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Ministry of Labor and Skills

CAPACITY BUILDING TRAINING FOR TVT TRAINERS ON INNOVATIVE PEDAGOGY AND DIGITAL INTEGRATION

PART II: DIGITAL INTEGRATION

August 2024

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FDRE TECHNICAL & VOCATIONAL TRAINING INSTITUTE

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Entrepreneurship Development Institute®

Outline

7 Digital Content Creation

8 Using LMS for Digital Content Delivery

9 **Using digital technologies for assessment, feedback and analysis**

10 **Using Generative AI**

11 **Using Assistive Tools**



Unit

9

Using digital technologies for assessment, feedback and analysis

Using digital technologies for assessment, feedback and analysis



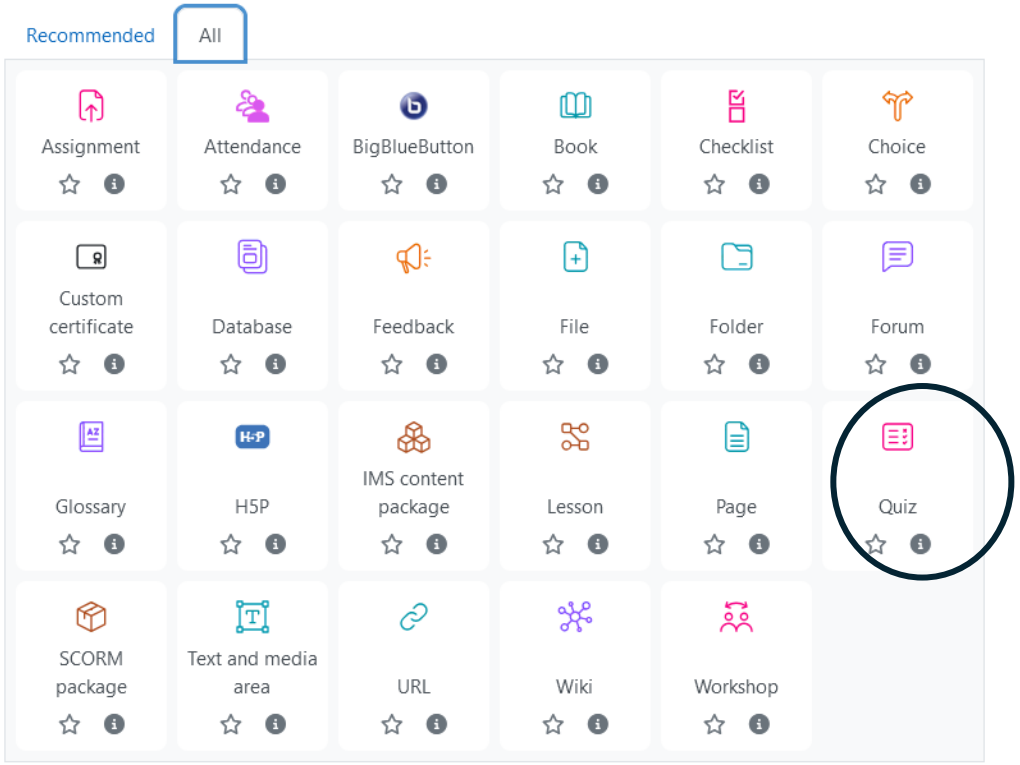
Using digital technologies for assessment can greatly enhance the efficiency, accuracy, and accessibility of evaluating student performance



These technologies offer various tools and methods for both formative and summative assessments, enabling educators to track progress, provide timely feedback, and personalize learning experiences

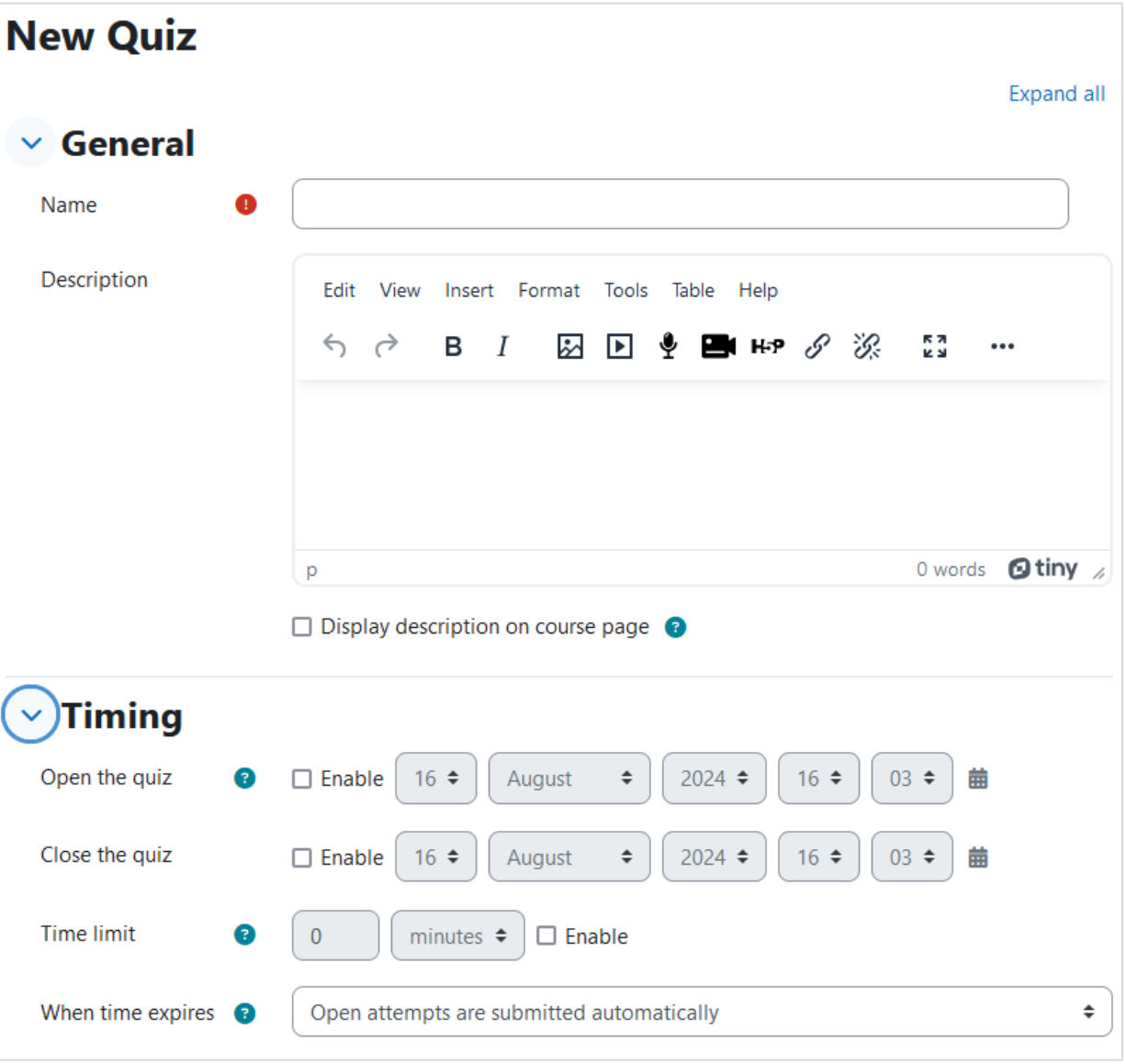


The basic futures of the assessment includes Automatic grading, immediate feedback, various question types



Assessment Using Moodle

- Previously we started seeing Moodle for digital content delivery
- We already know how to open our course and switch to edit mode to upload digital content
- With the same step, this time we will choose “Quiz” under “add activity or resource”.
- Give name for the quiz and description (optional).

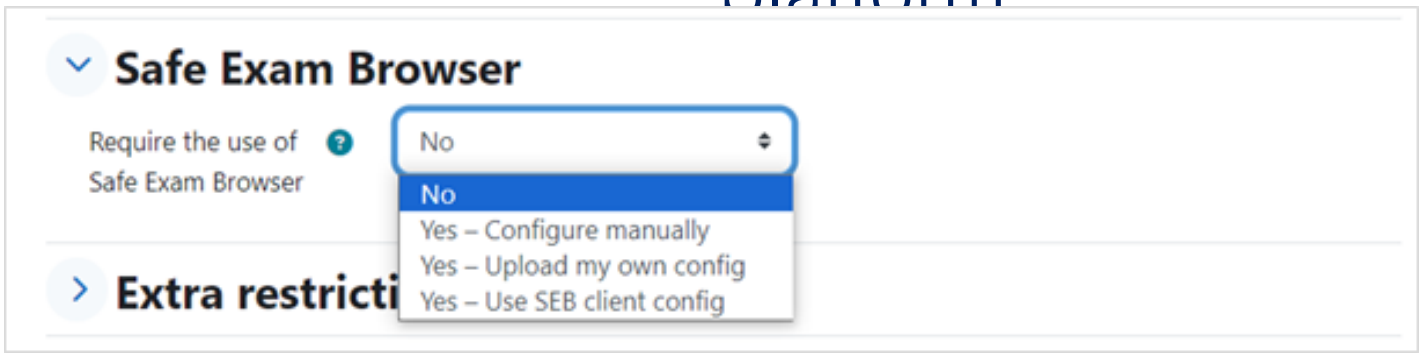


Assessment Using Moodle

- The next activity is to set timing for the exam
- On the timing, set the start time (open the quiz), end time (Close the quiz) and the exam time (time limit) by enabling them first
- To set time, you need to first check the enable buttons

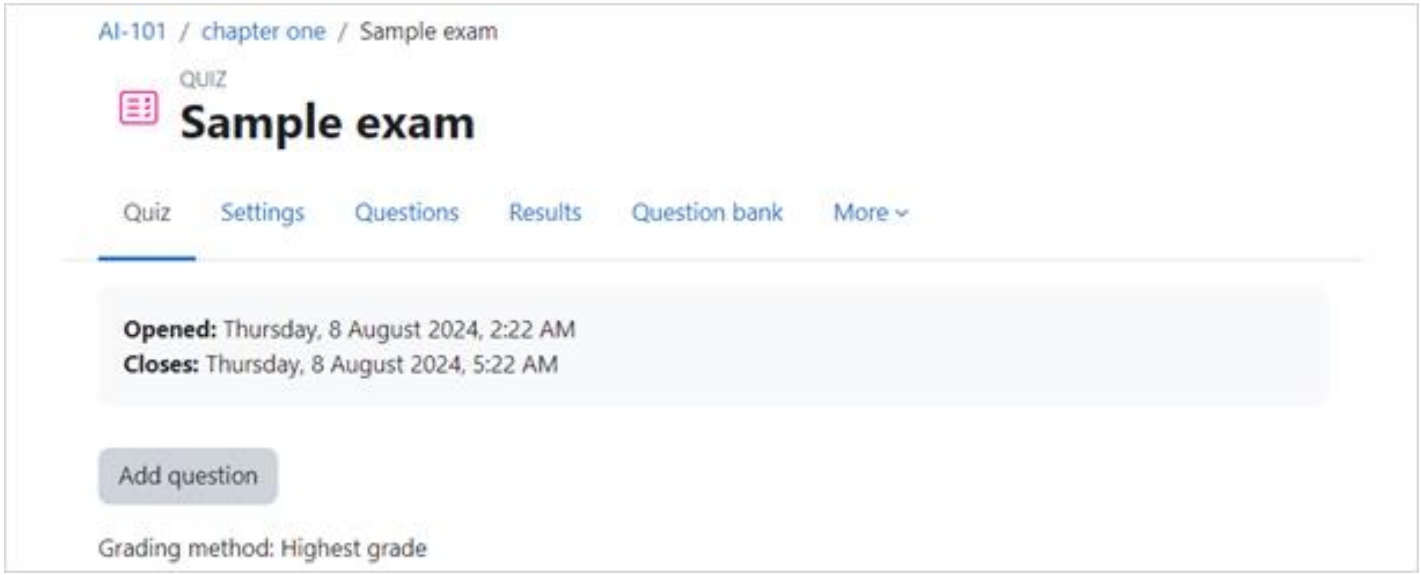
Assessment Using Moodle

- The layout will help to decide the number of questions on a page. You can choose among the options.
- The next important option you need to focus on is using safe browser or not.
- It is up to you to decide to use it or not. But the option is there on the platform



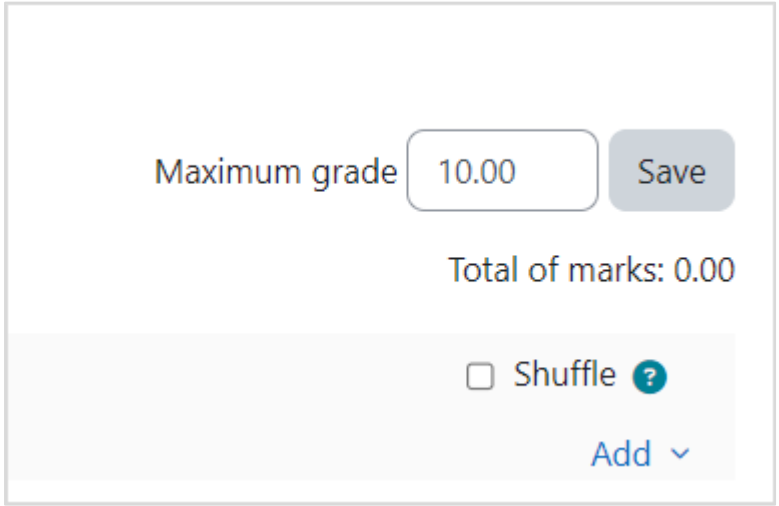
Assessment Using Moodle

- Once after we set the exam, the next process is to enter questions.
- The interface looks like the image below
- To add your question click on “Add question”.



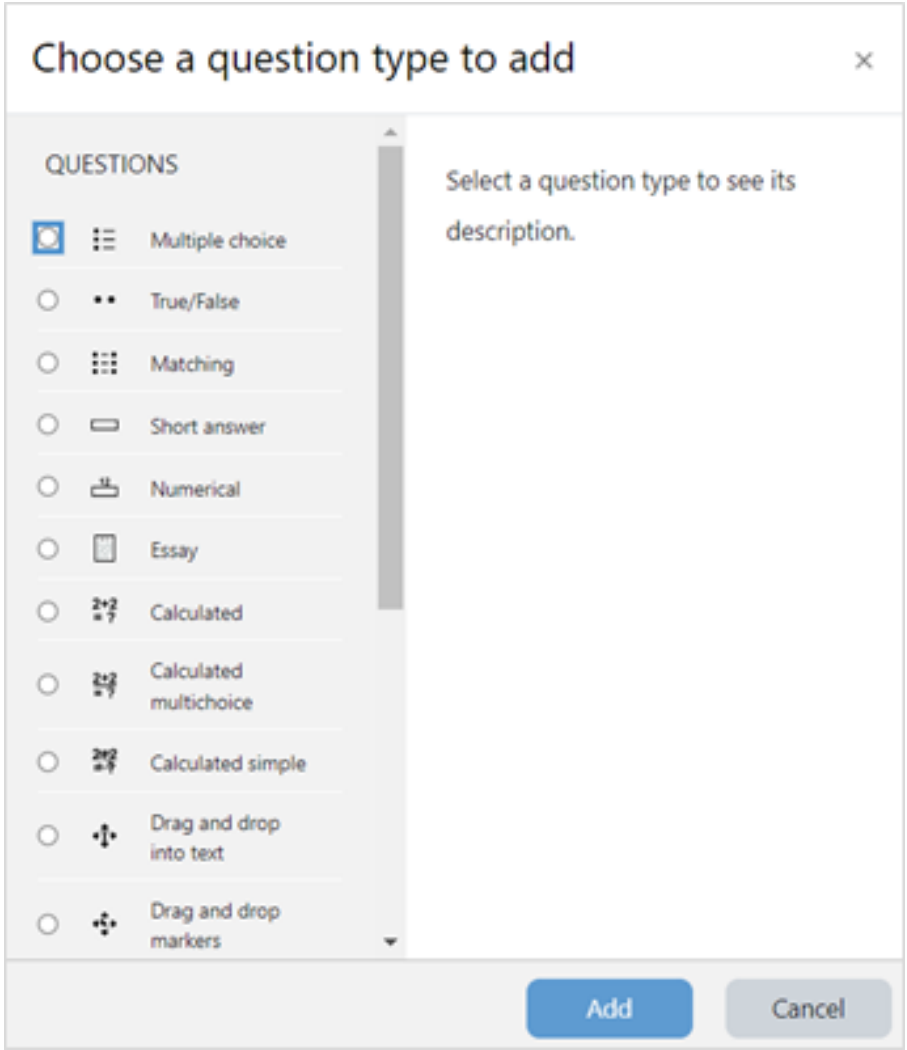
Assessment Using Moodle

- Here set your total result, save it and click on add button.
- Under Add button there are options to add new question or to add from exam bank.
- For now let us choose new question



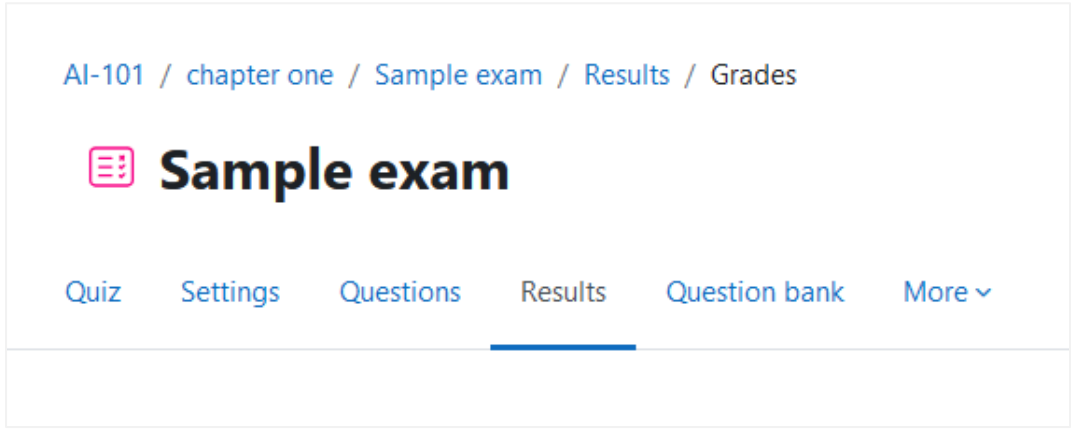
Assessment Using Moodle

- Here are the options for the type of question we need to add to the exam.
- Choose the type of question you need and continue to insert your question.
- Repeat the process until you finish inserting all questions



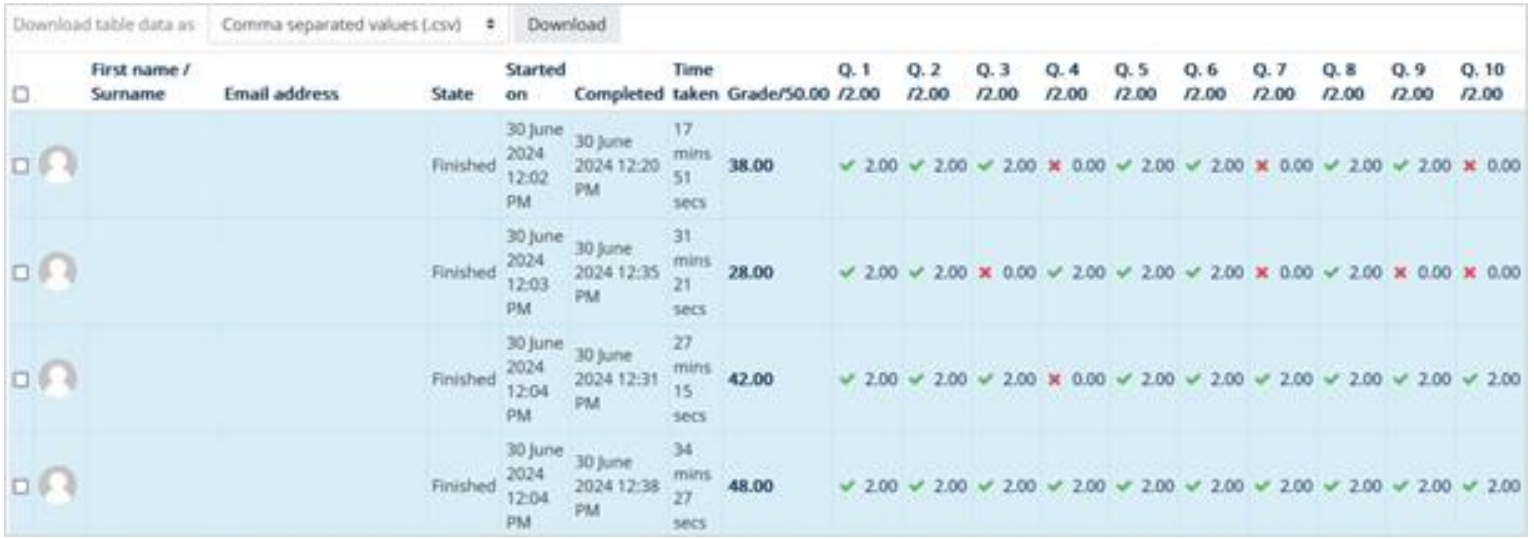
Feedback and Analysis using Moodle

- Using Moodle, to see the exam result of students, first we must click on the course name, then go to the assessment you created
- On the tab, click on Results.



Feedback and Analysis using Moodle

- Result of all the trainees that takes the assessment displays
- Results are kept for each questions and at the end total result of each student appears



Download table data as: Comma separated values (.csv) | Download

	First name / Surname	Email address	State	Started on	Completed	Time taken	Grade/50.00	Q. 1 /2.00	Q. 2 /2.00	Q. 3 /2.00	Q. 4 /2.00	Q. 5 /2.00	Q. 6 /2.00	Q. 7 /2.00	Q. 8 /2.00	Q. 9 /2.00	Q. 10 /2.00
			Finished	30 June 2024 12:02 PM	30 June 2024 12:20 PM	17 mins 51 secs	**38.00**	✓ 2.00	✓ 2.00	✓ 2.00	✗ 0.00	✓ 2.00	✓ 2.00	✗ 0.00	✓ 2.00	✓ 2.00	✗ 0.00
			Finished	30 June 2024 12:03 PM	30 June 2024 12:35 PM	31 mins 21 secs	**28.00**	✓ 2.00	✓ 2.00	✗ 0.00	✓ 2.00	✓ 2.00	✓ 2.00	✗ 0.00	✓ 2.00	✗ 0.00	✗ 0.00
			Finished	30 June 2024 12:04 PM	30 June 2024 12:31 PM	27 mins 15 secs	**42.00**	✓ 2.00	✓ 2.00	✓ 2.00	✗ 0.00	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00
			Finished	30 June 2024 12:04 PM	30 June 2024 12:38 PM	34 mins 27 secs	**48.00**	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00	✓ 2.00

Feedback and Analysis using Moodle



- As you can see on the feedback table, the output contains name of trainee, email address, started and completed time, the total time taken and result for each questions are displayed.
- The best thing here is you can download the result table using excel file for further process

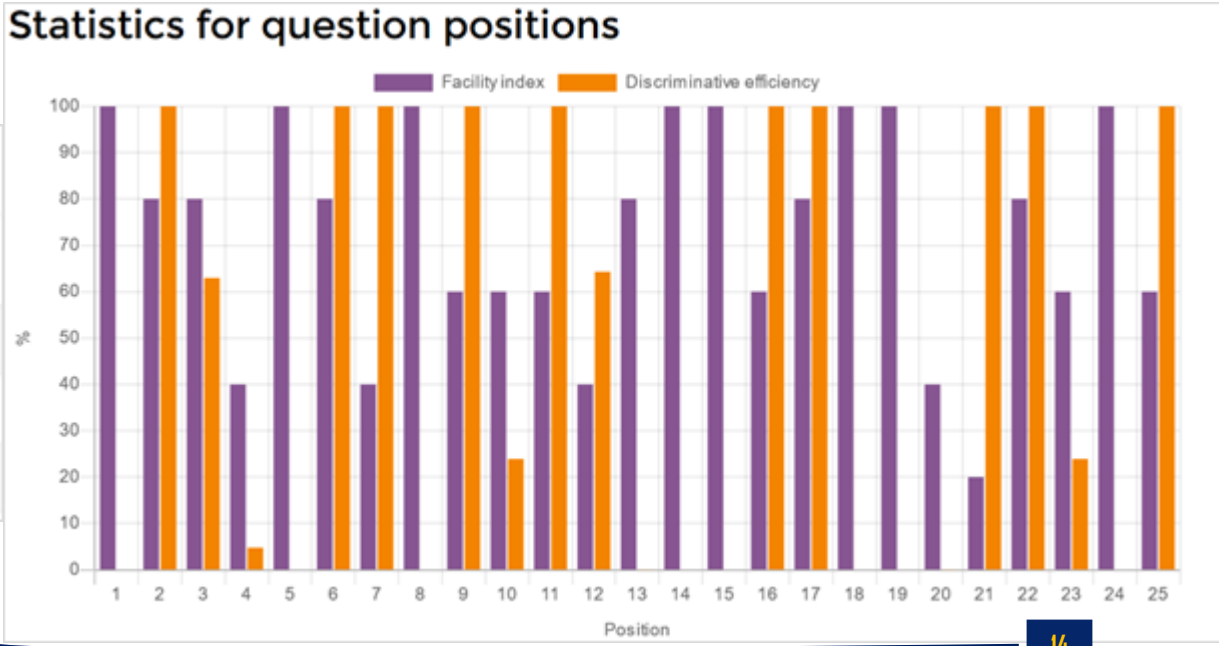
Feedback and Analysis using Moodle

- Moodle also provide analysis related with the questions and trainees.
- To see statically analysis, click on statistics of the assessment

Quiz structure analysis

Download table data as: Comma separated values (.csv) | Download

Q#	Question name	Attempts	Facility index	Standard deviation	Random guess score	Intended weight	Effective weight	Discrimination index	Discriminative efficiency
1	Q1	5	100.00%	0.00%	25.00%	4.00%	0.00%		
2	Q2	5	80.00%	44.72%	25.00%	4.00%	6.15%	55.99%	100.00%
3	Q3	5	80.00%	44.72%	25.00%	4.00%	5.53%	42.71%	62.96%



Using Google Form

Google Forms is a versatile tool that allows users to create surveys, quizzes, and forms for data collection and assessment purposes

It's part of the Google Workspace suite and is widely used in educational settings for creating and distributing quizzes, collecting feedback, and gathering data

Key Features of Google Forms

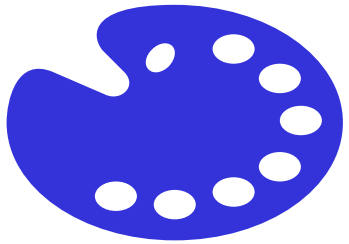




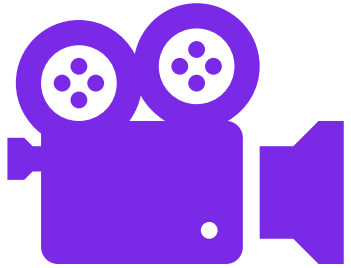
Question type

- Multiple choice
- Check boxes
- Drop down
- Short answer
- Paragraph
- Linear scale

Customization



Themes: Customize the look and feel with themes and colors



Images and Videos: Embed images and YouTube videos within questions

Collaboration

- Sharing: Share the form with collaborators to edit together in real-time
- Link Sharing: Distribute the form via a shareable link, email, or embedded on a website



Responses and Analysis



Real-Time Responses: View responses in real-time as they come in

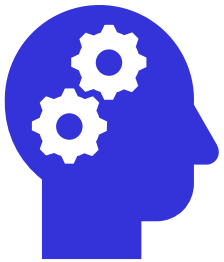


Summary of Responses: Automatically generated charts and graphs for quick analysis

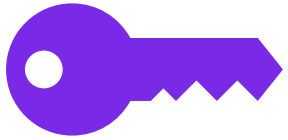


Google Sheets Integration: Export responses to Google Sheets for detailed analysis and reporting

Quiz Features



Quiz Mode: Turn a form into a quiz with auto-grading



Answer Keys: Set correct answers and assign point values



Feedback: Provide feedback for each question based on the answer

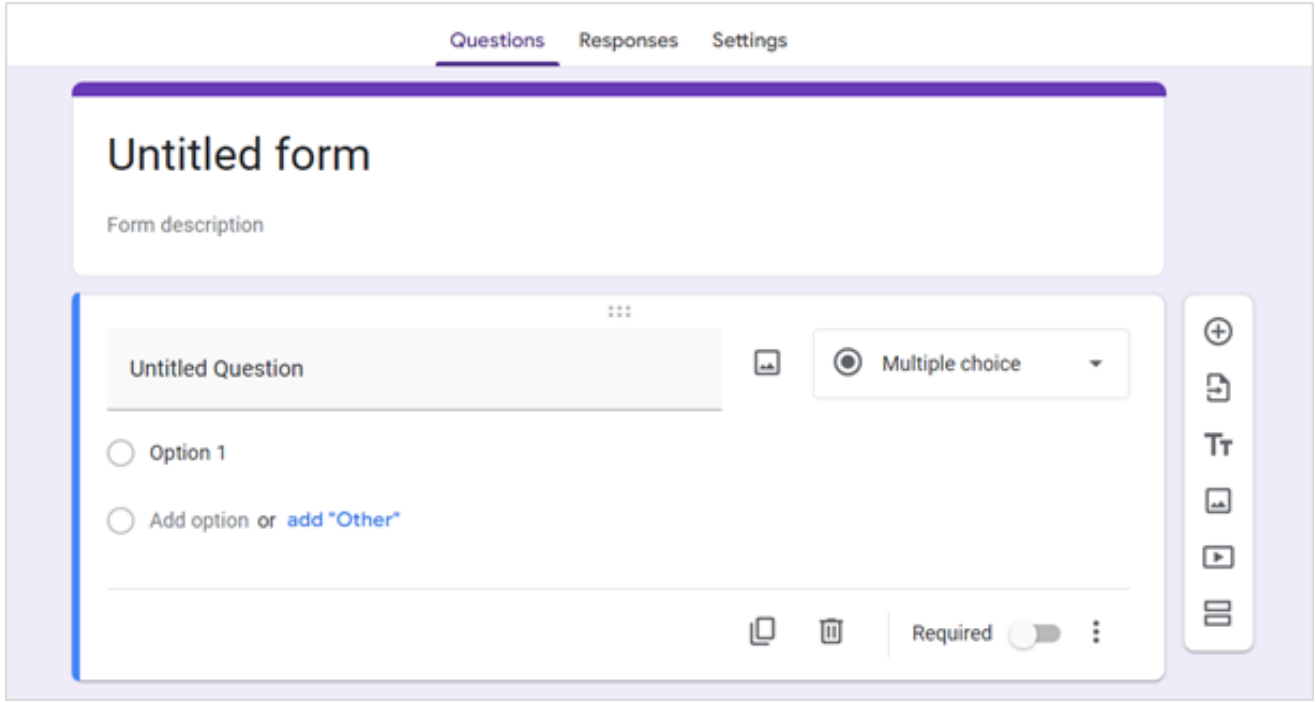
Using Google Forms in Education

- Quizzes and Exams
- Surveys and Feedback
- Assignments and Homework
- Attendance and Registration
- Formative Assessment



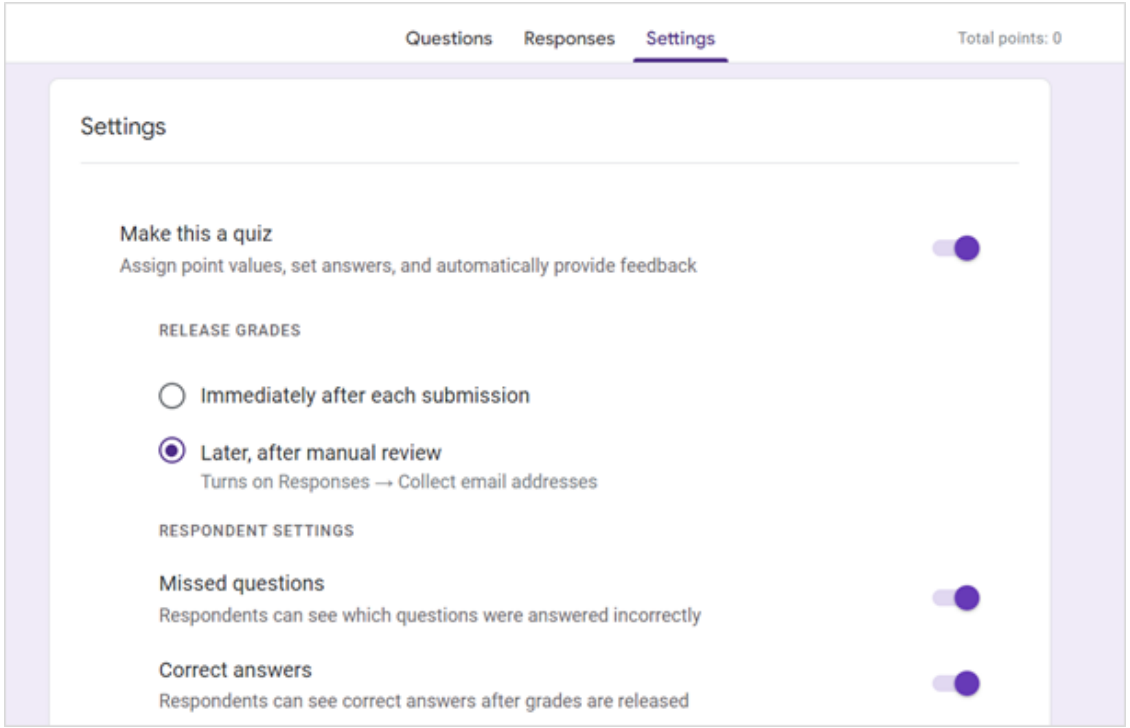
Assessment Using Google form

- Let us open google form from google apps and click on blank form
- To add question, click on the + button to add a question.
- Then choose the question type from the dropdown menu and enter your question and options (if applicable)



Assessment Using Google form

- Use the palette icon to change the theme and colors.
- Add sections by clicking the Add Section button to organize the form.
- To configure your form to quiz setting, click on the setting option, and toggle on “Make this a quiz” then set options for grading and feedback



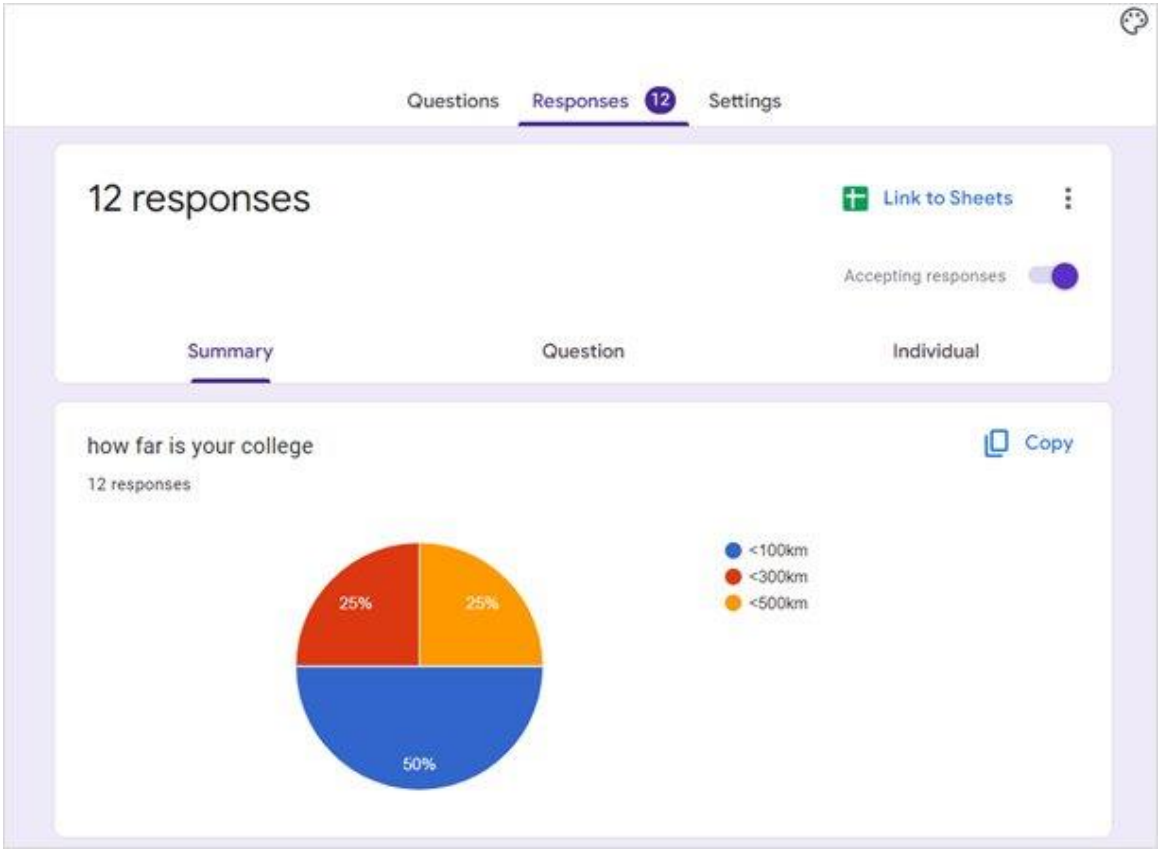


Assessment Using Google form

- Once after you finish entering the entire question, the next step is to share the link for student.
- Click the send button to share the form and choose to send via email, shareable link, or embed it on a website

Feedback and Analysis using Google form

- Responses and feedbacks are available on google form
- Click on response tab and see the result of the assessment.
- Under response, there are options like Summary, Question, and Individual.
- The image shows response collected from participants.



Feedback and Analysis using Google form

- This allows you to see collective analysis or individual answer/response from trainees or participants.
- There is also a possibility to share the result and to link it to excel sheet
- You must know that google form can also be used to collect data from participants in addition to assessment process.



Conclusion



Google Forms is a powerful tool for creating a variety of assessments and data collection instruments in education



Its ease of use, customization options, and integration with other Google tools make it an excellent choice for educators looking to streamline their assessment processes and gain valuable insights into student learning

Discussion questions

- What are the main digital tools discussed in this unit for creating and administering online assessments? How do these tools improve the assessment process?
- Can you summarize how feedback and analysis tools like Moodle can enhance the learning experience for trainees?
- How do you plan to integrate the use of online quizzes and tests into your teaching practices? Can you provide specific examples of how these tools will improve student assessment?
- Reflect on the importance of providing timely feedback. How will you use digital tools to ensure that students receive constructive feedback promptly?
- What challenges might you face when transitioning to digital assessment tools? How do you plan to overcome these challenges?

Discussion questions

- How can the skills of using digital technologies for assessment improve your ability to monitor and support trainees progress? Share an example of how you would apply these skills in a specific teaching scenario.
- In what ways can you teach your trainees the importance of digital assessments and feedback? What activities could you incorporate into your lessons to reinforce these skills?
- Considering the rapid advancement of digital assessment tools, how do you plan to keep your skills up to date? What resources or strategies will you use to continue learning in this area?
- How can the lessons learned in this unit contribute to fostering a more data-driven and personalized approach to education among your students? What role do you see yourself playing in this development?



Unit

10

Using Generative AI

What is Artificial Intelligence?

- Artificial Intelligence refers to the simulation of human intelligence in machines that are programmed to think, learn, and perform tasks that typically require human intelligence
- These tasks include reasoning, problem-solving, understanding natural language, recognizing patterns, and making decisions
- AI can be classified into various types based on its capabilities and functionalities



Types of AI

- Narrow AI : Designed to perform a specific task or a narrow range of tasks
- General AI : Hypothetical AI that possesses the ability to understand, learn, and apply intelligence to solve any problem like a human being
- Super intelligent AI: An AI that surpasses human intelligence across all fields, including scientific creativity, general wisdom, and social skills



Applications of AI



FINANCE



TRANSPORTATION



HEALTHCARE



EDUCATION



ENTERTAINMENT

What is Generative AI?

- Generative AI refers to a class of artificial intelligence models that are capable of generating new content, such as text, images, music, or other data, based on patterns and examples from existing data
- Unlike traditional AI, which typically focuses on recognizing patterns or making predictions, generative AI can create novel outputs that mimic the style and structure of the data it was trained on



Applications of Generative AI



TEXT GENERATION



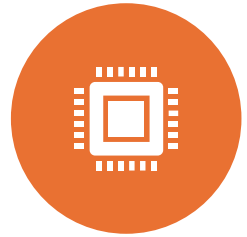
IMAGE GENERATION



MUSIC AND AUDIO GENERATION



VIDEO GENERATION



CODE GENERATION

Generative AI for Education

- Generative AI has the potential to significantly enhance education by creating personalized learning experiences, automating content creation, and providing intelligent tutoring
- Here are some key applications and benefits of generative AI in education



Personalized Learning



Adaptive Content Creation: Generative AI can create customized learning materials tailored to individual student needs and learning styles



Intelligent Tutoring Systems: AI-powered tutors can provide personalized feedback, explanations, and additional resources, adapting to each student's learning pace and progress

Content Generation

- Textbooks and Course Materials: Generative AI can assist in creating and updating textbooks, course materials, and syllabi by generating content that covers the required topics in a coherent and comprehensive manner
- Interactive Simulations and Scenarios: AI can generate interactive simulations and virtual environments for subjects like science, history, and languages, providing immersive learning experiences



Assessment and Feedback

- Automated Question Generation: AI can generate various types of assessment questions, such as multiple-choice, short answer, and essay questions, ensuring a diverse and comprehensive evaluation of student knowledge
- Instant Feedback: Generative AI can provide instant feedback on assignments and assessments, helping students understand their mistakes and learn from them more effectively



Language Learning

- Conversation Practice: AI can simulate realistic conversations in different languages, helping students practice and improve their language skills in a natural and engaging way
- Translation and Explanation: Generative AI can provide translations, explanations, and contextual usage examples for language learners



Creative Writing and Projects



Writing Assistance: AI can assist students in generating ideas, writing drafts, and refining their essays and creative writing projects



Project Ideas: AI can generate project ideas and outlines based on students' interests and curriculum requirements

Virtual Teaching Assistants

- Administrative Tasks: AI can help educators by automating administrative tasks such as grading, scheduling, and managing student records
- 24/7 Support: AI-powered chatbots can provide students with round-the-clock assistance, answering questions related to course content, deadlines, and administrative tasks



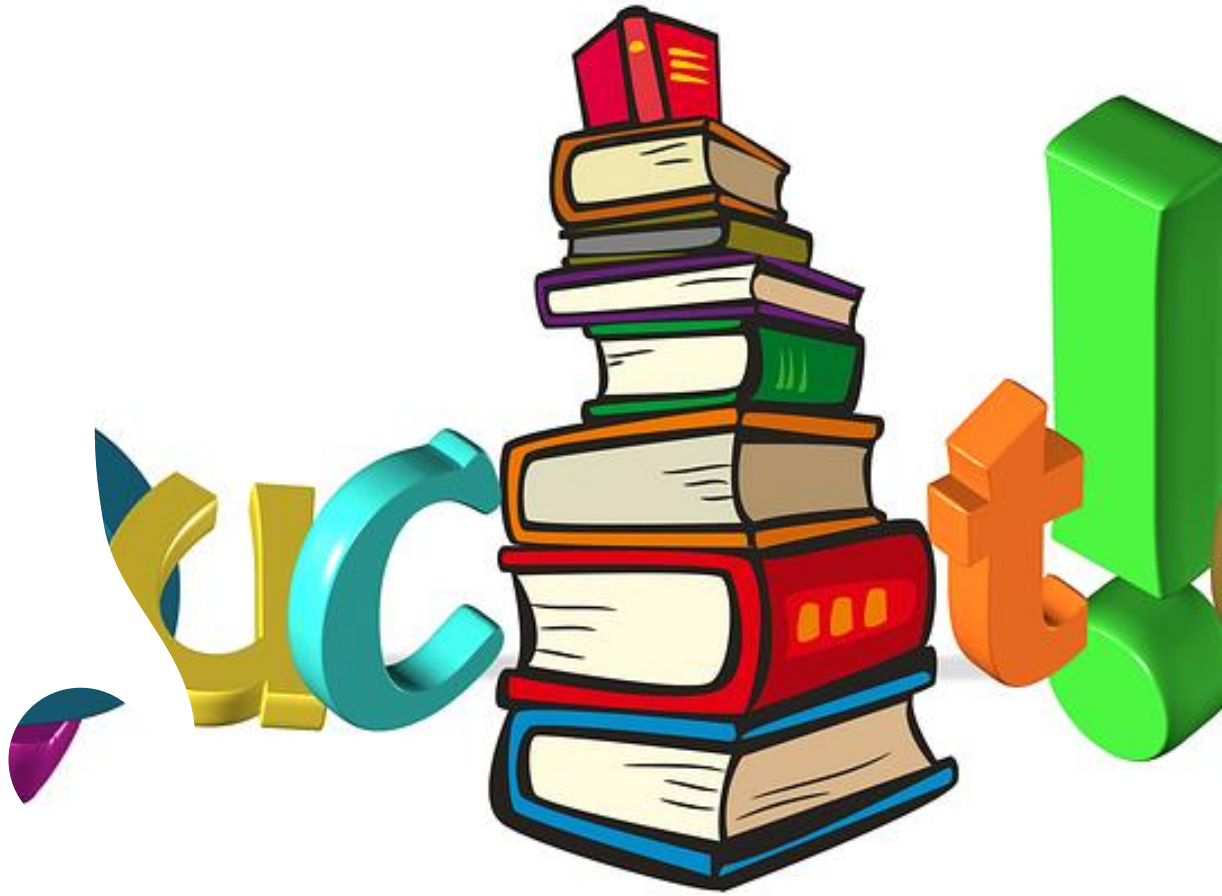


Benefits of Generative AI in Education

- **Enhanced Engagement:** Interactive and adaptive content keeps students engaged and motivated by providing a more personalized and relevant learning experience
- **Efficiency and Scalability:** Automating content creation and assessment allows educators to focus more on teaching and mentoring, while also enabling the delivery of high-quality education to a larger number of students
- **Accessibility:** AI can create accessible learning materials, such as generating content in different languages or formats, making education more inclusive for students with diverse needs

Examples of Generative AI in Education

- **Content Creation Tools:** Platforms like Knewton and Smart Sparrow use AI to create personalized learning paths and adaptive courseware
- **Language Learning Apps:** Duolingo and Babbel use AI to generate language exercises and provide instant feedback to learners
- Generative AI in education promises to revolutionize the way we teach and learn by making education more personalized, efficient, and accessible



Challenges and Considerations



Bias and fairness



Quality control



Privacy and Data Security



Teacher training

Examples of Generative AI

- Conversational chatbot: www.chat.kuki.ai
- Short video generator www.app.pixverse.ai
- Image generator www.canva.com/ai-image-generator
- Your assistant www.chatgpt.com
- Logo designer www.design.com





Generative AI and TVT

- Generative AI can significantly enhance technical and vocational education by providing personalized learning experiences, creating realistic simulations, and automating content creation
- Additional benefits of using generative AI in technical and vocational training includes

Increased Accessibility

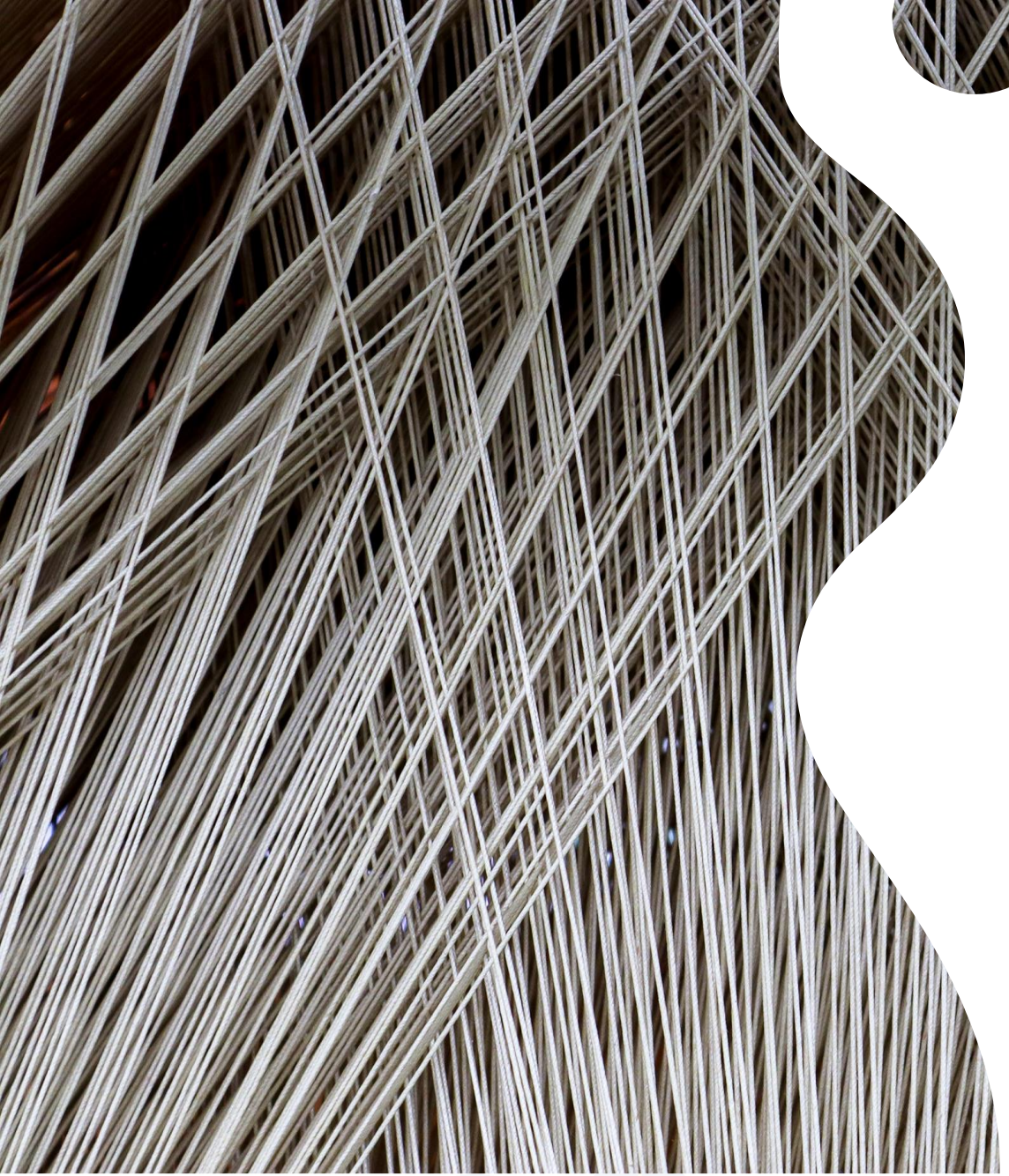
- Remote Learning: AI enables students to access high-quality vocational training remotely, making education more accessible to those in different geographic locations or with varying schedules
- Scalability: AI-driven platforms can accommodate large numbers of students, making it easier to scale educational programs without compromising quality



Enhanced Engagement

- Interactive Learning: AI-powered simulations and personalized learning paths can increase student engagement by making learning more interactive and relevant to their career goals
- Motivation and Retention: Personalized feedback and adaptive challenges can keep students motivated and help them stay on track with their learning objectives





Real-Time Skill Development

- Immediate Feedback: Instant feedback on practical tasks helps students learn and correct mistakes quickly, accelerating their skill development
- Practical Experience: AI-generated scenarios and simulations provide hands-on experience that is crucial for mastering technical and vocational skills

Alignment with Industry Standards



Up-to-Date Content: Generative AI can ensure that educational materials are constantly updated to reflect the latest industry standards and technological advancements



Industry-Specific Training: AI can generate content and simulations tailored to specific industries, ensuring students acquire relevant and current skills

Conclusion



Different examples of generative AIs are discussed on this topic. Now we know what generative AI can assist us in our activities



As a trainer, you are expected to use this technology effectively to simplify your training

Discussion questions

- What are the key differences between Narrow AI, General AI, and Super intelligent AI?
- Can you summarize how Generative AI works and provide examples of its use in educational settings?
- How do you plan to integrate Generative AI tools into your teaching practices? Can you provide specific examples of how these tools will enhance your content creation and instructional delivery?
- Reflect on the potential benefits and challenges of using AI-generated content in your teaching. How will you ensure the content meets the needs of your students?
- What challenges might you face when using Generative AI tools in your teaching environment? How do you plan to overcome these challenges?

Discussion questions

- How might the ethical considerations of using AI, such as data privacy and potential bias, affect your decision to integrate AI tools into your teaching practices?
- How can the skills of using Generative AI improve your efficiency in creating educational materials? Share an example of how you would apply these skills in a specific teaching scenario.
- In what ways can you teach your trainees about the role of AI in society, particularly in education? What activities could you incorporate into your lessons to reinforce these concepts?
- Considering the continuous evolution of AI technologies, how do you plan to keep your skills up to date? What resources or strategies will you use to continue learning in this area?
- How can the lessons learned in this unit contribute to fostering a better understanding of AI among your students? What role do you see yourself playing in this educational shift?



Unit

11

Using Assistive Tools

Using Assistive Tools

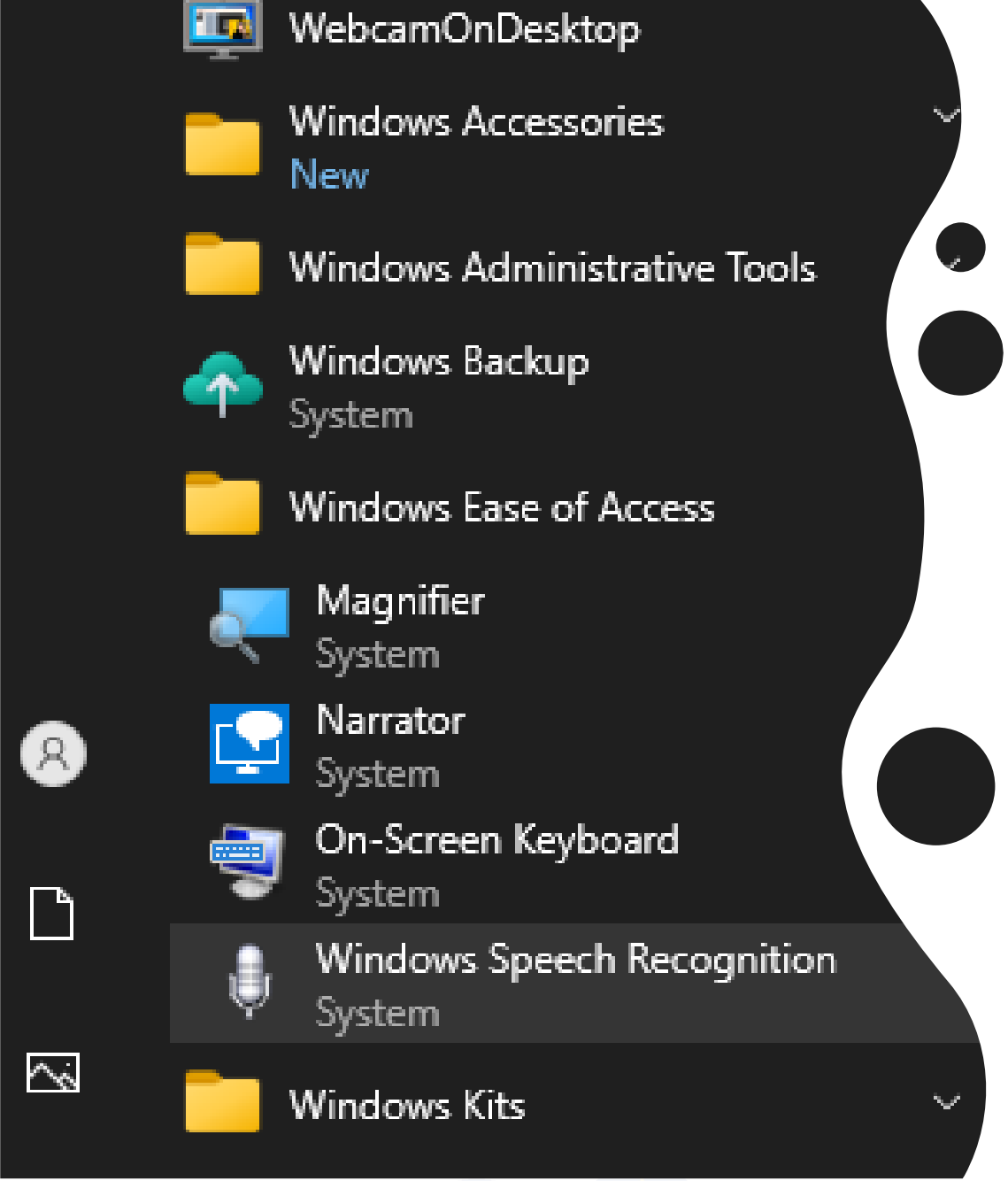
- Assistive tools in computing are software and hardware designed to help individuals with disabilities interact with computers and digital devices more effectively
- These tools enhance accessibility, allowing users to perform tasks they might find challenging due to physical, sensory, cognitive, or learning impairments



Types of Assistive Tools

- Text-to-Speech Software
- Screen reader
- Screen magnifier
- Speech recognition software
- Alternative input devices
- Hearing assistance





Windows speech recognition

- Follow these steps to open windows speech recognition
  1. Click the Start button.
  2. Scroll and click Windows Ease of Access.
  3. Click Windows Speech Recognition.
  4. Follow the instructions to set up the computer to recognize your voice.

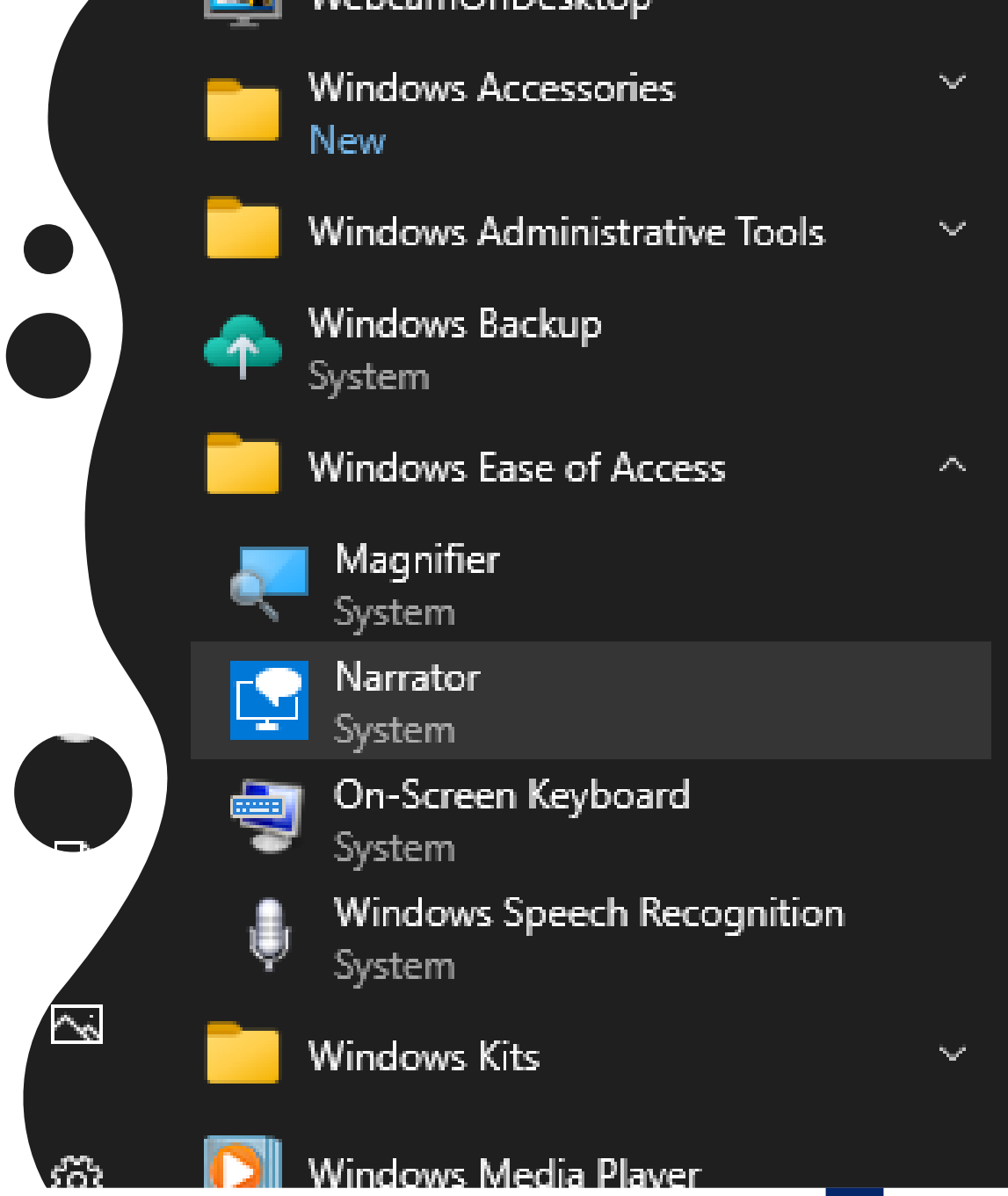
Windows speech recognition

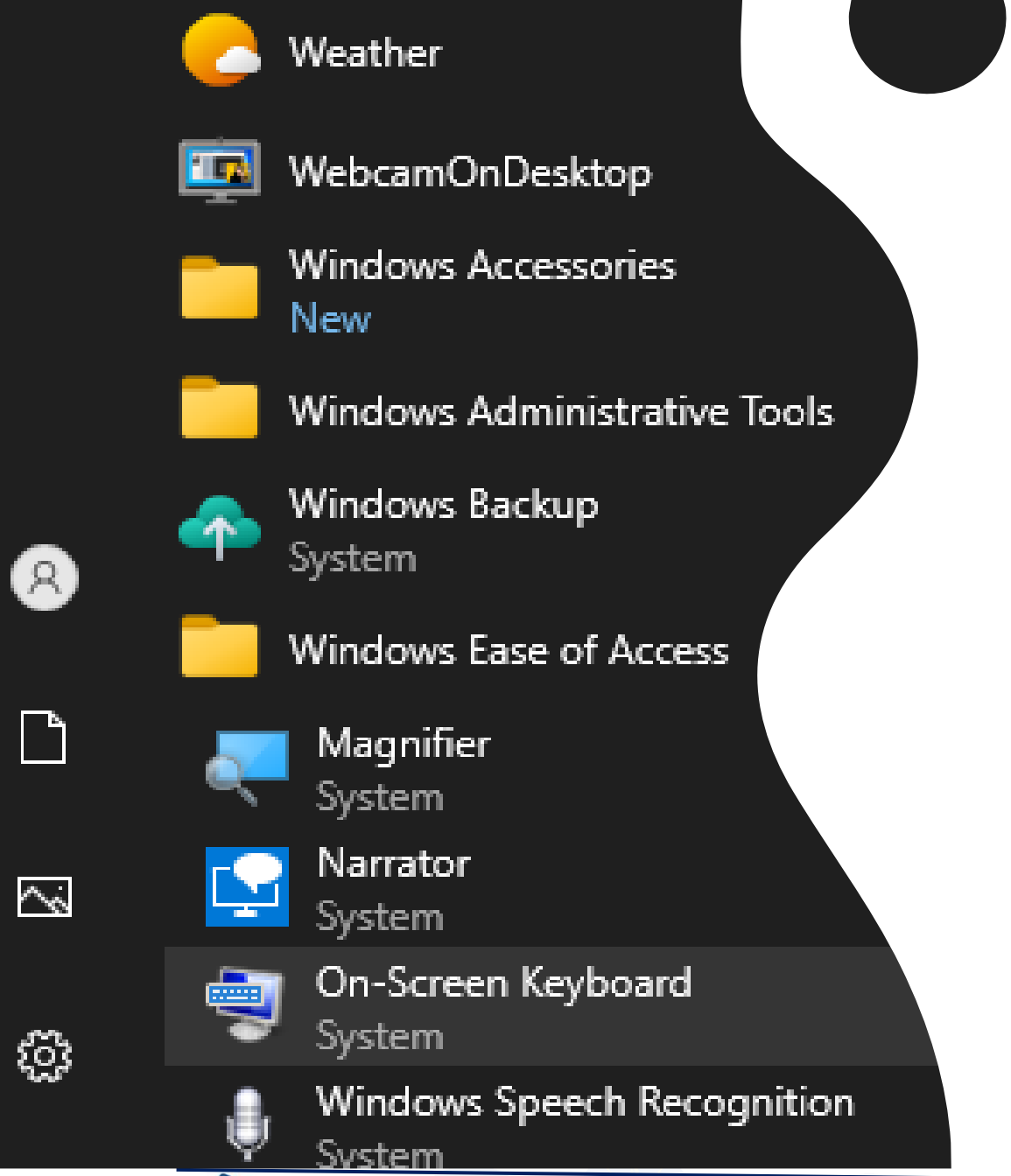
- Alternative options to open windows speech recognition
- Click on windows sign (start) and type “Speech recognition” and it appears. Look the image below.
- Using the keyboard shortcut. Press Windows + Ctrl + S



Screen reader

- Follow these steps to open windows speech recognition
  1. Click the Start button.
  2. Scroll and click Windows Ease of Access.
  3. Click Narrator
- You can also use this shortcut: Press Ctrl + Windows + Enter to start or stop Narrator





On screen keyboard

- Follow these steps to open windows speech recognition
  1. Click the Start button.
  2. Click Windows Ease of Access.
  3. Click On-Screen Keyboard.

- Shortcut: Press Windows + Ctrl + O

Conclusion

- Assistive tools are essential for making technology accessible to everyone, regardless of their physical, sensory, cognitive, or learning disabilities
- By leveraging these tools, individuals can achieve greater independence and productivity in their personal, educational, and professional lives



Discussion questions

- What are the different types of assistive tools discussed in this unit, and how can each tool support trainees with specific disabilities? Can you provide specific examples of how these tools will improve inclusivity in your classroom?
- Can you summarize how assistive tools like screen readers and magnifiers enhance accessibility in the classroom?
- Reflect on the challenges you might face when introducing assistive technologies. How will you overcome these challenges to ensure that all students benefit from these tools?
- How can the skills of using assistive tools improve your ability to create an inclusive learning environment? Share an example of how you would apply these skills in a specific teaching scenario.
- In what ways can you teach your students about the importance of accessibility and the use of assistive technologies? What activities could you incorporate into your lessons to reinforce these concepts?
- Considering the continuous development of assistive technologies, how do you plan to keep your skills up to date? What resources or strategies will you use to continue learning in this area?


Thank you