Essential Features for K-12 Virtual Collaboration Tools

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As new software are developed to provide virtual collaborative opportunities, it is important for learning experience designers to evaluate which platform is most beneficial to the users and for the content. The list below provides possible virtual tools within these platforms with features that can be either effective in the collaboration of the users or provide functionality that support the virtual learning environment. This is not meant to be an exhaustive list in which a virtual collaboration tool must include all features to be deemed effective and not every tool is solely meant to promote collaboration. However, the key features of the virtual tools listed below provide users with the ability to enhance collaboration, increase security, or create an enhanced learning experience.

Virtual Tool	What is the functionality?	Uses within the K-12 Learning Environment
Video conferencing	Allows users to see each other through devices such as webcams or smartphones	Providing visual imagery allows teachers and students to read verbal/non-verbal cues and body language to support effective communication. Allows instructors to observe learners in the environment.
Breakout Rooms	Users are able to move into smaller subgroups of the larger meeting in a pre-determined or randomized room.	Smaller environments can provide encouragement for students who may not feel comfortable interacting in a larger group. Allows for more efficient communication than a whole group setting
Chat/Messaging	Users are to communicate through text, visuals, or emoji's both inside and outside of the meeting, includes external notifications.	Students can send direct messages to each other, the group, or the instructor without having to use the mic. Provides an alternative form of communication that does not disrupt the speaker. Can be used as an assignment for learners and engage them in discussions.
Polling/Questioning	A host can create a questionnaire or survey to assess the participants. Can be done anonymously or with identification.	Can be used as an assessment tool to provide real-time data to the instructor. This can also be used informally to allow students to express thoughts on the given topic.
Screenshare	Users are able to project their desktop or specific applications into the meeting making it viewable for all participants.	The ability to see each other's screens provides context and information to instructional lessons. Students can see webpages, apps, or videos shared by the instructor. Students can also share their own screens to collaborate on a project or display applicable content.

Virtual Tool	What is the functionality?	Uses within the K-12 Learning Environment
Recording	Hosts are able to create a video recording of the meeting that can be shared with other users, both inside and outside of the organization.	While it does not act as a collaborative tool in the live meeting, it does allow for students who are not present at the meeting to stay current with the information and concepts that were discussed.
Captioning/Transcription	Provides speech-to-text running log for audio including speaking participants, videos, etc.	Students who struggle with hearing or language are able to follow along in real-time with transcription. Captioning on videos provides a text alternative to speech and sound within videos. Provides an alternative to students with technology issues with speakers/headsets.
Integration of Apps	Virtual collaborative tools can embed other 3rd party applications to use within the main digital environment.	While meeting in an online learning environment, students can collaborate in real-time on different platforms such as Google Suites, Microsoft Office Apps, and other outside software such as Kahoot or Nearpod.
File Sharing & Cloud Storage	Users are able to send files to each other on the platform. These files can be saved directly into a cloud-based storage system or to the user's hard drive.	Teachers are able to send files to students to collaborate as well as student to student sharing. Storing the files on the cloud also allows for easier access when retrieving documents or projects.
Analytics	Data is tracked through the software that provides users with information such as timestamps, attendance, participant identifiers, and engagement rates.	Instructors can use this data to analyze trends of students including engagement, attendance at live meetings, view time on recorded webinars, as well as student information including names and email addresses.
Mobile Compatibility	Users are able to effectively engage with the software on a variety of operating systems including PC, Mac, tablet and smartphone software.	Students who do not have access to a range of technology tools and are limited to a specific device would be able to access the virtual collaboration tool. This also allows for flexibility in the location of where students are collaborating, whether it's on a mobile smartphone or a hard-wired device.
Security	Features to ensure that user data is protected are built into the software. This could include technical aspects such as encrypted meeting rooms and secured files.	Teachers can use features such as waiting rooms and single sign-on to ensure that unwanted participants are not granted entry into the meeting. Meeting passcodes and two-factor authentication also can provide another layer of security.