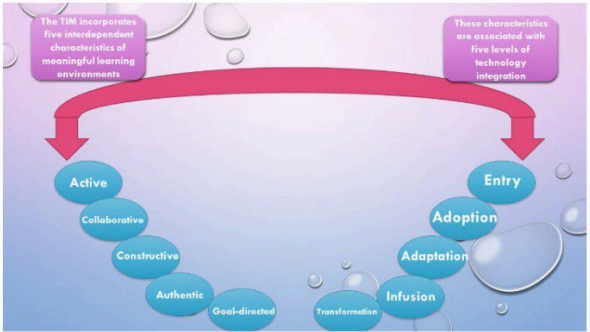
how to integrate technology in our classroom actively by incorporating technology into learning theories

canvas.instructure.com/courses/3207876/pages/technology-integrated-models-in-pedagogy?module_item_id=52917332

extending learning significantly. These tools can help students and teachers to:

- gain access to current primary sources,
- collect data
- collaborate with students, teachers, and experts worldwide,
- convey understanding through multimedia, and
- learn how to publish and present their findings.

Technology integrated Models (TIM) have five Characteristics associated with five levels of technology integration, as shown in the below image:



The TIM incorporates five interdependent characteristics of meaningful learning environments.

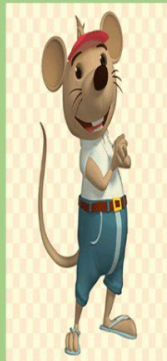
These characteristics are associated with five levels of technology integration.

COURSE GLIMPSE

canvas.instructure.com/courses/3207876/pages/rat-model?module_item_id=52922742

RAT MODEL

A FRAMEWORK TO HELP TEACHERS TO INTEGRATE TECHNOLOGY INTO THE CLASSROOM



R Replacement
Technology acts as a different digital means of carrying out the same strategies.

A Amplification
Technology increases efficiency productivity and effectiveness of the same educational approaches.


T Transformation
Technology creates new modes of learning and curricula.

- Originally books were once the primary source of education.
- With technology integration books were gradually displaced by Computers, Laptops, i-pads replaced
- Google Classroom, Prezi, kahoot etc. makes learning easy for students.
- Artificial intelligence, Second virtual life, amazing space or hubblesite and many other online software's helps the learners to transform their knowledge by their own with the use of technology.

Fig VIII: THE RAT MODEL

canvas.instructure.com/courses/3207876/pages/introduction-of-implementation-of-techno-pedagogical-skills-for-sustainable-development?module_item_id=535...

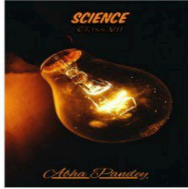
So let's start learning.



"Tell me and I forget, teach me and I may remember, involve me and I learn."

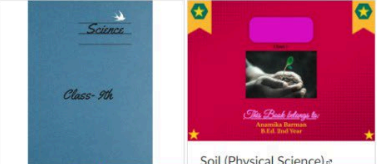
Benjamin Franklin.

canvas.instructure.com/courses/3207876/pages/role-of-sami-rat-pic-rat-and-tpack-models-in-preparation-of-lesson-plan?module_item_id=53017216



Electric Circuit & its components (Class VII)
 Click to read this book, made with Book Creator
 <https://read.bookcreator.com/ef>

Sample of Lesson Plans




Soil (Physical Science)

canvas.instructure.com/courses/3207876/pages/important-ict-tools-for-skill-enhancement?module_item_id=53639990


A Mind Map is a diagram for representing tasks, words, concepts, or items linked to and arranged around a central concept or subject using a non-linear graphical layout that allows the user to build an intuitive framework around a central concept.

For more details, read through the below given PPTs



Mind Mapping

[learningguide-mindmapping.pdf](#)



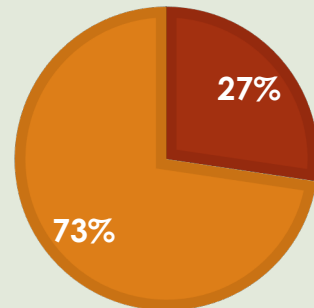
PARTICIPATION AND INVOLVEMENT LEVEL OF THE PARTICIPANTS IN THE ACTIVITIES

The MOOC focussed on equipping the participants with the technological skills among learners. The completion rate of this course (27.34%) is found more than the average rate (7.6%) across xMOOCs (Jordan, 2015)

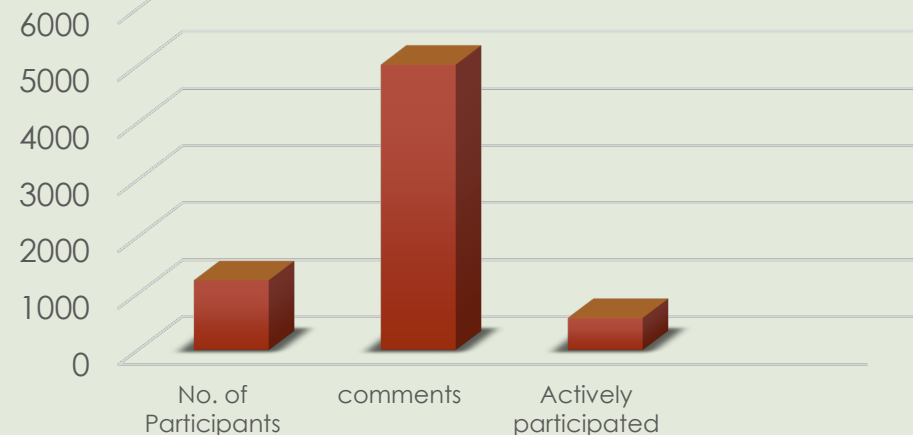
In total 1236 participants from India and out of India registered for the course and 5012 comments on all the activities were given by them. The participants shared their reflection on each activity with their feedback also. 567 participants have actively participated in different activities of the course.

COMPLETION

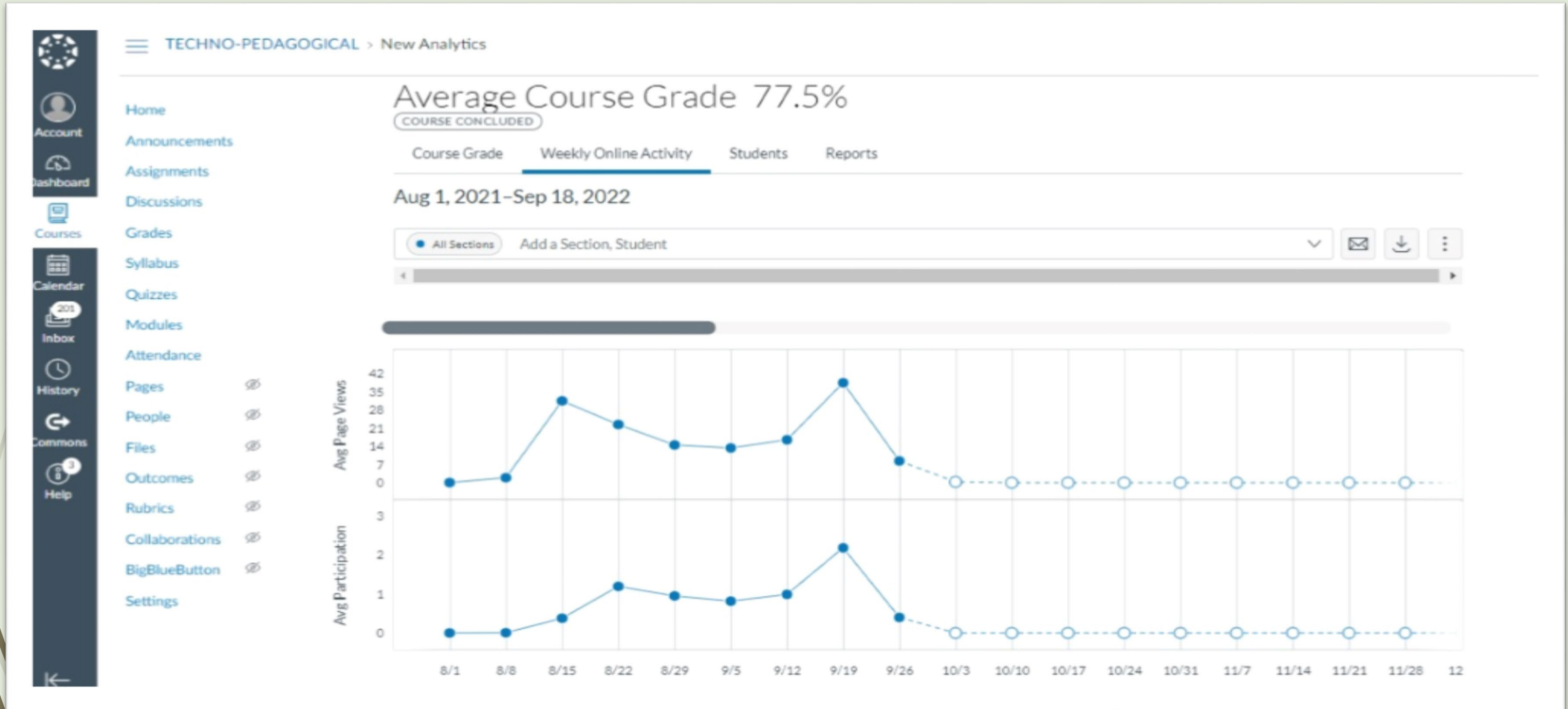
■ Completed ■ Not Completed



Participant Involvement



PARTICIPATION AND INVOLVEMENT LEVEL OF THE PARTICIPANTS IN THE ACTIVITIES



PARTICIPATION AND INVOLVEMENT LEVEL OF THE PARTICIPANTS IN THE ACTIVITIES

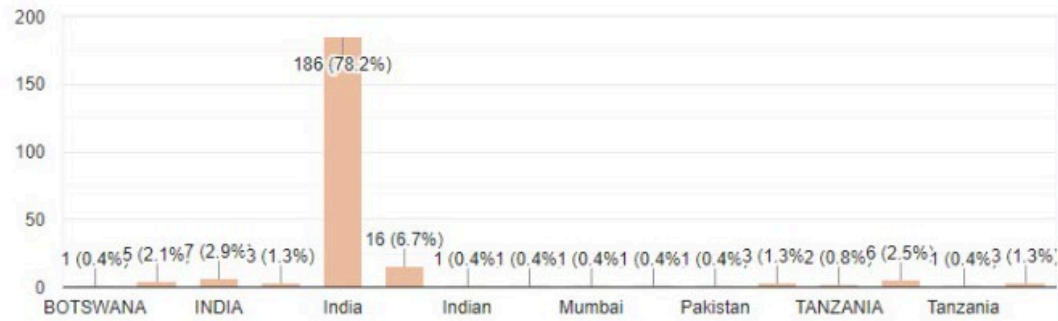
Resource	Students	Page Views	Participations	Resource	Students	Page Views	Participations
Course Home	1k	19.5k	0	RAMANDEEP KAUR r9650861422@gmail.com	84%	100%	Aug 24, 2021
online-4091231_1920.jpg	951	7.8k	0	101905278366540354446 javedevs@gmail.com	—	—	—
Screenshot (115).png	951	7.8k	0	101935633040572329136 akanshagnoids1006@gmail.com	81%	100%	Sep 18, 2021
2.png	754	5.3k	0	105844573133909978618 rajeshvarigopalakrishnan@gmail.com	76%	100%	Sep 20, 2021
1.png	754	5.3k	0	107709206227390720767 gowthengopal13@gmail.com	—	—	—
Course Assignments	433	3k	0	112039673507661551955 puja.kuchhel@gmail.com	88%	100%	Sep 29, 2021
Join this Telegram group for more information	433	810	30	116512089108581697680 waheerprince@gmail.com	87%	100%	Sep 28, 2021
Pre- Course Survey	412	2.3k	1	118408215111760028702 hgacharya2018@gmail.com	8%	100%	Aug 24, 2021
survey-3957027_1920-1.jpg	404	1.7k	0	Resource			
QUIZ 1, USE OF TECHNOLOGY IN TEACHING AND LEARNING (Module 1)	402	3.1k	2k	NEED OF COLLABORATION	317	1.9k	0
Welcome and Introductions: Getting to Know Each Other!	381	1.9k	266	Course Grades	315	2.1k	0
Course Announcements	371	1.3k	0	BICHRONOUS ONLINE LEARNING	314	1.7k	0
Module 1: Learning Outcomes	366	1.9k	0	TEACHERS REFLECTIONS ON ONLINE TEACHING	303	1.9k	0
INTRODUCTION OF TECHNOLOGY IN TEACHING AND LEARNING	364	2.3k	0	QUIZ 2: INTEGRATION OF TECHNOLOGY IN TO LEARNING THEORIES FOR BETTER UNDERSTANDING (Module 2)	296	1.6k	1.4k
Course Quizzes	355	2.8k	0	Course Syllabus	293	819	0
handshake-2009195_1920-1.png	348	1.4k	0	BLENDING OF BOTH SYNCHRONOUS AND ASYNCHRONOUS MODE OF ONLINE LEARNING	292	1.5k	0
TEACHING AND LEARNING IN SYNCHRONOUS AND ASYNCHRONOUS MODE	341	2.3k	0	Doc1_1.jpg	289	986	0
Welcome to the course !	330	613	0				
1.jpeg	319	996	0				



POST-COURSE SURVEY

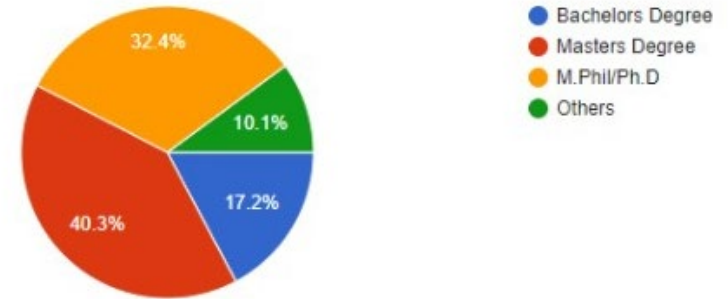
Country

238 responses



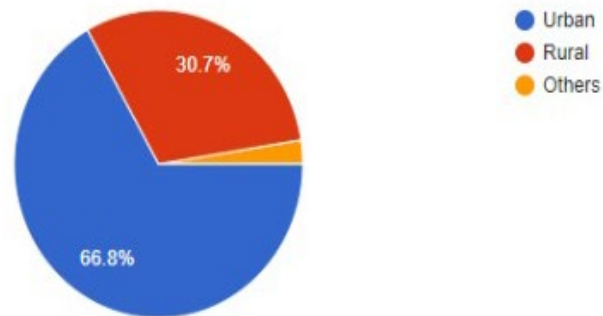
Highest Qualification

238 responses



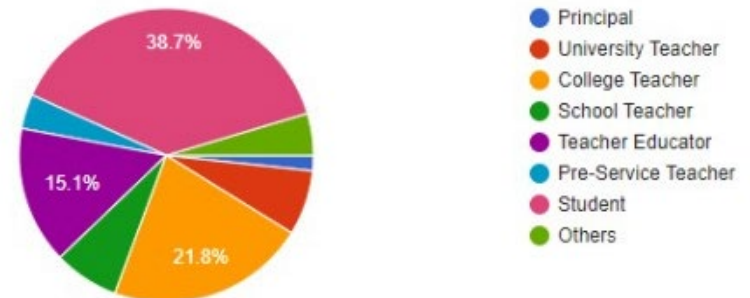
Locality

238 responses



Designation

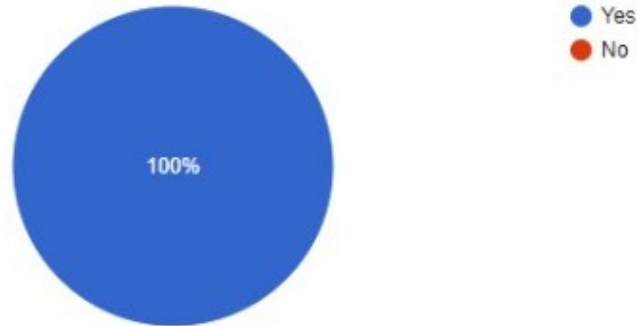
238 responses



POST-COURSE SURVEY

Did you find this course helpful ? *

238 responses



Why did you take this course? (Please tick all that apply.)

Copy

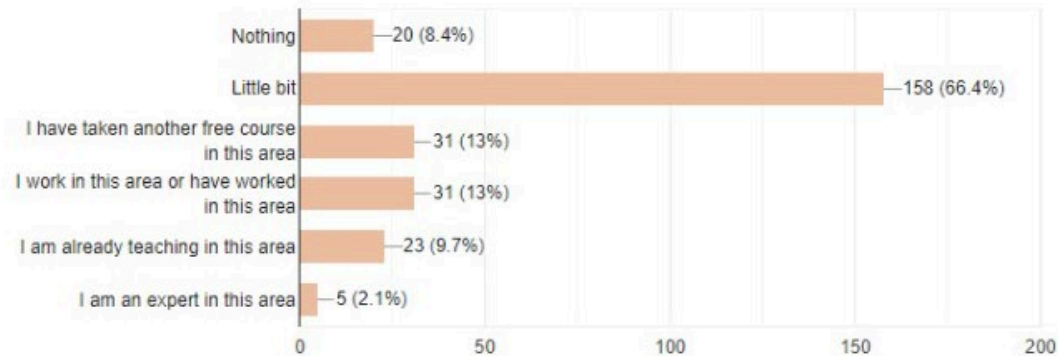
238 responses



When you first started this course, how much did you know about the subject? (Please check all of the boxes that apply.)

Copy

238 responses



Which of the following statements about your subject knowledge most accurately describes your understanding after completing this course?

Copy

234 responses



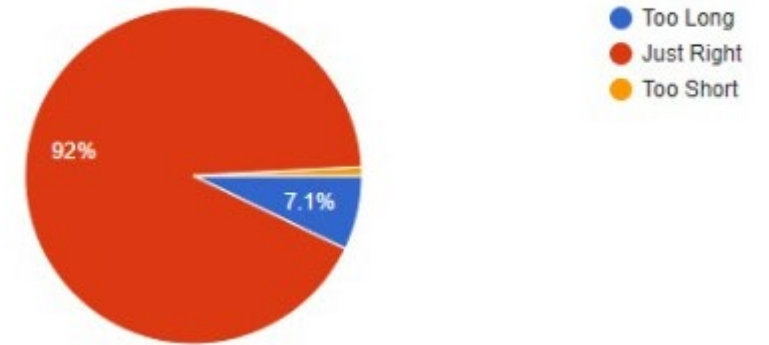
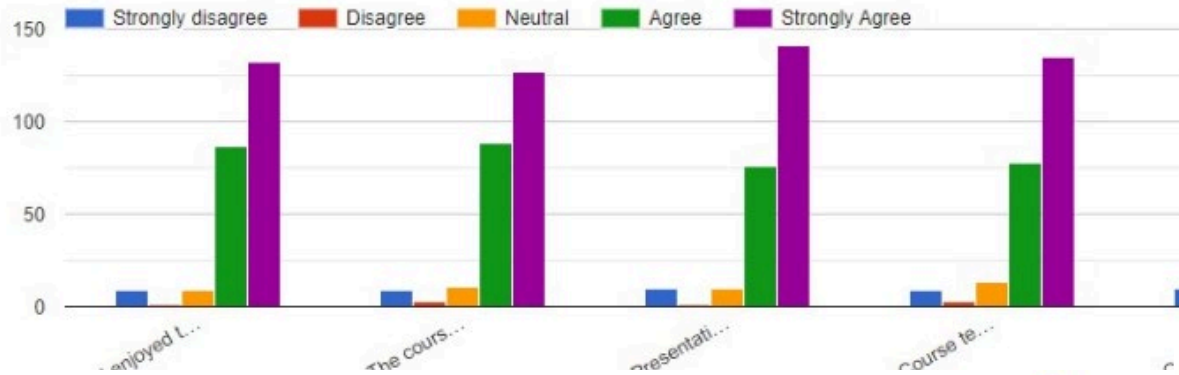
POST-COURSE SURVEY

Skill and Responsiveness of the Instructor/Course Creators. *Please indicate the extent to which you agree with these statements. (Please select one option for each row.)



How did you feel about the length of the course?

238 responses

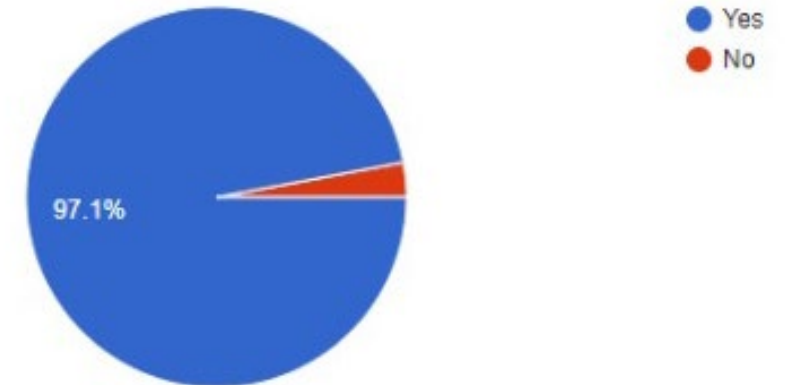
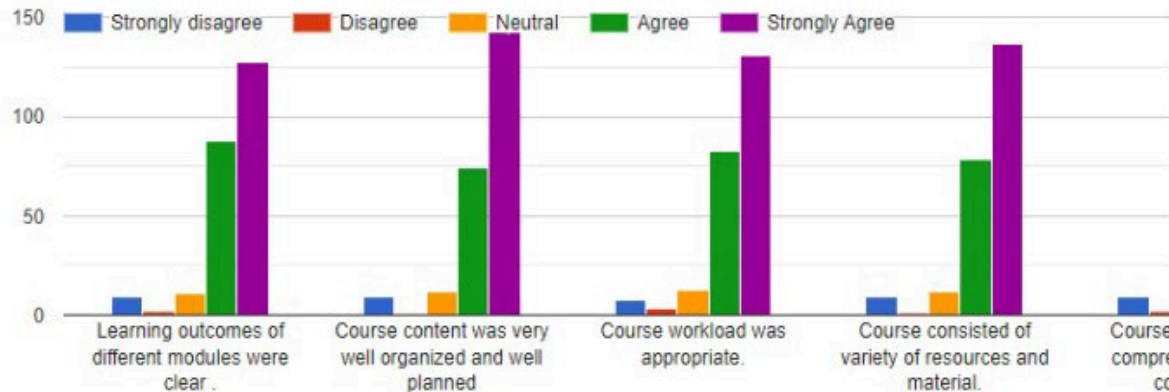


Course Content **Please indicate the extent to which you agree with these statements. (Please select one option for each row.)



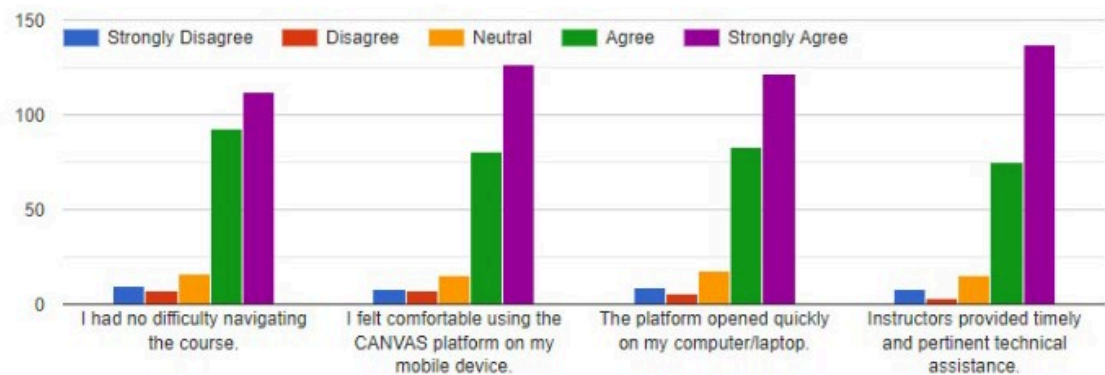
*Did you study the entire course?

238 responses

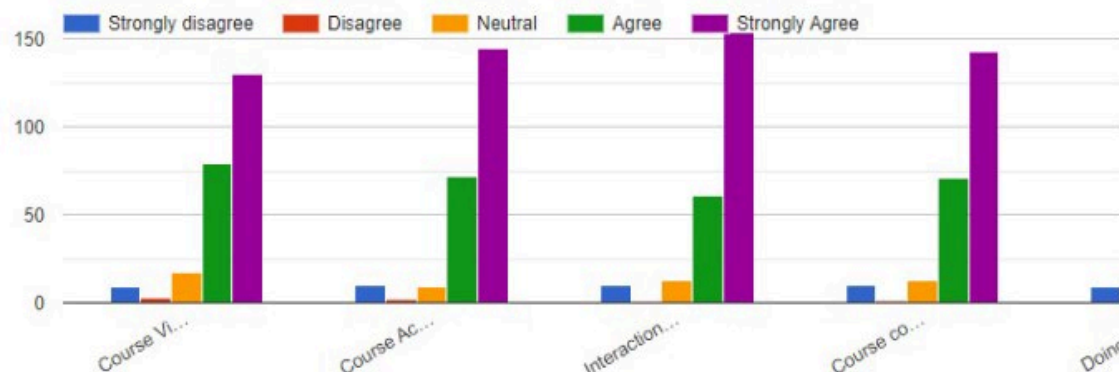


POST-COURSE SURVEY

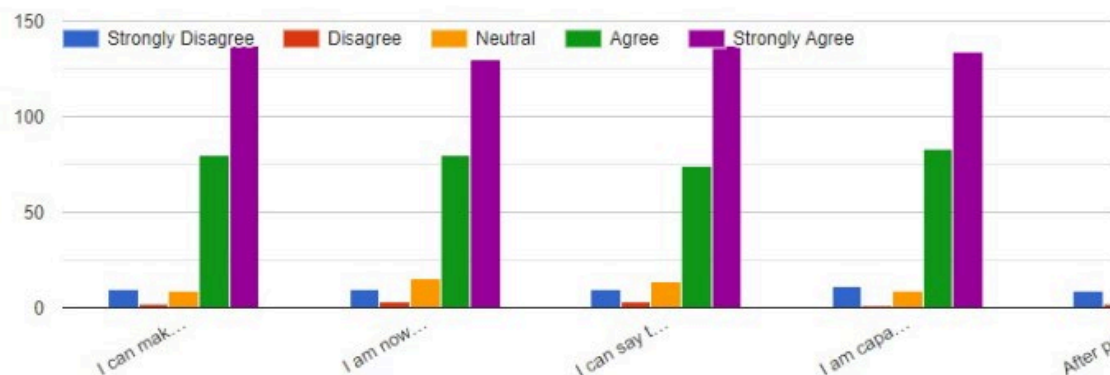
CANVAS Platform and Tech Support *(Please rate from "strongly disagree" to "strongly agree"). [Copy](#)



How you felt about the different ways of learning of the course content and activities on canvas* (Please rate from "strongly disagree" to "strongly agree"). [Copy](#)

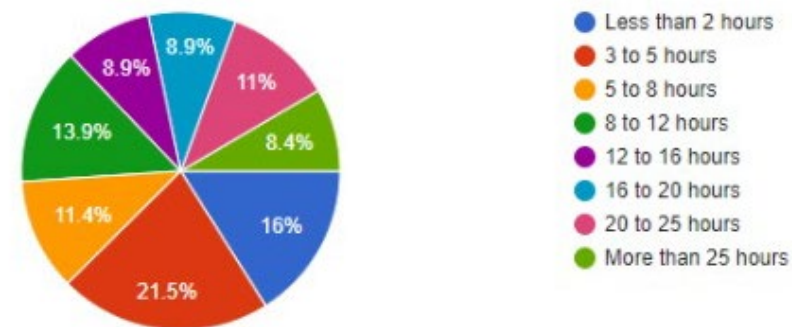


My learning from the course*(Please rate from "strongly disagree" to "strongly agree"). [Copy](#)



How much total time (in hours) did you study in or access this course? *

237 responses



POST-COURSE SURVEY

Any Four key points to summarize your journey in the course *

238 responses

In this course i liked the effective way teaching,

Latest technology, teaching process, learner engagement, peadogogical technique

Joyful, interesting, innovative, motivating

Interesting, innovative,time consuming , good

Pedagogy, presentation, planning and virtuality

1. Exploration to new apps
2. Interesting course
3. Amazing content and videos
4. Assignments
5. Developoment of techonological skills

Very well organised and managed

Any Four key points to summarize your journey in the course *

238 responses

All

Excellent

- 1.Easy access
- 2.Latest knowledge of technology which used in education.
3. Timely guidance from mentor
4. Satisfying Feedback

Blended

Skilled in Canvas, good knowledge of techno-pedagogical approach, great hand on activities, and interesting teaching learning tools lait available which will for future reference

All the knowledge in the is much beificial for me

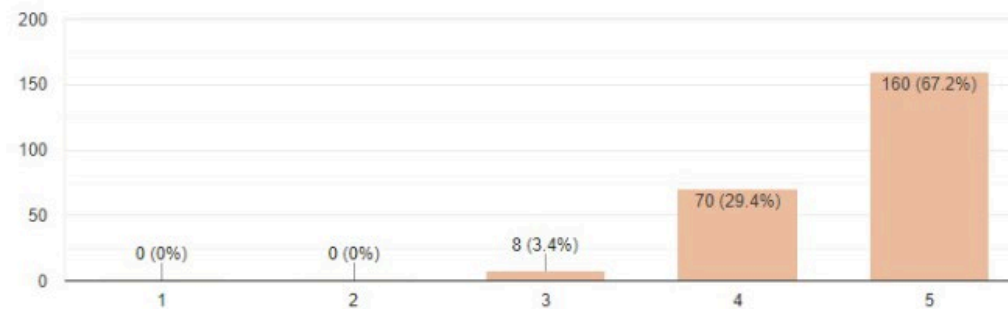
In this course i liked the effective way teaching,

Latest technology, teaching process, learner engagement, peadogogical technique

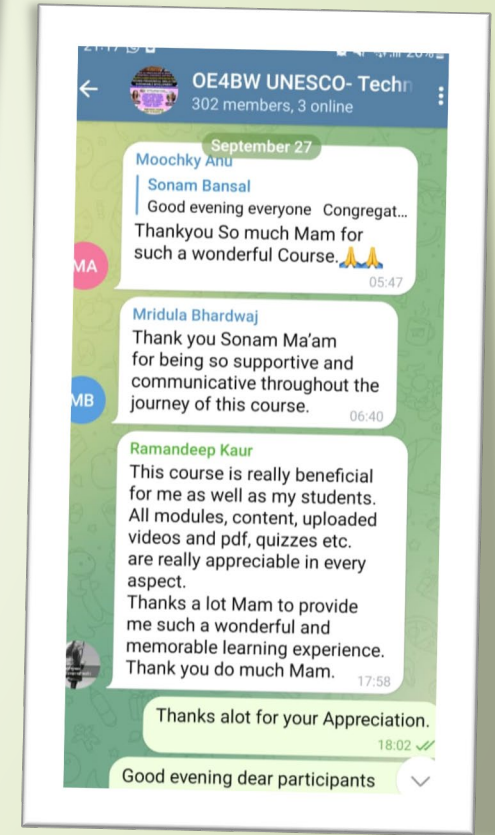
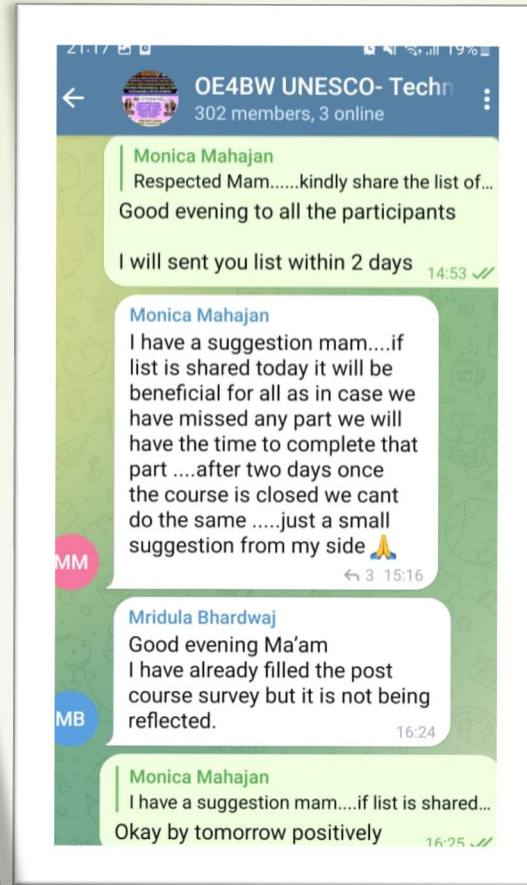
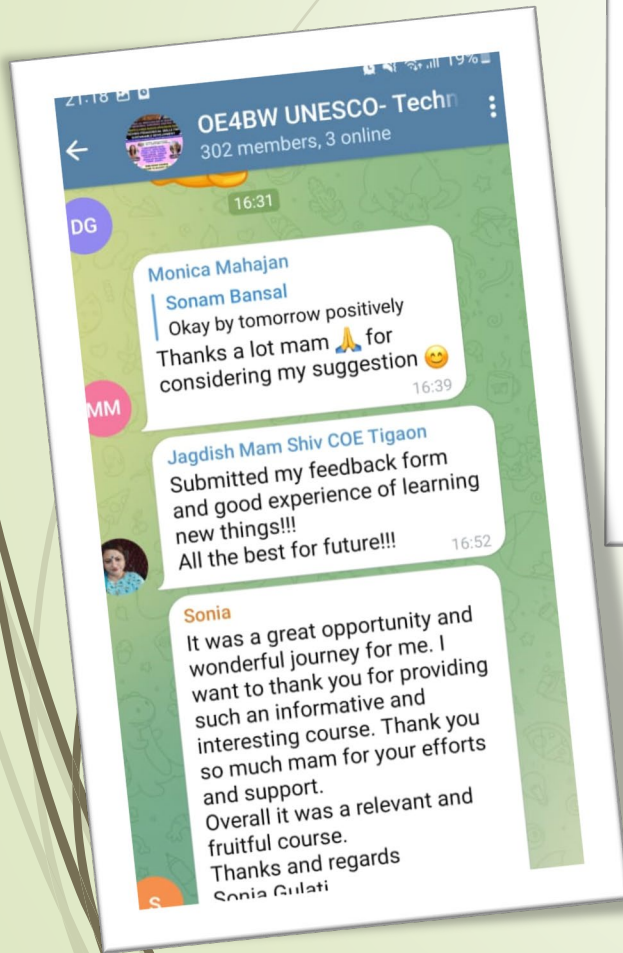
How would you rate your overall experience on this Course*?



238 responses



FEEDBACKS



Participant's perception of the course and their professional takeaways

1. Of the total 338 participants who had received the course completion certificates, approx. 27.36% (n= 1236) of the participants who were quite active throughout the complete course elicited their overall experience and perceived improvement in the understanding of inclusive education through survey form.
2. The participants who have completed the course reported the course as knowledgeable, relevant, practical, insightful and developed skills to teach children with disabilities in schools.

Total no. of participants	Participants received certificate
1236	338(27.36)

COURSE FEEDBACK

The course seemed to achieve the intended learning objectives in terms of effectiveness, 90.72 of the participants rated it very effective and 9.8% considered the course as effective.

- 94.78 of the participants strongly agreed the content was well organized and systematic with 88.7 strongly agreed the learning material was comprehensive and helpful.
- However, 83.6% of the participants strongly agreed that the Reflective and assignment exercises were sufficient with 77.5% strongly agreed that the assignments and exercises were related to the learning outcomes(Average course grade)
- The participants also valued and expressed their appreciation and understanding of the techno-pedagogical skills in the discussion forum after they completed the course which was evidence as screen shot of the discussion forum.

Feedback from students	Percentage
Effective	90.72%
Very effective	09.80%
well organized and sytematic content	94.78%
comprehensive and helpful	88.70%
reflective and assignment	83.60%
average course grade	77.50%

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THANK YOU NOTE

