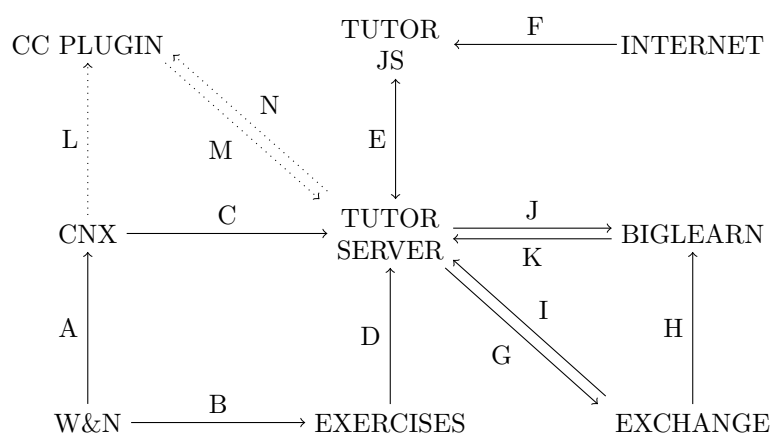


OpenStax Component Overview

W&N	Words and Numbers team (remote); providers of assessments (aka exercises, questions)
CNX	archives/serves book content
EXERCISES	archives/serves assessments
EXCHANGE	archives/serves “de-identified” learners’ exercise responses and grades
TUTOR JS	browser-based, user-facing UI code
TUTOR SERVER	server-based, behind-the-scenes coordinator for Course activities (managing rosters, assignments, content, etc.)
BIGLEARN	machine-learning (ML) algorithms which understand/predict learners’ current level of understanding estimates (CLUEs) and recommend personalized exercises
CC PLUGIN	Concept Coach javascript plugin



- A W&N provides content-based assessments to CNX
- B W&N provides exercises and exercise-tag spreadsheets for import into EXERCISES
- C TUTOR SERVER pulls/processes book content from CNX
- D TUTOR SERVER pulls/processes assessments from EXERCISES
- E TUTOR SERVER and TUTOR JS exchange information based on user's actions
- F TUTOR JS pulls some content (images, videos, etc.) from internet sites (Khan Academy, etc.) as directed by TUTOR SERVER's processed content
- G TUTOR SERVER (a) requests learner “de-identifiers” from EXCHANGE and (b) sends “de-identified” learner responses and grades to EXCHANGE as learners complete assessments in homeworks, readings, etc.
- H EXCHANGE sends BIGLEARN learner “de-identifiers” and “de-identified” learner responses and grades
- I EXCHANGE returns learner “de-identifiers” to TUTOR SERVER
- J TUTOR SERVER sends (a) assessment ids and tags and (b) assessment pool information to BIGLEARN and requests (a) personalized exercises and (b) learner CLUEs from BIGLEARN
- K BIGLEARN returns (a) assessment pool identifiers, (b) personalized assessment selections and (c) learner CLUEs to TUTOR SERVER
- L CNX places CC PLUGIN in CC-enabled pages
- M CC PLUGIN (a) requests assessments from TUTOR SERVER and (b) sends learner responses to TUTOR SERVER
- N TUTOR SERVER sends assessments to CC PLUGIN