## From Closing the Gap, Turning Action into Data


<table>
<thead>
<tr>
<th>Desire2Learn Learning Suite</th>
<th>Instructure Canvas</th>
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<tbody>
<tr>
<td>Standard</td>
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</table>

### Media support:
Instructors can add rich media to their courses. Videos from YouTube™ can be inserted with ease and the product suite handles Creative Commons licensing on Learning Objects and images from Flickr® quickly and easily. **Desire2Learn Mobile Web:** Learners can stay connected to course Content, News, Bookmarks, Grades, Discussions, and Calendars anywhere, anytime, through BlackBerry®, iPhone, iPad, iPod touch and Android™ devices. The Mobile Web platform can be extended across an entire organization or used for specific programs. iPhone, iPad and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries.

### Content Access

### Design and Development

**Desire2Learn® Course Builder:** Through an intuitive and accessible drag-and-drop interface, Course Builder organizes and manages the development of a course, its lessons, and its materials, building on the course blueprint provided by the Instructional Design Wizard™ solution. Its integration with Learning Environment tools provides a seamless experience for creating items and associating

A variety of teaching styles and methods can be accommodated in the Instructure LMS. Whether a course is face-to-face, instructor-led or self-paced, the tools in Canvas will allow instructors to build their course according to their desired teaching styles. A good example of this is that teachers...
Desire2Learn Learning Suite

them with one another, including alignment of standards with content and assessment, from one interface, providing a consolidated view of the course.

Instructure Canvas

can create modules that have prerequisites, meaning that the module is dependent on a previous module or specific assignments being completed. The prerequisites can be granular, down to viewing certain portions of content, and/or obtaining a certain score on an assignment or quiz, and/or contributing to a discussion. This allows courses to be truly self-paced and the instructor can feel confident that the student is moving through the material in the established way. Drag-and-drop to reorder content within modules or to move content between modules or in any of the file repositories. Deleting content is accomplished with the "recycle bin" function. All files can be locked or unlocked manually at any time or set for unlock at predetermined dates and times. The Rich Content Editor is a WYSIWYG editor. Anything that can be viewed in a browser can be inserted as content into the Rich Content Editor. HTML code can be entered directly into the editor by switching to the HTML view. Spell check is provided by the browser’s native spell check capabilities. The Rich Content Editor is used to create assignments, announcements, discussions, quizzes and other Canvas content. The toolbar of the Rich Content Editor enable users to insert video and audio, tables, math formulas, and URL links. Video and audio
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<td>can be recorded directly into the content using the camera and microphone of the user’s browser-enabled computing or mobile device. Users can also embed or link to any file, image or wiki page. Once the content is created and saved, the user can test the content and make any necessary modifications by simply loading the content into the Rich Content Editor, making the changes and resaving the content.</td>
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**Curriculum Evaluation**

Optional

Desire2Learn® Analytics provides the optional ability to track and compare academic performance, learning achievement, curriculum standards, and accreditation compliance.

**Instructure Canvas**

Standard

Rubrics are one of the most powerful tools in Canvas, giving instructors a structured, consistent, and prescriptive framework for assessing students’ assignments, participation, and progress.

When building a new course, instructors can either create their own rubrics or reuse previously created rubrics. Rubrics can be created for a course, a department, or the entire institution. Rubrics provide the association between tests and test questions and learning outcomes. Learning outcomes can be aligned to rubrics for institution-wide initiatives such as accreditation. Canvas rubrics are easy to create from sets of instructor-defined assessment criteria. Each criterion has a total point value associated with two of more ratings, ranging from “No Marks” to “Full Marks” and
**Desire2Learn Learning Suite**

Desire2Learn® Instructional Design Wizard™: By leveraging an instructional design framework and building on competencies and other system tools, the Instructional Design Wizard solution walks teachers and course designers through the creation of pedagogically sound courses containing a variety of learning experiences (including groupwork and project based learning) focused on appropriate learning levels. It promotes an effective course structure, and ensures the alignment of content and assessment with instructional strategies and course objectives.

**Instructure Canvas**

Instructure Canvas was designed to support a flexible pedagogy, with no restrictions on teaching styles, frameworks or use of new Web technologies.

**Instructional Design**

Comprehensive release conditions: Accessibility can be improved and individual learning styles accommodated by offering variable access conditions, including mastery of a learning objective, to allow for the creation of custom learning paths.

**Plan Book/Lesson Plans**

Desire2Learn® Course Builder: Through an intuitive and accessible drag-and-drop interface, Course Builder organizes and manages the development of a course, its lessons, and its materials, building on the course blueprint provided by the Instructional Design Wizard™ solution. Its integration with Learning Environment tools provides a seamless experience for creating items and associating them with one another, including alignment of standards with Canvas Modules are used to organize and sequence course content. Content in modules can be reorganized and resequenced by drag-and-drop. When building a module, instructors can add assignments, files, content pages, discussions, text headers, external URLs and eternal tools using the "Add Item" interface.
Desire2Learn Learning Suite
content and assessment, from one interface, providing a consolidated view of the course. **Custom learning paths:** Courses can be designed with customized workflows by connecting various tools together like Release Conditions and Intelligent Agents, which would allow for customized learning paths to measure performance-based learning. As a result, the learning environment will support discovery and investigation as well as allow monitoring of performance, knowledge and abilities.

Gradebook
The Desire2Learn® Gradebook is a tool that manages online grades for learners. With a powerful feature set and set-up wizard, the Gradebook simplifies tracking, calculating and the viewing of grades. Flexible setup options provide freedom to implement the grading system that works best for your individual course. To save time, grades are automatically published from Learning Environment assessment tools, can be entered in a simple spreadsheet-style interface, can be imported from .csv file format, or can be entered from integrated tools using web services.

Instructure Canvas
Standard
Canvas gradebook: Canvas incorporates a gradebook that provides ease of use for students and instructors, and functionality for the input and distribution of grades. The grade book can calculate weighted grades; assignments can be organized into groups for weighting as well. Canvas can also assign grades by percentage, complete/incomplete, letter grade or by points. The gradebook is a full-featured management tool that supports simultaneous viewing of grade information across all courses, instructor notifications when assignments are submitted, and student notifications when assignments are graded. A single, central interface allows instructors to see all students enrolled in the course, where grade additions or changes can be made. The gradebook can be exported from and imported
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<td>Portfolio Management</td>
<td>into Excel via comma-separated values (CSV) formatted data files.</td>
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<tr>
<td><strong>Desire2Learn® Learning Environment</strong> (base product) offers personal file storage and sharing functionality at no additional cost. Specific tools within Learning Environment support personal portfolio space and sharing: the Locker Tool and the Blog Tool. Both of these tools are part of the core product and do not carry any additional cost. <strong>Desire2Learn ePortfolio:</strong> Desire2Learn ePortfolio is an optional product offering that allows users to upload, share and reflect on their eLearning journey. Desire2Learn ePortfolio extends traditional portfolio functionality to support flexible assessment workflows and allow users to leverage the power of social networking specific to learning.</td>
<td>Standard Canvas now has an ePortfolio solution.</td>
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<tr>
<td><strong>Collaboration Tools</strong></td>
<td>Standard Collaboration tools: Canvas provides integration with both Google Docs and EtherPad for document sharing and collaboration. Canvas promotes collaboration between students by providing integrated Web 2.0 tools. Users can upload files for sharing into content areas within Canvas, including discussion board responses, messages, assignments, quizzes, wiki pages and other content. Instructors can use peer review in groups for grading assignments. Canvas provides</td>
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<td>Desire2Learn® Learning Environment enables learning-based networking through flexible group management options that are integrated with learning tools, and provides communication tools that can be customized to enforce security policies and promote engaging usage. Whether collaboration is happening through email, discussion groups, social profiles such as Facebook, Twitter™ and Google+™, instant messaging, synchronous tools, or blogs, students and instructors have the ability to communicate and work together in an environment that best meets their needs.</td>
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Desire2Learn Learning Suite

for file sharing within student groups using Tinychat. Groups in Canvas supply a course-like environment with a group-specific activity stream, announcements, discussions, a private wiki space, a files repository, and chat.

Instructure Canvas

Standard

Assessments: Assessment functionality, including quizzes, dropboxes, discussions, surveys and self-assessments, allow instructors to assess user performance within the learning environment. Students can upload assignments to drop boxes and take quizzes within the Web-based environment. Learning Environment includes a complete toolkit of question styles that can be adapted depending on the type of assessment and appropriate pedagogy. Questions can be created with varying difficulty and randomized within a quiz. Assessments can also be aligned to standards through meta-tagging.

Online Assessments

Standard (No. 3 Analytics Are Optional)

There are three ways in which reporting supports statistical analysis of assessment results: 1. Quiz Statistics directly from the Quizzes Tool 2. Basic reporting built into Desire2Learn® Learning Environment 3. Insightful, robust analysis provided by optional Desire2Learn product offering: Desire2Learn Analytics Quiz Statistics With Desire2Learn Learning Environment you can export quiz statistics and reports to a CSV file for data analysis. The

Class Data Management

Canvas’ grade management provides advanced gradebook functionality and the ability to define additional columns to enter, maintain and report on per-student information, such as attendance, demographics, program participation, interventions, and, of course, test scores. Clicking on the name of the assignment or assessment at the top of a column accesses the content and rubric. Clicking on an individual cell in the gradebook accesses that student’s submission and any feedback for the corresponding assignment or assessment.

Standard

Canvas reflects the structure of the institution in all of the functions and features of an advanced LMS, such as sharing course content, aligning learning outcomes, supporting accreditation reporting, and reusing assessment rubrics and test questions. Canvas applies inheritance logic to its course and account management down the institution’s organizational and management hierarchy.
CSV file contains all pertinent information on the quiz so that you can query, sort and evaluate the data without being connected to the learning management system. **User Stats** User Stats CSV files contain performance data by user, including: the user’s "Org Defined ID," user name, first name, last name, quiz score, the value the quiz was graded out of, the user’s score as a percentage, and the class average. **Questions Stats** Reports allow you to gather information on how students have performed on assessments. Reports are different from quiz statistics in that they allow you to collect more types of information than is available through the statistics. They are also printable. The following types of reports are available for assessments: • **Question Statistics:** An “overall” report that can show the class average, score distribution, and the percentage of correct responses for each question. • **Question Details:** A more-segmented report that can show a breakdown of all the responses received for each question and the average grade received on each question. • **User Statistics:** These can be used to provide class average and score distribution information to help you see how your class performed as a whole. • **Attempt Details:** This report allows you to view each user’s actual quiz. • **User Attempts:** This report reports user’s total number of attempts.

Desire2Learn® Analytics is a supplementary analysis and data mining product available for the Desire2Learn Learning Suite. Analytics starts off by sourcing key information from the Learning Suite and then significantly extends this
### Desire2Learn Learning Suite

by associating Internet-usage-based details. This provides the data that institutions need to measure, understand and predict student performance, instructor effectiveness and course component design.

Standard (Learning Repository Is Optional)

Within Desire2Learn® Learning Environment, users create a wide variety of question types that can be used in quizzes, surveys, and self assessments. These questions can be copied and used in other courses, and can also be published to Learning Repository to promote sharing and re-use. Questions in quizzes can also be associated to Learning Objectives to power objective-based assessment and tracking. Quizzes and questions can also be imported from .csv files, from exports of other systems, from standard course packages such as IMS Common Cartridge and SCORM®, or through third-party tools such as Respondus®. For creating other assessments in Learning Environment such as dropbox folders where users upload file submissions, or discussions where users contribute to a class discussion, instructors can use a rich HTML editor, attach files, and record audio or video to help describe the assessment and its expectations. **Learning Repository** Desire2Learn® Learning Repository is a content and file management system that offers a full-featured learning object repository, which incorporates industry metadata standards and specifications, such as IEEE LOM, Dublin Core, GEM and CanCore to support content and tool

### Instructure Canvas

Test, assessment and survey creation tools: Canvas incorporates a robust assessment feature that allows for the easy creation of tests, assessments and surveys, as well as being able to draw questions from question banks. Questions, and their answers, can be created in the Canvas rich media text editor to include graphics, images, audio and video, and Web links, and can be selected from question banks, individually or randomly, or through the integration of QTI format authoring tools like Respondus.

### Item Creation and Storage

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**Desire2Learn Learning Suite**

Desire2Learn Learning Repository also supports the creation, upload/download and use of SCORM® compliant IMS Content Packages. Storage space is allocated based on committed licensing. Additional storage capacity can be purchased as required to support customer data growth. Standard storage in a hosted scenario is limited to 20MB per FTE.

**Scoring**

A wide range of assessment and reporting options within Desire2Learn® Learning Environment allow educators to collect course data at a granular level. **Rubrics Tool**: Desire2Learn Learning Environment supports holistic and analytic rubrics with associated achievement levels. Instructors can use rubrics to manually or automatically evaluate learner performance on activities linked to competencies and learning objectives conducted through a variety of course tools. **Inline Grader**: Within the Dropbox tool, the capability to view documents inline which allows the process to all be done from within the learning system. Instructors, teachers, or trainers can provide feedback and grading (including by rubric) while simultaneously viewing the submitted assignment - no downloading or uploading required. **Assignment Grader (Optional)**: Whether instructors are online or offline, Desire2Learn Assignment Grader provides quick and easy access to assignment from a mobile tablet. With Desire2Learn Assignment Grader instructors are able to provide meaningful feedback and grading.

**Instructure Canvas**

**Scoring**

Grading tools: Instructors can leave private grading notes/comments for the student. These notes/comments can be in text form, audio and/or video, and made accessible to students. Canvas quiz statistics: The Canvas quiz statistics feature allows faculty and administrators to see the class distribution of each question, highlights consistently unanswered questions or the high ratio of wrong answers (to determine question validity), displays exam data such as mean and standard deviation, time to take the exam, and graphical representations of all student responses so student performance is more easily interpreted. Discrimination index values, the ability to set up groups with different settings for online exams, and online document editing are on the development road map for future release.
Desire2Learn Learning Suite

through rubric, text, audio or video. Assignments in the Learning Environment are easily synchronized to the tablet through the Dropbox tool.

Standard

Assessments: Assessment, both formative and summative, plays a critical role in the online learning process. Desire2Learn® Learning Environment includes, at no additional cost, a suite of measurement and assessment tools to evaluate outcomes and perform formative and summative evaluations of the effectiveness of instructional programs. Assessment tools are linked to other Desire2Learn Learning Environment tools like the Gradebook and Dropbox, and they have the capability to be imported and exported for reuse in other course offerings.

Standard

Competencies management tool: Alignment to state and common core standards can be integrated and utilized within the Competencies tool, ensuring that learners are meeting learning requirements and standards. Clients have the ability to edit and add their own standards in order to facilitate alignment with both content and assessments. Optionally Desire2Learn® ePortfolio extends this even further with the ability to manage and map goals, track learning experiences and receive feedback on activities aligned with outcomes, learning objectives and developing competencies.

Standard

Instructure Canvas

Standard

Formative and summative assessments: Canvas supports both formative and summative assessments. Formative assessment features have been built into the system and made simple and accessible for instructors. Canvas has a self-contained test-authoring tool. Both objective and subjective assessment types are built into our assessment tool.

Standard

Learning outcomes: Canvas' Learning Outcomes tool enables the administration and faculty to track students' progress as measured by pedagogical goals or desired outcomes. Student assessments showing their knowledge or demonstrating a specific skill resulting from a learning activity can be aligned to learning outcomes using our rubrics (which can be used for grading simultaneously). Assessing or grading student work automatically collects and compiles data on student progress. The data is available for reporting to support
Desire2Learn Learning Suite

Instructure Canvas

Staff Development Plans

Competencies management tool: The Competencies tool can be leveraged for staff development plans as well. Optionally, Canvas can be used to create, track, and share professional development plans. Desire2Learn® ePortfolio extends this functionality even further with the ability for faculty to store, manage, and showcase their professional development track including course syllabi, evaluations, certifications, research, and more.

Desire2Learn® Learning Environment enables learning-based networking through flexible collaboration tools. Members of groups have access to a shared calendar, shared file repositories, and a sleek interface. Staff Development Plans at-risk students and support the accreditation process. This unified, streamlined approach dramatically reduces the amount of work required to implement learning outcomes, making the assessment process more efficient. Several grading workflows are available through the Canvas user interface. Learning Outcome reports can be generated through the intelligent reuse of assessment workflows in the grading process. Learning outcome reports: Several reports for Learning Outcomes are available through the Canvas user interface. Learning Outcome reports can be exported to CSV for use in additional analysis.

Desire2Learn Learning Suite

Staff Development Plans

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Desire2Learn Learning Suite
group management options that are integrated with learning tools, and provides communication tools that can be customized to enforce security policies and promote engaging usage. Whether collaboration is happening through email, discussion groups, social profiles such as Facebook, Twitter, Google+™, instant messaging, synchronous tools, or blogs, students and instructors have the ability to communicate and work together in an environment that best meets their needs.

Instructure Canvas
common toolset, including:
• Collaborations: Using the Collaborations tool, groups can share content areas using Web-based tools that users are already familiar with. Users can use resources like Google Docs and EtherPad to work collaboratively on tasks like group papers or note-taking. Collaborations provide a convenient, common work space to keep track of those collaborative activities, all without the need to exchange personal email addresses.
• Chat rooms: All users logged into the system and in the same class and/or group can "gather" in the chat room to share video, audio, and text communication using familiar chat elements, such as avatars, emoticons and graphics.
• Web conferencing: With the web conferencing tool, users can invite group members to discussion and collaborate on shared text documents, PDFs, spreadsheets, white board, websites, and other work products.
• Discussions: Any member can start discussion topics and contribute to discussions.
• Conversations: Conversations provide asynchronous (and near-synchronous) public, group, and private discussions. Canvas Conversations extend the functionality of the integrated Inbox by organizing messages into conversation threads. Canvas Groups have their own shared file
Desire2Learn Learning Suite

Instructure Canvas

repositories. Group members can view and use the files within Canvas or download files to their own devices. Canvas Collaborations leverage the file exchange capabilities and file types supported by EtherPad and Google Docs, importing virtually any file type and exporting in a variety of common types including text, CSV, Excel, Word, HTML, PDF, OpenOffice, and others.

Administration: Desire2Learn® Learning Suite’s administration capabilities allow system administrators to manage student data. Integrations with student information systems, administrative roles, and highly configurable permissions allow administrators to granularly manage the data and operation of the learning management system. Flexible roles and permissions: The flexibility of the roles and permissions structure enables schools to customize the platform to reflect the unique environment of their own organization. Schools can create as many as roles and permissions as are needed to accommodate all the different roles within their district. Distributed administrative control: The organization is able to distribute administrative control, including database access and control, to different departments, providing them with complete autonomy over their unique learning environments while maintaining the benefit of systemwide collaboration. This flexibility allows clients to define

System Administration

Standard

Canvas has customizable permissions. System administrators can dictate all levels of permissions, from course designers down to students. New roles can be created for each institution. Instructors can set student, parent and TA-level permissions, as allowed by the administrative permissions granted.
<table>
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<td>different types of configurations for different organizations and programs and, optionally, to provide autonomy and control to different groups within the larger organization, all in a single database instance.</td>
<td>Standards support: Canvas Cloud is implemented as a true cloud-based LMS, which is incrementally upgraded and updated on an ongoing basis; there are no major releases in the traditional sense. Instructure does not assign version numbers to any particular point-in-time implementation of Canvas. By definition and by virtue of the cloud implementation model, all of our clients are using the current production implementation of Canvas Cloud.</td>
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| **Standards support:** Desire2Learn® Learning Suite supports a standards-based ecosystem with an open API and open-source software development kit aimed at building community, supporting sustainable growth, and maintaining a secure and scalable online learning environment. Learning Environment supports IMS Basic Learning Tools Interoperability allowing external learning tools such as wikis, simulations, protected content, and other resources from third-party tool vendors, or developed by clients, to be integrated. | Standard |

<p>| <strong>User Interface</strong> | The Desire2Learn® Learning Suite offers the ability to customize the content, look, and feel of an organization’s portal, homepage, and learning environment. The user interface and system navigation is designed with three key objectives: accessibility, intuitiveness, and customizability. | Usability: Canvas was designed using modern programming and true Web 2.0 standards so as to be both usable and accessible. By providing a deep level integration with Web 2.0 tools, a simple and unified user interface was developed to both manage the course as well as integrate with external tools. With major advancements in usability and simplicity, instructors and students can leverage these new tools for teaching and learning. User interface: Canvas’ user interface is well-organized and |</p>
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<td>is both sophisticated and elegant. This allows students and instructors to see at a glance all of their academic activity, across all courses, from the main dashboard.</td>
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**Standard**

- Assessment items can be imported from Desire2Learn® export packages, from standard course packages in Common Cartridge, QTI or SCORM® format, from third-party tools such as Respondus®, and from a variety of other export formats. Assessments, gradebook items, competency structures, and rubrics created within Learning Environment can be exported as well for reuse and import into other Learning Environment instances.

**3rd Party**

- Desire2Learn is committed to ensuring academic integrity within an institution, and has teamed up with Turnitin to provide an interoperable solution to check originality. This integration requires clients to have an existing Turnitin account, which interoperates with Desire2Learn® Learning Suite. This integration can be used to monitor dropbox folders, as well as identifying potential cases of plagiarism by automatically comparing submissions to an online database of original content. This originality checking is enabled through the integration of Turnitin, but the system is configured and managed from within Desire2Learn Learning Environment. The result is a seamless integration that gives direct control over end user experience.

**Data Integrity/Validation**

- From a data integrity perspective, Canvas is entirely 128-bit Secure Sockets Layer (SSL)-protected, ensuring that all inbound and outbound traffic is encrypted. Inside the application stack, Canvas is designed to ensure the following: • Personally identifiable information, including user's profile, enrollments and grades, are secured and only available to authorized parties. • Credentials used to access the system are never stored in the application infrastructure. Passwords are one-way-encrypted using a combination of a random, user-specific salt value and SHA512, the
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<td>visibility and report frequency. It is at the client's discretion to either have all submissions automatically sent for evaluation, or to manually choose which submissions to submit for assessment.</td>
<td>cryptographic, one-way hash algorithm. Incoming credentials are passed through the same procedure and compared against the encrypted and salted stored value. * Sessions are maintained and can be invalidated in the Canvas infrastructure. A cookie is used only to aid in identifying a current session. This session must be compared and validated against the server-stored value. An invalidated session will require a user to login again.</td>
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### Version Control

**Standard**

Our Learning Environment provides strong version control with our quizzes. We keep all previous versions and identify those clearly in the interface (for example, if an instructor is marking a quiz, they’ll easily see if someone was presented with an old version of a question).

**Standard / 3rd Party**

The standard integrated HTML Editor is available to edit discussion topics, create custom instructions for Dropbox folders, create ePortfolio artifacts, create content topics, and much more. Additionally, Desire2Learn can

### Authoring

**Standard**

Instructors create assignments using the Assignments tool, which uses the Rich Content Editor which enables instructors to include formatted text, URL links, links to other Canvas content, HTML, video,
Desire2Learn Learning Suite integrates many examples of third-party authored content into its Content tool. Common examples of this capability include the ability to import SCORM® packages from SCORM authoring tools, including Softchalk®, Articulate, Adobe®, etc. Desire2Learn is IMS Common Cartridge-compliant, allowing content, even password-protected content, to be imported into courses from third-party publishers. Content authored on other third-party tools that produce common file formats like ppt, Flash®, avi and HTML can be easily imported through the interface, while online tools that create online content (blogs, feeds, Flickr® albums, cartoons) can be embedded into an HTML file using the HTML Editor or linked from the Content tool. Desire2Learn is also IMS-QTI-compliant in order to aid the import of questions created via third-party quiz authoring tools like Questionmark® or Respondus®.

Instructure Canvas audio, images, mathematical equations, chemical formulas, and other rich content into assignments. Assignments are organized into groups. Each assignment group can be weighted for grading purposes and associated with one or more grading rules. Assignment submissions can be in a variety of formats: Web pages, Word docs, video, audio or even slide shows. Assignment types include "Assignment," "Discussion," "Quiz" and "Not Graded." Assignment attributes include due dates, peer reviews, point values, selective release using lock-until dates, assignment groups, submission locking, multiple attempts for quiz assignments, restricted submission types and grading methods. Assignments are assigned a point value with grading options of "points," "percentage," "complete/incomplete," and "letter grade." Instructors can provide feedback as text or recorded video/audio. To specify peer review when creating an online assignment, instructors simply select the "Require Peer Reviews" checkbox, and then choose either the "Manually Assign Peer Reviews" or "Automatically Assign Peer Reviews" radio button. For automatically assigned peer reviews, the instructor also specifies the number of reviews per user and the...
Desire2Learn Learning Suite

Instructure Canvas

review-by-date. When creating assignments, instructors select the checkbox "Allow File Uploads" to enable students to submit online assignments by uploading files of any type. Other submission options include "Allow Text Entry," "Allow Web URL" and "Allow Media Recordings." Thus, virtually any work product can be uploaded and submitted for a graded assignment.

Reporting Standard (Desire2Learn Analytics and the Analytics Data Warehouse Are Optional)

Report mechanisms:
Desire2Learn® Learning Suite offers robust and insightful reporting capabilities to its clients in three ways: included in Desire2Learn Learning Environment via the Reporting tool; included in Desire2Learn Learning Environment from within individual tools; and offered through a separate product: Desire2Learn Analytics. Report export: All reports can be exported to a CSV file for offline analysis. Clients can also take advantage of existing third-party reporting tools because Desire2Learn Learning Environment's Reporting tool uses predefined datasets and output formats. The datasets can be accessed by any external reporting, for example Crystal Reports™, to report on any dataset and produce the output in any format. Analytics: Desire2Learn Analytics and the Analytics Data Warehouse are optional analysis and data mining services available for the Desire2Learn Learning Suite. Desire2Learn Analytics

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Reports are tailored to show with the appropriate hierarchy of subaccounts, along with ordered learning outcomes and rubrics that can cover multiple courses, departments or the entire account. Standard Canvas reports include: • Count users by semester and role • Count users in active courses by semester • List courses by semester (active and nonactive) • List users by semester and role • List users in active courses by semester • User activity by date/time/course • Page views across entire university over time • Most-active courses • Activity by user • By learning outcome, across all linked programs or courses • By learning outcome, across one program or course • By student, for all linked learning outcomes • By student, for one learning outcome All of the standard reports, including the reports with various user-selectable options, are
Desire2Learn Learning Suite sources key information from Desire2Learn Learning Suite and then significantly extends this by associating internet usage-based details. This provides the data that institutions need to measure, understand, and predict student performance, instructor effectiveness, and course component design.

Instructure Canvas generates data in real time and are previewed online before printing or saving in an electronic format. Report data can be saved and exported in CSV format from the Canvas interface. For greater flexibility, Canvas’s open REST API is available to export Canvas data into structured data interchange formats including XML as well as CSV files. The Canvas Analytics toolset provides three views: student, instructor and administrator. Each view provides analytics reports that can be run by each of these user groups.

Data Warehouse

Learning Environment data warehouse: A standard data warehouse is provided with our Learning Environment, supporting robust built-in reporting capabilities. Analytics data warehouse (Optional): At the heart of Desire2Learn® Analytics is a large scale analytics data warehouse that captures and stores critical student and instructor transactions in the system for reporting, data mining, data visualization and data analysis.

Data Analysis

Standard (Extended Learning Analytics Are Optional)

Comparative reporting: Desire2Learn® Analytics goes beyond the reporting provided in Desire2Learn Learning Environment by allowing comparative reporting at different levels.

Canvas users can share content simultaneously, across institutional or domain boundaries without having to make multiple copies or versions of content items using:

- Shared question banks
- Creating courses not managed by the institution’s SIS
- Content repositories such as Equella, Flickr, McGraw-Hill Campus, SoftChalk, and IMS LTI- and QTI-conforming content sources
- Cross-listed courses

Canvas Analytics provides three user views: student, instructor and administrator. • Analytics Student View: Canvas Analytics puts students in control of their education with a dashboard of
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levels (system, institution, program, department, class) and over time. Extended Learning Analytics is available as an optional system module.

Instructure Canvas

their performance, course activity and achievement of outcomes that delivers continuous feedback to help motivate students. The student profile area quickly shows students their course grade to date, along with risk category, which is based on activity in the course. The student dashboard provides an at-a-glance view of performance in key course activities compared to their peers in the course. Students can also click on a dashboard item to drill down to a specific assignment or activity. • Analytics Instructor View: The instructor dashboard enables instructors to monitor the progress of the course as a whole, or drill down to see the detailed activity of individual students. Instructors can quickly identify students at risk, view the student’s course activity and proactively intervene with suggestions to help the student improve. The instructor profile area provides a high-level view of student performance in the course. Instructors can also select other courses they teach to compare two courses side-by-side. Student profiles provide a quick snapshot of each student. It’s quick and easy to drill down to the student view for a more detailed look. • Analytics Administrator View: Side-by-side comparisons enable administrators to access the same information as instructors across multiple courses or departments. Side-by-side comparisons quickly
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Identify differences in performance and outcomes or compare the progress of a program or department as a whole. For any area of concern, administrators can quickly drill down to the instructor or student level for additional detail. Administrators also have access to system metrics, which can be exported to a data warehouse for more specialized analysis in conjunction with other campus systems. In addition, a complementary capability on the Canvas product road map is the use of learning outcome information to provide remediation, by which Canvas will generate recommendations based on the student’s individual needs for remedial lessons, assignments and resources. The advanced analytics toolset will greatly expand this capability by using learning outcome information to provide remediation and recommendations based on students’ individual needs.

### Instructure Canvas

System Data Integration

**Holding Tank:** The Holding Tank, a middleware component designed and implemented with the intent to be vendor neutral, enables both batch and real-time integration. Functionality includes course shell creation, user creation, user enrollment, and final grade extract. **Desire2Learn® Web Services:** Desire2Learn Web Services extends the functionality of the Desire2Learn Learning Suite by providing programmatic access to user management, organization...
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- Unit management, enrolment management, and grades management.
- Standard

**Estimated scalability limits:**
Desire2Learn has done strenuous load testing in a Microsoft® certification facility to determine the maximum user levels. Currently, we anticipate scalability to at least 1,000,000 users on a single instance (sharing one license and including all hardware and maintenance/administration costs).

The maximum limitations for users are ultimately determined by the upwards and outwards scalability of our platform which is estimated to be in the tens of millions of users. There are no known limitations on scalability that exist.

Instructure Canvas

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Canvas’ open REST API is available to easily export Canvas data into structured data interchange formats, such as XML or CSV files.

Exported Canvas data can then be imported into highly capable query, analytical, and/or reporting tools — providing even greater customization, accessibility and visibility into Canvas data.

**Scalability/Configurability**

Desire2Learn has: • A 12 year track record of ensuring security has been a priority, and ongoing security reviews with each release • Security certifications for government clients and additional advanced certifications in progress • Regular privacy reviews to ensure we are protecting our client data and information • Ability to sign-up for automatic (no downtime) security updates for both cloud and on-premises clients

Security

- Standard

There are no practical scalability limitations with Canvas.

Language Support

**Language packs:** Optional language packs are available in French (Canada), Arabic (Saudi Arabia), Simplified Chinese, Spanish (Latin America), Portuguese (Brazil), Korean, Japanese, Traditional Chinese, and Turkish

Optional

- Standard

Canvas is entirely 128-bit Secure Sockets Layer (SSL)-protected, ensuring that all inbound and outbound traffic is encrypted. Inside the application stack itself, Canvas is designed to ensure the following: • Personally
Desire2Learn Learning Suite

Identifiable information, including user's profile, enrollments and grades, are secured and only available to authorized parties. • Credentials used to access the system are never stored in the application infrastructure. Passwords are one-way-encrypted using a combination of a random, user-specific salt value and SHA512, the cryptographic, one-way hash algorithm. Incoming credentials are passed through the same procedure and compared against the encrypted and salted stored value. • Sessions are maintained and can be invalidated in the Canvas infrastructure. A cookie is used only to aid in identifying a current session. This session must be compared and validated against the server-stored value. An invalidated session will require a user to login again.

Other Modules/Capabilities

**Standerd Locker:** The Locker tool is used for students to upload and store files in Desire2Learn® Learning Environment. Lockers allow users to upload files from their PC, or to create new HTML files. **Impersonation capability:** Instructors and Teaching Assistants can be given permission to login in as a student in a course in order to see what the system looks like from the student point of view. **Special access:** Special Access and Release Conditions are used to set criteria around the

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Standard Canvas offers both English and Spanish versions of the interface; additional languages are on the product road map. Language preferences can be set by the user, on the account, or on a spec
availability of content, which can be useful for accommodating students with different needs. **Auditors:**
Desire2Learn Learning Environment supports expanded permission sets for monitors, observers, etc. via the Auditors feature set. Auditors are implemented as standard users in Desire2Learn Learning Environment. This means that administrators can add auditors to the system in the same manner as other users. Administrators manage auditors the same way they would other uses of the system. Parents, for example, and other stakeholders with an auditor role can:

• Use the same login page as other users in the system.
• Be enrolled into courses where they can access course material, news and due dates.
• View user progress, which now includes feedback for scores and results.
• Take advantage of standard features such as email, personal profile, calendar and Forgot Password functionality.
• Auditors with the appropriate permissions can impersonate the users they audit.

An auditor is also enabled to view the following of the students they are auditing:

• Grades
• Quiz activity
• Discussion activity
• Content viewing activity
• Dropbox activity
• Login history
• Checklist completion
• Competency achievement