

Technology Supported Learning Environment (TSLE) Scale

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Scoring Key for Likert Scale

Strongly Disagree = 1	Found no evidence
Disagree = 2	Found minimal evidence
Agree = 3	Easily found evidence
Strongly Agree = 4	Found an abundance of evidence

1.0 Usability

Usability is the "fulfillment of functional requirements... performance and well-being, mainly from the user's perspective" (Iwarsson & Stahl, 2003, p. 60). It is further defined the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use. (Grassi et al., 2017)

1.1 TSLE facilitates access across operating systems (PC or Mac), devices (phones, tablets, laptops, desktops), and web browsers (Chrome, Safari, Firefox).	1234 Strongly Disagree○ ○ ○ ○Strongly Agree
1.2 TSLE offers an intuitive interface.	1234 Strongly Disagree○ ○ ○ ○Strongly Agree
1.3 TSLE uses a variety of applications (video, voice, text) to demonstrate learning.	1234 Strongly Disagree○ ○ ○ ○Strongly Agree

2.0 Feedback

Feedback gives learners meaningful insights into their progress, helping refine learning strategies and improve outcomes. Technology facilitates this process by offering instant, personalized feedback and enabling peer-to-peer and instructor-to-learner communication (Hattie & Timperley, 2007; Allen, 2016).

2.1 TSLE provides instant, automated, and personalized feedback to guide learners instantly.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree
2.2 TSLE enables peer-to-peer feedback through collaborative tools like shared documents, forums, or group assessments.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree
2.3 TSLE allows educators to provide structured, custom feedback on learner submissions.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree

3.0 Scaffolding

Scaffolding provides learners temporary support to accomplish tasks they cannot yet complete independently, using step-by-step guidance or adaptive technologies. This support decreases as learners gain competence, fostering independence (Wood, Bruner, & Ross, 1976; Rambe, 2012).

3.1 TSLE provides step-by-step guidance or prompts tailored to learners' current skill levels.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree
3.2 TSLE offers self-assessment opportunities to evaluate their learning and provides review/ refresher content for missed items.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree

3.3 TSLE offers tools (e.g., hints, examples, models, or templates) to aid learners in solving complex problems.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree
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4.0 Accessibility

Accessibility is a measurement of a user's ability to use products/services, the extent to and ease with which they can meet their goals. Designing with accessibility in mind enables people with various abilities and disabilities to perceive, understand, navigate, interact with, and contribute to the web (UX Magazine, 2020). In Learning Technology, accessibility involves features like text-to-speech or closed captioning to accommodate diverse learners (Seale, 2014).

4.1 TSLE offers multiple ways to engage, represent, and express learning.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree
4.2 TSLE allows control of media. Some examples are video playback, turning on captioning, and increasing/decreasing the volume.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree
4.3 TSLE reduces cognitive load by using clear labeling, including white space, eliminating unnecessary text/visual elements, and employing a consistent hierarchy and navigation design.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree

5.0 Social Interaction

Social interaction in a TSLE involves creating spaces for communication, collaboration, and knowledge-sharing among instructors and peers. It fosters active engagement, community building, and collective learning through synchronous and asynchronous methods (Koh, 2015).

5.1 TSLE facilitates collaborative learning experiences through group projects and peer discussions.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree
5.2 TSLE incorporates asynchronous communication channels such as messages, forums, blogs, and recorded videos for flexible interactions.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree
5.3 TSLE includes synchronous tools like live chats, video conferencing, and shared screen options to support real-time collaboration.	1 2 3 4 Strongly Disagree ☐ ☐ ☐ ☐ Strongly Agree

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