Enhancing
Forming Understanding
with Technology

WITHIN GROUP

CHALLENGES	SOLUTIONS
→ Teachers have difficulty creating streamlined, sustainable ways for students to regularly learn from each other's understandings and misunderstandings. → Using paper, it's sometimes hard to manage recording, revisiting, and reflecting upon co-constructed or collaborative learning and to gather evidence of collaborative learning.	→ Digital mind maps allow students to create a shared yet also concrete and ongoing record of learning connections between facts, ideas, concepts, and understandings.

DIGITAL APPROACHES	DIGITAL TOOLS
→ Create collaborative mind maps. » Students work collaboratively to find and record connections, understandings, and misunderstandings. » Students create a concrete record of growing understanding for reflection and ongoing review. » Students share and use a variety of media, such as videos, links, photos, drawings, and audio recordings, allowing for a richer and more useful process and product.	→ Collaborative mind-mapping tools: » Coggle » iBrainstorm » Mindmeister » MindMup » Mindomo » Padlet » Popplet

BETWEEN GROUPS

CHALLENGES	SOLUTIONS
→ Logistics make it difficult to help students make connections between learning in different subjects, to enable interdisciplinary and multidisciplinary learning.	→ A digital classroom, also called an online learning management system (LMS), enables teachers to share and store resources, track student progress, and plan more collaboratively, while helping students to ask and answer questions, collaborate with peers, and make tangible connections between ideas across subject boundaries.

BETWEEN GROUPS (continued)

DIGITAL APPROACHES	DIGITAL TOOLS
→ Facilitate connections between teachers and students of different subjects or disciplines. » It makes explicit for students the idea that two or more subjects seen as separate are connected around a similar topic or concept. » Students can share and store multimedia resources that are from different disciplines but are relevant to a shared topic. » Students have the opportunity to revisit and reuse multimedia resources as many times as needed to support learning. » This approach facilitates and records the process of peer questioning, feedback, and support. » It provides transparency and streamlines collaborative planning opportunities for teachers in different subject areas or groups.	→ Digital classroom tools: » Edmodo » Google Classroom » Microsoft Teams » Moodle » Schoology » Seesaw » Showbie

BEYOND SCHOOL

CHALLENGES	SOLUTIONS
→ There may be limited local ways to support students with additional or exceptional learning needs (e.g., those working significantly above or below grade level, who require external support from experts or opportunities to connect with peers). → It is difficult to find ways to connect students with real-world experiences and sources for unfamiliar or highly contextual ideas or knowledge. → Teachers struggle to help students to learn about topics that require specialist or advanced input.	→ Online bulletin boards, social media platforms, and digital classrooms can provide a digital space where students from diverse cultures can connect and collaborate. → Online bulletin boards allow invited participants to read, post, and reply to each other's ideas and questions in text, image, video, and audio form.

BEYOND SCHOOL (continued)

DIGITAL APPROACHES	DIGITAL TOOLS
➜ Facilitate questioning between students and experts internationally. » Questions and answers can be shared in the form of videos, photos, images, audio recordings, links, documents, and text, enabling deeper transfer of knowledge and engagement. » Teachers can act as moderators to ensure questions and responses are appropriate and interactions are safe and monitored ➜ Connect students with relevant individuals, groups, support networks, and experts. » Students can participate in classes or groups that are not available to them in their physical school building, through digital classrooms to support particular learning needs (e.g., Advanced Placement, learning difficulties, special interests). » Students can connect with and speak to peers in other communities and cultures, through social media and video calling. » Students can form a deeper understanding of topics, ideas, and perspectives from other cultures and contexts through communication with first-person sources.	➜ Online bulletin boards: » Flipgrid » Lino » Padlet » Scrumblr » Wakelet ➜ Social media: » Edmodo » Twiducate » Twitter ➜ Digital classrooms: » Edmodo » Google Classroom » Microsoft Teams » Moodle » Schoology » Seesaw » Showbie ➜ Video calling: » FaceTime » Google Hangouts » Skype » Zoom