EFFECTIVENESS OF GENERATIVE AI IN COLLEGE ADMISSIONS ESSAY REVIEWING

IMPACT OF GENERATIVE AI ON THE COLLEGE COUNSELOR-STUDENT RELATIONSHIP

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General Research Problem

How is generative AI redefining the conventional functions of college counselors in the admissions essay process?

Over the past few decades, technology has continued to integrate into educational contexts, and it has fundamentally transformed certain processes. A critical component within our education systems is the development of college admissions essays. College applications often require written personal essays to supplement the rest of the application, as it can provide important intangible context on the applicant as a whole. Given the intensifying competition in college admissions, the significance of these essays in the application process cannot be overstated. Students commonly seek college counselors' feedback on their essays, aiming to refine their applications as much as possible.

As we witness this evolution in educational practices, particularly in essay development, the rise of generative artificial intelligence stands to be a significant technological integration. Especially over the past year, there have been vast improvements in generative artificial intelligence (AI). Generative AI refers to technologies that are able to produce new, novel outputs that haven't been seen before, whether that be text, images, or other mediums. In the context of writing, generative AI has proved to have impressive capabilities. This includes fostering creativity, reducing errors, and enhancing overall human productivity.

There are three main actors who interact with college application essays: there are the students who are responsible for writing and submitting the essays; there are college counselors who are responsible for reviewing and providing feedback to the students on these essays; there are then the essay graders who work for the colleges that the students submit the essays to. Generative AI could be used to generate the essays entirely, potentially at a higher quality than

the capabilities of some high school seniors. AI could also be used by colleges to grade and review submitted essays and applications, which could automate a long and tedious process. Generative AI could also be used to review and edit drafts of college application essays. In essence, generative AI can be used to automate parts of the roles of the student, the college essay graders, and the college counselors. Specifically, this research aims to analyze the current capabilities of generative AI when focussed on the job function of college counselors, in addition to reviewing and analyzing how college counselors have interacted with generative AI in the most recent application cycle.

Technical Research Question: Effectiveness of Generative AI in College Admissions Essay Reviewing

How can generative AI be utilized to enhance the quality of college admissions essays, and how does it compare to traditional human expertise in this task?

Generative AI refers to technologies that use existing patterns in the real world to generate new content that likely has not been previously created. Over the past few decades, software has been used to automate simple human tasks and has greatly improved human productivity. However, until recently, software has not been particularly adept at automating more complex human tasks with nuance and subjectivity. Improvements in generative AI have unlocked the potential for more human tasks to be automated, with the potential to do it with even higher quality.

Every year, hundreds of thousands of students spend time filling out college applications, with many colleges requiring answers to open-ended essay questions. To help with this process, high schools employ college counselors to help students optimize their college applications,

which includes reviewing and giving feedback on the essays. With over 7 million applications being submitted in the 2022-2023 school year (Nietzel, 2023), college counselors have a lot of essays to review. With strict deadlines, this process can be incredibly time consuming for college counselors, which could lead to a lack of personalized or even good quality feedback. High school families have the option to pay for private college counselors, those that are not employed by a high school, but they often are only affordable for wealthy families.

There are many ways that a college counselor can provide feedback on a college admissions essay. First, they can offer general comments on the essay as a whole or a specific component of the essay. For example, a college counselor may write a paragraph about their general thoughts on the essay and what can be improved at a high level. They could also write a comment on the specific example that the author chose to use throughout the essay. College counselors can also provide anchored comments, which are comments that are tied to specific sections of the text. These comments can be very useful if they refer to a very specific part of the essay and not necessarily the whole essay. College counselors can also offer suggestions, which are proposals to alter sections of the text in a specific way. Suggestions are most useful in contexts when a change would be valuable, but a comment about the change is not necessary. College counselors can also provide quantitative feedback in the form of scores.

In this technical project, I will build a generative AI system designed to emulate the style and quality of feedback that a typical college counselor might give on a college application essay. This will be done through a software program written in Python. While I could build out my own custom model to accomplish this objective, I am going to use the language model GPT-4 and the OpenAI API for the review generation. Thus, there is no direct training data that will be used to input into the model; instead, I will use a technique known as "prompt engineering,"

which is the process of refining the model prompt instructions to converge to the most desired outputs. I will, however, use example essays reviewed by college counselors to guide the prompt engineering. The input will be a text file containing the unreviewed essay, and the output will be a Word document with the reviewed essay. To narrow the scope of this project combined with the goal is to see if generative AI can be used to emulate the quality of feedback of a college counselor, this project will focus mainly on providing general comments and anchored comments.

STS Research Problem: Impact of Generative AI on the College Counselor-Student Relationship

How has the use of generative AI in essay editing impacted the relationship and communication between college counselors and students in the 2023 college application cycle?

This research will explore how generative AI has impacted the relationship between college counselors and the students they advised during the 2023 college application cycle. College counselors have a critical role in the college application process. Traditionally, they will review their students' applications before being submitted and give advice on which colleges a given student should target or explore. They also sometimes manage personal relationships with specific colleges to help understand how their students can tailor their applications better to each school. One of the most valuable services college counselors offer is essay editing and review. The essay component of the college application process is only increasing in importance as schools join the movement to make submitting standardized test scores optional and as the "holistic review" approach becomes more popular (Najarro, 2023). The relationship between a college counselor and a student is incredibly important in the college admissions process.

However, counselors have been facing the challenge of large student-to-counselor ratios as the number of college applicants increases every year. This research will explore how generative AI has impacted this process in the 2023 application cycle, focussing on essay editing.

<u>Background</u>

The college essay editing process is a crucial step in crafting an effective college admission essay. The primary purpose of the essay is the showcase the student's unique personality, experiences, and aspirations. This provides a narrative that complements their academic and extracurricular achievements. The college essay should effectively resemble the student's voice and perspective, hopefully making them stand out compared to other applicants. In this process, a college counselor can play an important role by guiding the student in structuring their thoughts, ensuring clarity, coherence, and offering insights to refine the essay's narrative flow. Historically, the college essay has been an integral part of the application process, primarily judged through human insight and subjective evaluation (Sawyer, 2016). With the emergence of generative AI, some students and counselors have explored using these tools for brainstorming ideas, improving language, and seeking inspiration. For a high quality essay, however, it's crucial that the final essay remains authentically in the student's voice and is a true reflection of their individuality.

The lifecycle of a college essay typically happens through a standard sequence of interactions, beginning with the brainstorming phase. In this initial stage, the student reflects on their experiences and aspirations to generate potential topics for their essay. After this, the drafting process starts, where the student transforms their ideas into a structured narrative that answers the essay prompt. This draft is then reviewed in the revision phase, usually involving

feedback from a college counselor. The revision process may iterate, where the student refines their essay based on this feedback, and gives the essay back to the counselor for an additional review. The final phase involves proofreading, where attention is given to grammar, syntax, and punctuation. Finally, the essay is submitted as part of the final application to a college, then is reviewed by an essay grader at the college the essay is sent to.

This research will delve into how these technological advancements in generative AI have reshaped this counselor-student relationship. It will investigate whether AI tools are merely supplementary or if they pose a threat to the traditional mentorship offered by counselors, and how this might affect the authenticity and effectiveness of college essays. The objective is to unfold a comprehensive understanding of this evolving sociotechnical system, highlighting the challenges and opportunities brought forth by the infusion of AI in the college application process.

Literature Review

The integration of AI in essay editing tools has significant implications for the dynamics between college counselors and students. The homogenization of student voices due to AI tools is a concern, as it can diminish the uniqueness of admissions essays, which are crucial for counselors in understanding students' individual perspectives (Singer, 2023). Counselors need to understand these perspectives in order to tailor feedback and understand the underlying objective and message of the essay. Additionally, the overreliance on AI for writing might lead to a decline in students' fundamental writing skills, shifting the focus of the counselor-student relationship from developing higher-level skills to reinforcing basic writing abilities (Ilieva et al., 2023). This also could increase the amount of review and editing required to achieve the same quality of

writing. Furthermore, while AI can democratize access to quality writing assistance, it also raises questions about the authenticity and originality of student essays. The challenges of AI in maintaining the student's personal voice and context in their essays are large as well (Ramesh et al., 2022; Yeo, M. A., 2023). These issues are pivotal for counselors as they navigate ensuring the genuineness of students' work amidst AI assistance. This evolving landscape underscores the need for a nuanced approach to AI integration in education, particularly in its impact on counselor-student interactions.

<u>Theoretical Framework</u>

The theoretical framework of this research is grounded in Actor-Network Theory (ANT). ANT is an STS framework for examining complex relationships between human and non-human actors within sociotechnical systems (Michael, 2017). In the context of this research, ANT provides a framework to analyze how generative AI, as a non-human actor, has reshaped the existing standards on the iterative essay review process. Specifically, students went through the process of writing and submitting essays to their college counselors for review in 2023 with the existence of generative AI tools, and ANT will be used to see how generative AI has impacted the review process compared to prior years. This framework will be used with the entry points of generative AI, college counselors, and high school students, branching off from there. The goal is to uncover how the integration of AI in essay editing not only has affected the technical aspects of writing but also has impacted the responsibilities of the college counselors and students.

Investigation Methods

In conducting this research, I plan to use multiple investigation methods to address the underlying STS question. The plan is to conduct extensive interviews with a diverse group of stakeholders, including students, college counselors, and admissions officers at colleges. I will compare students from both the 2023 college application season and the 2022 college application season, asking questions about their use of generative AI in reviewing their college essays, in addition to their perspective on how college counselors have been using generative AI. In interviews with college counselors, I will ask questions about what the college essay review process is like for them, in addition to how generative AI has changed the review process from year to year. In interviews with college essay graders who work at colleges, I will ask questions on how the quality of the essays has changed from year to year, if it has at all. I will also ask questions in interviews with both graders and college counselors about how their relationships with others in the process have changed with the emergence and adoption of these technologies. While I will conduct interviews with a variety of stakeholders, I plan to conduct most interviews with practicing college counselors, including ones from private schools, public schools, and independent counselors.

Conclusion

I hope to learn many important things through completing this research. On the technical side, I hope to learn more about how to practically integrate AI tools into a real application. I also hope to learn some of the limitations of existing state of the art large language models with this kind of task. I also hope to gain a more fundamental understanding of what makes strong college essays, and potentially other unforeseen applications of generative AI in this space. On the STS side, I hope to learn the specifics of how generative AI has impacted specific functions

in the college essay review process. I also hope to gather information on how generative AI impacted sentiments on the technology as a whole, including the ways in which it is viewed as a force for good and bad. Overall, the objective of this research is to analyze how generative AI has transformed the traditional role of college counselors in the most recent college application cycle. One part of the research will be building out a generative AI system to emulate one of the complex job functions of a college counselor. To bring this research together, I will focus on the sociotechnical system of generative AI with the college essay review process of 2023, with the goal to highlight the impacts that this technology has had within this domain.

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