

# UBC Forestry

## Building Accessible Course Content and Activities: Practical Tips and Recommendations

Learners may differ in how they are engaged to learn, how they perceive and comprehend information, and how they can navigate learning environments and demonstrate their knowledge. To better accommodate students’ diverse learning needs, teaching teams are encouraged to create course content and activities that are accessible to everyone, regardless of their background, ability, or learning style. Enhancing accessibility can be critical not only for improving students’ learning experience, but also for fostering equity and inclusion within the educational environment.

Building upon the framework of [Universal Design for Learning \(UDL\)](#), this document aims to provide practical tips for designing accessible course content and activities across a range of delivery modes, including in-person, online, and hybrid settings. If you need assistance or have questions, feel free to book a consultation with [forestry.tls@ubc.ca](mailto:forestry.tls@ubc.ca).

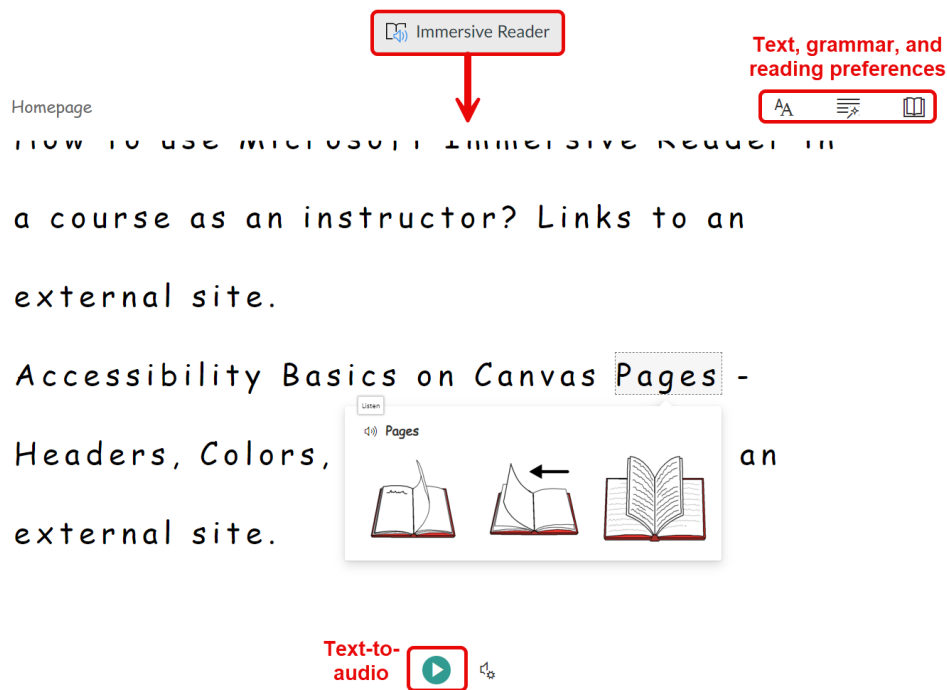
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## Text-based Content & Activities

Text-based content and activities (e.g., articles, essay assignments, online discussion posts, etc.) are essential in many courses. To ensure they are accessible to all students, teaching teams can consider the strategies below.

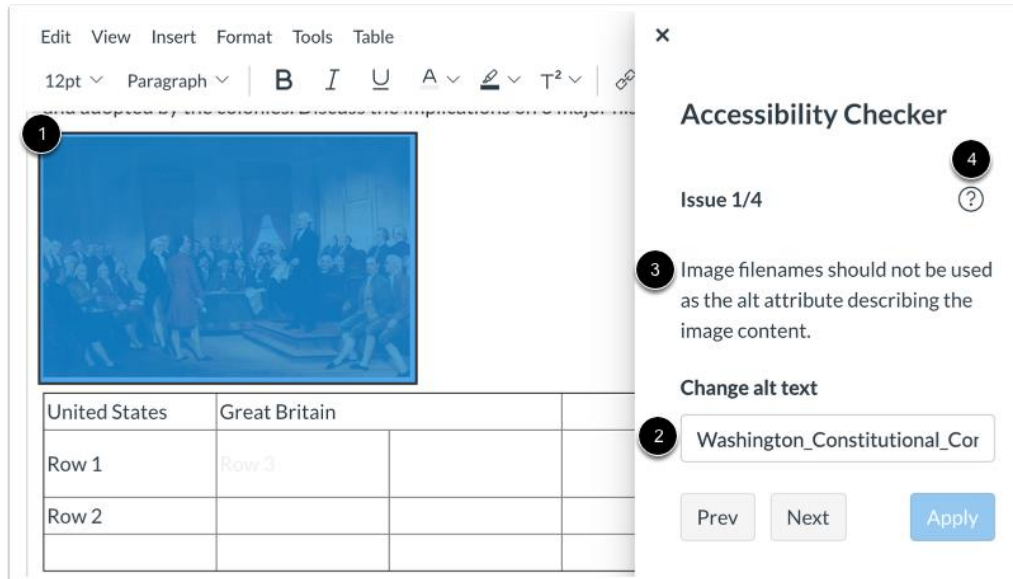
### Enabling Alternative Formats via Immersive Reader in Canvas

- [Microsoft Immersive Reader](#) is available in Canvas, offering automatic conversion of content into alternative formats, such as text-to-audio and color enhancements (refer to the screenshot below). This tool therefore offers different options for students to get engaged with Canvas content.
- Note that students have to [enable this feature in their Canvas account under User Settings](#) in order to enhance Canvas accessibility.
- This tool reduces the need for teaching teams to manually create alternative formats (e.g., audio) in Canvas. Please note that not all materials (e.g., videos) are supported by Immersive Reader.
- For more information, please [self-enroll in our Canvas site here](#).



### Optimizing Canvas Pages with the Accessibility Checker

- [Accessibility Checker](#) is a built-in tool in Canvas. Before saving edits in Canvas (e.g., a page, assignment, discussion, announcement, etc.), you can use this tool to identify correctable accessibility issues (e.g., no alternative text, headings are not sequential, etc.).
- Fixes can be applied directly within the tool, providing a practical starting point for enhancing accessibility.
- For more information, please [self-enroll in our Canvas site here](#).



## Media-based Content & Activities

Media-based content and activities come in a wide range of forms, such as class recordings, online discussions, images, and podcasts. To ensure the accessibility of these media-based resources, teaching teams can consider the following strategies.

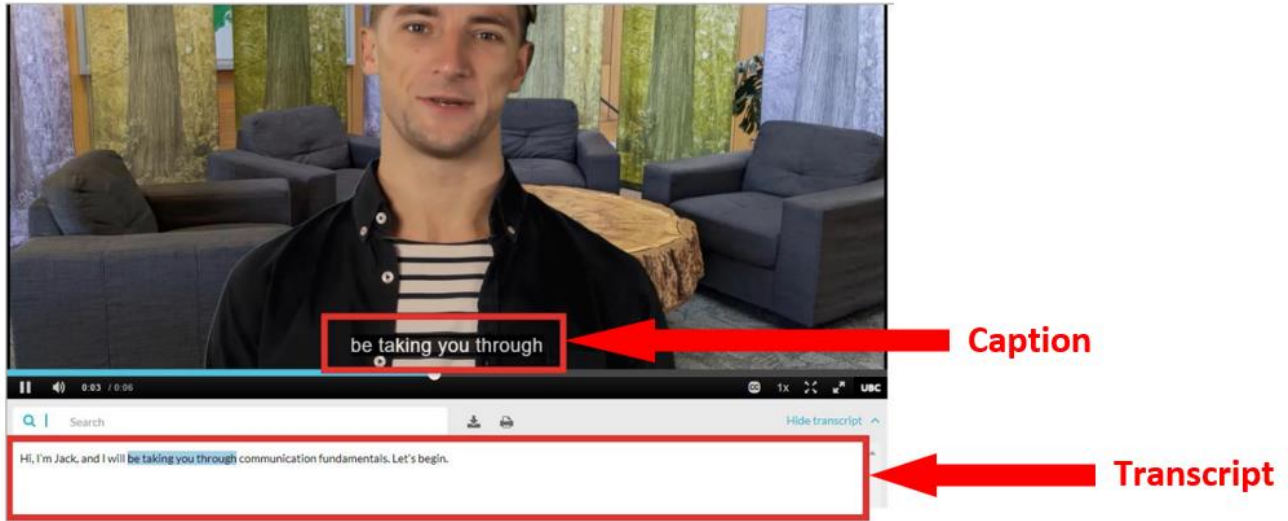
### *Adding Captions to Videos and Recordings*

Captions are text overlays synchronized with the video or audio playback. Several tools are available at UBC for teaching teams to record and edit videos. To add captions, see the list below.

- **Zoom:** [enable closed captioning](#)
- **Microsoft Teams:** [use live captions](#)
- **Camtasia:** [add captions to videos](#)
- **Kaltura in Canvas:** [enable auto-generated captions](#)
- **Panopto** (built-in live streaming and recording system in certain classrooms, such as FSC 1001, 1003, 1005, 1221): [please specify that you need auto-captions when submitting the request.](#)
- **PowerPoint:** [enable auto-generated captions when presenting the slides via the Slide Show tab](#)
- Note that the auto-generated captions may not be 100% accurate, and may require teaching teams' reviewing and editing.

### *Providing Transcripts or Notes to Video and Audio Materials*

- **Transcripts** are text versions of video or audio content, and do not have to synchronize with the playback. By providing transcripts with the video or audio content, students could review the material at their own pace.
- **Supplementary notes** may also be provided alongside video or audio materials. The notes may provide additional explanations or insights that are not covered in transcripts.

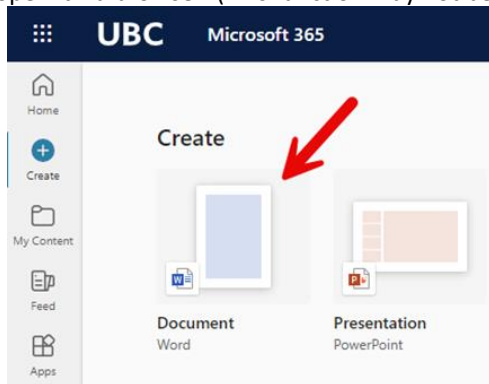


- **Transcribing Audio and Video Using Kaltura**

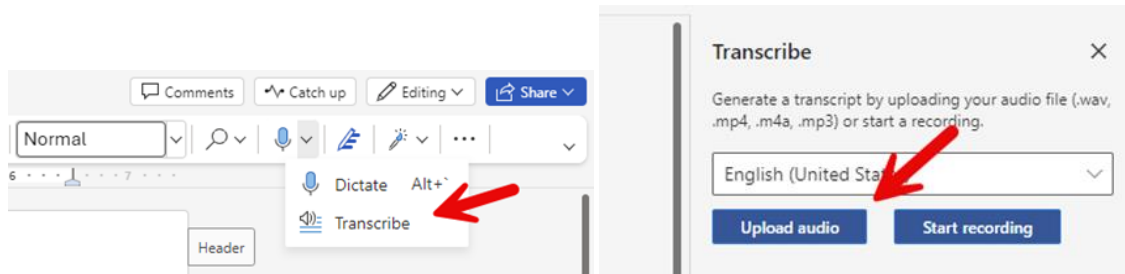
- Please follow the steps in this tip-sheet to request auto-captions (see pages 7 – 12).  
<https://teachingsupport.forestry.ubc.ca/files/2022/02/Tipsheet-Closed-Caption-Tool.pdf>

- **Using the Transcribe function in Microsoft Word**

- Word (Microsoft 365) has a transcribe function that converts audio and video to text.
- To use this function, please log into <https://portal.office.com/> or UBC OneDrive, add a new Word file, and open it via browser. (This function may not be available via desktop version.)



- Next, click Transcribe, and choose Upload audio. (Please note that there is a file size limit of **300 MB**)



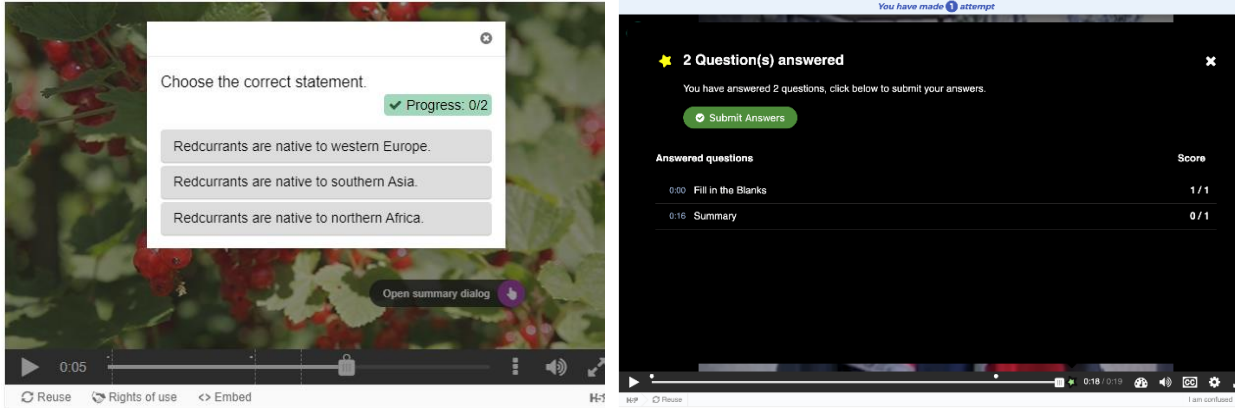
- After the auto-transcript is generated, you can add it to the Word file, and edit it as needed.

### *Incorporating Questions into Videos to Enhance Engagement*

Teaching teams could consider adding quiz questions to video content which can enhance student interaction and engagement.

- Kaltura in Canvas:** [Interactive quiz questions can be added to videos or class recordings through Kaltura](#). The questions (e.g., multiple choice, true/false, and open-ended questions) can be inserted at different points in the video to assess comprehension. Note that Kaltura can send quiz results to the Gradebook in Canvas. Feel free to check out [the UBC instructor guide](#), and [additional tutorial here](#).

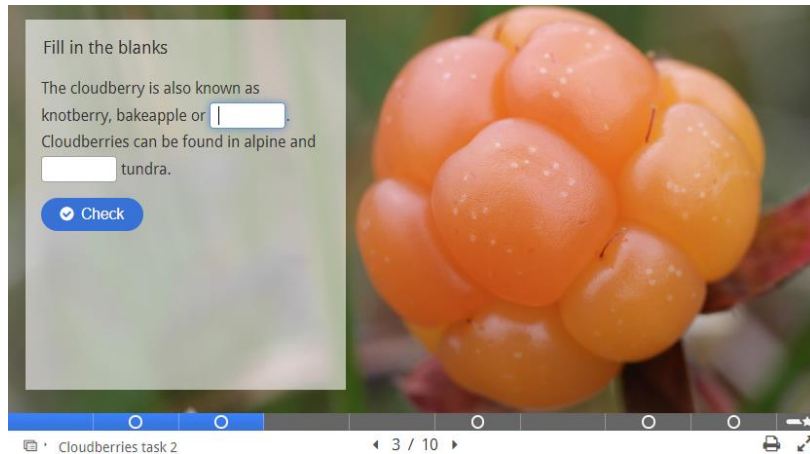
- H5P** ([see this example here](#)): It offers a variety of question types (e.g., multiple choice, fill-in-the-blank, and drag-and-drop options) at key points in the video. [The step-by-step tutorial can be found here](#). This option is good for ungraded and practice quizzes since H5P is not directly linked to the Canvas Gradebook.



- **Video + Canvas Quiz:** If teaching teams prefer to not embed questions within videos, they can also use Canvas quizzes to complement the video content. As teaching teams deliver the video content (live or recorded), students can be guided to complete the related Canvas quizzes.
- **Video + Verbal Questions + Assignment:** Instructors can also verbally ask questions during a video. Students are required to watch the video attentively, and respond to the questions in subsequent assignments.
- When designing videos, teaching teams could consider creating short videos (e.g., <20 min, ideally <12 min<sup>1,2</sup>) that cover a single topic. Short videos are more likely to be watched by students in full than longer videos, increasing student engagement and the likelihood of retaining the information. It also reduces the time needed for captioning and transcription.

*Creating Interactive Slides, Books, and Virtual Tours through H5P*

- Interactive slides, books, and tours can be created through H5P and then embedded in Canvas. They can be combined with questions (e.g., multiple choice, fill in the blanks, etc.) to engage students and enrich course activities.
- [To generate interactive slides, see the tutorial here.](#)



- [To create interactive books, see the tutorial here.](#)

<sup>1</sup> How video production affects student engagement: an empirical study of MOOC videos.

<https://dl.acm.org/doi/10.1145/2556325.2566239>

<sup>2</sup> How long should online course videos be? <https://accellier.edu.au/e-learning-video-duration/>

Interactive Book

- ▶ Strawberries ○
- ▶ Raspberries ○
- ▶ Blueberries ○
- ▼ Berries Quiz ○

○ Drag images of the be...  
○ Where does blueberri...  
○ Which one of the follo...  
○ Nutrition value of stra...

Summary & submit

Drag images of the berries into empty circles so each image gets above the correct berry name!

Raspberry Blueberry Strawberry

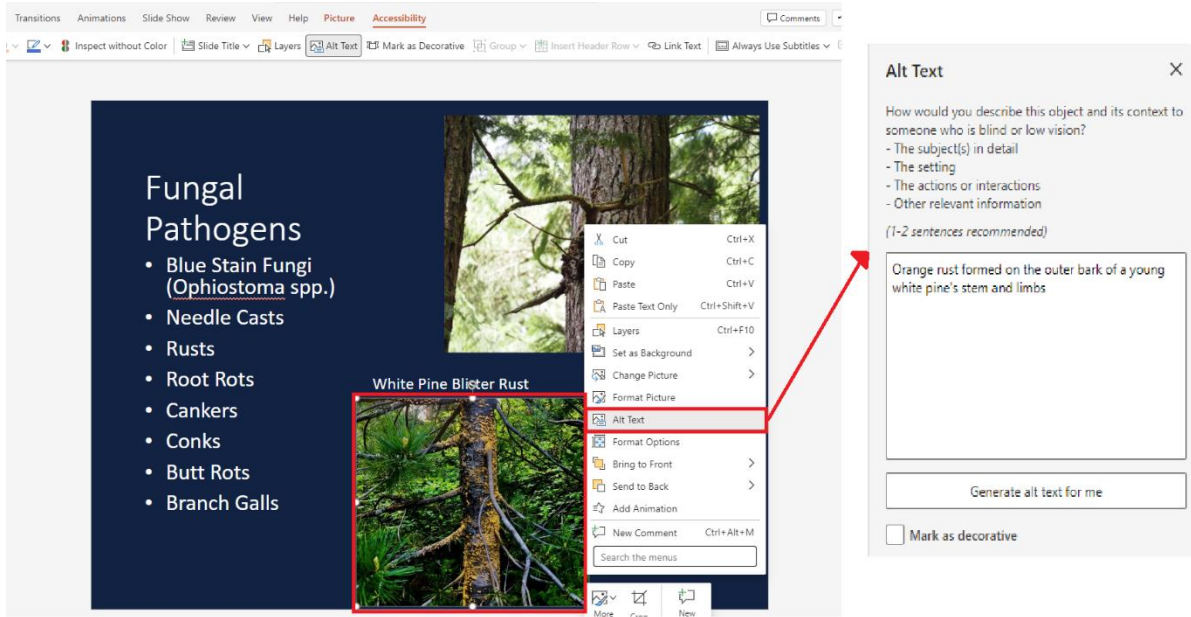
Show score

- [To create interactive virtual tours, see the tutorial here.](#) In Forestry, virtual tours have been created to accommodate students who are unable to participate in field activities. Quiz questions are also embedded within these tours for students to explore details such as tree measurements (see screenshots below).

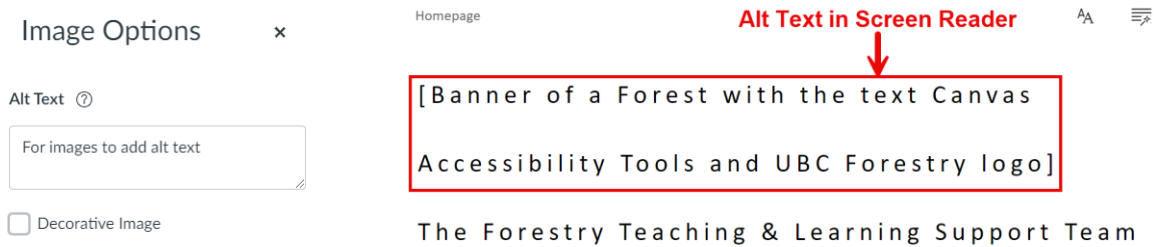


### Providing Alternative Text to Images and Infographics

- Images and infographics are commonly used in teaching materials. By adding alternative text to describe these visuals, students with visual needs could better understand the essential information conveyed.
- In PowerPoint presentations, [alternative texts can be added by right clicking the images, and then selecting Edit Alt Text](#). See an example below.



- In Canvas, alternative texts can be added under Image Options when embedding/editing images. The alternative texts can be recognized in screen readers, such as Microsoft Immersive Reader.



- For more information, please [self-enroll in our Canvas site on accessibility & UDL](#), and check out the best practices for generating image alternative texts under Modules.

## AI-based Content & Activities

AI tools are rapidly evolving, and can facilitate teaching teams to create accessible content and activities. In this context, we explore how AI tools can be used to encourage student participation and critical reflection across various course delivery modes. Please keep in mind that not all AI tools have met UBC’s information security standards, and therefore cannot be required for classroom use. [See UBC policies on the use of generative AI here.](#)

Visit this CTLT website for information on [the Privacy Impact Assessments \(PIA\) of generative AI tools for instructional use at UBC](#). The table below outlines which tools are approved with caution for course use, and which tools are not.

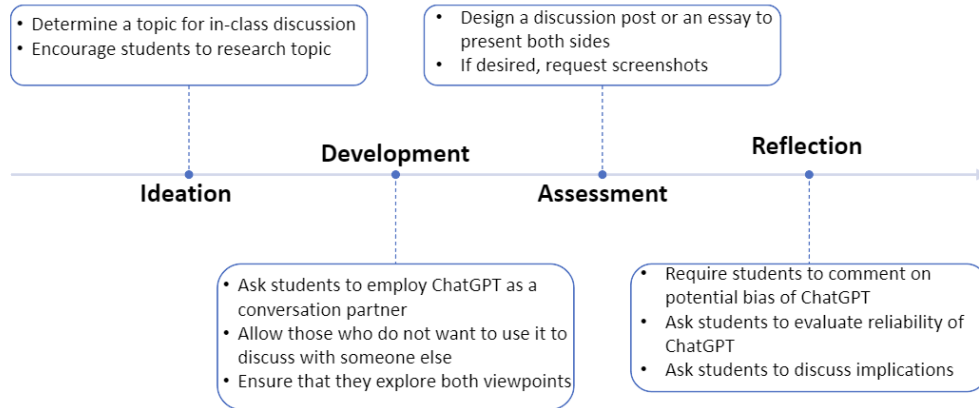


Status	Generative AI Tool	Does it require personal information for signup?	Does it protect personal information?	Can it be recommended or required for use by students in your course?
<p><b>Approved with caution for required course use</b></p> <p>The following tools have been approved for required use — with caution — within a course at UBC.</p>	<p><b>ChatGPT 3.5</b></p> <p><i>Updated: May 8, 2024</i></p>	<p>✔ <b>No</b>, not for ChatGPT Version 3.5.</p>	<p>⚠ <b>No</b>. It will share information entered into the tool outside Canada. Some device data such as IP Address <a href="#">may be stored</a>.</p>	<p>⚠ <b>Yes, with caution:</b> Students should be instructed on safe use of this tool because the risk of accidentally entering personal information or intellectual property is high.</p>
	<p><b>Microsoft Copilot for Organizations</b></p> <p><i>Updated: May 8, 2024</i></p>	<p>✔ <b>No</b>. Students can use it with their existing UBC credentials; this information will not be shared with the tool.</p>	<p>⚠ Some security and privacy protections exist. Only “Low Risk” Information should be submitted, as defined by <a href="#">Information Security Standard U1</a>.</p>	<p>⚠ <b>Yes, with caution:</b> Students should log in with their UBC credentials, be reminded not to enter personal information or intellectual property into the tool, and follow the other practices listed on the guidance page.</p>
<p><b>Not approved for required course use</b></p> <p>You are currently <b>unable to require</b> use of the following tools within a course at UBC. This guidance does not cover situations where students use the tools by choice.</p>	<p><b>ChatGPT 4</b></p> <p><i>Updated: April 15, 2024</i></p>	<p>✘ <b>Yes</b>, for ChatGPT Version 4.0.</p>	<p>⚠ <b>No</b>. It will share information entered into the tool outside Canada. Some device data such as IP Address <a href="#">may be stored</a>, and any personal data that is collected.</p>	<p>✘ <b>No</b>. Students must not be required to sign up for or use ChatGPT Version 4.</p>

Please note that the information on [CTLT’s website](#) may have been updated. Check there for the most recent information on generative AI tools.

*Using ChatGPT and Similar Tools to Enrich Discussions*

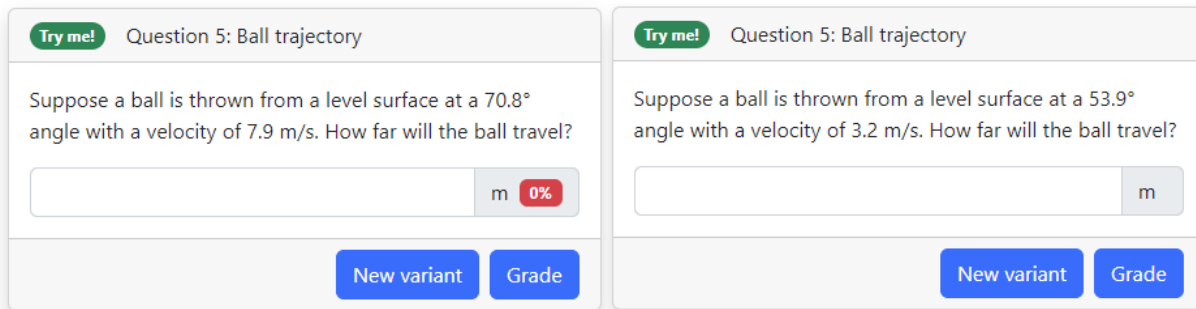
- [ChatGPT](#) and similar AI tools, such as Microsoft Copilot, can generate creative discussion topics and provide arguments from diverse perspectives. These tools can serve as conversational partners and translation aids, enriching discussions and enhancing engagement. See example use cases in the screenshot below.
- If students encounter difficulties accessing ChatGPT or similar tools, teaching teams should offer alternative options, such as engaging in discussions with peers or analyzing examples provided by the instructors.



The following tools and their use cases within the Faculty of Forestry have been confirmed with UBC Information Security Office through PIA. If you have questions, please contact [forestry.tls@ubc.ca](mailto:forestry.tls@ubc.ca).

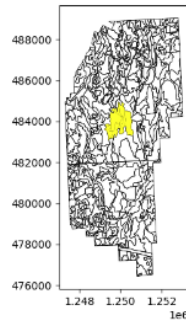
*Using PrairieLearn to Engage Students with Adaptive Learning*

- [PrairieLearn](#) is an adaptive learning platform powered by machine learning algorithms. Its primary advantage lies in its ability to present varied versions of a question to different students, allowing individualized practice opportunities. Note that this tool is not currently supported by UBC centrally, and may incur costs. To trial it for free, contact [forestry.tls@ubc.ca](mailto:forestry.tls@ubc.ca) to set up a sandbox site.
- In the example below, every time the students click *New Variant*, they will get a modified version of the question with altered numerical values.



- Additionally, PrairieLearn supports automatic grading for questions whose answers can be determined through equations.
- In Forestry’s courses, PrairieLearn is used to help students practice forest inventory calculations.

Here is a map of forest inventory from the BC Vegetation Resource Inventory Dataset. Every time you click the New Variant button, a region will be highlighted randomly. The attribute table associated with the highlighted region is displayed below.



**Each student gets a unique map location, and its associated forest inventory data.**

**Students will then calculate mean basal area, and identify the dominant tree species in the selected region.**

Use the information below to answer the questions. You can refer to [Veg Comp Poly Rank 1 data Model](#) to search for what each attribute in the table represents.

	Basal Area (m <sup>2</sup> )	Biogeoclimatic Zone	Leading Species	Forest Polygon Area (ha)
0	80.353424	CWH	CW	4.800000
1	60.136070	CWH	CW	26.500000
2	0.000000	CWH	None	0.200000
3	67.464645	CWH	CW	33.800000

- Feel free to check out [PrairieLearn open educational resources](#).

### Using Scite to Support Students with Literature Review

- [Scite](#) is an AI tool for research and writing, powered by large language models. It generates responses based on journal articles, aiding in the literature review process. This tool can therefore complement resources like UBC Library and Web of Sciences. Note that this tool is not currently supported by UBC centrally, and may incur costs.

**assistant** by [scite\\_](#)

How does the structure of a protein affect its function?

Proteins are essential for the proper functioning of living organisms, and their structure plays a crucial role in their function. The structure of a protein is determined by its amino acid sequence, which in turn affects its folding and stability [6]. The interactions between charged amino acids significantly influence the structure and function of proteins [1]. The number of hydrophobic methylenes linking the backbone to the charged functionality of amino acids affects protein structure stability [1]. Protein secondary structures, such as  $\beta$ -sheet structures, are the fundamental three-dimensional building blocks of protein structures [1]. Intrinsically disordered proteins (IDPs) are a family of proteins that fail to form rigid 3-D structures under physiological conditions, either along their entire lengths or only in localized regions [2]. IDPs exist as dynamic ensembles within which atom positions and backbone Ramachandran angles exhibit extreme temporal fluctuations without specific equilibrium values [2].

What do you need help with?

**References**

**Reference #1** ...

**Longer charged amino acids favor  $\beta$ -strand formation in hairpin peptides**

Jingyuan Chang<sup>1</sup>, Jing-Yuan Chang<sup>2</sup>, Nian-Zhi Li<sup>3</sup> et al. 2021J Pep Sci

3 | 1 | 7 | 0

Interactions between charged amino acids significantly influence the structure and function of proteins. The encoded charged amino acids Asp, Glu, Arg, and Lys have different number of hydrophobic methylenes linking the backbone to the charged functionality...

[View full text](#) [Add to Dashboard](#)

**Reference #2** ...

**Understanding protein non-folding**

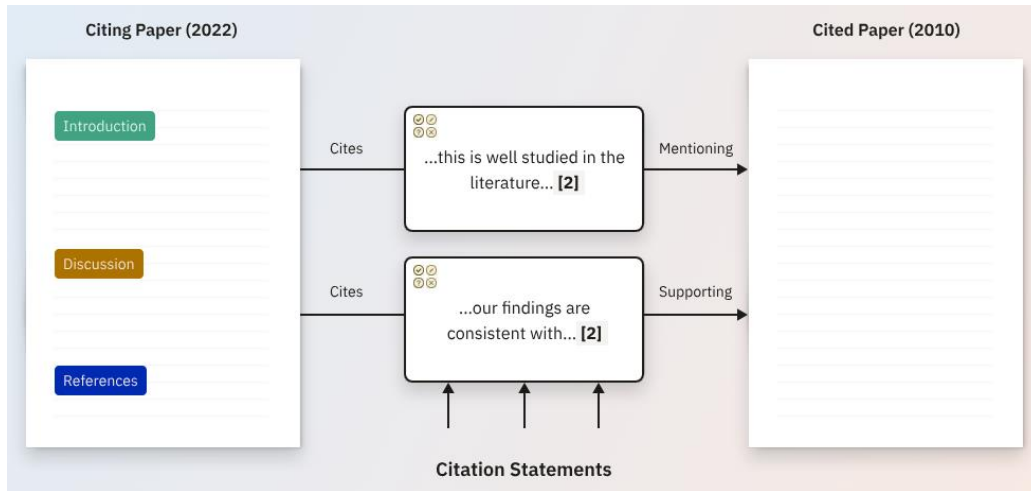
Vladimir N. Uversky<sup>1</sup>, A. Keith Dunker<sup>2</sup> 2010 *Biochimica et Biophysica Acta (BBA) - Proteins and Proteomics*

1017 | 24 | 1112 | 0

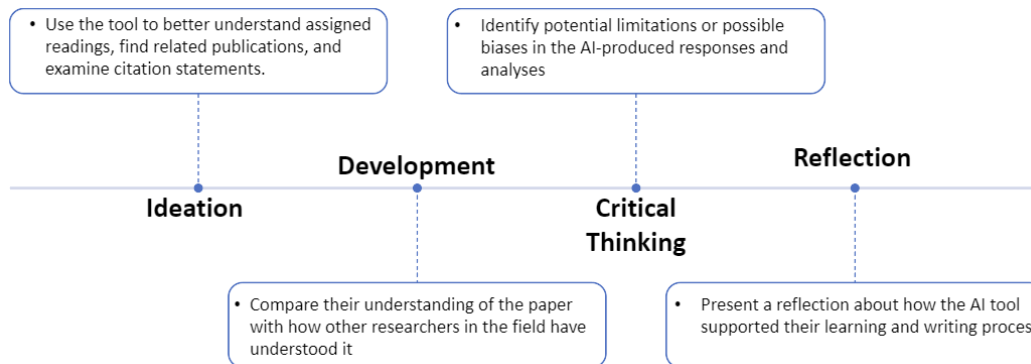
This review describes the family of intrinsically disordered proteins, members of which fail to form rigid 3-D structures under physiological conditions, either along their entire lengths or only in localized regions...

[View full text](#) [Add to Dashboard](#)

- Additionally, this tool allows users to see how publications have been cited in the past, providing valuable context and insights into their scholarly impact.



- Instructors may incorporate Scite into a literature review assignment. In this assignment, for example, students can use Scite to brainstorm ideas, investigate expert interpretations of texts, identify potential limitations in AI responses, and reflect on their writing process (see the screenshot below).



## Helpful Resources

Feel free to explore the following websites for more information about inclusive teaching, UDL resources, and guidance on creating accessible educational content.

- Inclusive Teaching at UBC: <https://inclusiveteaching.cltl.ubc.ca/>
- UBC UDL Hub: <https://udlhub.ubc.ca/>
- UBC Accessibility Corner: <https://udlhub.ubc.ca/accessibility-corner/>
- UBC Forestry – Inclusive Teaching & UDL: <https://learningsupport.sites.olt.ubc.ca/inclusive-teaching-udl/>
- UBC Forestry – Canvas Accessibility Tools & UDL: <https://canvas.ubc.ca/enroll/RT9MBM>  
<https://canvas.ubc.ca/enroll/RT9MBM>
- Engaging Students in Canvas Discussions with Threadz: <https://lthub.ubc.ca/guides/threadz-instructor-guide/>