edify

54 Miller Street, Glasgow,
G1 1DT, UK
+44 141 378 5901
support@edify.ac
edify.ac/accessibility

edify Accessibility Conformance Report

Last updated:

16 June 2021

Name of Product/Version:

edify

Product Description:

edify is an immersive 3D learning platform that allows users to create their own learning experience across any subject matter.

Contact Information:

support@edify.ac

Notes:

1. This Accessibility report relates to our evaluation of our software platform only.

2. This Accessibility report evaluates our platform and tools as a whole, and the catalogue of existing edify lessons currently available on the platform. Some existing edify lessons may be more accessible than others. For information regarding individual lesson accessibility or for a list of edify lessons that are accessible using keyboard navigation and a screen reader, please go to www.edify.ac/accessibility (Coming soon - new website under construction at the time of Version 1 publication.)

3. Our platform has been developed to allow educators to quickly and easily create their own learning experiences (user-generated lessons). Educators have full control over the accessibility of their lesson within the current scope of the accessibility features available via the platform and 3rd party integrations. The level of accessibility of user-generated lessons may vary depending on the educator or learners' individual needs.

Evaluation Methods Used:

Conformance to the listed Accessibility standards has been evaluated by edify using manual testing.

Applicable Standards/Guidelines:

This report covers the degree of conformance for the following accessibility standard/guidelines:

1. ***XR Accessibility User Requirements*** from the World Wide Web Consortium (W3C). The latest published version is available at the W3C XR Accessibility User Requirements Webpage: (https://www.w3.org/TR/xaur/) *W3C Working Draft 16 September 2020* referenced at the time of conformance checks.

Terms

The terms used in the Conformance Level information are defined as follows:

- **Fully Supports**: All learning experiences contain at least one method to meet the criterion without known defects.
- **Partially Supports**: Some learning experiences incorporate at least one method to meet the criterion.
- **Does Not Support**: Our platform and/or our learning experiences do not meet the criterion.
- **Not Applicable**: The criterion is not relevant to our platform or learning experience.
- **Not Evaluated**: Our platform and/or learning experiences have not been evaluated against the criterion.

W3C XR Accessibility User Requirements Report

This section documents conformance with the W3C XR accessibility requirements as listed in Section *4. XR User Needs and Requirements*.

4.1 Immersive semantics and customisation

User Need 1: A user of assistive technology wants to navigate, identify locations, objects and interact within an immersive environment.

Requirement	Conformance Level	Remarks and Explanations
REQ 1a: Navigation mechanisms must be intuitive with robust affordances. Navigation, location and object descriptions must be accurate and identified in a way that is understood by assistive technology.	**Partially Supports**	Navigation in edify is accessible by design in all modes. Users can choose to explore edify using desktop/keyboard navigation or VR controllers. Users can import their own environment and object descriptions. Barriers: not currently easy to adapt label captions but this is coming soon on our product roadmap. All 3rd party accessibility functions are available in edify.
REQ 1b: Controls need to support alternative mapping, rearranging of position, resizing and sensitivity.	**Does Not Support**	Re-mapping and customisation of controls is coming soon as part of our UI Accessibility Update. Edify can be experienced in desktop or VR mode and is device agnostic. All 3rd party accessibility functions in hardware and software integrations are available in edify.
REQ 1c: Objects that are important within any given context of time and place can be identified in a suitable modality.	**Partially Supports**	Users can add their own annotations and audio content to provide multi-modal descriptions of objects and environments.

Requirement	Conformance Level	Remarks and Explanations
REQ 1d: Allow filtering and the ability to query items and their content for more details.	**Partially Supports** (very soon Fully Support)	Filtering items is currently possible in edify. More advanced item query functions will be part of an upcoming release release. (View object properties, virtual keyboard, user-generated labels for object layers and components.)

4.2 Motion agnostic interactions

User Need 2: A person with a physical disability may want to interact with items in an immersive environment in a way that doesn't require particular bodily movement to perform any given action.

Requirement	Conformance Level	Remarks and Explanations
REQ 2a: Allow the user performing an action in the environment, in a device independent way, without having to do so physically.	**Partially Supports**	Users can navigate the environment and interact with objects in the environment using keyboard input alone, requiring minimal physical movement. Our team can advise on devices and controllers that are suited to individual users' motion agnostic needs. Our VR by proxy mode and the flexibility of our platform allows users to an immersive experience without it being interactive.
REQ 2b: Ensure that all areas of the user interface can be accessed using the same input method.	**Fully Supports**	Either VR hardware or keyboard input can be used throughout.
REQ 2c: Allow multiple input methods to be used at the same time.	**Partially Supports**	It is currently possible to switch between VR hardware and keyboard input, however this requires switching in/out of VR mode. We are currently scoping live-switching between inputs.

4.3 Immersive personalisation

User Need 3: Users with cognitive and learning disabilities may need to personalise the immersive experience in various ways.

Requirement	Conformance Level	Remarks and Explanations
REQ 3a: Support Symbol sets so they can be used to communicate and layered over objects and items to convey affordances or other needed information in way that can be understood according to user preference.	**Partially Supports** (Soon Fully Support)	Lesson creators can upload their own symbol sets to the whiteboard for use in the learning experience. These can be used for 2D content or communication. A planned Tiltbrush type tool will include a 3D shapes/symbols set for communicating in 3D space.
REQ 3b: Allow the user to turn off of 'mute' non-critical environmental content such as animations, visual or audio content, or non-critical messaging.	**Fully Supports** - edify lesson creation platform **Partially Supports** - edify exemplar lessons	Audio is fully under user control in our lesson creator. Barrier: Some edify exemplar lessons may contain pre-set animations with audio that may not be controllable. Please visit www.edify.ac/accessibility for a list of accessible lessons.

4.4 Interaction and target customisation

User Need 4: A user with limited mobility, or users with tunnel or peripheral vision may need a larger 'Target size' for a button or other controls.

Requirement	Conformance Level	Remarks and Explanations
REQ 4a: Ensure fine motion control is not needed to activate an input.	**Fully Supports**	Button designs are designed with accessibility in mind.
REQ 4b: Ensure hit targets are large enough with	**Fully Supports**	Buttons, controls and the user interaction with them are designed with accessibility in mind.

Requirement	Conformance Level	Remarks and Explanations
suitable spacing around them.		
REQ 4c: Ensure multiple actions or gestures are not required at the same time to perform any action.	**Fully Supports** - desktop **Partially Supports** – VR	Our desktop version fully supports step-wise input to perform any action in edify. Barriers: Some gestures in VR mode are not accessible (e.g. simultaneous button interaction required in grabbing an object then scaling/moving). We recommend using desktop mode to perform these actions for now and then switching back into VR mode. We will soon be providing a VR shortcut for currently inaccessible actions.
REQ 4d: Support 'Sticky Keys' requirements such as serialization for various inputs when the user needs to press multiple buttons.	**Partially Supports** - desktop **Does Not Support** – VR	Since our desktop version fully supports step-wise input to perform any action, sticky keys is not needed in desktop mode. Unfortunately edify does not currently support sticky keys in VR mode but would recommend desktop mode to achieve action without simultaneous multiple button input.

4.5 Voice commands

User Need 5: A user with limited mobility may want to be able to use Voice Commands within the immersive environment, to navigate, interact and communicate with others.

Requirement	Conformance Level	Remarks and Explanations
REQ 5a: Ensure Navigation and interaction can be controlled by Voice Activation.	**Does Not Support**	Our platform does not currently support voice commands. We are reviewing user input methods as part of the Accessibility UI project on our roadmap. Part of this will explore how we support voice commands in edify.
REQ 5b: Voice activation should preferably use native	**Does Not Support**	Our platform does not currently support voice commands.

screen readers or voice assistants rather than external devices to eliminate the additional step needed to pair devices.		We are reviewing user input methods as part of the Accessibility UI project on our roadmap. Part of this will explore how we support voice commands in edify.

4.6 Colour changes

User Need 6: Colour blind users may need to be able to customise the colours used in the immersive environment. This will help with understanding affordances of various controls or where colour is used to signify danger or permission.

Requirement	Conformance Level	Remarks and Explanations
REQ 6a: Provide customised high contrast skins for the environment to suit their particular luminosity and colour contrast requirements.	**Does Not Support**	We are currently developing adaptive lighting controls within environments. High contrast skins or in-environment filters are coming soon on our Roadmap.

4.7 Magnification context and resetting

User Need 7: Screen magnification users may need to be able to check the context of their view in immersive environments.

Requirement	Conformance Level	Remarks and Explanations
REQ 7a: Allow the screen magnification user to check the context of their view and track/reset focus as needed.	**Fully supports** - desktop **Fully supports** - VR	Desktop mode is compatible with screen magnification programs. Screen magnification in VR mode can be supported through use of a virtual desktop and VR magnification app.
REQ 7b: Where it makes sense (such as in menus) interface elements can be enlarged and the menu reflowed to enhance the usability of the interface up to a certain magnification requirement.	**Does Not Support**	In-experience customisable menus and user interfaces are on our product roadmap (UI Accessibility Update) to enable UI magnification without 3rd party software.

4.8 Critical messaging and alerts

User Need 8: Screen magnification users may need to be made aware of critical messaging and alerts in immersive environments often without losing focus. They may also need to route these messages to a 'second screen' (see **REQ 14** Second Screen).

Requirement	Conformance Level	Remarks and Explanations
REQ 8a: Ensure that critical messaging, or alerts have priority roles that can be understood and flagged to AT, without moving focus.	**Not Applicable** **Does Not Support**	Critical live messaging is not currently part of our immersive experience. Barrier: VR format does not support a hardware second screen, however our virtual home panel can act as one. As mentioned in REQ 7 – customisable menus/UI are planned into our roadmap as part of a UI Accessibility Update and will include routing critical messaging to our home panel 'second screen'.

4.9 Gestural interfaces and interactions

User Need 9: A blind user may wish to interact with a gestural interface, such as a virtual menu system.

Requirement	Conformance Level	Remarks and Explanations
REQ 9a: Support touch screen accessibility gestures (e.g. swipes, flicks and single, double or triple taps with 1, 2 or 3 fingers). See **REQ 14** Second Screen.	**Not Applicable** **Does Not Support**	Barriers: our product doesn't currently support touch screen devices. Future development plans include a touch screen Companion App.
REQ 9b: Using a virtual menu system - enable a self-	**Does Not Support**	Coming Soon as part of our UI Accessibility Update (as also mentioned for REQs 7, 8).

voicing option and have each category, or item description, spoken as they receive focus via a gesture or other input. As the blind user gestures to trigger both movement and interaction they may get more detail about items that are closer to them. The user must be allowed to query and interrogate these items and make selections.		Our Support Team is on hand to advise on VR hardware that supports self-voiced commands or gaze control.
REQ 9c: Allow for the re-mapping of gestures to associate different actions with different input types or gestures. This may be a virtual switch that can map to new macros on the fly. This will allow the user to change defaults and employ gestures to carry out new actions offered by the immersive environment as required.	**Does Not Support**	Button re-mapping option coming Soon as part of our UI Accessibility Update. Gesture re-mapping development to be phased in as hand tracking becomes more widely adopted in VR. Our Support Team can advise on hardware or alternative controllers that currently allow gestural re-mapping. Barriers: Hand tracking not available widely across all VR hardware. In future we will support hand gesture re-mapping in our drive to be as device-agnostic and accessible as possible.

4.10 Text description transformation

User Need 10: A deaf or hard of hearing person, for whom English or any other written language, may not be their first language and may have a preference for signing of text alternatives or equivalents.

Requirement	Conformance Level	Remarks and Explanations
REQ 10a: Allow object or item text descriptions to be presented to the user via a signing avatar.	**Does Not Support**	We plan to conduct research into a solution around this with our VR accessibility research collaborators at the University of Glasgow. Barriers: The 5 finger hand tracking capability required for accurate signing in VR is currently limited to a very small number of devices. Signing AI assistants are also some way off as this requires advanced AI R&D.

4.11 Safe harbour controls

User Need 11: People with Cognitive Impairments may be easily overwhelmed in Immersive Environments.

Requirement	Conformance Level	Remarks and Explanations
REQ 11a: Allow the user to set a 'safe place' - quick key, shortcut or macro.	**Fully Supports**	Our Support Team can advise on devices that allow setting of a 'safe space'. Coming soon as part of our UI Accessibility Update the user will be able to set or even create their own 'safe place' to their own specification.

4.12 Safe harbour controls

User Need 12: Users with cognitive impairments may be adversely affected by spending too much time in any immersive environment or experience, or may lose track of time.

Requirement	Conformance Level	Remarks and Explanations
REQ 12a: Allow the user to set a time limit for any immersive session.	**Fully Supports**	Our Support Team can advise on hardware or 3rd party apps that currently allow users to impose a time limit or programmes breaks. Timer within edify planned into roadmap as part of our UI Accessibility Update.

4.13 Reset focus and orientation

User Need 13: A screen magnification user or user with a cognitive disability or learning impairment may easily lose focus and be disorientated in immersive environments.

Requirement	Conformance Level	Remarks and Explanations
REQ 13a: Ensure the user can reset and calibrate their orientation/view in a device independent way.	**Fully Supports**	Our Support Team can advise on devices that currently allow resetting via gaze or voice control. Reset view within edify coming soon as part of our planned UI Accessibility Update.
REQ 13b: Ensure field of view in Immersive environments, are appropriate, and can be personalised - so users are not disorientated.	**Partially Supports**	Scope view is currently available in some edify lessons. It's on our roadmap to make this viewing option available for users who would like to limit their field of vision.

4.14 Second screen

User Need 14: A deaf-blind user communicating via a RTC application in XR may have sophisticated 'routing' requirements for various inputs and outputs and the need to manage same.

Requirement	Conformance Level	Remarks and Explanations
REQ 14a: Allow the user to route text output, alerts, environment sounds or audio to a braille or other second screen device.	**Does Not Support**	Barrier: our product doesn't currently offer a second screen mode. Future development plans include a touch screen Companion App which would allow users to route text output or other elements of the experience to a second screen. (Desktop or VR + second screen.)
REQ 14b: Ensure that the user can manage the flow of critical messaging, or content to display on a second screen.	**Does Not Support**	Barrier: our product doesn't currently offer a second screen mode. Routing of critical messaging and content to a second screen/device coming soon as part of our UI Accessibility Update.
REQ 14c: Support touch screen accessibility gestures (e.g. swipes, flicks and single, double or triple taps with 1, 2 or 3 fingers) on a second screen device to allow the user to navigate menus and interact.	**Does Not Support**	Barriers: our product doesn't currently support touch screen devices or a second screen. Future development plans include a touch screen Companion App which would allow users to route text output or other elements of the experience to a second screen. (Desktop or VR + second screen.)

4.15 Interaction speed

User Need 15: Users with physical disabilities or cognitive and learning disabilities may find some interactions too fast to keep up with or maintain.

Requirement	Conformance Level	Remarks and Explanations
REQ 15a: Allow users to change speed at lh they travel through an immersive environment, or can perform interactions.	**Partially Supports**	In VR mode, the user can travel by teleporting at their preferred pace. Desktop mode currently offers one speed of travel using keyboard navigation. Teleporting/speed control in desktop mode planned into the roadmap. It's currently possible to control the speed of animations via the UI.
REQ 15b: Allow timings for interactions or critical inputs to be modified or extended.	**Not Applicable**	In edify there are no timed interactions or time limits for input.
REQ 15c: Provide an XR angel or helper for the user with a cognitive or learning disability.	**Partially Supports**	Edify currently offers Onboarding and Support teams. Future improvements planned le in-le helper option.
REQ 15d: Provide clear start and stop mechanisms.	**Partially Supports**	Edify allows start/stop in 2 clicks. We plan to provide 1 click stop mechanisms by way of shortcut/verbal safe word as part of the UI Accessibility Update.

4.16 Avoiding sickness triggers

User Need 16: Users with vestibular disorders, Epilepsy, and photo sensitivity may find some interactions trigger motion sickness and other affects. This may be triggered when doing teleportation or other movements in XR.

Requirement	Conformance Level	Remarks and Explanations
REQ 16a: Avoid interactions that trigger epilepsy or motion sickness and provide alternatives.	**Fully Supports**	All interactions are accessible by design. By using animation UI controls the user can pause/stop any animations that cause unease. Aside from animations, the user maintains control of locomotion in desktop/VR modes.
REQ 16b: Ensure flickering images are at a minimum, will not trigger seizures (more than 3 times a second), or can be turned off or reduced.	**Fully Supports**	All content is accessible by design. We work to minimum frame rates to ensure FPS rate is well outside of seizure-inducing rates. By using animation UI controls the user can pause/stop any animations that cause unease.

4.17 Spatial audio tracks and alternatives

User Need 17: Deaf and hard of hearing users may need spatialized audio content with audio description in order to perceive it.

Requirement	Conformance Level	Remarks and Explanations
REQ 17a: Provide spatialized audio content and audio descriptions to emulate three dimensional sound forms in immersive environments.	**Partially Supports**	edify currently supports positional audio. Spatial audio is planned into our roadmap.

4.18 Captioning, Subtitling and Text: Support and customisation

User Need 18: Users with vision impairments may need to customise captions, subtitles and other text in XR environments.

Requirement	Conformance Level	Remarks and Explanations
REQ 18a: Provide support for captioning and subtitling of multimedia content.	**Partially Supports**	In VR by proxy mode user can provide captions in two ways. For multimedia content it is possible to import pre-written captions/subtitles to accompany 2D media files. Live auto-captions are also supported via Teams/Zoom/conferencing software integration.
REQ 18b: Allow customisable context sensitive reflow of captions, subtitles and text content in XR environments. The suitable subtitling area may be smaller than what is required currently for television [inclusive-seattle].	**Partially Supports**	Customisable solutions are currently offered by integrated 3rd party conferencing software e.g. Zoom/Teams offer caption resizing options, however these are currently limited. Barrier: 3rd party conferencing captioning solutions don't currently offer context-sensitive reflow. We will soon support this more fully with the development of an Accessible UI. This will include an option to reflow text/content to a second screen.

4.19 Mono audio option

User Need 19: Users with hearing loss in just one ear may miss information in a stereo or binaural soundscape.

Requirement	Conformance Level	Remarks and Explanations
REQ 19a: Allow mono audio sound to be sent to both headphones so that the user can perceive the whole soundscape through either ear. [mono-ios].	**Partially Supports**	In VR by proxy mode, preferred audio settings can be customised via device or integrated 3rd party conferencing software e.g. Zoom/Teams.