Preliminary Evaluation Report for MOOC ENV002: From Source to Sea to Sustainability: Integrated Cycles in Wastewater and Nutrient Management

KnowledgeOne Inc.

25 June, 2018

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Summary

In this report, the overall design, user experience, satisfaction and global course effectiveness of a MOOC course is being assessed. The course was offered for the first time in Winter 2018 term. It is given by the United Nations Environment Programme and delivered by Concordia University.

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1. Introduction

Creating a well-designed MOOC is an interdisciplinary effort emanating from several specialities and input from various disciplines. Evaluating a MOOC also requires utilising various analytics such as descriptive, diagnostic, as well as predictive analytics to inspect the plethora of information arising from learners' interactions with each other, with the system, with the content, to improve course design, user experience, satisfaction and course effectiveness. The data of this report are based on registration information from the EdX Platform, results of the online survey questionnaires delivered to all participants at the end of the course, predictive multivariate statistical analytics based on the survey data obtained, Google Analytics reports, as well as qualitative, open-ended comments from participants and report from the ISS officer responsible for help desk email correspondences.

2. Users' Demographics

a. Enrolments
According to the EDX platform Data Report, the Number of enrolled students: 1084

b. Certificates Issued
According to the EDX platform Data Report, the Number of certificates issued: 133

According to the platform registration data and the difference with the number of certificates issued, the Percentage of Attrition: 87.03 percent. This low completion rate is not untypical. MOOC users exit for multiple reasons. Our data indicate that users exited primarily because of lack of time. The next group of students claimed that they did not feel prepared for the class, indicating that it may have been too difficult for them.

c. Age

Based on the survey report, age of users who are producing traffic on the website to be as follows.

18-24 age range:	22 percent
25-34 age range:	34 percent
35-44 age range:	26 percent
45-54 age range:	11 percent
55-64 age range:	7 percent
65plus age range:	1 percent
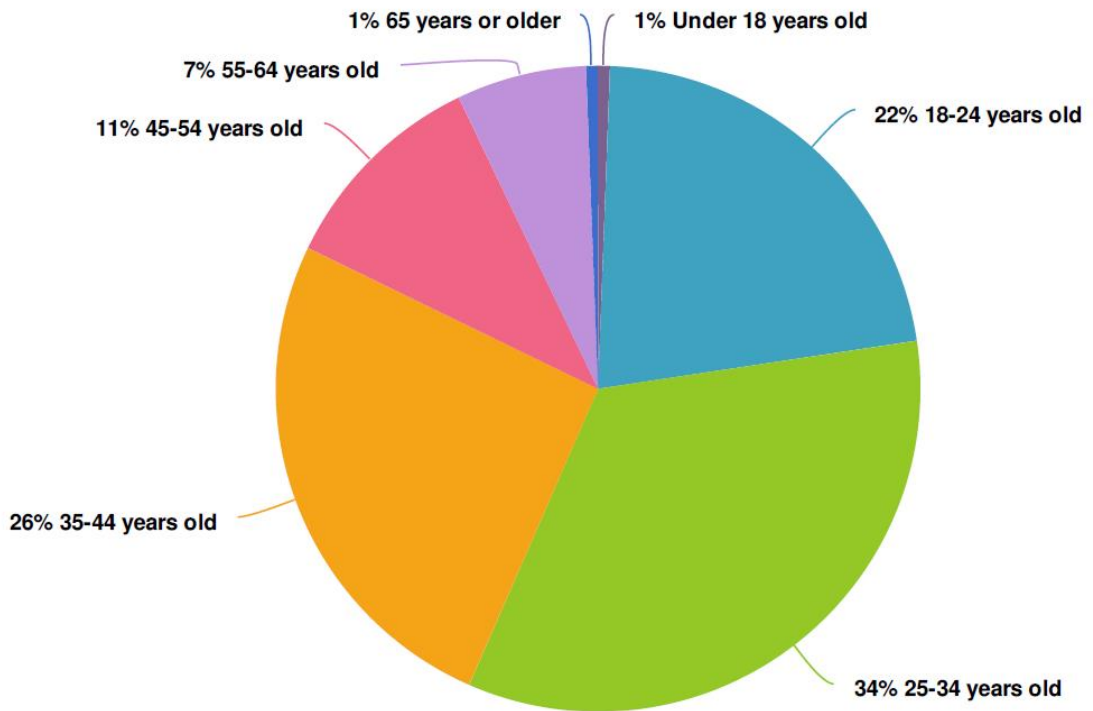
It appears the majority of users, were between 25- 34 years. In addition, our survey, answered by 186 participants, indicated that 1% of users are under 18 years old.

d. Gender

According to our survey, men and women were represented equally.

e. Referrals

Based on the Google analytics reports (see Appendix B), Based on this chart, most of the traffic (i.e. 68 percent in total) are coming from Direct (i.e. users typing in "environmentacademy.org" and through organic search results (that is users clicking on "environmentacademy.org" from search results). ten percent of the traffic appear to be coming from referrals i.e. third party websites and social network sites referrals.

Based on the Google Analytics charts, three percentage of the users traffic from the 10 percent total referrals (social network sites referral and third party referrals) (equivalent to 0.3 percent overall traffic) appear to be coming from Concordia website.

11 percent of the overall traffic appears to be coming from social network sites. From those, 69 percent appear to be coming from Facebook, 27 percent from Twitter, and 3 percent from LinkedIn. This corresponds to the following: 7.5 percent overall traffic appear to be coming from Facebook, 2.97 percent overall traffic from twitter, and 0.3 percent overall traffic from LinkedIn.

f. Top 10 Countries

Based on the google analytics reports (see Appendix B), Reference to this chart, the location and percentage of traffic from users appear to be originating from the following top 10 countries:

1. Philippines: 8.4 percent
2. Canada: 8.1 percent
3. USA: 6.7 percent
4. Kenya: 5.8 percent
5. UK: 5 percent
6. Nigeria: 3.9 percent
7. India: 3.4 percent
8. Turkey: 3.2 percent
9. Columbia: 2.9 percent
10. Brazil: 2.3 percent

g. Education Background

Based on the survey reports, when we asked all participants: What is the highest degree or level of schooling you have completed? If currently enrolled, highest degree received. 167 participants answered as follows:
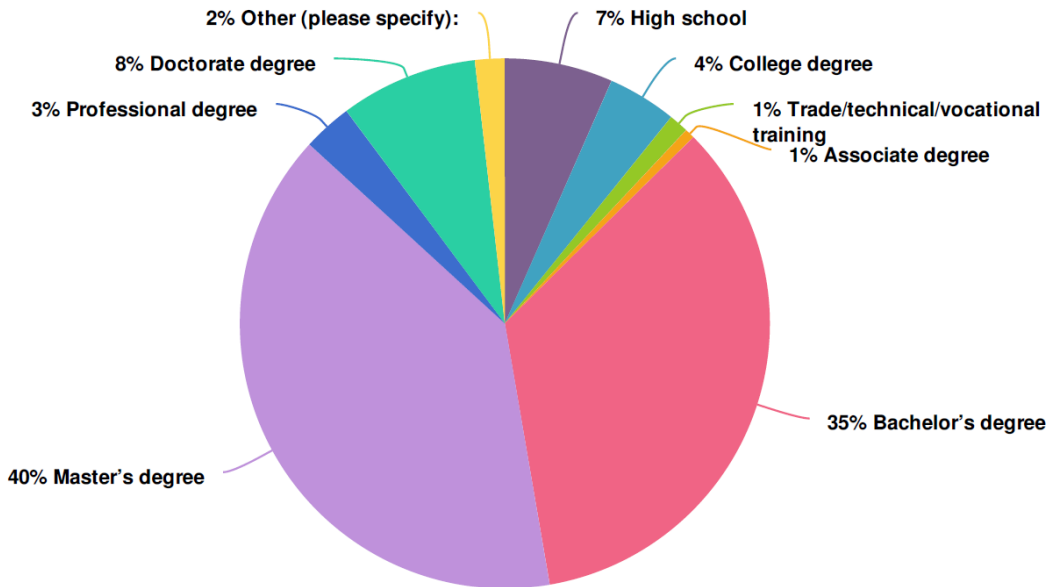
High school	7%
College degree	4%
Trade/technical/vocational training	1%
Associate degree	1%
Bachelor's degree	35%
Master's degree	40%
Professional degree	3%
Doctorate degree	8%
Other (please specify):	2%

It appears the majority of users (more than 75%) are highly education. They had at least a Bachelor's Degree or even a Master's Degree.

h. Employment status

Based on the survey reports, when we asked all participants: Are you currently…? 167 answered as follows:
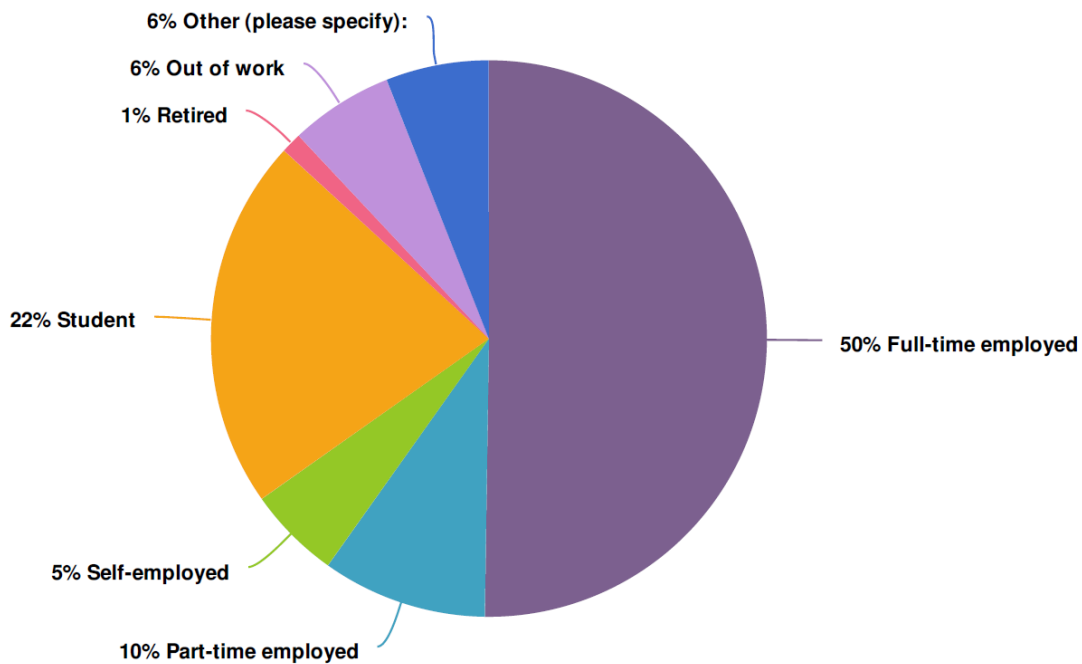
Value	Percent
Full-time employed	50%
Part-time employed	10%
Self-employed	5%
Student	22%
Retired	1%
Out of work	6%
Other (please specify):	6%

It appears that the majority of the users (60%) were full-time employed or part-time employed.

i. Specialties

Based on the survey reports, when we asked all participants: What is your education/work specialty, 167 answered as follows:
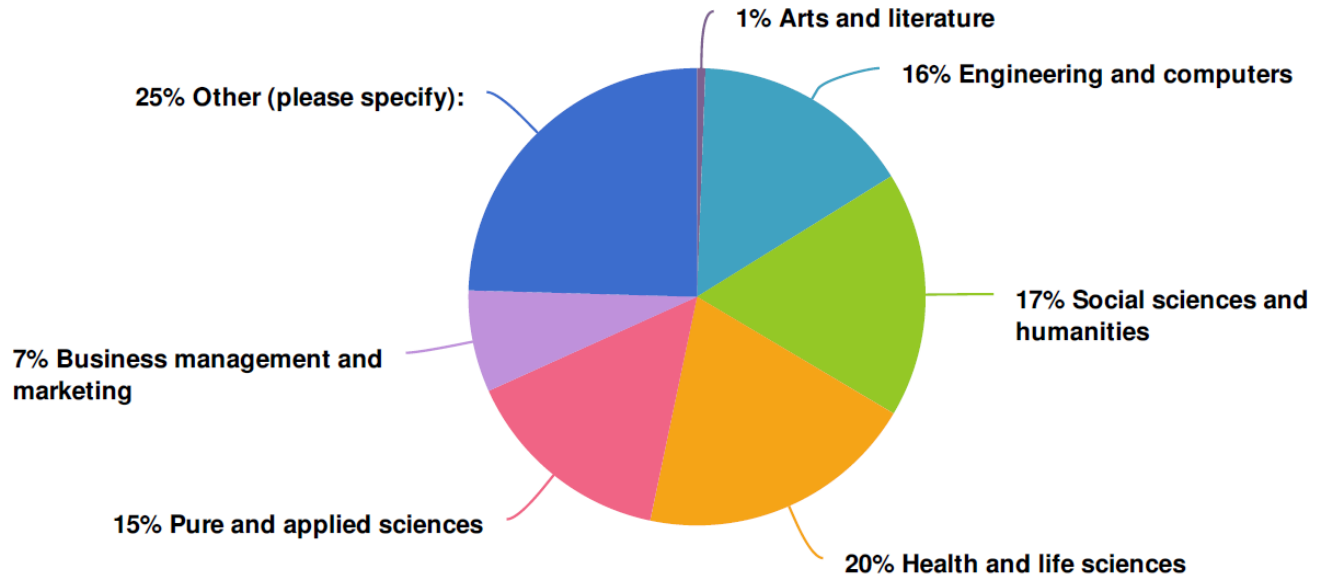
Value	Percent
Arts and literature	1%
Engineering and computers	16%
Social sciences and humanities	17%
Health and life sciences	20%
Pure and applied sciences	15%
Business, management, marketing	7%
Other (please specify):	25%

It appears that more than half of the users had sciences specialities since 51%. Many of the 'Other' (25%) wrote in answers of specialties in Environmental studies.

3. Course's Ease of Use

In fact, 55 students answered the following individual statements related to course's ease of use as follows:

a. Navigation
More than 92% agreed or strongly agreed that they understood how to navigate the course's format from the beginning.

b. Support
More than 85% agreed or strongly agreed that the Help and FAQ pages were useful.

c. Clarity
More than 92% agreed or strongly agreed that the course content was designed and presented in a clear manner.

d. Presentation
More than 90% agreed or strongly agreed that the overall presentation of the course content was helpful to them

4. Quality of Course Content

In fact, 55 students answered the following statements related to courses quality of course content as follows:

a. Course Objectives
More than 98% agreed or strongly agreed that the course objectives were clearly stated at the beginning of the course

b. Course Outline
More than 90% agreed or strongly agreed that the course outline was concise, complete and included all of the information relevant to the course

c. Knowledge Quests and Module Quizzes
More than 92% agreed or strongly agreed that the knowledge quests and module quizzes helped me pass the final test

d. Discussion Board
More than 65% agreed or strongly agreed that the Discussion Board facilitated and added to the interaction between students

e. Interactive Map
More than 70% agreed or strongly agreed that the Interactive Map was a very useful tool for the course.

f. Course Materials

More than 87% agreed or strongly agreed that they saved the course materials (e.g. pdfs, study guides, etc) to my computer for future reference

In addition, when we asked the participants through our survey questionnaire, which elements of the course was the most helpful to them (check all that apply), students answered as follows:
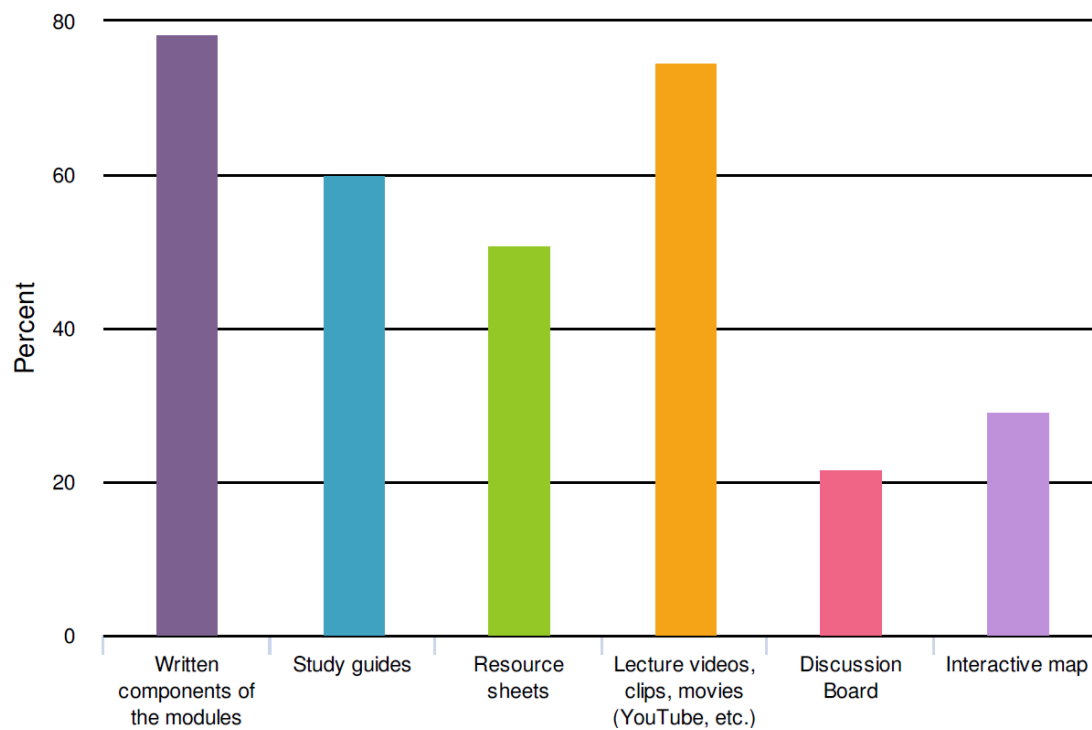
Written components of the modules	72%
Study guides	56.89%
Resource sheets	50.90%
Lecture videos, clips, movies (YouTube,	69.46%
Discussion Board	24.55%
Interactive map	23.95%

5. Application of Knowledge Gained from Course

In fact, 53 students answered the following statements related to courses their application of knowledge gained from the course as follows:

a. Work
More than 88% agreed or strongly agreed that they plan to use what they learned at my current work position

b. Thesis
More than 58% agreed or strongly agreed that they plan on doing their thesis (BSc, MSc, PhD, etc) based on what I learned in this course

c. Project
More than 69% agreed or strongly agreed that they plan on initiating a project based on what they learned

d. Studies
More than 69% agreed or strongly agreed that they plan to use what they learned in their current studies

e. Advanced Course
More than 73% agreed or strongly agreed that they plan on pursuing the Advanced course

6. Technical Issues faced during Course

In fact, 159 students answered the following statements related to technical issues faced during Course as follows:

a. Website
More than 90% agreed or strongly agreed that the course website was always available

b. Personal Computer
More than 82% agreed or strongly agreed that the computer that I was using to access the course website had all the necessary software to run the materials

c. Technical difficulties
More than 61% disagreed or strongly disagreed that the I experienced technical difficulties that hindered my enjoyment of this course

7. Affordances of Online and Open Course Accessibility

In fact, 53 students answered the following statements related to affordances of online and open course accessibility, as follows:

a. No Fees
More than 90% agreed or strongly agreed that It was important to me that there were no fees for this course

b. Open Access
More than 99% agreed or strongly agreed that the It was important that this course had open access

c. Online Learning
More than 98% agreed or strongly agreed that Online courses are convenient and a flexible way to learn

8. Global Course Effectiveness

In fact, 53 students answered the following statements related to courses global course effectiveness were as follows:

a. Excellent Course
More than 90% agreed or strongly agreed that Overall, this course was excellent

b. Increased Knowledge
More than 98% agreed or strongly agreed that the Overall, my knowledge of the subject matter has increased as a result of this course

c. Recommend to Others
More than 96% agreed or strongly agreed that they would recommend this course to others

9. Factors Impacting Global Course Effectiveness

10. Qualitative Open-ended Feedback

With regards to open-ended questions regarding suggested improvements to the course or technical difficulties encountered while taking the course, the following results emerged from a theme-based analysis. Corresponding quantitative counts of the comments are included. The main categories of comments are as follows:

Theme 1: Complaints regarding Technical Issues encountered.
These include. 6 comments.

Theme 2: Complaints related to Students' Own Technological Infrastructure.
12 comments.

Theme 3: Recommended Improvements.
17 comments.

Theme 4: No complaints to be reported.
19 comments.

11. ISS Officer Feedback

Theme 1: Technical Issues.

Number of students who encountered technical issues influenced by our learning system. 2 students. Examples of Technical Problems were printing the certificate, being logged out/disconnected.

Theme 2: Missing Required Technical Configurations.

Number of students who experienced a lower level of quality and accessibility due to unsuitable technical requirements. 2 students. Examples included inability to access some videos due to region, Mobile phone used a primary device.

Theme 3: Course Navigation/Procedures.

Number of student experiencing difficulties navigating the course, or misunderstanding the procedures to obtain final grade. 12 students. Examples included Students were unsure how fast to progress through the course, how much time they had for the course, Students had

trouble finding the following in the course: Certificate and Where to register to advanced MOOC.

12. Conclusions & Recommendations

- Suggested Improvements
– Suggestions from ISS and other departments
  - Provide a guide on how to print to PDF (many students don't know) or Provide link to PDF certificate. Prefer the former.
  - Students often did not know they had to go to the progress page to download/print certificate, this could be made clearer, perhaps in an FAQ.
  - Provide a technical issues page in the FAQ
  - Include an agenda with guidelines on which chapters to do each week. Students are emailed each week but it would help to have it laid out for them right from the beginning and would also guard against human error.
  - Improve discussion board participation: rephrase questions to include more action verbs, make DB more interactive so that it becomes more of a group effort (identify something no one else has or comment specifically on another's post), interaction with an SME.
  - Students are always asking for less text and more video

Appendix A:

List of Open-ended Comments

Theme: Complaints related to Students' Own Technological Infrastructure

1. Network and laptop computer could not support the software
2. Limited access to internet service due to internal crisis
3. My computer got bad; had to be using my phone, which couldn't display most of the materials properly. I as well faced difficulties getting any assessment on the course. Sorry, i didn't report the difficulties, but will like to take the course all over. I have adjusted my shortcomings. T hanks
4. T he problem lies in the difficulty of downloading the whole modules which made the task difficult because we had to copy the modules one by one to be able to follow the training
5. Currently I am living in a rural area, where regular internet connection is not available.
6. I experienced a breakdown of my previous device I used to access the website and other network connectivity challenges. No communication on the issues was reported due to network challenges.
7. I had experienced network problems in terms of wifi
8. Consistent power interruption No intrernet connection
9. Good day sir/madam. I was unble to fully access the course because of the following difficulties: Slow internet, Was unable to get access to the materials. Was also unable to get the assignments pertaining to the course.
10. network failure lack of proper software to download documents
11. i enrolled late for the course then my laptop developed a problem which took quite a while to repair.
12. I could not finish submitting the test due to network connectivity challenge in my area

Theme: Complaints Regarding Technical Issues Encountered

1. the video clips seemed to only give sounds with no visuals at some point
2. Accessing the YouTube videos
3. Using the map was a bit challenging
4. I couldn't watch some of the videos while using mozilla and therefore had to switch to Chrome
5. some reference documents were not available from the links shared thus finding the exact documents proved quite difficult.
6. At the end of the course, I had trouble getting a soft copy of the certificate. There is only an option to print the certificate. I do not have a printer, and used a PDF creator that resulted in messed up formatting/graphics for the certificate. I ended up taking a screenshot of the web page and saving that as a jpeg. I recommend that in future, an option be offered to download a soft copy of the certificate directly, rather than an option to print which the student then has to somehow convert to a soft copy. A pdf available for download can always be printed in the future, and is useful, for example, to attach to emails or online job application forms.

Theme: No complaints to be reported. All went well.

1. Almost good. I didn't fin any technical problem
2. I did not have problems
3. Everthing was perfect.T his course is very succesfull for environmental engineering students.
4. The courses are good. The updates are well put. Keep up the good work
5. Excellent course. Please keep this kind of courses available.
6. The course is encouraging and has a lot of teaching related to my career course
7. Great course so far! I hope to complete it soon! T hank you for this opportunity for free education!
8. The course provides excellent readings and very informative. It really enhances my knowledge particularly on how to maintain the quality of water.
9. One of the best and interesting way of learning. Keep it up
10. Congratulations!!! I love the work that you are doing.
11. This class is quite educative and diverse I loved it
12. I like the course...it is very useful in my career as an Environmental Management Specialist in Environmental Management Bureau-Department of Environment and Natural Resources Region IX, Zamboanga Peninsula.
13. I am grateful to the UNEP team for giving us the opportunity to learn more about the environment and how we can provide solution to its degradation without any environmental components (land, soil, sea, air, etc).
14. Course is very structured and useful for present context.
15. I am looking forward to Join another educative mooc from Environmental academy. thank you
16. The videos I watched were so informative to my current course on environment. Much as i did the course halfway, the resourse material was so useful, I shared it with my course mates
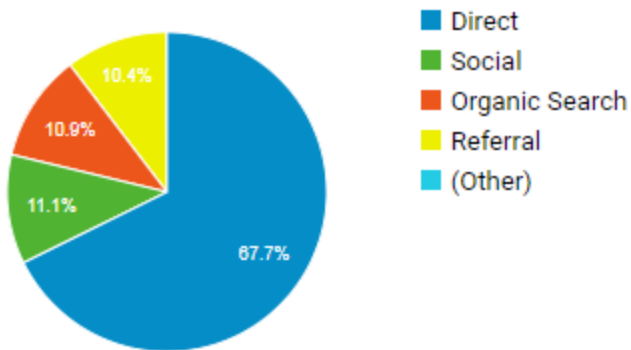
Theme: Recommended Improvements to the MOOC

1. training how to controlling the pollutants plan and treatment the pollution
2. Language problem... if the course design for us in urdu .....
3. The experience has been great, however i would recommend that the course module interface should be user friendly.. It was somehow difficult finding study materials. Thank you
4. I wish another opportunity is given me to complete this course. Thanks
5. Would like very much to see the MOOC coming again for me to have the chance to do the course
6. There is need to ensure course materials are available to students who have taken the course even after it has been terminated. Although I had downloaded the course materials, I lost my laptop and could not access the materials for reference.
7. I would prefer test questions to focus on subject matter and application of the knowledge rather than on results or outcomes of case studies, such as the actual reduction rate in use of vehicles in the Sweden case for instance
8. Its really good effort but must provide certification to all enrolled candidates for their encouragement to actively participate and involvement in next courses
9. Please make the course materials in pdf or PowerPoint or video format
10. I love the UN Courses. Thank you very much for such useful material.
11. More of these in the future but cutting across disciplines and known problems
12. Please Provide this in urdu language
13. I love the course, it's a good course to handle most sustainability problems in my Country. I regret not being able to complete it, but will like to take the course all over from the beginning if only I will be given another chance to do so.
14. First of all I would like to thank you for this initiative to communicate knowledge across all continents, we see offer to program masters and doctorates at a distance thanks for everything
15. It was worth my time and efforts to participate in this very relevant online course!
16. The content was well developed to tackle issues of pollutions while promoting sustainability and health of biota.

17. would have like if there would have been more videos and in some modules less texts. It can be difficult to keep reading for several hours, so it would have been convinient to have more audio/video files to listen/watch.

18. The text was too much, would be better if using more videos or more interactive learning with more picture/infographic. Please add closed caption or subtitle to the video cause sometimes it's difficult to listened to different accent

19. I registered for the two courses and only managed to complete one: from source to sea to sustainability. Personally, I found it very interesting. I propose that there be included more of audio visual contents i.e videos and audios that for me bring in the fun in the learning process.

Appendix B:

Google Analytics Reports

Top Channels

- Direct
- Social
- Organic Search
- Referral
- (Other)

REFERALS:

1.	web.unep.org	102	(24.64%)
2.	outlook.live.com	59	(14.25%)
3.	cep.unep.org	56	(13.53%)
4.	unep-iesd.tongji.edu.cn	32	(7.73%)
5.	mail.yahoo.com	22	(5.31%)
6.	best-ping-service-usa-1.info ◄◄ ═►═◄══visit-us	20	(4.83%)
7.	inms.international	16	(3.86%)
8.	concordia.ca	14	(3.38%)
9.	dombestofferhdd.info	10	(2.42%)
10.	ivegetadsincome.info	10	(2.42%)

SOCIAL:

1.	Facebook	**294**	(68.85%)
2.	Twitter	**117**	(27.40%)
3.	LinkedIn	**16**	(3.75%)

LOCATION:

1.	Philippines	**321**	(8.47%)
2.	Canada	**307**	(8.10%)
3.	United States	**254**	(6.70%)
4.	Kenya	**222**	(5.85%)
5.	United Kingdom	**191**	(5.04%)
6.	Nigeria	**153**	(4.03%)
7.	India	**131**	(3.45%)
8.	Turkey	**123**	(3.24%)
9.	Colombia	**112**	(2.95%)
10.	Brazil	**90**	(2.37%)