

Web-based Geospatial Learning Platform: Evaluation Summary

Survey, Fall 2014 – GGR337

Surveys, Winter 2015 – GGR276 & GGR335

Total respondents: 135

Summary

The majority of respondents were in their third year of study, and a slight majority had used geospatial software before. The top five programs of study were Geography, GIS, Environmental Management, Environmental Science, and Economics. By far the majority of students live off campus. The vast majority of respondents used a wireless internet connection to connect to the WLP. Most respondents did not report any problems with the installation or the instructions for the WLP.

Respondents did not show a clear preference for the WLP over the physical lab. 34% preferred to work using the WLP; 28% said that they preferred to work in the physical computer lab; and 28% said that they had no preference, one way or the other. However, the vast majority of respondents (86%) felt that their skill, their confidence level, or both their skill and confidence level with using geospatial software had improved as a result of using the WLP. Also, compared to working in the physical lab, most people felt that they used their time more effectively, or just as effectively, when working remotely through the web-based learning platform.

The most common problem that respondents described was with the connection to the WLP, including internet speed. Several respondents also described having a problem with accessing or saving files through Medusa.

When asked what they liked about using the WLP, the most common thing that students commented on was its convenience. Students also liked its ease of use and their access to technical support. Interestingly, in the second set of surveys (Winter 2015), 10% of respondents also mentioned the speed of the platform as a benefit. This is a marked change from previous surveys.

The most common suggestions on how to improve the WLP had to do with somehow increasing the speed. Several people also had suggestions for improvement related to accessing, transferring, or storing files using Medusa. Some people also suggested improvements in the instructions or the support for the WLP, including having support available beyond regular office hours (i.e. after 5pm) and having the WLP supported on library computers.

Most respondents to this survey preferred to study late at night, or in the evening, and preferred to study at home. This suggests that they would benefit from having access to the WLP outside of scheduled computer lab hours.

The survey in the winter session included questions about the use of the WLP in a special in-class session. Most people reported successfully logging in to the WLP during the in-lecture session (49%). 29% of respondents were able to log in partially (e.g., 1 out of 2 sessions), and 13% said they were able to log in but then lost the connection. Most people in the in-lecture session (51%) found that their connection speed to the platform was faster at home.

Background:

The majority of respondents were in their third year of study (47 of 135, or 35%), and approximately equal numbers had used (73 of 135, or 54%) and had not used (62 of 135, or 46%) geospatial software before. The top five programs of study were GIS, Geography, Environmental Management, Environmental Science, and Economics. By far the majority of students live off campus (123 of 135, or 91%).

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| Year of study: | |
| 1 | 3 |
| 2 | 30 |
| 3 | 47 |
| 4 | 41 |
| 5 or above | 13 |
| Graduate | 1 |

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| Top five programs of study of respondents: | |
| GIS | 55 |
| Geography | 43 |
| Environmental Management | 33 |
| Environmental Science | 13 |
| Economics | 10 |

Instructions and Installation:

Almost all respondents found the installation instructions “very helpful” (88 of 135, or 65%) or “somewhat helpful” (44 of 135, or 33%); only two people reported finding the instructions at all unhelpful. Similarly, by far the majority of respondents found the platform either very easy (69 of 135, or 51%) or somewhat easy (59 of 135, or 44%) to install.

Respondents commented on a few problems that they had with installing the platform. Five people mentioned connection problems, including (for the Winter 2015 survey) slow speed in the class with multiple simultaneous logins, as well as long loading times.

11 people had trouble with compatibility: three people mentioned that they had difficulties using the platform on a Mac, and one person had a compatibility problem with Windows XP Professional SP3 (Bruce helped them to find an older version of Citrix which was compatible with their version of Windows); the rest had trouble with using a particular browser.

One person had trouble transferring data to their personal computer; and one person said they were able to download R but not Citrix. This person may not have been motivated to pursue solutions since they already had R and ArcMap installed on their computer.

Finally, one person mentioned some confusion over the instructions, as follows:

The last step... states: "A window will appear asking you to save a program with the file name 'launch.ica'. Save to a known location, then double click on the file and select 'Permit Use' when the Security warning appears." It is confusing because permit use never appears. Personally I was unsure if I had everything installed correctly or not - at first.

In-Lecture Session (Winter 2015)

Most people reported successfully logging in to the WLP during the in-lecture session (52 of 107, or 49%). 29% of respondents were able to log in partially (e.g., 1 out of 2 sessions; 31 of 107), and 13% said they were able to log in but then lost the connection (14 of 107). 7% of respondents were unable to log in (8 of 107).

Equal numbers of respondents found the speed acceptable, and found the speed variable, when completing the in-class tasks assigned (37 of 107, or 35% each). 13% did not find the speed acceptable (14 of 107); the rest were undecided. Most people (55 of 107, or 51%) found that their connection speed to the platform was faster at home; however, 28% (30 of 107) found that there was no difference in connection speed, and 20% (21 of 107) found that their connection was faster in class.

By far the majority of respondents found the in-class session demonstrating some practical applications of GIS helpful (86 of 107, or 80%).

Location and Access

Most people used a computer with a Windows operating system (86 of 135, or 64%), and used Google Chrome as their internet browser (96 of 135, or 71%). Also, by far the majority of respondents used a wireless internet connection (111 of 135, or 82%), perhaps reflecting the type of internet connection that is predominantly available to students.

When they needed access to geospatial software, 31% of respondents used the web-based learning platform instead of the physical computer lab “most of the time” (42 of 135). 28% of respondents used the WLP “only some of the time” (38 of 135). 18% said they used the WLP and the physical lab equally (24 of 135), and 15% of participants said that they chose the WLP “every time” (20 of 135). Only 7% of respondents indicated that they never used the WLP instead of the physical lab (10 of 135).

Slightly fewer people indicated exploring other features of the software in the WLP (39 of 135, or 29%) than in the physical lab (40 of 135, or 30%). Of those who explored other features in the WLP, most people said that they just spent time exploring and trying to use various tools and features. Two respondents said that they used other programs within the WLP to work on assignments from other courses.

Compared to working in the physical lab, most people felt that they used their time more effectively, or just as effectively, when working remotely through the web-based learning platform (103 of 135, or 76%).

Use of time with WLP compared to physical lab:

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|---------------------------|----|
| Much more effectively | 25 |
| Somewhat more effectively | 38 |
| The same | 40 |
| Somewhat less effectively | 26 |
| Much less effectively | 4 |

32% of respondents reported having had some difficulties in accessing the physical lab (43 of 135). Of these, the most common reason given was transportation issues, including commuting time, inclement weather, and the TA strike. The second most common access problem had to do with scheduling, including preferring to work on weekends and being unable to access the physical lab when other classes were using it. Four people mentioned health problems as a barrier to access, two people had problems with their personal card access to the lab, and two people mentioned discomfort with the lab environment. Work was mentioned as a barrier for one respondent and other responsibilities at home, including child care, were mentioned by another respondent.

Of those who said they had access issues, 39 of 43 (91%) said that having access to the WLP helped to solve their issues. 10 of 43 (23%) were unsure whether having the WLP available helped, and 3 of 43 (7%) said the WLP did not help.

Using the WLP

87% of respondents found it easy to learn how to use the WLP (117 of 135). Slightly fewer respondents found it easy to access lab data under Medusa for use in the WLP (104 of 135, or 77%). Compared to using the same software in a computer lab, most respondents found the WLP to be more efficient (62 of 135, or 46%) or the same (42 of 135, or 31%).

Respondents did not show a clear preference for the WLP over the physical lab. 34% (46 of 135) preferred to work using the WLP; 28% (38 of 135) said that they preferred to work in the physical computer lab; and 28% (38 of 135) said that they had no preference, one way or the other.

The most common problem that respondents described was with the connection to the WLP, including internet speed (38 of 135, or 28%). Four of these respondents (from the Winter 2015 survey) said that they had trouble with the internet speed only during the in-class session. Previously we have recommended that students use a wired internet connection; however, students have not been taking this advice. It is possible that relying on a wired internet connection would cancel out the freedom that students enjoy through being able to use the WLP from anywhere. It is also possible that wired internet connections are simply less available than wireless.

11% of respondents (15 of 135) described having a problem with accessing or saving files through Medusa. Specifically, students were confused about how to save data from the WLP to their personal computers. Some students mentioned that they initially had problems but these were resolved with help from Bruce.

Three respondents described having problems that were Mac-specific. Two people also mentioned that they had difficulties learning the programs on their own and preferred to have help available when they needed it. One person stated having a problem with the platform generating large amounts of data and then crashing due to the size of the files it was attempting to handle.

When asked what they liked about using the WLP, the most common thing that students commented on was its convenience (99 of 135, or 73%). Being able to access geospatial programs from their own computers, at any time, and at any place with an internet connection, was very popular with students who responded to these surveys.

Interestingly, 10% of respondents in the Winter 2015 survey also mentioned the speed of the platform as a benefit (11 of 107). This is a marked change since the first survey we

conducted. Some students still complain about the slow speed of the platform (see above), but many are now commenting that they like how fast it is.

Students also liked its ease of use and their access to technical support (13 of 135, or 10%). As one student put it:

It's getting easier and easier to use once I've got adjusted and used to it. Additionally, the help in class is very good because it allows us to share our reactions when using the platform to Bruce and show that we may have similar issues such as connection speeds. Furthermore, the upgrade of Citrix was very helpful, as everything is noticeably faster.

Four students also mentioned the cost effectiveness of the WLP, and one respondent commented on its safety. Three respondents simply said that they found it interesting or that they learned a lot from using it.

When asked for any suggestions on how to improve the WLP, 16% of students (22 of 135) mentioned somehow increasing the speed. One student acknowledged that there have been improvements, but suggested the speed could still be improved:

The platform speed has improved a lot from previous years and I feel more comfortable using it now than I did before but the only suggestion would be to keep working on the speed.

10% of people (13 of 135) had suggestions for improvement related to accessing, transferring, or storing files using Medusa. Respondents mainly asked just to make the process easier or better, or enable them to save files from the platform to their own computer. One respondent suggested “add[ing] Google Chrome into [the] platform so that downloaded files can be placed right into the Medusa folder.” Another suggested posting data for the assignments on Blackboard to make them more easily accessible. A third respondent suggested providing more storage space on the platform so that the WLP could be used in other classes as well.

6% of people (8 of 135) suggested improvements in the instructions or the support for the WLP. Suggestions regarding instructions were not very specific. One person suggested having clearer instructions related to using files from Medusa. Suggestions regarding support were to have support available beyond regular office hours (i.e. after 5pm).

4% of respondents (6 of 135) had suggestions regarding improving the compatibility of the WLP. These respondents noted that the WLP does not work with all browsers or all operating systems such as legacy operating systems.

4% of respondents (5 of 135) suggested expanding the applications available through the WLP, increasing the storage space, allowing two programs to be open at once, or providing instructions for more of the applications within the WLP, with the goal of being able to use the WLP for other classes as well.

Three respondents suggested making improvements in the appearance of the WLP (i.e. “improving picture quality”), and two respondents asked for improvements in the stability of the WLP (i.e. keeping it from crashing).

Two respondents asked for time to complete the labs in class using the WLP, and one respondent suggested introducing the WLP earlier in the course so that they would have the option of using it for more of the class assignments.

Learning outcomes of the WLP:

Most respondents to this survey preferred to study late at night (28%, or 38 of 135), or in the evening (28%, or 38 of 135). This suggests that they would benefit from having access to the WLP outside of scheduled computer lab hours.

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| Best time to study: | |
| Late at night | 38 |
| In the evening | 38 |
| In the afternoon | 32 |
| In the morning | 22 |
| Other | 3 |

Most respondents also preferred to study at home (57%, or 77 of 135). This also suggests that having access to the WLP would be beneficial.

| | |
|---------------------------|----|
| Preferred place to study: | |
| At home | 77 |
| In the library | 45 |
| In a computer lab | 4 |
| In a coffee shop | 2 |
| Other | 3 |

46% (62 of 135) were unsure of whether or not having access to the WLP helped them produce better quality assignments.

36% of respondents (49 of 135) felt that having access to the WLP did help them to produce better quality lab assignments. Of these, 84% (41 of 49) mentioned the benefits of having extra time, including being able to work whenever they felt they would be most productive, not having to spend time commuting, and being able to spend more

time overall on the assignment. 12% (6 of 49) said that the WLP helped them by enabling them to work in a location of their choosing – including being able to work where they were most comfortable and being able to choose a place to work with no distractions.

16% of respondents (22 of 135) answered that they did not think that having access to the WLP helped them produce better assignments. Of these, 59% (13 of 22) said that they preferred working in the lab, including because of the quality and speed of the programs and because they had access to help as soon as they needed it. 36% (8 of 22) stated that they felt the quality of their assignments was the same regardless of where they completed them; having the WLP did not make a difference. 32% (7 of 22) reported that the WLP did not help them produce better assignments because they had problems with it.

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| Did you find that having access to the web-based learning platform allowed you to produce better quality lab assignments? | |
| Yes | 49 |
| No | 22 |
| Unsure | 62 |

The vast majority of respondents (86%, or 116 of 135) felt that their skill, their confidence level, or both their skill and confidence level with using geospatial software had improved as a result of using the WLP.

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|---|----|
| Do you feel your confidence and/or skill level with the geospatial/image processing software have increased as a result of using the web-based learning platform? | |
| Skill level has improved | 38 |
| Confidence has improved | 24 |
| Both skill level and confidence have improved | 54 |
| Neither confidence nor skill level have improved | 17 |

Assistance

The majority of students (61%) found it very easy (27 of 135) or somewhat easy (55 of 135) to get assistance with the WLP when they had questions. 19% of respondents reported that it was somewhat difficult (22 of 135) or very difficult (4 of 135) to get assistance. Comments that students made, above, suggest that they would prefer to have assistance available whenever they need it, even outside of regular work hours.

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|-------------------------|----|
| Easy to get assistance: | |
| Very easy | 27 |
| Somewhat easy | 55 |
| Somewhat difficult | 22 |
| Very difficult | 4 |
| Did not have questions | 25 |