

# Implementation of an Academic Counselling Online Platform

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**Abstract:** Academic stress is a factor that can affect the mental health of students. It may take the form of peer pressure, doing poorly in tests, or even submitting a requirement late. With the current coronavirus pandemic, most schools have opted to do online classes. However, some students find difficulty in doing online classes due to the lack of resources. Other services such as counseling are also put to a halt. Monitoring the students' mental health is now more difficult with the current online class setup. For this purpose, we developed web-based mental health monitoring platform for educational institutions, which can be used by mandated school personnel e.g. guidance counselors to continue to address the mental health concerns of students brought about by academic stress. With the deployment of this platform, we found that the students respond positively to online sessions and consult with their academic counselors as we intended to replicate the dynamics of face to face sessions. We have deployed this platform in a specific University in the Philippines and to be able to provide this essential service to the student constituents even at this time of pandemic. We also designed the platform to incorporate topic models and sentiment for analytics and visualization of the anonymized data to inform the University as to the necessary improvement and needs of the students pertaining to their mental health concerns.

**Keywords:** Guidance counseling, web application, academic mental health, sentiment analysis, topic modeling, data mining tools

## 1. Introduction

### 1.1 Background of the Study

Academic institutions offer guidance counseling to its students to monitor overall wellness, academic performance and other academic related concerns. It is facilitated between a student and a counselor face-to-face within a room to discuss pertinent matters. As guidance counseling is part of a service that the school offers, it is one of the services that has been difficult to provide due to the coronavirus pandemic. The only solution, at present, is the implementation of counseling on an online platform. To address this need, a chat web application is designed and developed. This chat web application is a convenient way to have online student consultation sessions. To also automatically monitor the overall academic mental health of students, automated topic modeling and sentiment analysis of the transcripts of the sessions are performed. Data protection and privacy issues are addressed as the overall models are anonymized and individual students can, in no way, be specifically identified when statistics of overall academic performance and wellness summaries are generated. These statistics will inform the academic administrators in instructional design and pedagogical design such that their students' academic and overall performance and wellness are given due consideration.

### 1.2 Objectives

In the design of this application we considered the following:

- What are the user and systems requirements and development considerations for these online academic counseling sessions?
- What are the factors affecting the general student population that will be generated according to the topics which are extracted from the online chat counseling sessions?

- What are the sentiments likely to be experienced by students, in general, based on the overall sentiment model of the chat counseling sessions?

## 2. Review of Related Literature

### 2.1 *Academic Guidance Counseling and Monitoring*

Guidance and counseling services are an essential educational tool in the development of a child's orientation (Nkechic, Ewomaoghene & Egenti, 2016). It is a service that assists students throughout their academic journey in order to aid in their development and let them further improve within their capacity (Demir & Can, 2015), i.e. online counseling (synchronous and asynchronous), web-based interventions, internet operated therapeutic platforms, and other online activities such as online support groups and online health assessment (Barak, Klein & Proudfoot, 2009).

#### 2.1.1 *Need for Counseling*

The suspension of in-person and face to face classes can have adverse psychological effects among students as they are more prone to feel intense emotions like frustration, anxiety, and betrayal or struggle with loneliness and isolation, which detaches them from their friends and teachers. Students that receive on-campus counseling lose access to this essential service, may jeopardize their study program and possibly contribute to poor academic performance, hence the need to provide counseling even at a distance (Zhai & Du, 2020).

## 3. Online Platform Requirements, Design and Implementation

Focused group discussions and user interviews were conducted to build the process flow model of the online platform. The chat function is an essential part of the website. The counselors agreed that there is a need for the chatbox or message box as it will serve as their medium for online counseling. A student can message any counselor. In the chatbox, the student is able to attach files in their messages, such as images or documents. The chat sessions can support both synchronous and asynchronous messaging. Through synchronous messaging, counselors and student counselee may interact in real-time. Having asynchronous messaging students can leave a message to the counselors even when they are not available and for counselors to be able to respond to students even when the student is not online.

The counselors also wanted to add two sections to the website, the Readings and Update section. In the Readings section, the counselors can post articles or other items they wish to share with the students.

NDMUGuide is the site name for the counseling platform (see screenshots in Figure 1). The design of the web application was based on the results of the requirements gathered and planned. It can be accessed through the link <https://www.ndmuguide.com>. When creating the website, the researcher chose WordPress and Tawk.To as the platforms to be used in NDMUGuide in order for the website to be easily manageable by the guidance counselors without help from a professional and it can also be easily replicated by other schools if they want to offer a platform for online counseling. The chat function uses Tawk.To which is a free chat live software which was founded by Robert D'Assisi. Tawk.To was integrated directly to the NDMUGuide website.

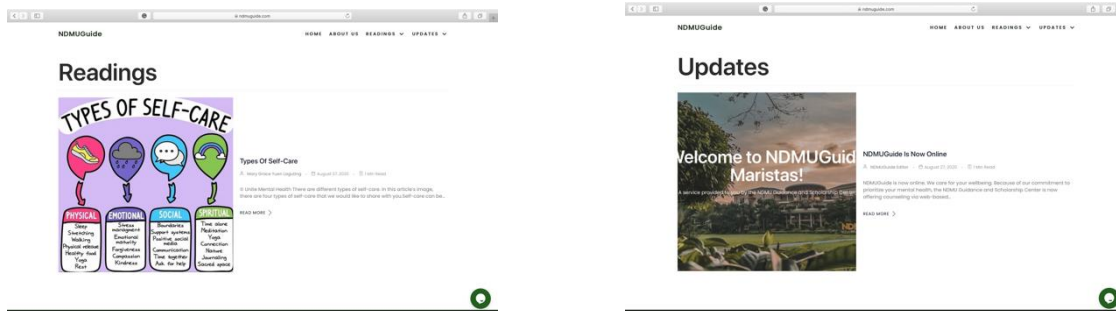


Figure 1. Screenshots of Online Academic Counseling Platform

We have made initial sentiment models using the Vader valence scores (Gilbert & Hutto, 2014). We also built initial topic models using the genism (Řehůřek & Sojka, 2011) library in Python. In the subsequent phases of this study, the automated topic or “themes” and general sentiments of the students will be extracted, analyzed, and presented via visualization and reports will be designed so as to inform instructional design and academic administration decisions.

#### 4. Findings and Future Work

At present, students and academic counselors are using the online platform. With the platform, the essential counseling and monitoring services of the University are continuously provided despite the disruptions that the pandemic has brought about. The subsequent part of the work for this study is to perform appropriate visualization of the general themes of the concerns of the students, as well as their sentiments. With this valuable feedback, instructional design will be made appropriate to factor in the pressing concerns expressed by the students via this online platform.

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