



**UNIVERSITY OF THE PHILIPPINES
OPEN UNIVERSITY**

Bachelor of Arts in Multimedia Studies

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**EVALUATING ACCESSIBILITY OF THE MASSIVE OPEN DISTANCE
e-LEARNING (MODeL) PLATFORM**

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Date of Submission
5 August 2019

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This Special Project titled
Evaluating Accessibility of the Massive Open Distance
e-Learning Platform

is hereby accepted by the Faculty of Information and Communication Studies in partial fulfillment of the requirements for the Bachelor of Arts in Multimedia Studies.

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ABSTRACT

As one of the constituents of the country's national university and premier institution of higher learning, the University of the Philippines Open University (UPOU) provides and delivers Massive Open Online Courses as learning opportunities for more people anywhere in the country or the world. The official platform of UPOU MOOCs is the Massive Open Distance e-Learning website, also called the MODeL platform. The main purpose of this research is to evaluate the accessibility of the platform, the selected course site, and the course materials of that course site, which are available to the students. The selected MOOC was Oral Communication and Conversational Fluency (CFE 101).

The platform, course site, and course materials were evaluated using Initial Checks, the WCAG-EM report tool, along with several web accessibility evaluation tools. In the evaluation and audit reports, there are failures in several WCAG 2.0 guidelines in three levels of conformance, Levels A, AA, and AAA. The students from two batches (March and June) of the selected MOOC were invited to participate in offline and online surveys. The evaluation and the survey revealed that there are accessibility issues that need to be addressed as these are crucial to the overall learning experience of the users and students, especially to persons with disabilities.

This research concludes that the accessibility issues of the MODeL website be addressed and fixed to provide a better and more effective delivery of MOOCs. This research also allows for more research and more opportunities for the improvement of the university.

KEYWORDS: Accessibility, Massive Open Distance e-Learning, Massive Open Online Courses, MOOC, Web Content Accessibility Guidelines, WCAG 2.0, WCAG-EM, Easy Checks

BIOGRAPHICAL SKETCH

Hyacinth C. Celzo studied at the University of the Philippines from 2000 to 2005 but was unable to finish Bachelor of Science in Industrial Engineering (BSIE). Shortly after quitting school, she started to work full-time in a BPO company and, later, learned about the courses being offered by the University of the Philippines Open University in 2010. She enrolled in 2011 under the Bachelor of Arts in Multimedia Studies (BAMS) program and studied while working. Due to financial and health concerns, she stopped and focused on her job and personal life. After getting married, she returned to continue her studies in 2017.

As a BAMS student, she took interest in photography, stop-motion animation, photo and video editing, and web design. What inspired her to do this research is the elective, MMS 151: Introduction to Web Accessibility. Knowing about how persons with disabilities access the web and the difficulties they encounter prompted Hyacinth to propose a research project on the UPOU websites. She was advised to do an evaluation of the web accessibility of the MODeL platform, which is UPOU's official platform for MOOCs offerings. She hopes that this research will be helpful to make the delivery of MOOCs better and to enhance the learning experiences of the students. After graduation, she plans to learn more about web design, assistive technologies, software, and tools necessary to become a web accessibility specialist.

ACKNOWLEDGEMENTS

I would like to express my heartfelt gratitude to my advisers, Asst. Prof. Myra C. Almodiel and Asst. Prof. Ria Mae H. Borrromeo and to the BAMS Program Chair, Asst. Prof. Diego Silang S. Maranan for the approval, guidance, and completion of this research project.

I would also like to thank all the students of the Oral Communication and Conversational Fluency (CFE 101) March and June classes for their interest and/or participation in the research survey.

Last but not the least, I would like to thank the MODeL Administrator and MODeL Support for accommodating my request and extending their help.

DEDICATION

I dedicate my thesis to my dear husband, Bryan, for his support for all my endeavors and for his love for me. I also dedicate this to my mother, Maridel, for her patience and prayers and for taking care of me. To all my professors, instructors, classmates, and groupmates, you have been part of what I am now and I would have never reached this point if not for your help in all of my academic life here at UPOU. And last but not the least, special mention to all my friends who have listened to my personal struggles. Our conversations have kept me alive and away from depression. To God be the glory.

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Chapter 1

INTRODUCTION

Web accessibility is important and should always be considered when designing and developing websites and web tools. In fact, this is necessary in the planning stage before starting to write the code. What do we mean by web accessibility? In simplest terms, web accessibility refers to the design and development of websites, web applications, tools, and technologies, so that people with disabilities are able to use them. Specifically, web accessibility enables people to perceive, understand, navigate, and interact with and contribute to the Web. It addresses disability problems in auditory, cognitive, neurological, physical, speech, and visual, and also people with temporary disabilities, degrading abilities for older people, being in situational limitations, while multi-tasking, using smaller screens, or having a slow Internet connection (¹Lawton Henry, 2018).

Web accessibility is not only for people with permanent disabilities or extreme cases, but also benefits people even without disabilities. If a website is accessible by a blind person, then it is accessible by those with blurred vision. If a video with audio is accessible by a deaf person, then it is accessible by a person watching it in a noisy background (¹Abou-Zahra, 2016). Persons with disabilities may use “products, equipment, and systems that enhance learning, working, and daily living” (AT Resources, n. d.), and these are called Assistive Technologies (AT). An example is the screen reader, a computer software that uses Text-to-Speech (TTS) engine that assists the blind and visually impaired (Watson, 2005). It also helps people with difficulties in reading text, with dyslexia, or when multi-tasking (²Abou-Zahra, 2016).

The UP Open University offers Massive Open Online Courses through its official platform, the MODeL website. MOOCs and online courses are beneficial for any learner who has access to the internet and would like to study, especially for working students, parents, and persons with disabilities. In general, this research aims to evaluate the Massive Open Distance e-Learning (MODeL) platform in terms of its accessibility and usability. How accessible is the MODeL platform for its users, particularly for the students studying UPOU MOOCs? Specifically, this study aims to assess the Massive Open Distance e-Learning (MODeL) platform in terms of accessibility and usability of the (a) Platform, (b) Course Site, and (c) Course Materials. What are the issues that can hinder a student from fully accessing the website, course site, and course materials? The researcher would like to determine the perceptions of students in terms of accessibility and usability of the platform, course site and course materials. What can be recommended to resolve such accessibility issues? The results of this research may be used by the university and the web developers of the MODeL platform and UPOU websites to improve the design, allowing for more inclusivity and better learning experiences.

Chapter 2.

LITERATURE REVIEW

Disability Laws

Web accessibility is not just an option nor a responsibility of one person, but a commitment of an organization, company, institution, or nation as a whole. That is why disability laws and policies, such as, An Act Providing for the Rehabilitation, Self-development and Self-reliance of Disabled Persons and their Integration into the Mainstream of Society and for other Purposes or the Republic Act 7277 was approved in 1992 to recognize the disabled persons' rights, to expand rehabilitation services and benefits, to promote welfare and address their needs and concerns, to encourage respect, and to remove prejudice and discrimination ("Republic Act 7277", n.d.). By virtue of Proclamation No. 125, the National Council on Disability Affairs or NCDA (formerly, National Council for the Welfare of Disabled Persons or NCWDP) was mandated to participate in and observe the Asian and Pacific Decade of Disabled Persons in 1993 ("Proclamation No. 125", n.d.).

Initiatives in the Philippines

There have been many efforts and initiatives to make websites accessible such as the Interregional Seminar and Regional Demonstration Workshop on Accessible Information and Communications Technologies (ICT) to Persons with Disabilities, attended by 11 countries held in Manila on March 3-7, 2003, and the Manila Accessible Information and Communications Technologies (ICT) Design Recommendations was adopted ("Manila Accessible Information and Communications Technologies (ICT) Design Recommendations", n.d.). The first, second, and third Regional Workshop on Accessible ICT for Persons with Disabilities

were held in 2004 (Tagaytay City) and in 2005 (Davao City and Cebu City). The National Computer Center (NCC) and NCWDP had also given Disabled-Friendly Website Awards to participating websites that passed their accessibility recommendations, such as, Philippine House of Representatives Official Website, Adaptive Technology for Rehabilitation, Integration and Empowerment of the Visually Impaired (ATRIEV), Manila Christian Computer Institute for the Deaf (MCCID), and the Official Website of the De La Salle University (DLSU) ("Web accessibility initiatives in the Philippines", 2017).

The PWAG

In 2006, the Philippine Web Accessibility Group (PWAG) was formed and www.pwag.org was launched ("Web accessibility initiatives in the Philippines", 2017). The initial members of this group were the webmasters and web designers of the Disabled-Friendly Website awardees (1Esposa, n.d.).

PWAG envisions to:

- (1) Upscale the web accessibility compliance of participating organizations;
- (2) Through an e-group, continue skills upgrading; and
- (3) Intensify an accessible ICT advocacy to open up economic opportunities for the sector. (2Esposa, n.d.)

PWAG aims to:

- (1) Offer training whether on-site or through e-groups to members or those who are interested;
- (2) Collaborate with international organizations in learning new developments on accessibility;
- (3) Encourage the participation of the differently-abled groups in the testing, monitoring and evaluation of accessible websites;

- (4) Prepare training manuals, kits and presentation materials;
- (5) Lobby to the government legislators on the inclusion of Web Accessibility on the next revision of [Magna Carta for the Disabled Persons, Accessibility Law] and [E-commerce Law];
- (6) Develop innovative ways for promoting the push and pull approach in web accessibility both on the government and private sector;
- (7) Use web accessibility as a starting point in attaining the final goal of becoming an International Web Standards Compliant as envisioned by the World Wide Web Consortium. (2Esposa, n.d.)

Continued Efforts

The NCDa and NCC continued to give Disabled-Friendly Website Awards to encourage others. The book entitled, “Basic Web Accessibility Guide for Filipinos” authored by Jojo Esposa, Jr. was published in 2007. The Philippine Web Designers Organization who define themselves as “a group of professionals and hobbyists who create human interfaces for the Web, champion the use of standards, accessibility and usability, and aim to uplift the state of web design in the country” (3Esposa, 2009) continued to hold web design conferences, seminars, and collaborative efforts with NCDa, NCC, and PWAG to this day. In 2010, the Joint Circular No. 1, series of 2010, entitled, Accessible Website Design Guidelines was announced, which states in Section 1, “Pursuant to Article 9 of the UNCRPD which explicitly identifies Information Communication Technology (ICT), which includes government websites to be accessible to all types of citizens with disabilities (...), this Circular hereby enjoins all government agencies to implement accessible website design in accordance with the technical guidelines”

The Massive Open Distance e-Learning (MODeL)

The official MOOC platform of the University of the Philippines Open University is called the Massive Open Distance e-Learning or MODeL, which can be accessed at www.model.upou.edu.ph. MOOC stands for Massive Open Online Courses and is defined as “an online course aimed at unlimited participation and open access via the web” (“Massive Open Online Courses (MOOCs)”, n.d.). It was coined by Dave Cormier from the University of Prince Edward Island in 2008. The features of MOOC are (1) massiveness, (2) openness, and (3) connectivism. It also offers three advantages, which are, (1) accessibility, (2) student engagement, and (3) lifelong learning experiences, as well as three challenges, namely, (1) individual instruction, (2) student performance assessment, and (3) long-term administration and oversight. (“Massive Open Online Courses (MOOCs)”, n.d.).

The UP Open University has been offering free and quality MOOCs, including, Database Management and Business Analytics Applications, Introduction to Inter-Local Cooperation, Designing Learning in ODeL, Social Entrepreneurship, Traditional and New Media for Child’s Rights Protection and Promotion, UNICEF: Understanding Better the Child, and Teaching and Learning with Modern ICTs (www.model.upou.edu.ph). To be able to gain access, a student needs to create an account on the site and log in. To enrol in MOOC, the student needs to take the DE Readiness Module to earn the DE Ready Badge. The MODeL platform is also accessible on mobile devices by downloading the Moodle Mobile app and following the procedures as enumerated in the site.

Screen Reader User Surveys

The Web Accessibility in Mind group conducts screen reader user surveys and these are some of the results regarding the preference of screen reader users.

Out of 1792 valid responses, 89.2% use a screen reader due to a disability. Among these, 75.8% are due to blindness and 20.4% due to low vision or visual impairment. In screen reader proficiency, screen reader users with disabilities are more proficient than users without disabilities. In Internet proficiency, 72.9% rated themselves “Advanced”, but users without disabilities are more proficient than those with disabilities. About the same number of respondents feel that Web content has become more accessible (40.8%) and that Web content accessibility has not changed (40.4%). Compared to the previous surveys, more users (85.3%) think that better (more accessible) websites would have a bigger impact on improvements to web accessibility than better assistive technology (14.7%) (Screen Reader User Survey #7 Results, 2017).

Accessibility Research on MOOCs

A conference paper written by Iniesto, Mcandrew, Minocha, and Coughlan (2016) cited that The Open University (UK) has more disabled students (more than 21,000) than any other university in UK and Europe. Due to their preference for distance education and online learning, accessible design for MOOCs is necessary. The paper also cited several other accessibility research studies that were conducted on different MOOC platforms to evaluate accessibility for older learners, blind, and partially sighted learners, and found out that Udacity, Coursera, OpenCourseWorld and Iversity had severe accessibility problems. The conference paper, authored by Sanchez-Gordon and Lujan-Mora (2013) focused on web accessibility of MOOCs for elderly students and another one studied on edX and “the future of inclusive online learning, by proposing a software design to incorporate features in MOOC platforms to enable, support and guide authors toward conceptualizing, designing, building and testing accessible MOOCs” Sanchez-

Gordon & Lujan-Mora, 2016). Ngubane-Mokiwa (n.d.) authored a paper that analyzed articles and academic sources to determine accessibility strategies to make MOOCs accessible for people with visual impairments in the Universal Design Learning (UDL) perspective.

Chapter 3.

METHODOLOGY

A. Research Design

The MODeL platform will be evaluated using Initial Checks, evaluation tools, and auditing with WCAG-EM if it conforms with the standards and guidelines recommended by the World Wide Web Consortium (W3C).

1. Evaluate the UPOU website through Easy Checks

Easy Checks is called “a first review of web accessibility” because these are quick and simple steps to see if a webpage addresses accessibility or not.

- a. Page Title
- b. Image Text Alternatives
- c. Text: Headings; Contrast Ratio; Resize Text
- d. Interaction: Keyboard Access and visual focus; Forms, labels, and errors
- e. General: Moving, Flashing, or Blinking content; Multimedia (video, audio) alternatives; Basic Structure Check

(Lawton Henry, Rush, Watson, Keith, Leiserson, & Arch, et al, 2017)

2. Use Web Accessibility Evaluation Tools

Evaluation tools are also used in assessing web accessibility. These are “software programs or online services that help determine if web content meets accessibility guidelines”. However, they only assist but cannot determine accessibility (Abou-Zahra, Steenhout, & Keen, 2017). We can select from the list of over a hundred tools available that match our needs in evaluating web accessibility. Examples are Colour Contrast Determinator by

Vision Australia, aXe Chrome Plugin by Deque Systems, Inc., Functional Accessibility Evaluator 2.0 by University of Illinois at Urbana-Champaign, and HeadingsMap by Jorge Rumoroso (Eggert & Abou-Zahra, 2016).

3. Evaluate its conformance to WCAG

WCAG 2.0 (published on December 11, 2008) and WCAG 2.1 (published on June 5, 2018) have 12-13 guidelines organized into four principles, namely, (1) Perceivable, (2) Operable, (3) Understandable, and (4) Robust. There are also three levels, (1) A, (2) AA, and (3) AAA of testable success criteria (Lawton Henry, 2018).

B. Target Respondents and Research Instrument

This study will use an online survey using self-administered questionnaires among 15 students taking UPOU MOOCs via MODeL.

C. Procedure

1. Assess the Massive Open Distance e-learning (MODeL) platform in terms of accessibility and usability of the platform, course site and course materials and come up with the recommendations and guidelines to make the platform course site and course material accessible.

To do this, the following actions will be followed:

- Evaluate with Initial Checks (Easy Checks).
- Audit using the Evaluation Procedure of the Website Accessibility Conformance Evaluation Methodology (WCAG-EM) 1.0 as guide.
- Use the WCAG-EM Report Tool.
- Download the HTML evaluation report and the report stylesheet (CSS).

- Create a separate report detailing the web accessibility issues and the recommendations.

2. Determine the perceptions of students in terms of accessibility and usability of the platform, course site, and course materials.

To do this, the questionnaire will include definitions of terms to guide the respondents and the following sample questions:

- Do you have any type of disability?
- Do you use any type of assistive technology in accessing the web?
- Do you experience any issues or difficulties accessing the platform, the course site, and course materials? If yes, please cite them.
- Do you think these issues or difficulties affect the effectiveness, and efficiency of the UPOU MOOCs and your overall learning experience?

The respondents will also be asked to rate the web accessibility and usability of the MODeL platform, the course site, and the course materials, from 1 (Really bad) to 5 (Very good).

Chapter 4.

RESULTS AND ANALYSIS

I. Initial Checks

A. Easy Checks on the MODeL Platform

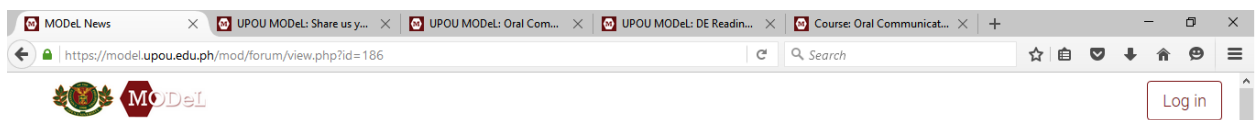
Easy Checks was performed on the home page of the MODeL platform to determine basic accessibility issues.

Selected page: Home (<https://model.upou.edu.ph>)

1. Page Title

Page titles are shown in browsers' tabs when there are multiple web pages open, such as "Home", "MOOC categories & certification series", "Dashboard", all the "Site pages", and "My courses". Page titles are shown in search engine results and can be read by screen readers (Screen reader used was NVDA). The page titles are different from other pages and distinguish the page from other web pages, as shown in the image below.

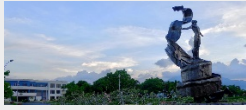


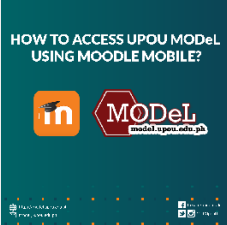
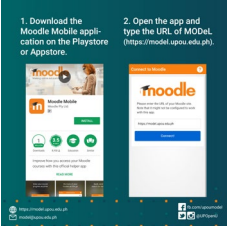
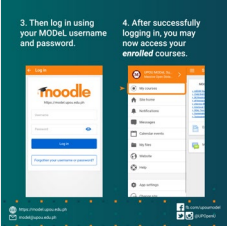
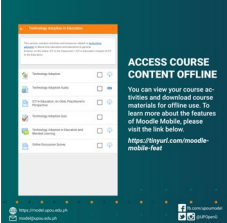
Figure 1. Page titles of the MODeL platform shown in browser tabs



2. Image Text Alternatives ("alt text")

Image text alternatives were checked using Web Developer Toolbar (*Images > Outline Images Without Alt Attributes; Images > Display Alt Attributes; Images > Viewing Image Information*). Images have appropriate alt text.

Table 1. Images, src, and alt attributes of the home page

Image	SRC	Alt Attribute
	https://model.upou.edu.ph/pluginfile.php/1/theme_snap/coverimage/1503645304/site-image.jpg	(background image)
	https://model.upou.edu.ph/pluginfile.php/1/theme_snap/favicon/1547791880/favicon2.ico	None
	https://model.upou.edu.ph/pluginfile.php/1/theme_snap/logo/1547791880/mod.png	None
	https://model.upou.edu.ph/pluginfile.php/14182/mod_page/content/1/CHED_ENDORSES_MOOCs.png	Endorsement of MOOCs
	https://model.upou.edu.ph/pluginfile.php/17418/mod_page/content/2/moodle%20mobile-01-min%20%281%29.png	Null
	https://model.upou.edu.ph/pluginfile.php/17418/mod_page/content/2/moodle%20mobile-02-min%20%281%29.png	Null
	https://model.upou.edu.ph/pluginfile.php/17418/mod_page/content/2/moodle%20mobile-03-min.png	Null
	https://model.upou.edu.ph/pluginfile.php/17418/mod_page/content/2/moodle%20mobile-04-min.png	Null

	https://model.upou.edu.ph/pluginfile.php/18129/theme_snap/coverimage/1533199042/course-image.jpg	(background image)
	https://model.upou.edu.ph/pluginfile.php/18221/theme_snap/coverimage/1533275403/course-image.png	(background image)
	https://model.upou.edu.ph/pluginfile.php/23098/mod_page/content/2/Calendar20193.3.jpg	2019 MOOCs Calendar
	https://model.upou.edu.ph/pluginfile.php/24000/theme_snap/coverimage/1546928830/course-image.png	(background image)
	https://model.upou.edu.ph/pluginfile.php/24058/theme_snap/coverimage/1547004850/course-image.png	(background image)
	https://model.upou.edu.ph/pluginfile.php/24070/theme_snap/coverimage/1547006154/course-image.png	(background image)
	https://model.upou.edu.ph/pluginfile.php/24076/theme_snap/coverimage/1547010543/course-image.png	(background image)
	https://model.upou.edu.ph/pluginfile.php/24082/theme_snap/coverimage/1547010778/course-image.png	(background image)
	https://model.upou.edu.ph/pluginfile.php/24087/theme_snap/coverimage/1547011168/course-image.png	(background image)

	https://model.upou.edu.ph/pluginfile.php/313/mod_forum/post/12481/Countdown%20AM%202.jpg	Risk Analysis and Ethics 2 weeks countdown
	https://model.upou.edu.ph/pluginfile.php/313/mod_forum/post/12481/Countdown%20DA%201.jpg	Data Preprocessing
	https://model.upou.edu.ph/theme/image.php/snap/core/1547791880/t/switch_minus	Hide Ask for help block
	https://model.upou.edu.ph/theme/image.php/snap/core/1547791880/t/switch_plus	Show Ask for help block
	https://model.upou.edu.ph/theme/image.php/snap/page/1547791880/icon	None
	https://model.upou.edu.ph/theme/image.php/snap/theme/1547791880/facebook	facebook
	https://model.upou.edu.ph/theme/image.php/snap/theme/1547791880/instagram	instagram
	https://model.upou.edu.ph/theme/image.php/snap/theme/1547791880/twitter	twitter
	https://model.upou.edu.ph/theme/image.php/snap/theme/1547791880/youtube	youtube

3. Headings

The headings outline and heading markup in the page were checked using Web Development Toolbar (*Information > View Document Outline, Outline > Show Element Tag Names, Outline > Outline Headings*). Headings are marked up as headings and follow a meaningful hierarchy, as shown below.

<https://model.upou.edu.ph/>

43 headings

<h1>(Missing heading)

<h2>Courses

<h3>Assessment of Learning in ODeL (22 May-26 Jun 2019)

<h4>Course Contacts

<h3>Oral Communication and Conversational Fluency (05 June-17 Jul 2019)

<h4>Course Contacts

<h2>Deadlines

<h2>Feedback

<h2>Messages

<h2>Forum posts

<h1>Massive Open Distance e-Learning (MODeL)

<h2>(Missing heading)

<h3>About UPOU

<h3>Universal Accessibility

<h3>Quality MOOCs

<h2>Featured course offerings

<h3>MOOC categories & certification series

<h4>(Missing heading)

<h5>(No heading text)

<h5>▶ ASEAN Studies

<h5>▶ Business Analytics

<h5>▶ Business Analytics (BA Track)

<h5>▶ Business Analytics (IT Track)

<h5>(No heading text)

<h5>(No heading text)

<h5>▶ Child Rights Protection and Promotion

<h5>▶ DE Readiness

<h5>▶ eFilipiniana

<h5>▶ eService Management Program

<h5>▶ Interlocal Cooperation

<h5>▶ ODeL Teacher Accreditation

<h5>▶ Oral Communication and Conversational Fluency

<h5>▶ Sustainable Development

<h5>▶ Technology for Teaching and Learning

<h4>Endorsement of MOOCs

<h4>Access our courses through your phones

<h4>2019 MOOCs Calendar

<h2>MODeL News

<h3>Share us your story!

<h3>Data Preprocessing Opens Today!

<h3>New MOOCs to open in a few days!

<h4>(Missing heading)

<h5>(No heading text)

<h2>Get your certificates of accomplishment!

<h3>(Missing heading)

<h4>(Missing heading)

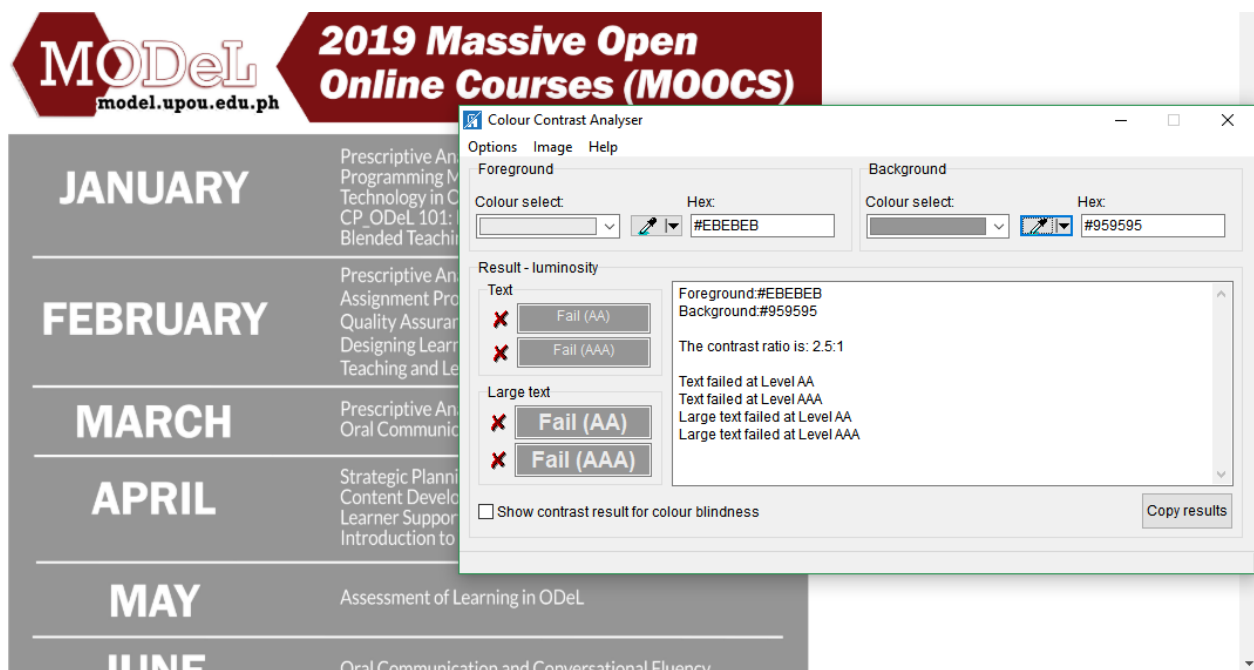
<h5>Click the icon below to proceed:

- <h2>Ask for help
- <h2>Navigation

4. Contrast Ratio

Contrast ratio was checked using Colour Contrast Analyser. Contrast ratio of the text against background of the 2019 MOOCs calendar is 2.5:1 which is below the minimum contrast ratio of 4.5:1. (Image shown below.)

Figure 2. Contrast ratio of the 2019 MOOCs Calendar



5. Resize Text

Resizing text was checked by zooming text only on Firefox (Alt+V, Z, T). Buttons, search field, and links are still visible and usable. No horizontal scrolling is required but there are overlapping of elements. Under Featured Offerings, text overlap with other text when the text is enlarged. The text “Preprocessing” also got cutoff. Clicking “My Courses” at the top right corner of the web page leads the user to a pop-up providing links to profile, courses, calendar, feedback, messages, forum posts, and the log out button. When

text is enlarged to 200%, the text, “Deadlines”, “Feedback”, “Messages”, and “Forum posts” overlap with the link text, “View my calendar”, “View my feedback”, “View my messages”, and “View my forum posts”, respectively. (Images shown below.)

Figure 3. Overlaps in “Featured course offerings”

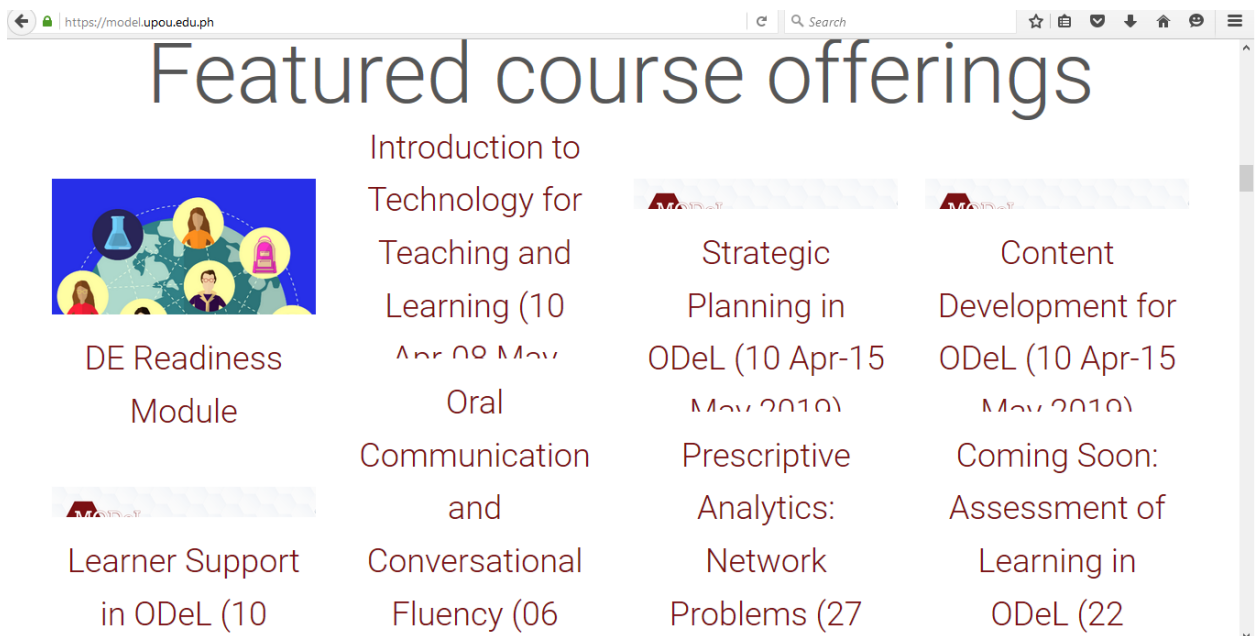


Figure 4. The text, “Preprocessing”, got cut off

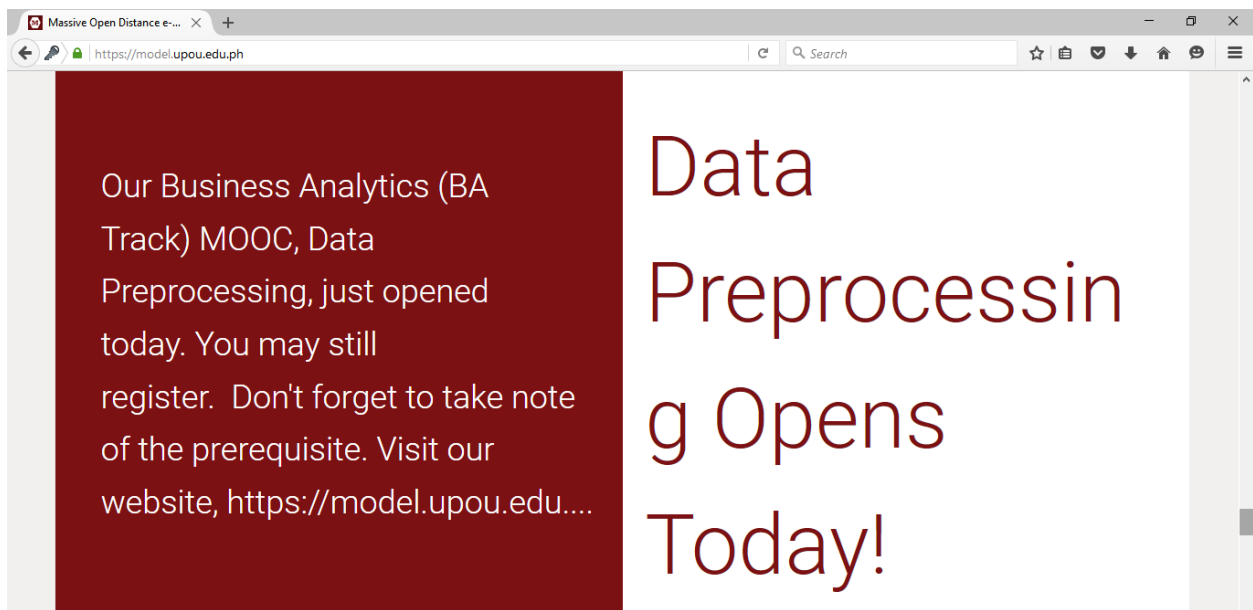
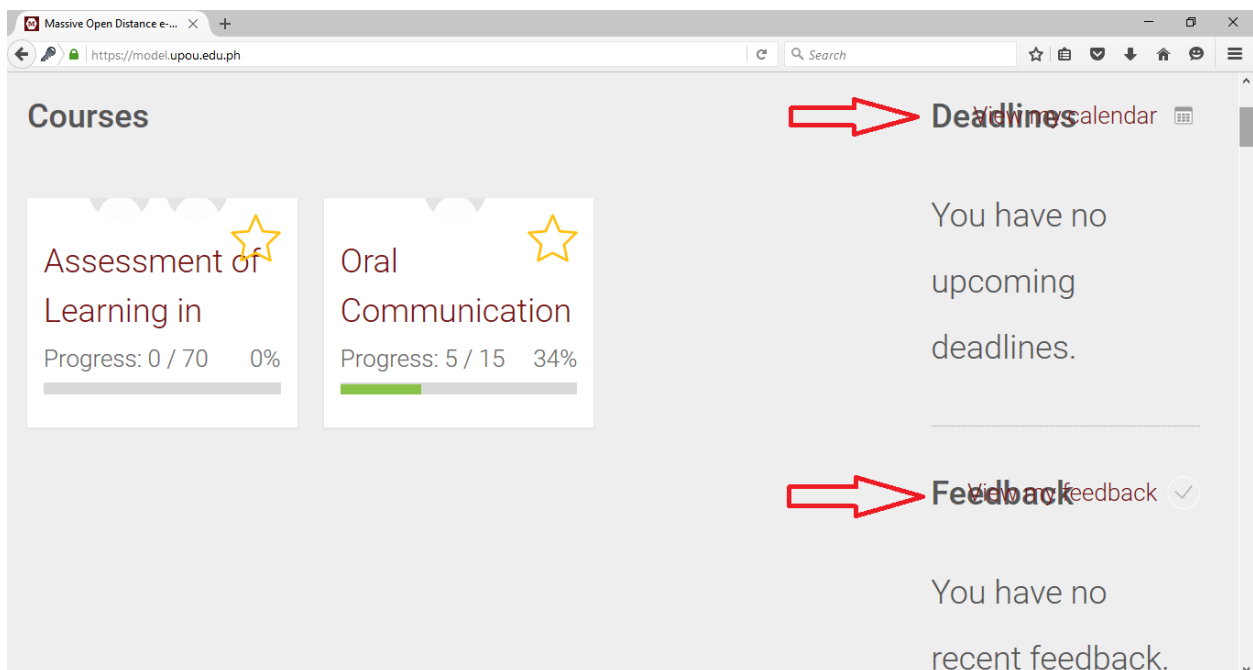


Figure 5. Overlapping text



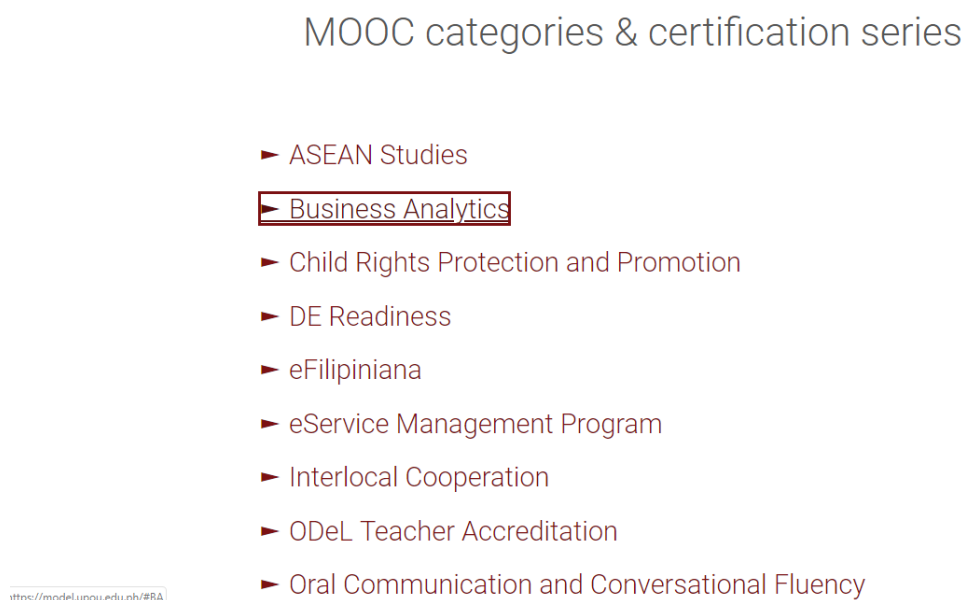
6. Keyboard Access and Visual Focus

Keyboard access and visual focus were checked by using keyboard only.

There were no issues with tabbing to all, tabbing away, and the tabbing order.

Visual focus is clearly visible, even for image links, except for the selection of language at the bottom right, where the visual focus has a low contrast. All functionality can be done by keyboard and arrow keys can be used to move through drop-down lists. (Image shown below.)

Figure 6. Visible keyboard focus



7. Forms, Labels, and Errors

The Search box has a label element and has a unique id. The **for** attribute and **id** are the same. It is also accessible via keyboard, as shown below.

```
<div class="box mdl-align"><form id="coursesearch"
action="https://model.upou.edu.ph/course/search.php" method="get"><fieldset
class="coursesearchbox invisiblefieldset"><label
for="shortsearchbox">Search courses: </label><input type="text"
id="shortsearchbox" size="12" name="search" value="" /><input type="submit"
value="Go" /></fieldset></form></div>
```

8. Moving, Flashing, or Blinking Content

The web page does not contain any moving, flashing, or blinking information or content and auto-updated information.

9. Multimedia (Video, Audio) Alternatives

The web page does not contain video or audio content.

10. Basic Structure Checks

The basic structure of the web page was checked using Web Developer Toolbar (*Images > Disable Images > Disable All Images, CSS > Disable All Styles, Miscellaneous > Linearize Page*). Except for images of text (Moodle mobile app instructions and 2019 MOOCs calendar), when the images are disabled, the text alternatives replace them. Even without the style and all the content was linearized, the information can still be understood, makes sense, and follows a logical reading order. However, the information on the image texts are not accessible if the images are disabled. The headings help the user determine blocks of information and be able to navigate on the page. (Images shown below.)

Figure 7. The home page when linearized

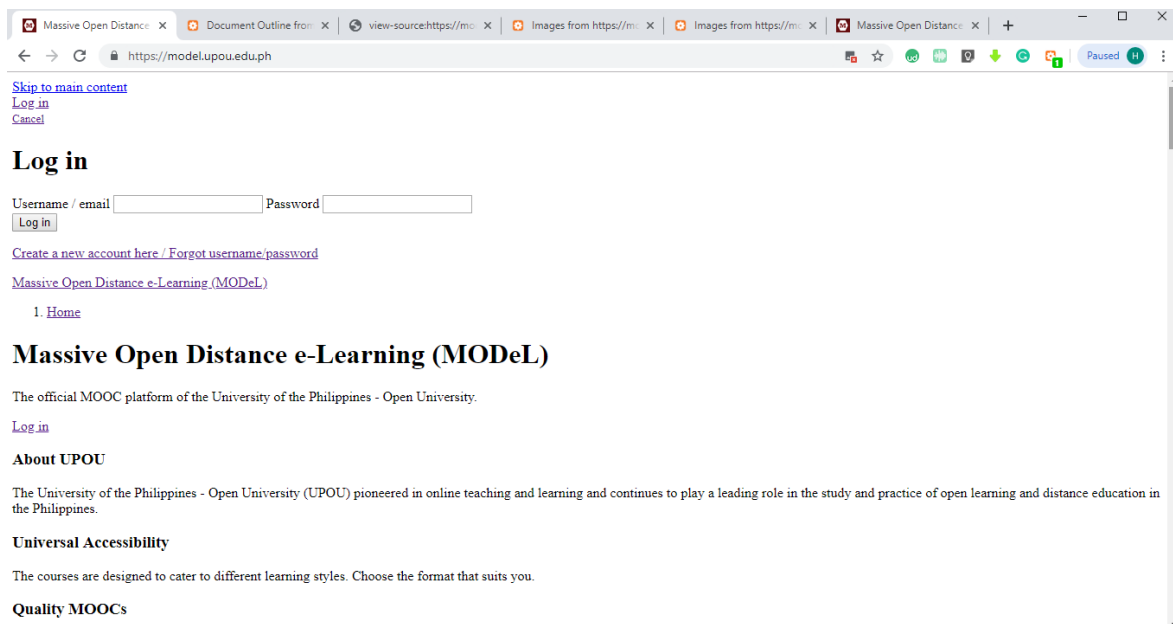


Figure 8. Images of texts – Moodle mobile app instructions (left) and 2019 MOOCs Calendar (right)



Accessibility Issues Found on the MODeL Platform with Easy Checks

Having a low contrast ratio on the 2019 MOOCs Calendar will be a problem for people who have visual impairment or for those who require high contrast in order to read the text. Overlapping text and text that got cut off after resizing text to 200% will make the text unreadable, unusable, or confusing. Information on images of text are not perceivable when images are disabled.

B. Easy Checks on the Course Site

To be able to evaluate the course site, the evaluator must enroll in one of the MOOCs classes being offered. The class that was chosen was Oral Communication and Conversational Fluency because this MOOC does not have prerequisites nor is a part of a series. This course would, most likely, have more enrollees than the other MOOCs. On the 2019 MOOCs Calendar, this MOOC is scheduled on March, June, and September which means that there are more students that can be invited to participate in the survey and the timing is just right for the completion of the research. The selected page to perform Easy Checks on the course site is the Introduction page.

Course: Oral Communication and Conversational Fluency (CFE 101)

Inclusive Dates: March 6 to April 17, 2019; June 5 to July 17, 2019

Teacher: Ana Katrina Marcial

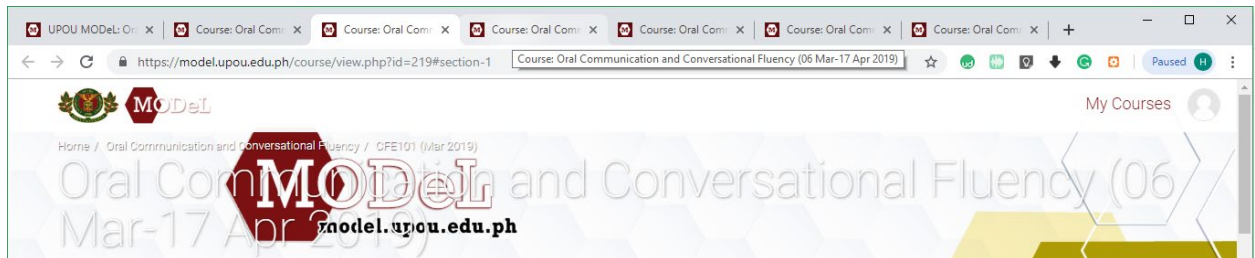
Selected page: Introduction (<https://model.upou.edu.ph/course/view.php?id=220>)

1. Page Title

The page title is shown in the browsers' tab when there are multiple web pages open. The page title is shown in search engine results and can be

read by screen readers. (Screen reader used is NVDA.) The page title is different and can be distinguished from the other web pages, as shown in the image below.

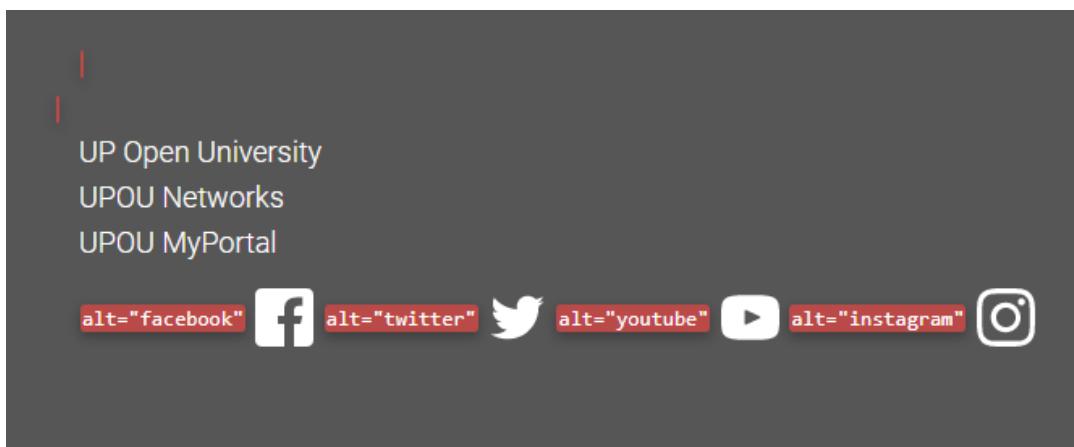
Figure 9. Page titles of the CFE 101 course site web pages



2. Image Text Alternatives (“alt text”)

Image text alternatives were checked using Web Developer Toolbar Chrome extension (*Images > Outline Images Without Alt Attributes; Images > Display Alt Attributes, Images > View Image Information*). Images have appropriate alt text, as shown below.

Figure 10. Alt texts in the footer



3. Headings

The headings outline and heading markup in the page were checked using Web Development Toolbar (*Information > View Document Outline*,

Outline > Show Element Tag Names, Outline > Outline Headings). Headings are marked up as headings and follow a meaningful hierarchy, as shown below.

<https://model.upou.edu.ph/course/view.php?id=220>

85 headings

<h1>(Missing heading)

<h2>Courses

<h3>Assessment of Learning in ODeL (22 May-26 Jun 2019)

<h4>Course Contacts

<h3>Oral Communication and Conversational Fluency (05 June-17 Jul 2019)

<h4>Course Contacts

<h2>Deadlines

<h2>Feedback

<h2>Messages

<h2>Forum posts

<h1>Oral Communication and Conversational Fluency (05 June-17 Jul 2019)

<h2>Page Contents

<h3>(Missing heading)

<h4>(Missing heading)

<h5>(No heading text)

<h2>Introduction

<h3>(Missing heading)

<h4>Announcements

<h4>Announcements

<h4>CFE_ Course Guide (2019)

<h2>Principles of effective oral communication

<h3>(Missing heading)

<h4>CFE_ Module 1

<h3>1.0 Verbal and Non-verbal Communication

<h3>Module activity 1A:

<h3>2.0 Types of Communication: Intrapersonal, Dyadic, Small Group, Public, and Mass

<h3>3.0 Communication Competence

<h3>4.0 Effective Speaking

<h4>Module 1 Activities

<h2>Talking About Oneself and Exchanging Personal Information

<h3>(Missing heading)

<h4>CFE_ Module 2

<h3>1.0 Conversation context: Introducing oneself and sharing personal information

<h4>(Missing heading)

<h5>Video resources:

<h5>Self-reflection questions:

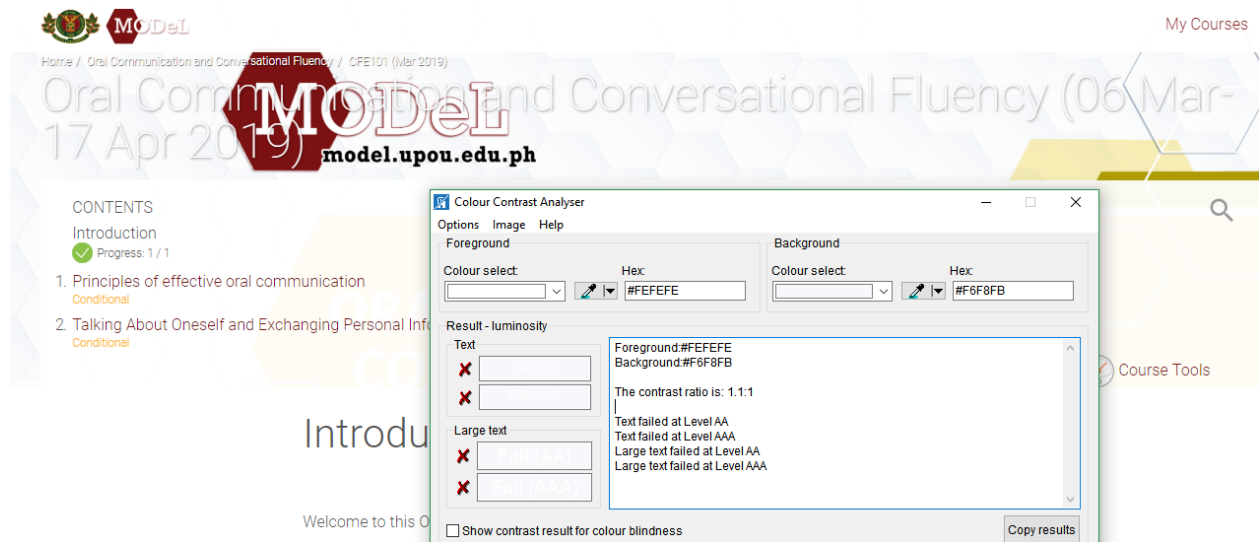
- <h3>2.0 Grammar and/or Vocabulary focus: Statements in self-introduction and in exchanging information
 - <h4>2.1 Introducing yourself
 - <h5>Video resources:
 - <h4>(No heading text)
 - <h4>2.2 Introducing someone to other people
 - <h4>2.3 Flow of conversation when exchanging information
 - <h5>Module Activity 2A
 - <h5>Module Activity 2B (Optional)
 - <h4>Module 2-3 Peer Assessments [under Module 2]
- <h2>Expressing Preferences
 - <h3>(Missing heading)
 - <h4>CFE_Module 3
 - <h3>1.0 Conversation context: Expressing preferences
 - <h4>(Missing heading)
 - <h5>Reading resources:
 - <h3>2.0 Grammar and/or Vocabulary focus: Comparisons, parallelism, and verb tenses
 - <h4>2.1 Keywords and phrases in expressing preferences
 - <h4>2.2 Making comparisons and observing parallelism
 - <h5>Reading resources:
 - <h4>(No heading text)
 - <h4>2.3 Using appropriate verb tenses
 - <h5>Reading resources:
 - <h3>3.0 Speaking exercise
 - <h4>(Missing heading)
 - <h5>Module Activity 3
 - <h4>Module 2-3 Peer Assessments [under Module 3]
- <h2>Making Polite Requests and Invitations
 - <h3>(Missing heading)
 - <h4>(Missing heading)
 - <h5>(No heading text)
 - <h5>Listening resource
 - <h4>CFE_Module 4
 - <h3>1.0 Conversation context: Making requests and invitations
 - <h4>1.1 Requests and favours
 - <h5>Reading resources:
 - <h5>(No heading text)
 - <h5>Listening resource:
 - <h4>1.2 Invitations
 - <h5>Listening resources:
 - <h3>2.0 Grammar and/or Vocabulary focus: Modals
 - <h4>2.1 Auxiliaries
 - <h4>2.2 Modals
 - <h5>Video resource:
 - <h5>Reading resources:
 - <h3>3.0 Module activities
 - <h4>(Missing heading)
 - <h5>Module Activity 4A
 - <h3>Module Activity 4B
 - <h4>Module 4A activity
 - <h4>Module 4B activity
 - <h4>Course Assessment
- <h2>Course Tools

<h2>Navigation
<h2>Administration
<h2>Search forums
<h2>Latest announcements
<h2>Upcoming events
<h2>Recent activity
 <h3>(Missing heading)
 <h4>(Missing heading)
 <h5>(Missing heading)
 <h6>Course Contacts
 <h6>About This Course
 <h6>Recent activity
 <h3>New forum posts:

4. Contrast Ratio

The color contrast in the “Home”, “Oral Communication and Conversational Fluency”, and “CFE101 (March 2019)” was tested using Colour Contrast Analyser. The contrast ratio of the font against the background is 1.0:1 and 1.1:1 which is extremely poor making it difficult to find this navigation bar on the page. The course title on top of the page, though with bigger font size, is also difficult to read because of very poor color contrast. See image below.

Figure 11. Contrast ratio of the navigation text and the course title against the background



5. Resize Text

Resizing text was checked by zooming text only on Firefox (Alt+V, Z, T). Buttons, search field, and links are still visible and usable. No horizontal scrolling is required but there are overlapping of elements. When the text is enlarged, the text on the banner image displaying the course title becomes more visible and the heading of the page which is on top of the banner image is difficult to read. Clicking “My Courses” at the top right corner of the web page leads the user to a pop-up providing links to profile, courses, calendar, feedback, messages, forum posts, and the log out button. When text is enlarged to 200%, the text, “Deadlines”, “Feedback”, “Messages”, and “Forum posts” overlap with the link text, “View my calendar”, “View my feedback”, “View my messages”, and “View my forum posts”, respectively. (Images shown below.)

Figure 12. The course title is hard to read because of the banner image as its background.

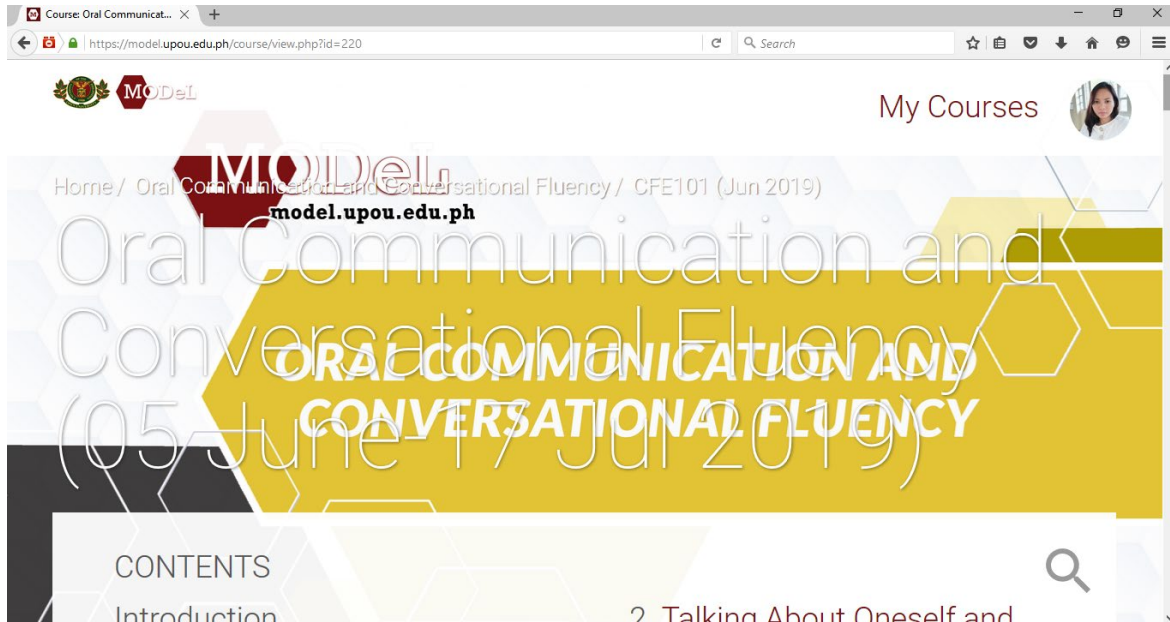
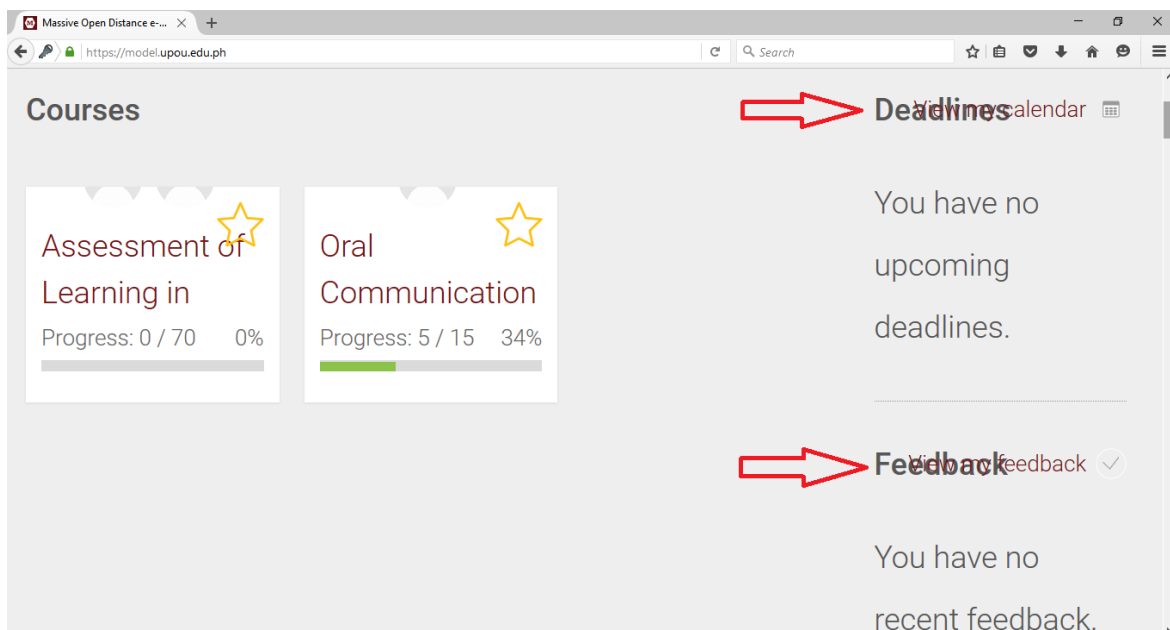


Figure 13. Overlapping texts

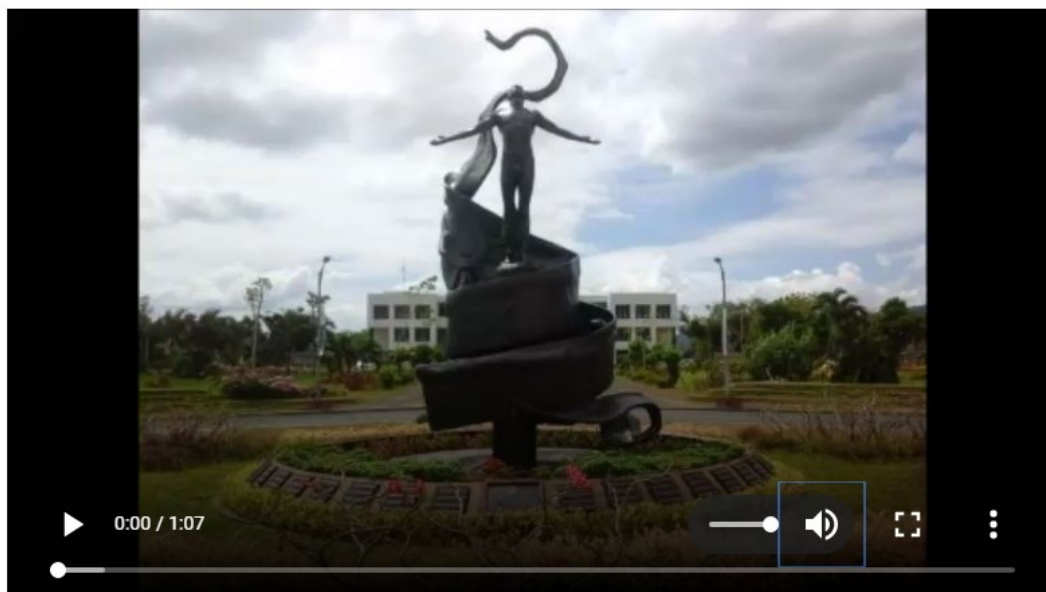


6. Keyboard Access and Visual Focus

The page can be accessible via keyboard only. You can tab to all and away from elements and tabbing order follows a logical reading order. There are no keyboard traps and the visual focus is clearly visible in the body, but slightly visible when tabbing to the footer. All functionality can be done by keyboard. See image below.

Figure 14. Visible keyboard focus

Listen to this welcome message for an overview of what the course will focus on, and then proceed to reading the Course Guide:



7. Forms, Labels, and Errors

The “Search” field is accessible via keyboard. It is labeled with an icon and when it is clicked, the text, “Search” is shown and is clearly visible to the user. (Image shown below.)

Figure 15. "Search" field is labeled.



8. Moving, Flashing, or Blinking Content

The web page does not contain any moving, flashing, or blinking information or content and auto-updated information.

9. Multimedia (Video, Audio) Alternatives

The video and controls are accessible via keyboard. The controls are not labeled with text and can be perceived visually through the icons or auditory with a screen reader. The video does not start automatically and the user can play, pause, or stop it at any time. There are no closed or open captions. There are no transcripts nor audio descriptions provided.

10. Basic Structure Checks

The basic structure of the web page was checked using Web Developer Toolbar (*Images > Disable Images > Disable All Images, CSS > Disable All Styles, Miscellaneous > Linearize Page*). When the images are disabled, the text alternatives replace them. Even without the style and the all content was linearized, the information can still be understood, makes sense, and follows a logical reading order. The headings help the user determine

blocks of information and be able to navigate on the page. (Image shown below.)

Figure 16. Linearized CFE 101 course site

[Oral Communication and Conversational Fluency \(05 June-17 Jul 2019\)](#)

PageContents

- [Forum Announcements](#)
- [Forum Announcements](#)
- [CFE Course Guide \(2019\)](#)
- [CFE Module 1](#)
- [Forum Module 1 Activities](#)
- [CFE Module 2](#)
- [Forum Module 2-3 Peer Assessments \[under Module 2\]](#)
- [CFE Module 3](#)
- [Forum Module 2-3 Peer Assessments \[under Module 3\]](#)
- [CFE Module 4](#)
- [Forum Module 4A activity](#)
- [Forum Module 4B activity](#)
- [Feedback Course Assessment](#)

[Contents"](#)

0. [Introduction](#)  Completed Progress: 1 / 1
1. [Principles of effective oral communication](#) Progress: 1 / 2
2. [Talking About Oneself and Exchanging Personal Information](#) Progress: 1 / 2
3. [Expressing Preferences](#) Progress: 1 / 2
4. [Making Polite Requests and Invitations](#) Progress: 1 / 4

[Course Tools](#)

Accessibility Issues Found on the Course Site with Easy Checks

Having a low contrast ratio on the font on the navigation bar will be a problem for people who have visual impairment or for those who require high contrast in order to read the text. Navigation bar is important so that users will be able to locate where they are in the set of web pages but if it has extremely low contrast, then even the navigation itself will be difficult to locate on the page. Overlapping elements and text that got cut off after resizing text to 200% will make the text unreadable, unusable, or confusing. The introduction video will not be perceived by users who have hearing impairment or if the users are listening to it in a noisy place. Since there isn't any transcript, the users will not be able to get the information when the video does not play due to slow internet speed.

C. Initial Checks on the Course Materials

Course: Oral Communication and Conversational Fluency (CFE 101)

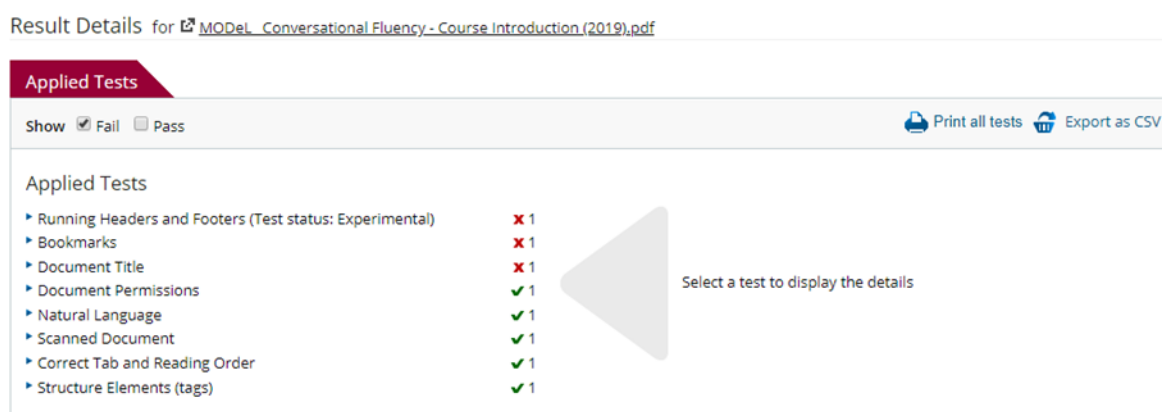
Inclusive Dates: March 6 to April 17, 2019; June 5 to July 17, 2019

Teacher: Ana Katrina Marcial

Selected file: MODEL_Conversational Fluency – Course Introduction (2019).pdf

Instead of Easy Checks, the PDF document was checked using PDF accessibility evaluation tools. The first tool that was used is the online PDF Checker by the European Internet Inclusion Initiative (<http://checkers.eiii.eu/en/pagecheck/>). Out of 8, the document failed 3 applied tests, namely, running headers and footers, bookmarks, and document title. It passed the tests for document permissions, natural language, scanned document, correct tab and reading order, and structure elements (tags). (See image below.)

Figure 17. Results of PDF Checker by EIII



The second one was done with PDF Accessibility Checker (PAC 3) by Access for all. According to the results, there are failures in fonts, structure elements, alternate descriptions, and metadata. Therefore, the PDF is not PDF/UA compliant.

However, the document passed PDF Syntax, content, natural language, role mapping, and document settings. (See image below.)

Figure 18. Results of PAC 3 by Access for all

PAC 3 - PDF Accessibility Checker 3 Version: 3.0.7.0

PDF Accessibility Checker 3

Title
(no title)

Filename
MODEL_Conversational Fluency - Course Introducti

Language **Tags** **Pages** **Size**
en-PH **875** **7** **207 KB**

Summary Report

✗ This PDF file is not PDF/UA compliant.

Checkpoint	Passed	Warned	Failed
✓ PDF Syntax	893	0	0
✗ Fonts	12	0	8
✓ Content	64392	0	0
⊘ Embedded Files	0	0	0
✓ Natural Language	30822	0	0
✗ Structure Elements	120	56	124
⚠ Structure Tree	1650	2	0
✓ Role Mapping	1846	0	0
✗ Alternate Descriptions	3500	0	26
✗ Metadata	2	0	4
✓ Document Settings	10	0	0

Sponsors

SZBLIND
Schweizerischer Zentralverein für das Blindenwesen

printsatz
DRUCKVORSTUFE

Access1
Accessible documents for everyone

axes PDF

BITV CONELIT

**Zugang für alle
Accès pour tous
Accesso per tutti
Access for all**

**Zugang für alle
Accès pour tous
Accesso per tutti
Access for all**

Results in Detail **Summary Report as PDF**

Screen Reader Preview **Logical Structure**

Document Statistics

The third evaluation tool that was used is the Adobe Acrobat Pro DC. In summary, the checker found problems which may prevent the document from being fully accessible, as follows:

- Needs manual check: 2
- Passed manually: 0
- Failed manually: 0
- Skipped: 1
- Passed: 28
- Failed: 1

The following table show the detailed accessibility report generated using Adobe Acrobat Pro DC:

Table 2. Accessibility report using Acrobat Pro DC

Rule Name	Status	Description
Document		
Accessibility permission flag	Passed	Accessibility permission flag must be set
Image-only PDF	Passed	Document is not image-only PDF
Tagged PDF	Passed	Document is tagged PDF
Logical Reading Order	Needs manual check	Document structure provides a logical reading order
Primary language	Passed	Text language is specified
Title	Failed	Document title is showing in title bar
Bookmarks	Passed	Bookmarks are present in large documents
Color contrast	Needs manual check	Document has appropriate color contrast
Page Content		
Tagged content	Passed	All page content is tagged
Tagged annotations	Passed	All annotations are tagged
Tab order	Passed	Tab order is consistent with structure order

Character encoding	Passed	Reliable character encoding is provided
Tagged multimedia	Passed	All multimedia objects are tagged
Screen flicker	Passed	Page will not cause screen flicker
Scripts	Passed	No inaccessible scripts
Timed responses	Passed	Page does not require timed responses
Navigation links	Passed	Navigation links are not repetitive
Forms		
Tagged form fields	Passed	All form fields are tagged
Field descriptions	Passed	All form fields have description
Alternate Text		
Figures alternate text	Passed	Figures require alternate text
Nested alternate text	Passed	Alternate text that will never be read
Associated with content	Passed	Alternate text must be associated with some content
Hides annotation	Passed	Alternate text should not hide annotation
Other elements alternate text	Passed	Other elements that require alternate text
Tables		
Rows	Passed	TR must be a child of Table, THead, TBody, or TFoot
TH and TD	Passed	TH and TD must be children of TR
Headers	Passed	Tables should have headers
Regularity	Passed	Tables must contain the same number of columns in each row and rows in each column
Summary	Skipped	Tables must have a summary
Lists		
List items	Passed	LI must be a child of L
Lbl and LBody	Passed	Lbl and LBody must be children of LI
Headings		
Appropriate nesting	Passed	Appropriate nesting

II. WCAG-EM Report

A. WCAG-EM Report for the MODeL Platform

Website name: Website of the UPOU Massive Open Distance e-Learning

Scope of the website: All web content of the website of the UPOU Massive Open Distance e-Learning located at <https://model.upou.edu.ph/>

Conformance target: Level AAA

Additional evaluation requirements: The report will include a list of errors and description of the problems. The evaluation will cover all web pages and web content of the website available to the student.

Accessibility support baseline: Chrome with NVDA, FireFox with NVDA

Relied upon technologies: HTML5, CSS

Table 3. Results of Level AAA (MODeL platform)

Principle	Level A	Level AA	Level AAA
1. Perceivable	8/9	2/5	5/8
2. Operable	8/9	1/3	7/8
3. Understandable	4/5	3/5	4/7
4. Robust	1/2	0/0	0/0
Total	21/25	6/13	16/23

The following accessibility issues on the MODeL platform have been found:

Principle 1: Perceivable

1.1.1 Non-text content (Level A). There are images with no alternate texts. Instructions and information in "Access our courses through your phones", "2019 MOOCs Calendar", and "MODeL News" are images of text with no text alternatives if

the images are disabled, inaccessible or don't load. Endorsement of MOOCS PDF file is a scanned image. On the "Welcome to MODeL!" page, the graphic that provides instructions how to create an account and join courses doesn't have text alternatives.

Recommendation: Provide short text alternatives by using alt on img elements (<https://www.w3.org/WAI/WCAG21/Techniques/html/H37.html>). For images of text, provide an alternative that provides the same information in the form of text and use CSS to control visual presentation of text.

1.4.3 Contrast (Minimum) (Level AA). Contrast for text and large text against background of the 2019 MOOCs Calendar is 2.5:1, failing the minimum contrast ratio of 4.5:1 and 3:1, respectively.

Recommendation: Ensure that the minimum contrast ratio between text and its background is at least 4.5:1 and for large text is at least 3:1 (<https://www.w3.org/WAI/WCAG21/Techniques/general/G18.html>). Provide a mechanism to switch to a presentation with sufficient contrast (<https://www.w3.org/WAI/WCAG21/Techniques/general/G174.html>).

1.4.4 Resize text (Level AA). Text overlaps with other text and image under "Featured course offerings". Using Firefox browser with text-only zoom at 200%: "Deadlines" overlap with "View my calendar", "Feedback" overlaps with "View my feedback", "Messages" overlaps with "View my messages", and "Forum posts" overlaps with "View my forum posts".

Recommendation: Ensure that text containers resize when the text resizes. Use measurements that are relative to other measurements in the content. Use percent for font sizes (<https://www.w3.org/WAI/WCAG21/Techniques/css/C12.html>).

Use a liquid layout (<https://www.w3.org/WAI/WCAG21/Techniques/general/G146.html>)

1.4.5 Images of Text (Level AA). Images of text were used instead of text to convey information. Instructions on how to access the courses on mobile app and the calendar showing the schedule of course offerings, and the instructions how to create an account and join courses are images of text, though they can be conveyed through text with visual presentation controlled with CSS.

Recommendation: Provide an alternative that provides the same information in the form of text and use CSS to control visual presentation of text (<https://www.w3.org/WAI/WCAG21/Techniques/css/C22.html>).

1.4.6 Contrast (Enhanced) (Level AAA). Contrast ratio of text and background is lower than 7:1. Contrast for text and large text against background of the 2019 MOOCs Calendar is 2.5:1.

Recommendation: Ensure that the minimum contrast ratio between text and its background is at least 7:1. Provide a mechanism to switch to a presentation with sufficient contrast (<https://www.w3.org/WAI/WCAG21/Techniques/general/G17.html>).

1.4.8 Visual Presentation (Level AAA). The user cannot select foreground and background colors.

Recommendation: Provide a multi-color selection tool so that users can select foreground and background colors (<https://www.w3.org/WAI/WCAG21/Techniques/general/G175.html>).

1.4.9 Images of Text (No Exception) (Level AAA). Images of text that are not pure decoration are present.

Recommendation: Provide an alternative that provides the same information in the form of text and use CSS to control visual presentation of text (<https://www.w3.org/WAI/WCAG21/Techniques/css/C22.html>).

Principle 2: Operable

2.4.2 Page Titled (Level A). The page title of “Site Blogs” does not describe the topic of the page. It is the same as the home page title, “Massive Open Distance e-Learning (MODeL)”, instead of “Site Blogs”.

Recommendation: Provide a descriptive title using the title element (<https://www.w3.org/WAI/WCAG21/Techniques/html/H25.html>).

2.4.5 Multiple Ways (Level AA). There are multiple ways to locate a web page but there are pages which do not have the “Navigation” menu, as displayed on the Home, Dashboard, and Calendar pages.

Recommendation: Provide a site map that provides link to all web pages and which can be accessed from any web page in the site (<https://www.w3.org/WAI/WCAG21/Techniques/general/G63.html>).

2.4.7 Focus Visible (Level AA). Keyboard focus that is colored maroon is visible but the light blue one has a poor contrast against its background.

Recommendation: Provide a visible focus indicator with high contrast ratio or use script to change the background color or border of the element with focus (<https://www.w3.org/WAI/WCAG21/Techniques/client-side-script/SCR31.html>).

2.4.9 Link Purpose (Link Only) (Level AAA). There are non-specific links used as anchor elements and have no mechanism to make the destination clear by itself. Anchor elements, “Read more”, “Go”, and “here” need the surrounding text to understand the purpose.

Recommendation: Provide a link text that describes the purpose of a link for anchor elements (<https://www.w3.org/WAI/WCAG21/Techniques/html/H30.html>).

3.1.4 Abbreviations (Level AAA). On the Home page, the acronym MOOC is not defined but the term is used in the text on the banner and there is no definition provided under the heading, Quality MOOCs.

Recommendation: Provide the first use of the abbreviation immediately before or after the expanded form (<https://www.w3.org/WAI/WCAG21/Techniques/general/G97.html>). Provide the definition using the abbr element (<https://www.w3.org/WAI/WCAG21/Techniques/html/H28.html>).

3.2.3 Consistent Navigation (Level AA). The location of “Navigation” menu is not consistent and it is not displayed on other web pages.

Recommendation: Present the navigation menu consistently in other web pages.

3.3.1 Error Identification (Level A). The username/email and password fields are mandatory but if one field is not filled or completed, the error is not identified nor described through text.

Recommendation: Provide a text description to identify the fields that are not filled or completed (<https://www.w3.org/WAI/WCAG21/Techniques/general/G83.html>).

3.3.3 Error Suggestion (Level AA). There are no error suggestions that will help the user to understand and correct input errors.

Recommendation: Provide a text description to identify the fields that are not filled or completed (<https://www.w3.org/WAI/WCAG21/Techniques/general/G83.html>).

3.3.5 Help (Level AAA). The log-in screen, which is accessible and appears on any web page, doesn't have a help link, help text, or help assistant provided.

Recommendation: Provide a help link or help by an assistant on every web page (<https://www.w3.org/WAI/WCAG21/Techniques/general/G71.html>, <https://www.w3.org/WAI/WCAG21/Techniques/general/G193.html>).

3.3.6 Error Prevention (All) (Level AAA). Input submissions are not reversible and user inputs are not checked nor confirmed before submission.

Recommendation: Provide a mechanism so that user can review, confirm and correct information before submitting.

There were a total of 18 web pages that were audited and the sample included Home, Dashboard, Site Blogs, Site Badges, Tags, Calendar, MODeL News, Endorsement of MOOCs, Access our courses through your phones, 2019 MOOCs Calendar, Welcome to MODeL!, Blogs, Export calendar, Manage subscriptions, Calendar preferences, New event, Courses, and Issuance of Certificates.

The tools used to evaluate the website are Web Developer Toolbar and Colour Contrast Analyzer. The assistive technology used is NVDA. The browsers used are Google Chrome, Mozilla Firefox, and Microsoft Edge.

The complete WCAG-EM audit report of the MODeL platform can be found on Appendix A.

B. WCAG-EM Report for the CFE 101 Course Site

Website name: Website of the UPOU Massive Open Distance e-Learning (Course Site: Oral Communication and Conversational Fluency)

Scope of the website: All web content of the course site, Oral Communication and Conversational Fluency of the UPOU Massive Open Distance e-Learning

located at <https://model.upou.edu.ph/course/view.php?id=220>

Conformance target: Level AAA

Additional evaluation requirements: The report will include a list of errors and description of the problems. The evaluation will cover selected web pages and web content of the website available to the student.

Accessibility support baseline: Chrome with NVDA, FireFox with NVDA

Relied upon technologies: HTML5, CSS

Table 4. Results of Level AAA (CFE 101 course site)

Principle	Level A	Level AA	Level AAA
1. Perceivable	6/9	1/5	2/8
2. Operable	9/9	2/3	8/8
3. Understandable	5/5	4/5	6/7
4. Robust	1/2	0/0	0/0
Total	21/25	7/13	16/23

The following accessibility issues on the CFE 101 course site have been found:

Principle 1: Perceivable

1.2.1 Audio-only and Video-only (Pre-recorded) (Level A). The course introduction video is like a pre-recorded audio-only content because it presents only an image with an audio recording and there is no alternative to present equivalent information. Likewise, in Module 4, pre-recorded audio-only content is present with no alternative in the form of text.

Recommendation: Provide an alternative for audio-only time-based media (<https://www.w3.org/WAI/WCAG21/Techniques/general/G158.html>).

1.2.2 Captions (Pre-recorded) (Level A). There are no captions for pre-recorded audio content in synchronized media in the Course Introduction page.

Recommendation: Provide open or closed captions (<https://www.w3.org/WAI/WCAG21/Techniques/general/G93.html>, <https://www.w3.org/WAI/WCAG21/Techniques/general/G87.html>).

1.2.3 Audio Description or Media Alternative (Pre-recorded) (Level A). There is no alternative or audio description of the pre-recorded time-based media.

Recommendation: Provide an alternative for time-based media. Provide a version with audio descriptions (<https://www.w3.org/WAI/WCAG21/Techniques/general/G69.html>, <https://www.w3.org/WAI/WCAG21/Techniques/general/G173.html>)

1.2.5 Audio Description (Pre-recorded) (Level AA). There are no audio descriptions provided for all pre-recorded video content.

Recommendation: Provide a second, user-selectable audio track that includes audio descriptions (<https://www.w3.org/WAI/WCAG21/Techniques/general/G78.html>).

1.2.6 Sign Language (Pre-recorded) (Level AAA). There are no sign language interpretations provided for all pre-recorded audio content.

Recommendation: Provide a synchronized video of the sign language interpreter that can be displayed in a different viewport or overlaid on the image by the player (<https://www.w3.org/WAI/WCAG21/Techniques/general/G81.html>)

1.2.7 Extended Audio Description (Pre-recorded) (Level AAA). There are no extended audio descriptions provided.

Recommendation: Provide a movie with extended audio descriptions
(<https://www.w3.org/WAI/WCAG21/Techniques/general/G8.html>)

1.2.8 Media Alternative (Pre-recorded) (Level AAA). There are no alternatives for time-based media provided for all pre-recorded synchronized media.

Recommendation: Provide an alternative for time-based media
(<https://www.w3.org/WAI/WCAG21/Techniques/general/G69.html>)

1.4.3 Contrast (Minimum) (Level AA). The contrast ratio for the text in the navigation bar against the background and the course title against the banner/cover images is very poor, from 1.1:1 to 1.5:1 only. This appears in all selected web pages.

Recommendation: Ensure that the minimum contrast ratio between text and its background is at least 4.5:1 and for large text is at least 3:1

(<https://www.w3.org/WAI/WCAG21/Techniques/general/G18.html>). Provide a mechanism to switch to a presentation with sufficient contrast
(<https://www.w3.org/WAI/WCAG21/Techniques/general/G174.html>).

1.4.4 Resize text (Level AA). Clicking on My Courses using Firefox browser with text-only zoom at 200%, “Deadlines” overlaps with “View my calendar”, “Feedback” overlaps with “View my messages”, and “Forum posts” overlaps with “View my forum posts”.

Recommendation: Ensure that text containers resize when the text resizes. Use measurements that are relative to other measurements in the content. Use percent for font sizes (<https://www.w3.org/WAI/WCAG21/Techniques/css/C12.html>). Use a liquid layout (<https://www.w3.org/WAI/WCAG21/Techniques/general/G146.html>)

1.4.5 Images of Text (Level AA). The banner/cover image is an image of text displaying the title of the course on the selected web pages, but is not useful when it

is presented to the user. It is not customizable nor essential because the course title is already being presented through text.

Recommendation: Provide an alternative that provides the same information in the form of text and use CSS to control visual presentation of text (<https://www.w3.org/WAI/WCAG21/Techniques/css/C22.html>).

1.4.6 Contrast (Enhanced) (Level AAA). The contrast ratio of the text in the navigation bar against the background and the course title against the banner/cover image is very poor, from 1.1:1 to 1.5:1 only. This appears in all selected web pages. The contrast ratio of text and background is lower than 7:1.

Recommendation: Ensure that the minimum contrast ratio between text and its background is at least 7:1. Provide a mechanism to switch to a presentation with sufficient contrast (<https://www.w3.org/WAI/WCAG21/Techniques/general/G17.html>).

1.4.8 Visual Presentation (Level AAA). The user cannot select foreground and background colors.

Recommendation: Provide a multi-color selection tool so that users can select foreground and background colors (<https://www.w3.org/WAI/WCAG21/Techniques/general/G175.html>).

1.4.9 Images of Text (No Exception) (Level AAA). The banner/cover image is an image of text displaying the title of the course on the selected web pages, but is not useful when it is presented to the user. It is not customizable nor essential because the course title is already being presented through text.

Recommendation: Use a plain background for the title instead of the banner/cover image.

Principle 2: Operable

2.4.7 Focus Visible (Level AA). Keyboard focus that is colored maroon is

visible but the light blue one has a poor contrast ratio against its background.

Recommendation: Provide a visible focus indicator with high contrast ratio or use script to change the background color or border of the element with focus (<https://www.w3.org/WAI/WCAG21/Techniques/client-side-script/SCR31.html>).

Principle 3: Navigable

3.3.3 Error Suggestion (Level AA). There are no error suggestions that will help the user to understand and correct input errors.

Recommendation: Provide a text description to identify the fields that are not filled or completed (<https://www.w3.org/WAI/WCAG21/Techniques/general/G83.html>).

3.3.6 Error Prevention (All) (Level AAA). Input submissions are not reversible and user input are not checked nor confirmed before submission.

Recommendation: Provide a mechanism so that user can review, confirm and correct information before submitting.

There were a total of 19 web pages that were audited and the sample included Introduction, Module 1, Module 1 Activities, Module 2, Module 2 Activities, Module 3, Module 3 Activities, Module 4, Module 4A Activities, Module 4B Activities, Course Tools, Participants, Grades, Competencies, Badges, Post Forum 1, Post Forum 2, Post Forum 3, and Post Forum 4. Module 5, Module 5 Activities and Post Forum 5 were not included in the evaluation because these web pages were opened weeks after the WCAG-EM report on the course site was done.

The tools used to evaluate the course site are Web Developer Toolbar and Colour Contrast Analyzer. The assistive technology used is NVDA. The browsers used are Google Chrome, Mozilla Firefox, and Microsoft Edge.

The complete WCAG-EM audit report on the CFE 1010 course site can be found on Appendix B.

C. WCAG-EM Report for the CFE 101 Course Materials

Website name: Website of the UPOU Massive Open Distance e-Learning (Course materials of Oral Communication and Conversational Fluency)

Scope of the website: Downloadable course materials (PDF) of the course site, Oral Communication and Conversational Fluency of the UPOU Massive Open Distance e-Learning located at <https://model.upou.edu.ph/course/view.php?id=220>

Conformance target: Level AAA

Additional evaluation requirements: The report will include a list of errors and description of the problems. The evaluation will cover selected course materials available to the student.

Accessibility support baseline: Adobe Acrobat Pro DC with NVDA

Relied upon technologies: HTML5, CSS

Table 5. Results of Level AAA (CFE 101 course materials)

Principle	Level A	Level AA	Level AAA
1 Perceivable	8/9	5/5	6/8
2 Operable	8/9	1/3	8/8
3 Understandable	5/5	5/5	7/7
4 Robust	2/2	0/0	0/0
Total	23/25	11/13	21/23

The following accessibility issues have been found on the CFE 101 course materials (downloadable PDF documents):

Principle 1. Perceivable

1.1.1 Non-text Content (Level A). There are figures missing alternate texts.

Recommendation: Provide text alternatives using Alt entry in PDF Documents (<https://www.w3.org/WAI/WCAG21/Techniques/pdf/PDF1.html>).

1.4.6 Contrast (Enhanced) (Level AAA). Visual presentation of some of the text has a contrast ratio lower than 7:1.

Recommendation: Ensure that the contrast between the text and its background is at least 7:1. Use a thicker or bold font.

1.4.8 Visual Presentation (Level AAA). Width is more than 80 characters per line. Line spacing (leading) is less than space-and-a-half within paragraphs.

Recommendation: Ensure that there are no more than 80 characters per line and line spacing is at least a space-and-a-half within paragraphs.

Principle 2. Operable

2.4.2 Page Titled (Level A). There is no document title showing in the title bar.

Recommendation: Specify the document title using the Title entry in the document information dictionary of a PDF (<https://www.w3.org/WAI/WCAG21/Techniques/pdf/PDF18.html>).

2.4.5 Multiple Ways (Level AA). Documents do not have bookmarks.

Recommendation: Create bookmarks in PDF documents (<https://www.w3.org/WAI/WCAG21/Techniques/pdf/PDF2.html>)

2.4.7 Focus Visible (Level AA). Keyboard focus indicator (shaped like a dotted rectangle) is slightly visible or difficult to spot within paragraphs.

Recommendation: Ensure that the keyboard focus indicator is highly visible when tabbing through paragraphs (example, use a different color).

There were 5 PDF documents that were evaluated and the sample included Course Introduction, Module 1, Module 2, Module 3, and Module 4. Module 5 was not included because this was uploaded after the WCAG-EM audit report was done.

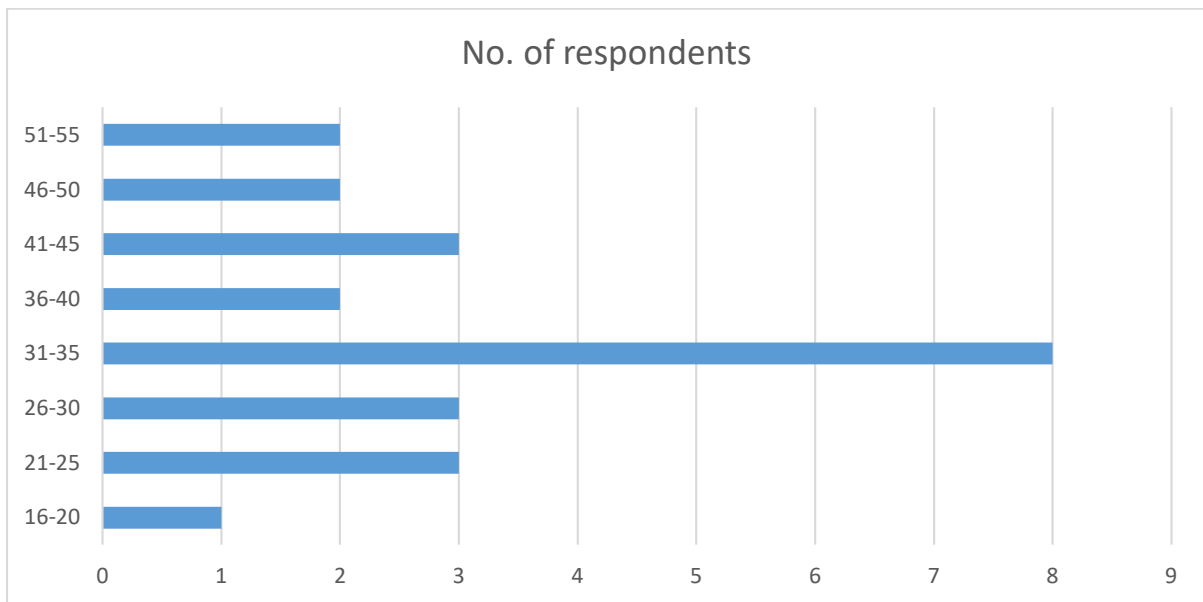
The tools and software used to evaluate the course materials are Adobe Acrobat Pro DC with Accessibility and NVDA, PDF Checker by European Internet Inclusion Initiative, DocParser, and PDF Accessibility Checker (PAC 3) by Access for all.

The complete WCAG-EM audit report on the CFE 101 course materials can be found on Appendix C.

III. Survey

The selected MOOC classes were the first and the second batches of Oral Communication and Conversational Fluency (CFE101). The first class was from March 6 to April 17, 2019 and the second class was from June 5 to July 17, 2019. Both classes had more than 80 participants and about 90% were invited to participate in the offline or online survey. There were a total of 25 respondents, 13 from the first and 12 from the second batch.

Figure 17. Number of respondents by age



The research is for the benefit of all MOOC participants of the UPOU MODeL. The class participants were invited to participate in the survey regardless of their age. 32% of the respondents are in the age range 31-35 years old while 36% of the respondents are older than 35 years old and 28% are younger than 31 years old.

Out of 25 respondents, one (or 4%) has a certain type of disability - psychosocial disability. However, not one uses any type of assistive technology in accessing the web. 9 out of 25 (or 36%) respondents experience issues or difficulties in accessing the platform, the course site, and course materials, while 64% do not experience any issues or difficulties.

The respondents stated these issues or difficulties: (1) missing / unavailable / inaccessible submission bin / discussion forum, (2) internet connectivity/speed, (3) white text font on white background, (5) video captions on YouTube, (6) problematic features on the Moodle mobile app, and (7) confusion in browsing replies and activities.

A higher percentage, 12 out of 25 or 48% of the respondents think that these issues or difficulties affect the effectiveness and efficiency of the UPOU MOOCs and their overall learning experience. Some of their responses, in verbatim, are:

“We were not able to have an exchange of ideas with each other”

“Learner loses the ability and interest to complete the course”

“It could somehow affect because there is no one to ask about the issue so you are left wondering on what to do.”

“Yes, it affects my overall learning experience because I do not have access to computer all the time, and my only hope is to be able to study using my smartphone.”

“Yes but it will still vary on the kind of disability of the person. For example your hearing is not that good and the lecture is in video format, even though it has assistive technology like speech to text there are times that the spelling is incorrect or the word the speaker is saying not the same as the text, readers will only be confuse.”

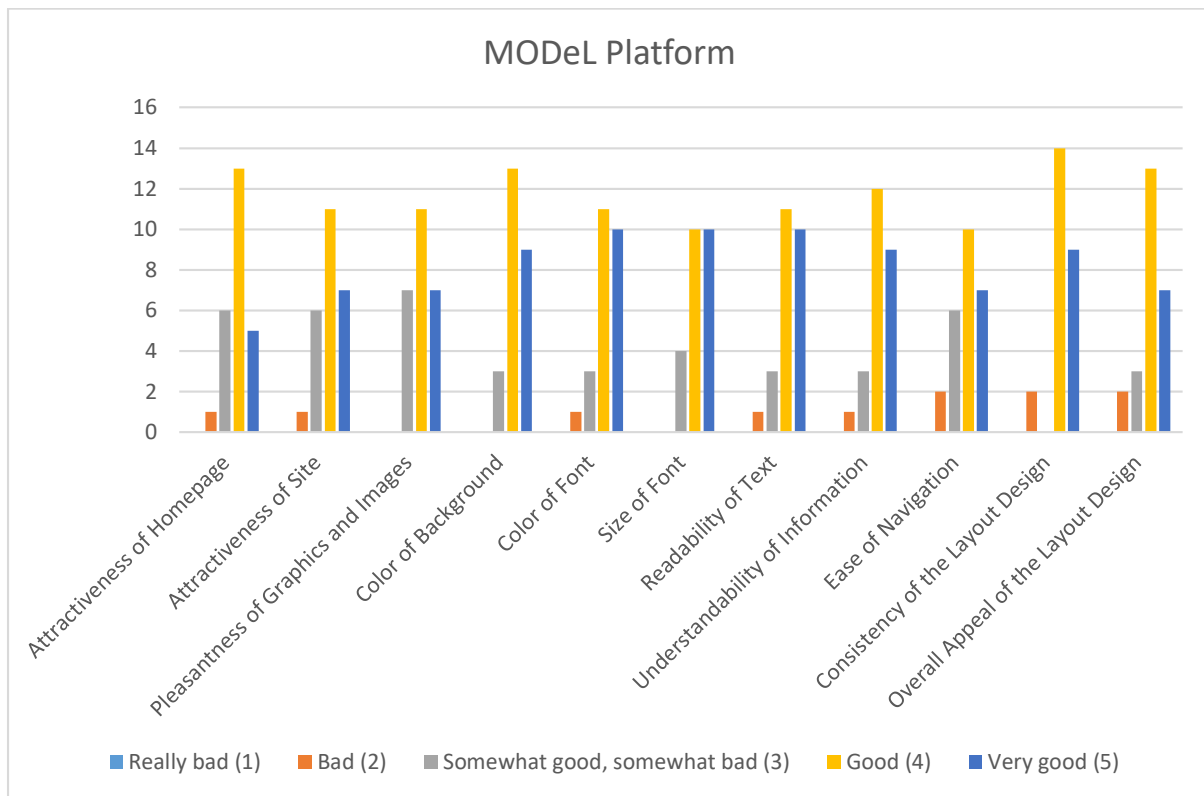
“I haven't experienced any difficulty but if I put myself on the shoes of my son who has learning disability, the answer to question number 4 is yes. It will lead to frustration and possibly failure to finish the courses.”

“As a person with bipolar disorder, one of the issues I face is difficulty sleeping, so I think this personal affliction makes it harder for me to complete the assignments at the proper time. If I'm in manic mode, I can complete the tasks immediately, but this means I won't have any sleep at all.”

“Because at some you will be out of focus.”

“Most of the materials given for learning guides are visual and written. People with visual difficulties may struggle comprehending the lesson guides.”

Figure 20. Ratings of the MODeL platform



The MODeL platform, the CFE 101 course site, and the CFE 101 course materials were rated in terms of pleasantness, attractiveness, color, readability, understandability, ease, consistency, and clarity. The rating is from 0 to 5, 5 being the highest – Cannot determine (0), Really bad (1), Bad (2), Somewhat good, Somewhat bad (3), Good (4), and Very good (5).

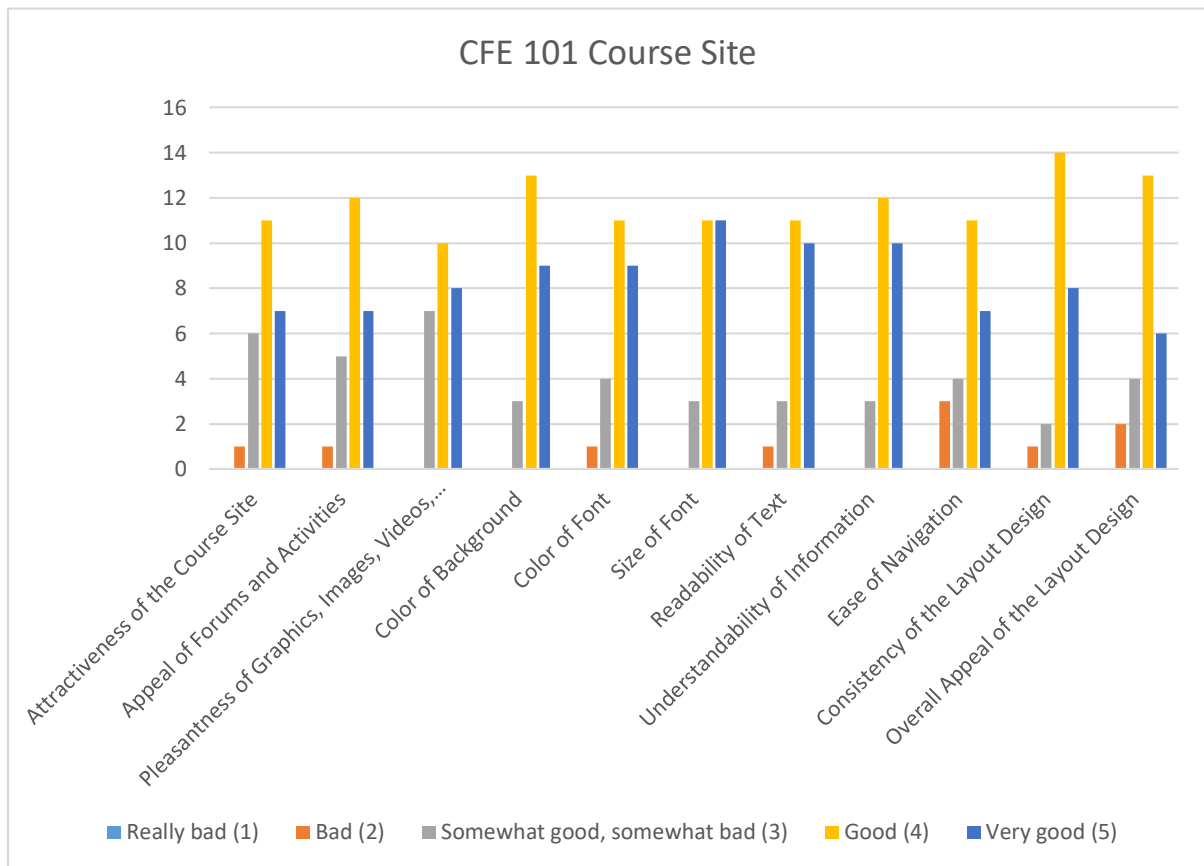
Most of the respondents rated the MODeL platform, Good (4), as follows:

- Attractiveness of the home page – 52%
- Attractiveness of the site – 44%
- Pleasantness of graphics and images – 44%
- Color of background – 52%
- Color of font – 44%
- Size of font – 40%

- Readability of text – 44%
- Understandability of information – 48%
- Ease of navigation – 40%
- Consistency of the layout design – 56%
- Overall appeal of the layout design – 52%

The average of those percentages is 46.9% which means that less than half of the respondents rated the MODeL platform a rating of Good (4). The MODeL platform also received ratings of Bad (2) and Somewhat good, Somewhat bad (3). 4% to 8% of the respondents gave Bad (2) ratings for Attractiveness of the home page, Attractiveness of the site, Color of font, Readability of text, Understandability of information, Ease of navigation, Consistency of the layout design, and Overall appeal of the layout design. Meanwhile, 24% to 28% of the respondents gave Somewhat good, Somewhat bad (3) ratings for Attractiveness of the home page, Attractiveness of the site, Pleasantness of graphics and images, and Ease of navigation. The MODeL platform received total rating scores ranging from 97 to 106 with a total average score of 101.82. That is 81.45% of the highest possible score of 125 for each category.

Figure 21. Ratings of the CFE 101 Course site



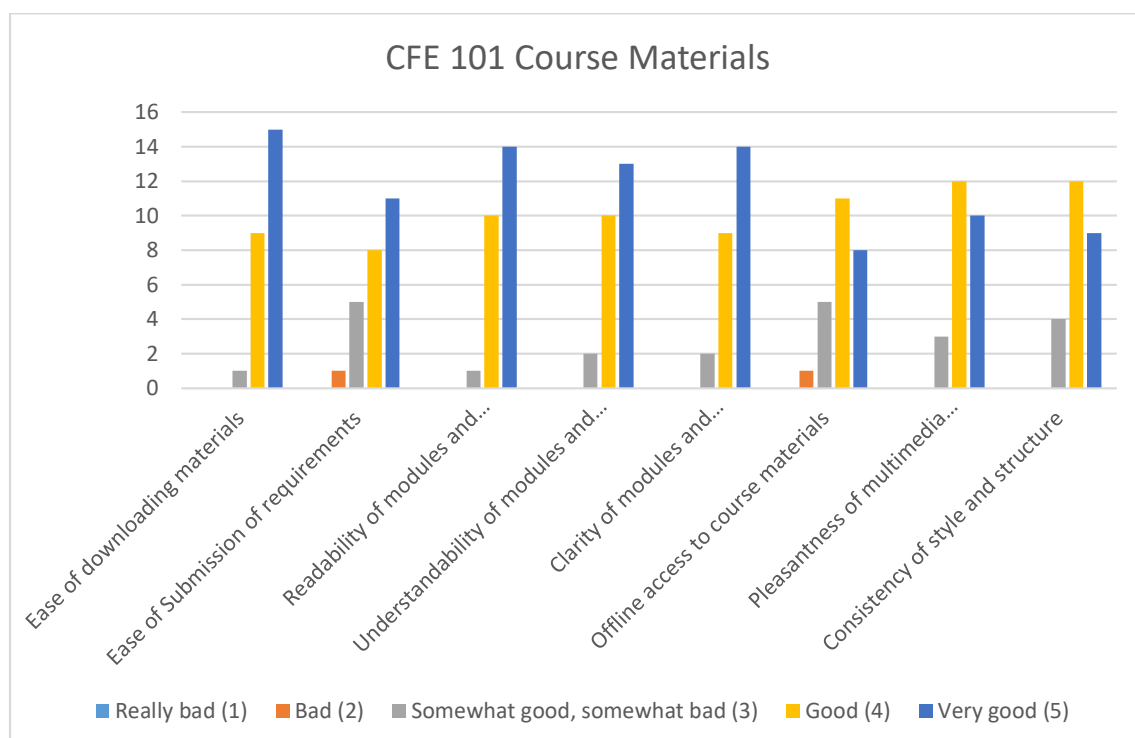
Similar to the MODEl platform ratings, most of the respondents rated the CFE 101 Course site, Good (4), as follows:

- Attractiveness of the course site – 44%
- Appeal of forums and activities – 48%
- Pleasantness of graphics, images, videos, and other multimedia - 40%
- Color of background – 52%
- Color of font – 44%
- Size of font – 44%
- Readability of text – 44%
- Understandability of information – 48%
- Ease of navigation – 44%

- Consistency of the layout design – 56%
- Overall appeal of the layout design – 52%

The average of those percentages is also 46.9% which means that less than half of the respondents rated the CFE 101 course site a rating of Good (4). Likewise, the CFE 101 course site received ratings of Bad (2) and Somewhat good, Somewhat bad (3). 4% to 12% of the respondents gave Bad (2) ratings for Attractiveness of the course site, Appeal of forums and activities, Color of font, Readability of text, Ease of navigation, Consistency of the layout design, and Overall appeal of the layout design. Meanwhile, 20% to 28% of the respondents gave Somewhat good, Somewhat bad (3) ratings for Attractiveness of the course site, Appeal of forums and activities, and Pleasantness of graphics, images, videos, and other multimedia. The MODeL platform received total rating scores ranging from 97 to 107 with a total average score of 102.55. That is 82.04% of the highest possible score of 125 for each category.

Figure 22. Ratings of the CFE 101 Course materials



With the CFE 101 course materials, most of the respondents gave a rating of Very good (5), as follows:

- Ease of downloading materials – 60%
- Ease of submission of requirements – 44%
- Readability of modules and requirements – 56%
- Understandability of modules and requirements – 52%
- Clarity of modules and requirements – 56%
- Offline access to course materials – 32%
- Pleasantness of multimedia elements – 40%
- Consistency of style and structure – 36%

The average of those percentages is 47% which means that less than half of the respondents rated the CFE 101 course materials a rating of Very good (5). The CFE 101 course materials also received ratings of Bad (2) and Somewhat good, Somewhat bad (3). 4% of the respondents gave Bad (2) ratings for Ease of submission of requirements and Offline access to course materials, while 16% to 20% gave Somewhat good, Somewhat bad (3) ratings for Ease of submission of requirements, Offline access to course materials, and Consistency of style and structure. The CFE 101 course materials received total rating scores ranging from 101 to 116 with a total average score of 109.5. That is 87.6% of the highest possible score of 125 for each category.

Chapter 5.

DISCUSSION

Initial Checks done on the MODeL platform, course site, and course materials revealed that accessibility issues are present, such as, low to very poor contrast ratio of text and images of text, overlapping and text getting cut, presence of images of text with no other alternatives, and no document title for PDFs. The audit using WCAG-EM Report Tool exposed more accessibility issues as the conformance to 61 guidelines was checked. There were several failures under the three principles, Perceivable, Operable, and Navigable, that were found in the selected sample of 37 web pages and 5 PDF documents.

Under the Perceivable principle, failures include the (1) presence of images, images of text, and figures with no text alternative, (2) very low contrast (minimum and enhanced), (3) overlapping of text when resized to 200%, (4) no option to select foreground and background colors, (5) presence of time-based media with no or lacking text alternative, captions, audio descriptions, sign language interpretations, or other media alternatives, and on PDF documents, (6) width is more than 80 characters per line. Under the Operable principle, failures include (1) page title is not descriptive, (2) missing Navigation menu on other pages, (3) non-specific links used as anchor elements, (4) PDF documents do not have document titles and bookmarks, and (5) keyboard focus is slightly visible. Under the Navigable principle, failures include (1) undefined abbreviation of MOOC when the term was first used, (2) inconsistent location of the Navigation menu, and on pages with forms, (3) errors are not identified, error suggestions and help link, text, or assistant are not provided, and submission of forms is not reversible.

Most of the survey respondents, about 47% had given the MODeL platform and the CFE 101 course site a rating of Good (4) and the CFE 101 course materials a rating of Very Good (5). The average percentage of the ratings are higher than 80%. Those scores may seem high but this research would like to address the smaller percentage that had given ratings of Somewhat good, Somewhat bad (3) to Bad (2). The number of respondents represent only about 13-14% of the total number of participants of the CFE 101 classes, most of which do not have any form of disability. However, knowing that they have issues with the platform while not having any form of disability, implies that the platform can be more difficult for users and learners with disabilities.

Evaluating the MODeL platform is necessary for the benefit of all users, including students and prospective learners with disabilities. This evaluation will greatly help and improve learning experiences and will allow for more people to enroll and study MOOCs being offered by the UPOU. The scores tell us that there are, indeed, issues that need to be addressed and given solutions. The survey results reflect the effects of the failed WCAG scores. These should be taken into consideration by web developers and designers in improving the platform.

If given the chance to do the project again, the researcher would spend more time working with selected persons with disabilities and have them enroll in one of the MOOCs. She would like to observe how they navigate through the website and determine how much time they would have to spend to locate and access the page they needed. Additionally, she would like to have more exposure to assistive technologies and see how they actually work with persons who use them to access the web.

Since the UPOU's students have increased in numbers, it is highly possible that there are more people with disabilities who visit the UPOU's websites and more students who use the Student Portal and MyPortal sites. It would be a great move if the university will have knowledge of the number of persons with disabilities, especially those who use assistive technologies, so that the websites can be customized to suit each student's needs. If the university will conduct accessibility evaluation on these websites, the researcher would like to be a part of the team. It will, not only, enrich her knowledge and enhance her experiences, but also, a way for her to give back to the university.

Chapter 6.

CONCLUSION

In summary, this research aimed to determine accessibility issues on the Massive Open Distance e-Learning website, the official platform of the UP Open University in the delivery of Massive Open Online Courses. The MODeL platform, the Oral Communications and Conversational Fluency (CFE 101) course site, and course materials were evaluated using Initial Checks, WCAG-EM Report Tool, and web accessibility evaluation tools. The participants of CFE 101 were invited to answer a survey to determine their perceptions on the usability and accessibility of the MODeL platform, the course site, and course materials. The results of the evaluation, audit reports, and survey were all analyzed and these revealed that there are accessibility issues present. This research also provided suggestions to fix the issues, which implies that the platform has more room for improvement.

This research is beneficial for the university and the students. The failures of the website affect the learning experience of the students and the impression of future learners. This, in turn, affects the university. If the website is designed to be more accessible, this paves way for more inclusivity. The researcher believes that the university can deliver MOOCs and online courses better if the MODeL platform is improved. Hence, more students are encouraged to study and finish the modules, which increases the population of online learners.

RECOMMENDATIONS

The researcher recommends that the university perform an evaluation of the MODeL platform, the course sites, and course materials. It is also recommended that the university will be able to create an accessibility team focused on accessibility tasks to ensure that the platform, the course sites, and course materials are accessible. If it is possible, it is recommended to create specific or customized websites for students who have disabilities and for those who use assistive technologies in accessing the web. A research team may be needed to acquire information regarding students with disabilities. Furthermore, the researcher also recommends that the UPOU websites, such as, the main UPOU website, My Portal, and Student Portal sites be evaluated for the benefit of every user, though this may exhaust more time.

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APPENDICES

APPENDIX A

WCAG-EM Report for the MODeL Platform

Report Creator: Hyacinth C. Celzo, June 25, 2019

Evaluation Commissioner: Hyacinth C. Celzo, UP Open University

SUMMARY OF THE EVALUATION FINDINGS

The MODeL platform was evaluated if it meets the WCAG 2.0 requirements. Out of 61, it failed in 17 guidelines, namely, 1.1.1, 1.4.3, 1.4.4, 1.4.5, 1.4.6, 1.4.8, 1.4.9, 2.4.2, 2.4.5, 2.4.7, 2.4.9, 3.1.4, 3.2.3, 3.3.1, 3.3.3, 3.3.5, and 3.3.6. There are images of text that can be difficult for users who are blind or have vision impairments because there is no other way to perceive the information. The navigation bar's contrast ratio is extremely low. The "Navigation" menu only appears on certain web pages and its location on these web pages are not consistent. The log-in screen that is accessible on all pages is not equipped with a mechanism to identify errors, provides error suggestions, or a way to prevent errors before the form is submitted. There are failures in contrast for both minimum and enhanced. Overlapping of text with other text or images also happens in some areas of the web pages when text-only is increased to 200%.

SCOPE OF THE EVALUATION

Website name: Website of the UPOU Massive Open Distance e-Learning

Scope of the website: All web content of the website of the UPOU Massive Open

Distance e-Learning located at <https://model.upou.edu.ph/>

Conformance target: Level AAA

Additional evaluation requirements: The report will include a list of errors and

description of the problems. The evaluation will cover all web pages and web content of the website available to the student.

Accessibility support baseline: Chrome with NVDA, FireFox with NVDA

Relied upon technologies: HTML5, CSS

OVERVIEW OF AUDIT RESULTS

Results of Level AAA

Principle	Level A	Level AA	Level AAA
Perceivable	8/9	2/5	5/8
Operable	8/9	1/3	7/8
Understandable	4/5	3/5	4/7
Robust	1/2	0/0	0/0
Total	21/25	6/13	16/23

DETAILED AUDIT RESULTS

Principle 1: Perceivable

1.1 Text Alternatives

1.1.1 Non-text Content: (Level A)

Results for the entire sample:

Outcome: Failed

Findings: There are images with no alternate texts.

Results for specific pages:

Page URL: Home, <https://model.upou.edu.ph/>

Instructions and information in "Access our courses through your phones", "2019 MOOCs Calendar", and "MODEL

News" are images of text with no text alternatives if the images are disabled, inaccessible or don't load. Endorsement of MOOCS PDF file is an image.

Page URL: Endorsement of MOOCs,

<https://model.upou.edu.ph/mod/page/view.php?id=1300>

PDF file is an image.

Page URL: Access our courses through your phones,

<https://model.upou.edu.ph/mod/page/view.php?id=1631>

Instructions are images and there are no text alternatives if the images are disabled, inaccessible or don't load.

Page URL: 2019 MOOCs Calendar,

<https://model.upou.edu.ph/mod/page/view.php?id=2292>

Information about the course offerings and schedules is an image and there are no text alternatives if the image is disabled or inaccessible or doesn't load.

Page URL: Welcome to MODeL!,

<https://model.upou.edu.ph/mod/forum/discuss.php?d=2275>

The graphic that provides instructions how to create an account and join courses doesn't have text alternatives.

1.2 Time-based Media

1.2.1 Audio-only and Video-only (Pre-recorded): (Level A)

Results for the entire sample:

Outcome: Not present

Findings: No time-based media present.

1.2.2 Captions (Pre-recorded): (Level A)

Results for the entire sample:

Outcome: Not present

Findings: No time-based media present.

1.2.3 Audio Description or Media Alternative (Pre-recorded):

(Level A)

Results for the entire sample:

Outcome: Not present

Findings: No time-based media present.

1.2.4 Captions (Live): (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: No time-based media present.

1.2.5 Audio Description (Pre-recorded): (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: No time-based media present.

1.2.6 Sign Language (Pre-recorded): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: No time-based media present.

1.2.7 Extended Audio Description (Pre-recorded): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: No time-based media present.

1.2.8 Media Alternative (Pre-recorded): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: No time-based media present.

1.2.9 Audio-only (Live): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: No time-based media present.

1.3 Adaptable

1.3.1 Info and Relationships: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Information, structure, and relationships can be perceived through visual and auditory cues.

1.3.2 Meaningful Sequence: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Content is presented in the correct reading sequence.

1.3.3 Sensory Characteristics: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Buttons that change color and images, such as logos, are also labeled with alternative text.

1.4 Distinguishable

1.4.1 Use of Color: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Buttons that change color are also labeled.

1.4.2 Audio Control: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: Any audio that plays automatically is not present.

1.4.3 Contrast (Minimum): (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: Contrast for text and large text against background of the 2019 MOOCs Calendar is 2.5:1, failing the minimum contrast ratio of 4.5:1 and 3:1, respectively.

1.4.4 Resize text: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: Using Firefox browser with text-only zoom at 200%:

"Deadlines" overlap with "View my calendar".

"Feedback" overlaps with "View my feedback".

"Messages" overlaps with "View my messages".

"Forum posts" overlaps with "View my forum posts".

Results for specific pages:

Page URL: Home, <https://model.upou.edu.ph/>

Text overlaps with other text and image under "Featured course offerings".

1.4.5 Images of Text: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: Images of text were used instead of text to convey information.

Results for specific pages:

Page URL: Home, <https://model.upou.edu.ph/>

Instructions on how to access the courses on mobile app and the calendar showing the schedule of course offerings are images of text, though they can be conveyed through text with visual presentation controlled with CSS.

Page URL: Access our courses through your phones,

<https://model.upou.edu.ph/mod/page/view.php?id=1631>

Instructions on how to access the courses on mobile app are images of text, though they can be conveyed through text with visual presentation controlled with CSS.

Page URL: 2019 MOOCs Calendar,

<https://model.upou.edu.ph/mod/page/view.php?id=2292>

The calendar showing the schedule of course offerings is an image of text, though the information can be conveyed through text with visual presentation controlled with CSS.

Page URL: Welcome to MODeL!,

<https://model.upou.edu.ph/mod/forum/discuss.php?d=2275>

The instructions how to create an account and join courses is an image of text, though the information can be

conveyed through text with visual presentation controlled with CSS.

1.4.6 Contrast (Enhanced): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: Contrast ratio of text and background is lower than 7:1.

Results for specific pages:

Page URL: Home, <https://model.upou.edu.ph/>

Contrast for text and large text against background of the 2019 MOOCs Calendar is 2.5:1.

Page URL: 2019 MOOCs Calendar, <https://model.upou.edu.ph/mod/page/view.php?id=2292>

Contrast for text and large text against background of the 2019 MOOCs Calendar is 2.5:1.

1.4.7 Low or No Background Audio: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: Pre-recorded audio only is not present.

1.4.8 Visual Presentation: (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: The user can't select foreground and background colors.

1.4.9 Images of Text (No Exception): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: Images of text that are not pure decoration are present.

Principle 2: Operable

2.1 Distinguishable

2.1.1 Keyboard: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: All functionality can be controlled by keyboard.

2.1.2 No Keyboard Trap: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Keyboard focus can be moved from one button/link to another with Tab, Shift + Tab, Ctrl + Shift + Tab, and arrow keys.

2.1.3 Keyboard (No Exception): (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: All functionality can be controlled by keyboard and specific timings for individual strokes are not required.

2.2 Enough Time

2.2.1 Timing Adjustable: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There are no time limits in viewing, reading, or using the content.

2.2.2 Pause, Stop, Hide: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There is no moving, blinking, scrolling, or auto-updating information present.

2.2.3 No Timing: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: There is no activity that has a time limit.

2.2.4 Interruptions: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no interruptions when using content.

2.2.5 Re-authenticating: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no authentication time limits after a period of inactivity.

2.3 Seizures

2.3.1 Three Flashes or Below Threshold: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: No flashing, blinking, or moving content present.

2.3.2 Three Flashes: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: No flashing, blinking, or moving content present.

2.4 Navigable

2.4.1 Bypass Blocks: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: "Skip to main content" link is added at the top of each page when "Tab" is pressed.

2.4.2 Page Titled: (Level A)

Results for the entire sample:

Outcome: Failed

Findings: The page title of "Site blogs" does not describe the topic of the page.

Results for specific pages:

Page URL: Site blogs,

<https://model.upou.edu.ph/blog/index.php>

Web page title is the same as the home page title, "Massive Open Distance e-Learning (MODEL)", instead of "Site blogs".

2.4.3 Focus Order: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: There is a logical tab order through buttons, links, and controls.

2.4.4 Link Purpose (In Context): (Level A)

Results for the entire sample:

Outcome: Passed

Findings: The link text provided describes the purpose of the link.

2.4.5 Multiple Ways: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: There are multiple ways to locate a web page but there are web pages which don't have the "Navigation" menu, as displayed on the Home, Dashboard, and Calendar web pages.

2.4.6 Headings and Labels: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: Descriptive headings and labels are provided.

2.4.7 Focus Visible: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: Keyboard focus that is colored maroon is visible but the light blue one has a poor contrast ratio against its background.

2.4.8 Location: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: The navigation bar at the top left below the UPOU and MODeL logos displays the user's location within the web pages.

2.4.9 Link Purpose (Link Only): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: There are non-specific links used as anchor elements and have no mechanism to make the destination clear by itself.

Results for specific pages:

Page URL: Home, <https://model.upou.edu.ph/>

Anchor elements, "Read more" and "Go", need the surrounding text to understand the purpose.

Page URL: Endorsement of MOOCs,

<https://model.upou.edu.ph/mod/page/view.php?id=1300>

Anchor element, "here", needs the surrounding text to understand the purpose.

2.4.10 Section Headings: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Heading markups are used for different sections of the pages.

Principle 3: Understandable

3.1 Readable

3.1.1 Language of Page: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Language attributes (lang and xml:lang) are provided on the html element.

3.1.2 Language of Parts: (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There are no changes in language of parts.

3.1.3 Unusual Words: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no unusual words, words used in a unique way, or have different meanings within the same web page.

3.1.4 Abbreviations: (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: On the Home page, the acronym MOOC is not defined but the term is used in the text in the banner and there is no definition provided under the heading, Quality MOOCs.

3.1.5 Reading Level: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: The text is easy to read and the language used is clear, simple, and appropriate for the content.

3.1.6 Pronunciation: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no words whose meanings are ambiguous without knowing the pronunciation.

3.2 Predictable

3.2.1 On Focus: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: No changes of context occur when components receive focus.

3.2.2 On Input: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Submit buttons are provided.

3.2.3 Consistent Navigation: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: The location of "Navigation" menu is not consistent and it is not displayed on other web pages.

3.2.4 Consistent Identification: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: There is consistent identification of components having the same functionality within the web pages (i.e. Search fields in Home, Tags, and MODeL News)

3.2.5 Change on Request: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Context changes only when initiated by the user.

3.3 Input Assistance

3.3.1 Error Identification: (Level A)

Results for the entire sample:

Outcome: Failed

Findings: The username/email and password fields are mandatory but if one field is not filled or completed, the error is not identified nor described through text.

3.3.2 Labels or Instructions: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Labels and/or instructions are provided in fields requiring user input.

3.3.3 Error Suggestion: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: There are no error suggestions that will help the user to understand and correct input errors.

3.3.4 Error Prevention (Legal, Financial, Data): (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There are no web pages that cause legal commitments, financial transactions, or that modify or delete user-controllable data in data storage systems.

3.3.5 Help: (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: The log-in screen is accessible and appears on any web page but there is no help link, help text, or help assistant provided.

3.3.6 Error Prevention (All): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: Input submissions are not reversible and user inputs are not checked nor confirmed before submission.

Principle 4: Robust

4.1 Compatible

4.1.1 Parsing: (Level A)

Results for the entire sample:

Outcome: Cannot tell

Findings: There are no duplicate IDs but checking elements for complete start and end tags and if nested according to their specifications cannot be done thoroughly. Viewing each webpage's source with no "parsing only" tools available requires more time.

4.1.2 Name, Role, Value: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Role, state, and value information are provided on all user interface components and compatible with assistive technology (i.e. NVDA).

SAMPLE OF AUDITED WEB PAGES

- Home: <https://model.upou.edu.ph/>
- Dashboard: <https://model.upou.edu.ph/my/>
- Site Blogs: <https://model.upou.edu.ph/blog/index.php>
- Site Badges: <https://model.upou.edu.ph/badges/view.php?type=1>
- Tags: <https://model.upou.edu.ph/tag/search.php>
- Calendar: <https://model.upou.edu.ph/calendar/view.php?view=month>
- MODeL News: <https://model.upou.edu.ph/mod/forum/view.php?id=186>
- Endorsement of MOOCs:
<https://model.upou.edu.ph/mod/page/view.php?id=1300>
- Access our courses through your phones:
<https://model.upou.edu.ph/mod/page/view.php?id=1631>
- 2019 MOOCs Calendar:
<https://model.upou.edu.ph/mod/page/view.php?id=2292>
- Welcome to MODeL!:
<https://model.upou.edu.ph/mod/forum/discuss.php?d=2275>
- Blogs: Add a new entry: <https://model.upou.edu.ph/blog/edit.php?action=add>
- Export calendar: <https://model.upou.edu.ph/calendar/export.php>

- Manage subscriptions:
<https://model.upou.edu.ph/calendar/managesubscriptions.php>
- Calendar preferences: <https://model.upou.edu.ph/calendar/preferences.php>
- New event:
<https://model.upou.edu.ph/calendar/event.php?action=new&course=1&time=1559573080>
- Courses: <https://model.upou.edu.ph/course/>
- Issuance of Certificates:
<https://model.upou.edu.ph/course/index.php?categoryid=13>

RECORDING OF EVALUATION SPECIFICS

The tools used to evaluate the website are Web Developer Toolbar and Colour Contrast Analyzer. The assistive technology used is NVDA. The browsers used are Google Chrome, Mozilla Firefox, and Microsoft Edge.

APPENDIX B

WCAG-EM Report for CFE 101 Course Site

Report Creator: Hyacinth C. Celzo, June 25, 2019

Evaluation Commissioner: Hyacinth C. Celzo, UP Open University

SUMMARY OF THE EVALUATION FINDINGS

The course site was evaluated if it meets the WCAG 2.0 requirements. Out of 61, it failed in 16 guidelines, namely, 1.2.1, 1.2.2, 1.2.3, 1.2.5, 1.2.6, 1.2.7, 1.2.8, 1.4.3, 1.4.4, 1.4.5, 1.4.6, 1.4.8, 1.4.9, 2.4.7, 3.3.3, and 3.3.6. There are pre-recorded audio-only content that do not have any alternative way for hearing-impaired users to perceive. There is a lack of audio descriptions and media alternatives for time-based media. The navigation bar's contrast ratio is extremely low. The title of the course can hardly be seen because of the extremely low contrast of the white font and the banner image. On the web pages wherein users fill forms to submit forum posts, there are no error suggestions nor a mechanism to prevent errors before submitting.

SCOPE OF THE EVALUATION

Website name: Website of the UPOU Massive Open Distance e-Learning (Course Site: Oral Communication and Conversational Fluency)

Scope of the website: All web content of the course site, Oral Communication and Conversational Fluency of the UPOU Massive Open Distance e-Learning located at <https://model.upou.edu.ph/course/view.php?id=220>

Conformance target: Level AAA

Additional evaluation requirements: The report will include a list of errors and

description of the problems. The evaluation will cover selected web pages and web content of the website available to the student.

Accessibility support baseline: Chrome with NVDA, FireFox with NVDA

Relied upon technologies: HTML5, CSS

OVERVIEW OF AUDIT RESULTS

Results of Level AAA

Principle	Level A	Level AA	Level AAA
Perceivable	6/9	1/5	2/8
Operable	9/9	2/3	8/8
Understandable	5/5	4/5	6/7
Robust	1/2	0/0	0/0
Total	21/25	7/13	16/23

DETAILED RESULTS

Principle 1: Perceivable

1.1 Text Alternatives

1.1.1 Non-text Content: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Non-text content presented to the user have text alternatives.

1.2 Time-based Media

1.2.1 Audio-only and Video-only (Pre-recorded): (Level A)

Results for the entire sample:

Outcome: Failed

Findings: Pre-recorded audio-only content are present and do not have an alternative to present equivalent information.

Results for specific pages:

Page URL: Course Introduction,

<https://model.upou.edu.ph/course/view.php?id=220>

The course introduction video is like a pre-recorded audio-only content because it presents only an image with an audio recording and there is no alternative to present equivalent information.

Page URL: Module 4,

<https://model.upou.edu.ph/course/view.php?id=220#section-4>

Pre-recorded audio-only content is present with no alternative to present equivalent information.

1.2.2 Captions (Pre-recorded): (Level A)

Results for the entire sample:

Outcome: Failed

Findings: There are no captions provided for pre-recorded audio content in synchronized media in the Course Introduction page.

1.2.3 Audio Description or Media Alternative (Pre-recorded): (Level A)

Results for the entire sample:

Outcome: Failed

Findings: There is no alternative or audio description of the pre-recorded time-based media.

1.2.4 Captions (Live): (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There is no live audio content present.

1.2.5 Audio Description (Pre-recorded): (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: There are no audio descriptions provided for all pre-recorded video content.

1.2.6 Sign Language (Pre-recorded): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: There are no sign language interpretations provided for all pre-recorded audio content.

1.2.7 Extended Audio Description (Pre-recorded): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: There are no extended audio descriptions provided for all pre-recorded video content.

1.2.8 Media Alternative (Pre-recorded): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: There are no alternatives for time-based media provided for all pre-recorded synchronized media.

1.2.9 Audio-only (Live): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There is no live audio content present.

1.3 Adaptable

1.3.1 Info and Relationships: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Information, structure, and relationships can be perceived through visual and auditory cues.

1.3.2 Meaningful Sequence: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Content is presented in the correct reading sequence.

1.3.3 Sensory Characteristics: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Buttons that change color and images, such as logos, are also labeled with alternative text.

1.4 Distinguishable

1.4.1 Use of Color: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Buttons that change color are also labeled.

1.4.2 Audio Control: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: Any audio that plays automatically is not present.

1.4.3 Contrast (Minimum): (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: The contrast ratio of the text in the navigation bar against the background and the course title against the banner/cover image is very poor, from 1.1:1 to 1.5:1 only. This appears in all selected web pages.

1.4.4 Resize text: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: Clicking on My Courses using Firefox browser with text-only zoom at 200%:

"Deadlines" overlap with "View my calendar".

"Feedback" overlaps with "View my feedback".

"Messages" overlaps with "View my messages".

"Forum posts" overlaps with "View my forum posts".

1.4.5 Images of Text: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: The banner/cover image is an image of text

displaying the title of the course on the selected webpages, but is not useful when it is presented to the user. It is not customizable nor essential because the course title is already being presented through text.

1.4.6 Contrast (Enhanced): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: The contrast ratio of the text in the navigation bar against the background and the course title against the banner/cover image is very poor, from 1.1:1 to 1.5:1 only. This appears in all selected web pages. The contrast ratio of text and background is lower than 7:1.

1.4.7 Low or No Background Audio: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There is no background audio present in audio-only content.

1.4.8 Visual Presentation: (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: The user can't select foreground and background colors.

1.4.9 Images of Text (No Exception): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: The banner/cover image is an image of text displaying the title of the course on the selected webpages, but is not useful when it is presented to the user. It is not customizable nor essential because the course title is already being presented through text.

Principle 2: Operable

2.1 Distinguishable

2.1.1 Keyboard: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: All functionality can be controlled by keyboard.

2.1.2 No Keyboard Trap: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Keyboard focus can be moved from one button/link to another with Tab, Shift + Tab, Ctrl + Shift + Tab, and arrow keys.

2.1.3 Keyboard (No Exception): (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: All functionality can be controlled by keyboard and specific timings for individual strokes are not required.

2.2 Enough Time

2.2.1 Timing Adjustable: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There are no time limits in viewing, reading, or using the content.

2.2.2 Pause, Stop, Hide: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There is no moving, blinking, scrolling, or auto-updating information present.

2.2.3 No Timing: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: There is no activity that has a time limit.

2.2.4 Interruptions: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no interruptions when using content.

2.2.5 Re-authenticating: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no authentication time limits after a period of inactivity.

2.3 Seizures

2.3.1 Three Flashes or Below Threshold: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There is no content that flashes more than three times in any one second.

2.3.2 Three Flashes: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There is no content that flashes more than three times in any one second.

2.4 Navigable

2.4.1 Bypass Blocks: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: "Skip to main content" link is added at the top of each page when "Tab" is pressed.

2.4.2 Page Titled: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Web pages have appropriate titles.

2.4.3 Focus Order: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: There is a logical tab order through buttons, links, and controls.

2.4.4 Link Purpose (In Context): (Level A)

Results for the entire sample:

Outcome: Passed

Findings: The link text and the link context provided describes the purpose of the link.

2.4.5 Multiple Ways: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: There are multiple ways to locate a web page.

2.4.6 Headings and Labels: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: Descriptive headings and labels are provided.

2.4.7 Focus Visible: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: Keyboard focus that is colored maroon is visible but the light blue one has a poor contrast ratio against its background.

2.4.8 Location: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: The navigation bar at the top left below the UPOU and MODeL logos displays the user's location within the web pages.

2.4.9 Link Purpose (Link Only): (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: The purpose of each link can be identified from link text alone.

2.4.10 Section Headings: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Heading markups are used for different sections of the pages.

Principle 3: Understandable

3.1 Readable

3.1.1 Language of Page: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Language attributes (lang and xml:lang) are provided on the html element.

3.1.2 Language of Parts: (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There are no changes in language of parts.

3.1.3 Unusual Words: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no unusual words, words used in a unique way, or have different meanings within the same web page.

3.1.4 Abbreviations: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Expanded form or meaning of abbreviations are available.

3.1.5 Reading Level: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: The text is easy to read and the language used is clear, simple, and appropriate for the content.

3.1.6 Pronunciation: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no words whose meanings are ambiguous without knowing the pronunciation.

3.2 Predictable

3.2.1 On Focus: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: No changes of context occur when components receive focus.

3.2.2 On Input: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Submit buttons are provided.

3.2.3 Consistent Navigation: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: There is consistent navigation within the web pages of the course site.

3.2.4 Consistent Identification: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: There is consistent identification of components having the same functionality within the web pages.

3.2.5 Change on Request: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Context changes only when initiated by the user.

3.3 Input Assistance

3.3.1 Error Identification: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: The form is not submitted when required fields are not filled. The page shows the errors through the text, "Required".

3.3.2 Labels or Instructions: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Labels and/or instructions are provided in fields requiring user input.

3.3.3 Error Suggestion: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: There are no error suggestions that will help the user to understand and correct input errors.

3.3.4 Error Prevention (Legal, Financial, Data): (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There are no web pages that cause legal commitments, financial transactions, or that modify or delete user-controllable data in data storage systems.

3.3.5 Help: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: Labels are sufficient so context-sensitive help is not necessary.

3.3.6 Error Prevention (All): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: Input submissions are not reversible and user input are not checked nor confirmed before submission.

Principle 4: Robust

4.1 Compatible

4.1.1 Parsing: (Level A)

Results for the entire sample:

Outcome: Cannot tell

Findings: There are no duplicate IDs but checking elements for complete start and end tags and if nested according to their specifications cannot be done thoroughly. Viewing each webpage's source with no "parsing only" tools available requires more time.

4.1.2 Name, Role, Value: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Role, state, and value information are provided on all user interface components and compatible with assistive technology (i.e. NVDA).

SAMPLE OF AUDITED WEB PAGES

- Introduction: <https://model.upou.edu.ph/course/view.php?id=220>
- Module 1: <https://model.upou.edu.ph/course/view.php?id=220#section-1>
- Module 1 Activities: <https://model.upou.edu.ph/mod/forum/view.php?id=3021>
- Module 2: <https://model.upou.edu.ph/course/view.php?id=220#section-2>
- Module 2 Activities: <https://model.upou.edu.ph/mod/forum/view.php?id=3026>
- Module 3: <https://model.upou.edu.ph/course/view.php?id=220#section-3>
- Module 3 Activities: <https://model.upou.edu.ph/mod/forum/view.php?id=3030>
- Module 4: <https://model.upou.edu.ph/course/view.php?id=220#section-4>
- Module 4A Activities: <https://model.upou.edu.ph/mod/forum/view.php?id=3036>
- Module 4B Activities: <https://model.upou.edu.ph/mod/forum/view.php?id=3037>
- Course Tools:
<https://model.upou.edu.ph/course/view.php?id=220#coursetools>

- Participants:
[https://model.upou.edu.ph/user/index.php?contextid=24006&roleid=0&id=220
&perpage=20&search=&mode=1](https://model.upou.edu.ph/user/index.php?contextid=24006&roleid=0&id=220&perpage=20&search=&mode=1)
- Grades: <https://model.upou.edu.ph/grade/report/user/index.php?id=220>
- Competencies:
<https://model.upou.edu.ph/admin/tool/lp/coursecompetencies.php?courseid=220>
- Badges: <https://model.upou.edu.ph/badges/view.php?type=2&id=220>
- Post Forum 1: <https://model.upou.edu.ph/mod/forum/post.php?forum=892>
- Post Forum 2: <https://model.upou.edu.ph/mod/forum/post.php?forum=893>
- Post Forum 3: <https://model.upou.edu.ph/mod/forum/post.php?forum=894>
- Post Forum 4: <https://model.upou.edu.ph/mod/forum/post.php?forum=895>

RECORDING OF EVALUATION SPECIFICS

The tools used to evaluate the website are Web Developer Toolbar and Colour Contrast Analyzer. The assistive technology used is NVDA. The browsers used are Google Chrome, Mozilla Firefox, and Microsoft Edge.

APPENDIX C

WCAG-EM Report for CFE 101 Course Materials

Report Creator: Hyacinth C. Celzo, July 1, 2019

Evaluation Commissioner: Hyacinth C. Celzo, UP Open University

SUMMARY OF THE EVALUATION FINDINGS

Out of 61 WCAG 2.0 guidelines, the course materials failed 6, namely, 1.1.1, 1.4.6, 1.4.8, 2.4.2, 2.4.5, and 2.4.7. There are figures missing alternative texts. Visual presentation of some of the text has a contrast ratio lower than 7:1. Width is more than 80 characters per line within paragraphs. Line spacing (leading) is less than space-and-a-half within paragraphs. There is no document title showing in the title bar. Keyboard focus indicator (shaped like a dotted rectangle) is slightly visible or difficult to spot within paragraphs. Documents do not have bookmarks.

SCOPE OF THE EVALUATION

Website name: Website of the UPOU Massive Open Distance e-Learning (Course materials of Oral Communication and Conversational Fluency)

Scope of the website: Downloadable course materials (PDF) of the course site, Oral Communication and Conversational Fluency of the UPOU Massive Open Distance e-Learning located at <https://model.upou.edu.ph/course/view.php?id=220>

Conformance target: Level AAA

Additional evaluation requirements: The report will include a list of errors and description of the problems. The evaluation will cover selected course materials available to the student.

Accessibility support baseline: Adobe Acrobat Pro DC with NVDA

Relied upon technologies: HTML5, CSS

OVERVIEW OF AUDIT RESULTS

Results of Level AAA

Principle	Level A	Level AA	Level AAA
Perceivable	8/9	5/5	6/8
Operable	8/9	1/3	8/8
Understandable	5/5	5/5	7/7
Robust	2/2	0/0	0/0
Total	23/25	11/13	21/23

DETAILED AUDIT RESULTS

Principle 1: Perceivable

1.1 Text Alternatives

1.1.1 Non-text Content: (Level A)

Results for the entire sample:

Outcome: Failed

Findings: There are figures missing alternative texts.

1.2 Time-based Media

1.2.1 Audio-only and Video-only (Pre-recorded): (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-based media present.

1.2.2 Captions (Pre-recorded): (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-based media present.

1.2.3 Audio Description or Media Alternative (Pre-recorded):

(Level A)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-based media present.

1.2.4 Captions (Live): (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-based media present.

1.2.5 Audio Description (Pre-recorded): (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-based media present.

1.2.6 Sign Language (Pre-recorded): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-based media present.

1.2.7 Extended Audio Description (Pre-recorded): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-based media present.

1.2.8 Media Alternative (Prerecorded): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-based media present.

1.2.9 Audio-only (Live): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-based media present.

1.3 Adaptable

1.3.1 Info and Relationships: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: TR is a child of Table, THead, TBody, or TFoot. TH and TD are children of TR. Tables have headers. LI is a child of L. Lbl and LBody are children of LI. All form fields are tagged and have description. Headings are nested properly.

1.3.2 Meaningful Sequence: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Tab and reading order are consistent with the logical structure.

1.3.3 Sensory Characteristics: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There is no content that relies solely on sensory characteristics of components.

1.4 Distinguishable

1.4.1 Use of Color: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There is no content whose color is the only visual means of conveying information.

1.4.2 Audio Control: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There is no audio that plays automatically.

1.4.3 Contrast (Minimum): (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: The visual presentation of text has a contrast ratio greater than 4.5:1.

1.4.4 Resize Text: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: The document can be resized without an assistive technology without loss of content or functionality, though there is no way for resizing text only.

1.4.5 Images of Text: (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There are no images of text present.

1.4.6 Contrast (Enhanced): (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: Visual presentation of some of the text has a contrast ratio lower than 7:1.

1.4.7 Low or No Background Audio: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no prerecorded audio-only content present.

1.4.8. Visual Presentation: (Level AAA)

Results for the entire sample:

Outcome: Failed

Findings: Width is more than 80 characters per line. Line spacing (leading) is less than space-and-a-half within paragraphs.

1.4.9 Images of Text (No Exception): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no images of text present.

Principle 2: Operable

2.1 Keyboard Accessible

2.1.1 Keyboard: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Tab and reading order is correct.

2.1.2 No Keyboard Trap: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: There are no keyboard traps.

2.1.3 Keyboard (No Exception): (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: All functionality of the content is operable by keyboard.

2.2 Enough Time

2.2.1 Timing Adjustable: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There are no time-limits in viewing the documents.

2.2.2 Pause, Stop, Hide: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There is no moving, blinking, scrolling, or auto-updating information.

2.2.3 No Timing: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: There is no content that requires timed interaction.

2.2.4 Interruptions: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no interruptions when viewing the content.

2.2.5 Re-authenticating: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no authenticated sessions.

2.3 Seizures

2.3.1 Three Flashes or Below Threshold: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There is no flashing content.

2.3.2 Three Flashes: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There is no flashing content

2.4 Navigable

2.4.1 Bypass Blocks: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: All page content is tagged and heading levels are consistent.

2.4.2 Page Titled: (Level A)

Results for the entire sample:

Outcome: Failed

Findings: There is no document title showing in the title bar.

2.4.3 Focus Order: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Tab and reading order is correct.

2.4.4 Link Purpose (In Context): (Level A)

Results for the entire sample:

Outcome: Passed

Findings: The purpose of each link can be determined from the link text or link context

2.4.5 Multiple Ways: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: Documents do not have bookmarks.

2.4.6 Headings and Labels: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: Headings are clear and descriptive.

2.4.7 Focus Visible: (Level AA)

Results for the entire sample:

Outcome: Failed

Findings: Keyboard focus indicator (shaped like a dotted rectangle) is slightly visible or difficult to spot within paragraphs.

2.4.8 Location: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Document has consistent page numbering.

2.4.9 Link Purpose (Link Only): (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Link text is read correctly by a screen reader. The destinations of the links are correct.

2.4.10 Section Headings: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: The documents have appropriate headings.

Principle 3: Understandable

3.1 Readable

3.1.1 Language of Page (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Natural language is specified.

3.1.2 Language of Parts: (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There is no passage or phrase in the documents that is in a different language.

3.1.3 Unusual Words: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no unusual words or phrases in the documents.

3.1.4 Abbreviations: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Expansion of abbreviations are provided.

3.1.5 Reading Level: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Text does not require reading ability more advanced than lower secondary education.

3.1.6 Pronunciation: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: There are no complex or ambiguous words that require specific pronunciation to know the meaning.

3.2 Predictable

3.2.1 On Focus: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Change of context is not initiated when a component receives focus.

3.2.2 On Input: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Clicking on links activates and opens up browser window but the setting of that control is not changed.

3.2.3 Consistent Navigation: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: Location of page numbers on a page is consistent.

3.2.4 Consistent Identification: (Level AA)

Results for the entire sample:

Outcome: Passed

Findings: Text, figures, and layout are consistent within the pages of a document.

3.2.5 Change on Request: (Level AAA)

Results for the entire sample:

Outcome: Passed

Findings: Changes of context are initiated only by user request.

3.3 Input Assistance

3.3.1 Error Identification: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There are no forms that are required to be submitted.

3.3.2 Labels or Instructions: (Level A)

Results for the entire sample:

Outcome: Not present

Findings: There are no forms that are required to be submitted.

3.3.3 Error Suggestion: (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There are no forms that are required to be submitted.

3.3.4 Error Prevention (Legal, Financial, Data): (Level AA)

Results for the entire sample:

Outcome: Not present

Findings: There are no forms that are required to be submitted.

3.3.5 Help: (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no forms that are required to be submitted.

3.3.6 Error Prevention (All): (Level AAA)

Results for the entire sample:

Outcome: Not present

Findings: There are no forms that are required to be submitted.

Principle 4: Robust

1.5 Compatible

1.5.1 Parsing: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Data can be extracted and parsed using PDF parser or scraper software (DocParser).

1.5.2 Name, Role, Value: (Level A)

Results for the entire sample:

Outcome: Passed

Findings: Name, role, and values can be set using PDF authoring tools with accessibility support.

SAMPLE OF AUDITED WEB PAGES

- Course Introduction:
 - MODeL_Conversational Fluency - Course Introduction (2019).pdf
 - https://model.upou.edu.ph/pluginfile.php/27400/mod_resource/content/3/MODeL%20_Conversational%20Fluency%20-%20Course%20Introduction%20%282019%29.pdf
- Module 1:
 - MODeL_Conversational Fluency - Mod 1 (2019).pdf
 - https://model.upou.edu.ph/pluginfile.php/27402/mod_resource/content/4/MODeL_Conversational%20Fluency%20-%20Mod%201%20%282019%29.pdf
- Module 2:
 - MODeL_Conversational Fluency - Mod 2 (2019).pdf
 - https://model.upou.edu.ph/pluginfile.php/27409/mod_resource/content/3/MODeL_Conversational%20Fluency%20-%20Mod%202%20%282019%29.pdf
- Module 3:
 - MODeL_Conversational Fluency - Mod 3 (2019).pdf
 - https://model.upou.edu.ph/pluginfile.php/27414/mod_resource/content/3/MODeL_Conversational%20Fluency%20-%20Mod%203%20%282019%29.pdf
- Module 4:

- MODeL_Conversational Fluency - Mod 4 (2019).pdf
- https://model.upou.edu.ph/pluginfile.php/27418/mod_resource/content/3/MODeL_Conversational%20Fluency%20-%20Mod%204%20%282019%29.pdf

RECORDING OF EVALUATION SPECIFICS

The tools and software used to evaluate the course materials are:

- Adobe Acrobat Pro DC with Accessibility and NVDA
- PDF Checker by European Internet Inclusion Initiative (<http://checkers.eiii.eu/en/pdfcheck/>)
- DocParser (<https://docparser.com/>)
- PDF Accessibility Checker (PAC 3) by Access for all (<https://www.access-for-all.ch/en/pdf-lab/pdf-accessibility-checker-pac/downloading-pac.html>)

APPENDIX D

Survey Questionnaire Results

Evaluating Accessibility of the Massive Open Distance

e-Learning (MODeL) Platform

The online version of the survey can be found on this link:

<https://forms.gle/at3NnmJgnvokLJQx7>

MOOC	No. of Respondents
Oral Communication and Conversational Fluency (March 6-April 17, 2019)	13
Oral Communication and Conversational Fluency (June 5-July 17, 2019)	12
Total	25

Age (y. o.)	No. of Respondents
16 to 20	1
21 to 25	3
26 to 30	3
31 to 35	8
36 to 40	2
41 to 45	3
46 to 50	2
51 to 55	2
No answer	1

1. Do you have any type of disability?	No. of respondents	Details
NO	24	
YES	1	Psychosocial disability

2. Do you use any type of assistive technology in accessing the web?	No. of respondents	Details
NO	25	
YES	0	

3. Do you experience any issues or difficulties accessing the platform, the course site, and course materials?	No. of respondents	Details
NO	16	
YES	9	<ol style="list-style-type: none"> 1. I am not sure whose fault it was, but my classmates and I were not able to post our activities on the respective forum discussion bins because there was no particular comment box/wall box to post our answers on. 2. Internet Connectivity 3. Course work/requirement submission bin unavailable in my last attempted MOOC Course (Assignment No. 2 & 3). 4. Yes, Sometimes especially the text below the UPOU logo "Home/subject/" wherein the text font is white and the background is white. Second, is the video captions provided by the youtube. 3rd, May I request that there will be folder for the finished courses and it must separated from the new courses.

-
5. I could not access the forum of Module 2-3 of CFE 101
 6. I am having difficulty accessing the platform using my smartphone. Although UPOU has tied up with Moodle App to mimic the platform, there are still lots of problematic features, like some buttons are unclickable or do not direct you to the page you intend to go to.
 7. Yes due to slow connectivity
 8. the speed of the internet
 9. It was a little difficult to browse the replies and the activities. I think it was a bit confusing.
-

4. Do you think these issues or difficulties affect the effectiveness, and efficiency of the UPOU MOOCs and your overall learning experience?	No. of respondents	Details
NO	12	
YES	12	<ol style="list-style-type: none"> 1. We were not able to have an exchange of ideas with each other 2. because the course is available online 3. Learner loses the ability and interest to complete the course

-
4. Yes, but if the issue is minimal it will not affect the whole system. If the issues/ problems arise that will affect the whole system then it will surely affect the effectiveness and efficiency of the program .
 5. It could somehow affect because there is no one to ask about the issue so you are left wondering on what to do.
 6. Yes, it affects my overall learning experience because I do not have access to computer all the time, and my only hope is to be able to study using my smartphone.
 7. Yes because it affects the momentum and the mood for learning
 8. Yes but it will still vary on the kind of disability of the person. For example your hearing is not that good and the lecture is in video format, even though it has assistive technology like speech to text there are times that the spelling is incorrect or the word the speaker is saying not the same as the text, readers will only be confuse.

-
9. If we need to pass a requirement on time.
 10. I haven't experienced any difficulty but if I put myself on the shoes of my son who has learning disability, the answer to question number 4 is yes. It will lead to frustration and possibly failure to finish the courses.
 11. As a person with bipolar disorder, one of the issues I face is difficulty sleeping, so I think this personal affliction makes it harder for me to complete the assignments at the proper time. If I'm in manic mode, I can complete the tasks immediately, but this means I won't have any sleep at all.
 12. Because at some you will be out of focus.
 13. Most of the materials given for learning guides are visual and written. People with visual difficulties may struggle comprehending the lesson guides.
 14. If the student/learner will be assisted by someone, then learning experience will still be the same.

NO ANSWER/BLANK

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RATINGS

MODeL Platform	Really Bad	Bad	Somewhat good, somewhat bad	Good	Very Good	Total Score
	1	2	3	4	5	
Attractiveness of Homepage		1	6	13	5	97
Attractiveness of Site		1	6	11	7	99
Pleasantness of Graphics and Images			7	11	7	100
Color of Background			3	13	9	106
Color of Font		1	3	11	10	105
Size of Font			4	10	10	102
Readability of Text		1	3	11	10	105
Understandability of Information		1	3	12	9	104
Ease of Navigation		2	6	10	7	97
Consistency of the Layout Design		2		14	9	105
Overall Appeal of the Layout Design		2	3	13	7	100

Course Site	Really Bad	Bad	Somewhat good, somewhat bad	Good	Very Good	Total Score
	1	2	3	4	5	
Attractiveness of the Course Site		1	6	11	7	99
Appeal of Forums and Activities		1	5	12	7	100

Pleasantness of Graphics, Images, Videos, and other Multimedia		7	10	8	101
Color of Background		3	13	9	106
Color of Font	1	4	11	9	103
Size of Font		3	11	11	108
Readability of Text	1	3	11	10	105
Understandability of Information		3	12	10	107
Ease of Navigation	3	4	11	7	97
Consistency of the Layout Design	1	2	14	8	104
Overall Appeal of the Layout Design	2	4	13	6	98

Course Materials	Really Bad	Bad	Somewhat good, somewhat bad	Good	Very Good	Total Score
	1	2	3	4	5	
Ease of downloading materials			1	9	15	114
Ease of Submission of requirements		1	5	8	11	104
Readability of modules and requirements			1	10	14	113
Understandability of modules and requirements			2	10	13	111

Clarity of modules and requirements		2	9	14	112
Offline access to course materials	1	5	11	8	101
Pleasantness of multimedia elements		3	12	10	116
Consistency of style and structure		4	12	9	105
