

Code Scheme for Systematic Literature Review on Dialogic Feedback and Learning Analytics

Code	Description
Contribution	These set of codes are used to capture the contribution of the research paper
Tools	The output of the research paper is a new LA tool that facilitate dialogic feedback
Dashboards	The output of the research paper is a LA dashboard that facilitate dialogic feedback
Conceptual framework	The output of the research paper is a conceptual framework that facilitate dialogic feedback
Analysis Method	The output of the research paper is a method to derive insights from the dialogic feedback process
Dialogic principles	This set of codes captures the dialogic principles that have been focused by the study.
Providing emotional and relational support	LA artefacts have been used to provide emotional and relational support to students.
Maintaining dialogue between agents	LA artefacts have been used for facilitating and maintaining dialogue between different feedback agents (e.g., educators, students, peers, and AI).
Facilitating agent autonomy	LA artefacts have been used to ensure that the voices and needs of human feedback agents (e.g., educators, students, and peers) are respected and meaningfully integrated into the dialogue.
LA Data Types	This set of codes captures the different types of data collected, used, or visualised by LA tools, dashboards, other technological artefacts, or research for facilitating feedback dialogue or deriving insights about it.
Trace data	Log data (e.g., clicks, views) that captures students' interactions with learning platforms or tools is used to facilitate the feedback dialogue or collected to derive insights about it.
Assessment data	Assessment data (e.g., grades) is used to support feedback agents in facilitating the feedback dialogue or collected to derive insights about it.
Demographic data	Demographic data (e.g., age, gender, year) is used to facilitate the feedback dialogue or collected to derive insights about it.

Academic history data	Historical academic data from current or past cohorts (e.g., grade distributions, study pathways) is used to facilitate the feedback dialogue or collected to derive insights about it.
Academic Performance data	Academic performance data from students' current performance is used to facilitate the feedback dialogue or collected to derive insights about it.
Survey data	Survey data is used to facilitate the feedback dialogue or collected to derive insights about it.
Interview data	Interview data is used to facilitate or evaluate the feedback dialogue or collected to derive insights about it.
Feedback data	Data related to the feedback (e.g., feedback requests, educators or peers feedback, common themes derived from feedback, etc.) process is used to facilitate the dialogue or collected to derive insights about it.
Conversational data	Conversational data from student–teacher, student–bot, student–peer, student–forum or teacher–bot interactions is used to facilitate the feedback dialogue or collected to derive insights about it.
Eye tracking data	Eye tracking data is used to facilitate the feedback dialogue or collected to derive insights about it.
Other	Other data types not listed above are used to facilitate the feedback dialogue or collected to derive insights about it.
LA methods	This set of codes captures the different learning analytics (LA) methods employed by tools, dashboards, other technological artefacts, or research to facilitate dialogic feedback processes and derive insights from collected data.
Information visualisation	Information visualisation techniques are used to represent learning data and facilitate dialogic feedback processes, or to derive insights about the feedback process.
Data mining	Data mining techniques are used to derive insights from learning data in order to support or understand dialogic feedback processes.
Text Analytics	Text analytics techniques are used to derive insights from textual data to facilitate or analyse dialogic feedback processes.
Social Network Analysis	Social network analysis methods are used to explore relationships and interactions that inform dialogic feedback processes.
Epistemic Network Analysis	Epistemic network analysis method is used to derive insights about how learners build and connect knowledge during dialogic feedback processes.
Process Mining	Process mining is used to analyse sequences of feedback agents' actions in order to understand and support dialogic feedback processes.
Other	Other data analysis methods are used to derive insights into the feedback process that are not captured by the above categories.

LA Stakeholders	This set of codes is used to capture the key stakeholder(s) targeted by the LA tool, dashboard, other technological mechanisms, or research to engage in the dialogic feedback process or to derive insights about their role or interactions within it.
Students	Students are identified as a key stakeholder group to engage in the dialogic feedback process or to derive insights about their interactions within it.
Educators	Educators are identified as a key stakeholder group to engage in the dialogic feedback process or to derive insights about their facilitation, interpretation, or response within it.
Peers	Peers are identified as a key stakeholders group to engage in the dialogic feedback process or to derive insights about their role in providing or receiving feedback within it.
AI agents	AI agents are identified as key stakeholders designed or deployed to participate in the dialogic feedback process or to support insights about interactions within it.
LA designers	LA designers are identified as a key stakeholder group involved in developing or configuring the LA artefacts to support dialogic feedback, or for implementing recommendations derived from it.
LA Objectives	This set of codes are used to capture the main objective/s of the the LA tool, dashboard, any other technological means to facilitate dialogic feedback or the research study
Reflection	The LA artefact allows or supports students to critically evaluate their work or teachers to critically evaluate their teaching practice
Adaption	The LA artefact allows students to make necessary changes to their work based on the feedback or teachers to make changes to their teaching practice
Personalisation	The LA artefact is based on students academic characteristics or teacher specific characteristics
Emotional Management	The LA artefact supports students to better manage emotions generated from feedback or teachers to help students with managing their emotions
Scaffolding feedback provision	The LA artefact supports teachers or students to better draft the feedback messages
Self-regulation	The Feedback dialogue facilitated by the LA artefact helps students to self assess, seek and deal with feedback, confidence in the correctness of their work, understanding of success and failure and seeking help.
Motivation	The LA artefact supports students or teachers to increase their motivation to engage with the feedback process
Engagement	The LA artefact increases student or teacher engagement with the dialogic feedback process

Low cognitive load	The LA artefact supports to reduce the mental load for teachers and students within the feedback process
Low procrastination	The LA artefact supports to reduce procrastination for students and teachers through reminders
Self-efficacy	The LA artefact supports to create a positive experience for students or teachers with the dialogic feedback process
Transactional distance	The LA artefact supports students and teachers with consistent reports or guiding messages to identify shortcomings
Monitoring	The LA artefact supports students or teachers to track academic activities or interactions with feedback
Assessment	The LA artefact supports students or teachers to better assess the learning artefacts using the dialogic feedback process
Prediction	The LA artefact supports students to better predict their learning behaviours based on feedback or teachers to identify students that need more support
Recommendation	The LA artefact supports or allow to provide feedback or suggestions for students or teachers to revise their work or feedback
Satisfaction	The LA artefact supports to increase the teachers' or students' satisfaction of the dialogic feedback process
Time management	The LA artefact supports students or teachers to better manage their time within the dialogic feedback process
Assistance	The LA artefact supports students to improve their work using the feedback or teachers to improve their feedback
Other	The LA artefact focuses on objectives not listed above.
Effective elements of dialogic feedback	This set of codes is used to capture the various effective elements of dialogic feedback that are promoted or facilitated by LA tools, dashboards, other technological mechanisms, or discussed in the study.
Continuous process	The research paper conceptualises dialogic feedback as an ongoing, continuous process.
Temporality of feedback (asynchronous)	The research paper frames dialogic feedback as a process that occurs with a time lag (i.e., the dialogue does not happen at the same time).
Temporality of feedback (synchronous)	The research paper frames dialogic feedback as a process that occurs in real-time (i.e., the dialogue happens at the same time).
Conversational	The research paper emphasises dialogic feedback as a responsive conversational exchange between feedback agents (e.g., educators, students, peers, chatbots, or AI agents).
Feedback level (Task level, process level, self-regulation level, self level)	The research paper considers dialogic feedback as occurring across multiple levels, such as task, process, self-regulation, and self.

Interactive learning	The research paper promotes interactivity between the agents within the dialogic feedback process to enhance learning
Technology mediation	The research paper describes how dialogic feedback is facilitated through technological means, such as LA tools or dashboards.
Actionable information	The research paper highlights the importance of communicating specific, actionable steps students can take to improve their future learning tasks.
Strengths and weaknesses	The research paper highlights the importance of communicating the strengths and weaknesses students demonstrate in their learning tasks.
Expected standards	The research paper highlights the importance of communicating the expected standards or criteria for a learning task.
Clarity	The research paper highlights the importance of clear communication within the dialogic feedback process.
Personalisation	The research paper aims to personalise the feedback dialogue based on individual human agent characteristics or needs.
Agency	The research paper emphasises the importance of agency of the human agent within the feedback process, or contains features that support or trigger their agency.
Intercultural competence	The research paper promotes awareness of socio-cultural diversity and feedback cultures, or includes features designed to support intercultural competence in feedback.
Self-regulation	The research paper supports or triggers student self-regulation in the feedback process, or highlights its importance.
Mutual trust and respect	The research paper emphasises the importance of mutual trust and respect in the dialogic feedback process, or includes features designed to foster it among feedback agents.
Affirmation	The research paper emphasises the importance of affirming students' efforts in the feedback process, or includes features that do so.
Learning Theory	This set of codes captures the learning theories that are either explicitly mentioned or conceptually aligned with the feedback design or analysis presented in the research paper.
Social Constructivism	The research paper explicitly mentions social constructivism, or presents feedback as a socially interactive process involving peers or instructors to co-construct understanding.
Social Cultural Theory	The research paper explicitly mentions social cultural theory, or embeds feedback within culturally mediated social interactions (e.g., discussion, negotiation, collaboration).
Meta Cognitivism	The research paper explicitly mentions metacognitive theory, or presents feedback as a means for promoting self-generated reflection and self-monitoring.

Connectivism	The research paper explicitly mentions connectivism, or conceptualises dialogic feedback as a networked process in which learners form connections across people, digital tools, and information sources — with technology playing a central role in enabling and navigating these connections.
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