

Attainment with AI

Making a Real Difference
in College Completion
with Artificial
Intelligence

November 2023

A Compendium of Practical
Applications for Generative AI
in Higher Education

**COMPLETE
COLLEGE
AMERICA**

In partnership with:



T3 ADVISORY

About Complete College America

Complete College America (CCA) builds movements for scaled change and transforms institutions. Specifically, CCA drives systemic change that leads to better college completion rates; more equitable outcomes; and greater economic and social mobility, especially for historically excluded students. CCA operates at the federal, state, and institutional levels and works with its national network of forward-thinking state and higher education leaders. Since its founding in 2009, CCA and its network have introduced bold initiatives that help states and institutions implement data-driven policies, student-centered perspectives, and equity-driven practices.

About T3 Advisory

T3 Advisory partners with higher education institutions and national organizations to chart a strategic path forward in today's complex landscape of technology and postsecondary student success. Our work leverages data analysis, strategic planning, and process improvement to build capacity for sustainable change.

Founded in 2023 by Audrey Ellis, T3 Advisory brings more than 10 years of higher education expertise. We aim to equip our partners with insights on new technology to advance student success, especially for historically excluded students and the institutions that serve them. Our customized services help leaders make sense of challenges and seize opportunities.

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Attainment with Artificial Intelligence: An AI Playbook

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A Message from Complete College America

Artificial intelligence (AI) is the newest, most profound disruption in education, which many have classified as a problem for higher education, equity, and broader society. Yet, we view AI as an opportunity to boost attainment. Rather than continue to do business as usual, we must collectively steer the AI ship toward positive disparate impact on educational success and completion. Let us use AI to equalize opportunities that have historically been out of reach for many Americans, particularly college degrees and credentials, and dramatically scale access to higher education's myriad individual, economic, and societal benefits.

Complete College America (CCA) is exploring AI because it presents a profound opportunity to scale the completion practices we already work with institutions to develop, implement, and expand. We were among the first organizations to showcase technological innovation in service of student success and completion through the CCA Technology Seal of Approval in 2016, which recognized specific software tools to support our Game Changer strategies. We still believe that technology is critical to enabling and accelerating the structural reforms and game-changing strategies for which CCA advocates.

AI is a tool in the larger completion toolkit that will accelerate progress toward our mission. CCA is still rooted in reshaping policy, perspective, and practice toward the ultimate goal of economic opportunity, social mobility, and racial justice—but we must all adapt to the technology and tools that can accelerate our ultimate goals.

The necessity of transforming systems and improving college completion has remained the same, but how we do that is changing. CCA is here to provide guidance, support, and resources to navigate the new tools that will open doors and opportunities for students.

EXECUTIVE SUMMARY

Recent developments in generative artificial intelligence (AI) have spurred a new sense of urgency around the transformative potential of AI in the workforce, education, and economy. Many forms of AI have long been in use in the education industry, but with the introduction of new generative AI technology (e.g., ChatGPT, Claude, Bard, and Bing), conversations around the use of such tools have exploded.

In the 2022-2023 academic year, one study estimated that more than 30% of all students were already using generative AI technology in the classroom.¹ Earning a postsecondary degree or credential remains the most effective means of gaining the skills and knowledge needed to navigate and thrive in such a rapidly evolving society and workforce environment. Yet, historically, higher education has struggled to keep pace in moments of social and economic transformative change, and while AI is not a novel concept, wide-scale discussions of this technology are only just beginning to gain momentum.

¹ Intelligent.com. (2023, June 9). *One third of college students used ChatGPT for schoolwork during the 2022-23 academic year*. Retrieved from <https://www.intelligent.com/one-third-of-college-students-used-chatgpt-for-schoolwork-during-the-2022-23-academic-year/>.

Such rapid transformation poses a unique opportunity to catalyze Complete College America’s mission to increase college attainment and, by extension, close national racial and socio-economic gaps.

By proactively shaping the narrative around AI in postsecondary education, we can harness these transformative technologies to promote equitable attainment, enabling students from all backgrounds to access and successfully complete their definition of college attainment.

AI presents an untapped well of opportunities to transform higher education for the better: augmenting capacity among employees who support students in a time of dwindling resources, improving the student experience through timely information, predicting students that would benefit from additional support, customizing messaging to individual students, enabling highly personalized interventions that build on strengths rather than deficits, mining previously unruly datasets, and more that we have yet even to understand.

Understanding both the risks and transformative potential of generative AI, in the summer of 2023, CCA convened a working group of higher education thought leaders to embrace experimentation and innovation and share lessons to create guardrails for the responsible use of AI. Representing multiple states, two-year and four-year institutions, consultants, state higher-education agencies, and education technologists, this group of more than twenty leaders has developed an AI Playbook for states and institutions in the CCA Alliance.

This publication serves as a comprehensive playbook for higher education institutions, offering a curation of over 200 potential applications of artificial intelligence (AI) designed to bolster student success, with a particular emphasis on college completion.²

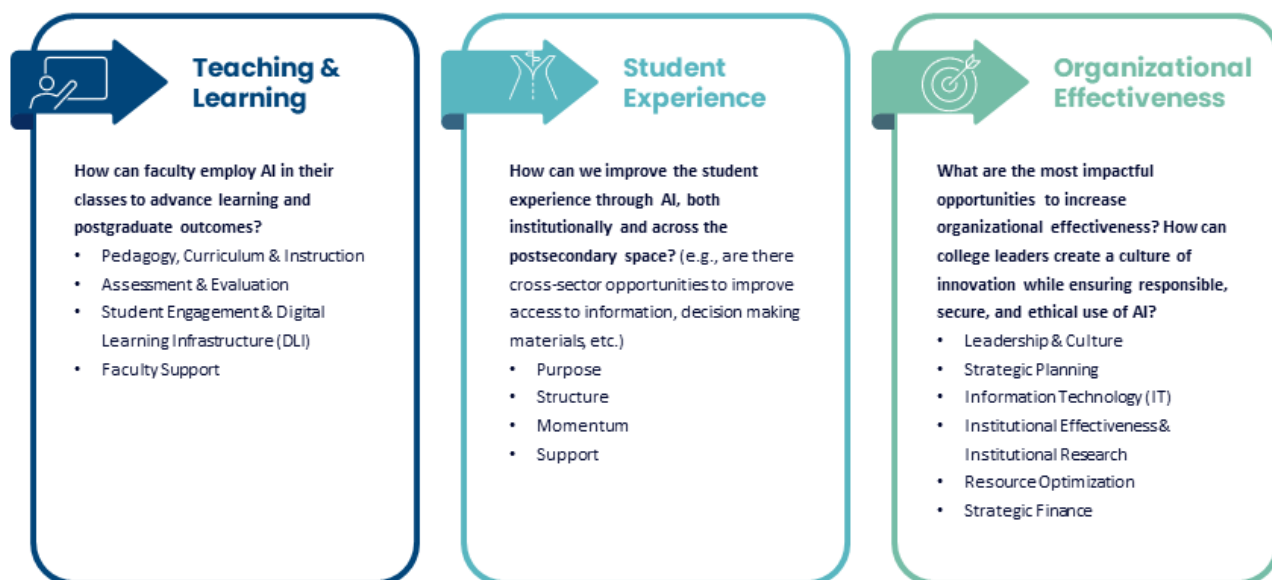
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² Throughout this playbook, we provide ideas, use cases, and currently developed applications of AI in higher education – covering the broad spectrum of novel ideas to well-tested products.

Spearheaded by CCA, this guide surfaces ideas and innovative applications of AI that will help higher education institutions with their efforts to increase college opportunity and completion for all. Recognizing that the field of AI is dynamic and constantly evolving, this report aims to inform and inspire action, presenting a range of solutions from immediate, implementable steps to more aspirational, forward-thinking strategies. Readers should be aware that as the landscape of AI continues to change, so too might the context and relevance of the applications and recommendations provided herein.

This report is specifically tailored for higher education leaders committed to improving outcomes for historically underserved student populations. Policymakers, advocates, education technology leaders, higher education managers, and other stakeholders interested in the role of AI in college completion and outcomes may also find value in this report. We organized our recommendations into three operational areas, with an appendix that includes additional resources to begin this work.



The transformative power of AI in reshaping the national workforce and economy demands bold and timely action from higher education institutions. By embracing responsible AI innovation, CCA aims to provide resources to our Alliance and the industry at large to improve postsecondary access and attainment rates.

Moreover, CCA's AI working group seeks to promote a positive and curious attitude toward new transformative tools, such that students are equipped with the necessary skills and competencies to succeed in AI-driven industries, thereby propelling their upward mobility and promoting the long-lasting impacts of our mission.



INTRODUCTION

Why the Urgency to Focus on AI Now?

Artificial intelligence (AI) is the simulation of human intelligence in computers and other machines. It encompasses a set of algorithms and models that enable machines to perform tasks that typically require human-like understanding, reasoning, learning, and decision-making.³ Recent developments in the field of generative AI, including open tools like ChatGPT, have sparked a new wave of disruption in all fields, including education.⁴

The COVID-19 pandemic spotlighted the digital divide that is still a reality in our nation, encompassing reliable access to the internet, mobile devices, and technology. As the higher education sector stands on the precipice of disruption, AI is a new technology that can either contribute to the well-documented digital divide in our nation or become a tool that could begin to bridge gaps. We must consider the role existing institutional access to resources will play in determining who has access to AI, how it is built, and the problems it intends to solve.

CCA is a national fulcrum for accelerating college completion rates and closing institutional performance gaps. The organization is rooted in data-driven advocacy and collaborates with states, systems, academic institutions, and various national and community partners.

CCA advocates for reallocating and expanding resources to our constituency, enabling them to initiate required structural and practice reforms. These reforms aim to bridge equity gaps and elevate overall institutional performance, especially around completion rates and other pivotal college goals.

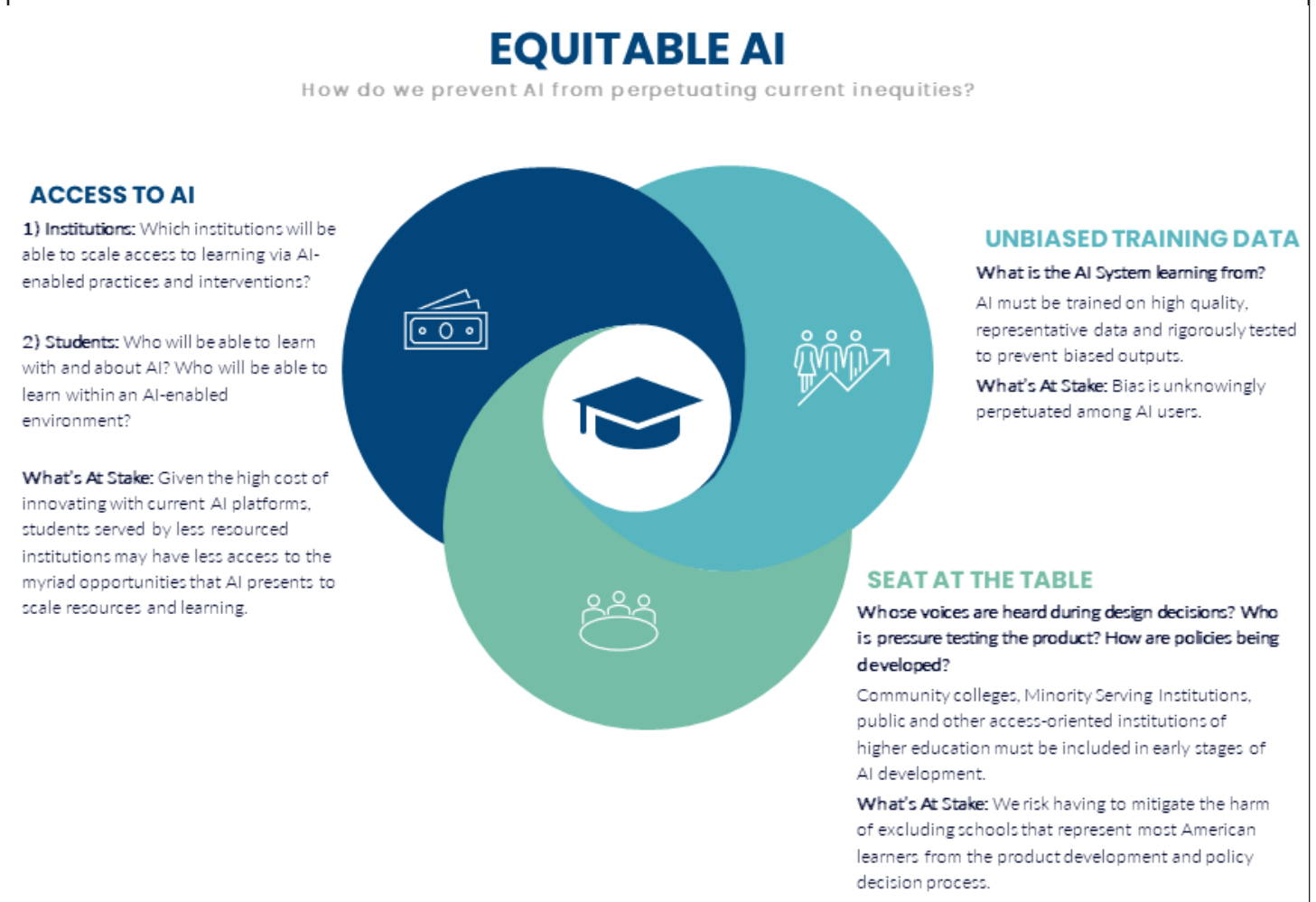
³ Stanford University. (n.d.). *Defining AI*. <https://aiil00.stanford.edu/2016-report/section-i-what-artificial-intelligence/defining-ai/with-2021-annotations>.

⁴ See the Appendix for a glossary of useful AI terminology.

In 2022, CCA published *No Middle Ground: Advancing Equity through Practice*,⁵ reminding colleges that without taking bold, targeted, systemic, and immediate action, inequities will persist in our educational systems. The recently expanded access to generative AI presents a momentous opportunity to rethink institutional practices, structures, and policies that undergird ongoing inequities in higher education.

The lessons shared in this report apply to these new developments, too: inequities will persist without bold, targeted, systemic, and immediate action. We urge higher education leaders and policymakers to act so we may continue to disrupt dysfunctional higher education systems. We've outlined a playbook to use AI as a tool to act now.

In the CCA working group's equity position paper, [*The AI Divide: Equitable Applications of AI in Higher Education to Advance the Completion Agenda*](#), we outline a three-part model for understanding the relationship between Equity and AI:



In the equity position paper, we propose convening a Council on Equitable AI in Higher Education, a new advisory council representing all higher education stakeholders, and not just those that have historically had a voice in key policy, product, and funding decisions.

⁵ Complete College America. (2022). *No middle ground: Advancing equity through practice*. https://completecollege.org/wp-content/uploads/2022/06/No-Middle-Ground_Advancing-Equity-Through-Practice.pdf

The Council seeks to employ AI to craft solutions that bridge the gap in opportunities. They will champion the cause of all institutions and the students they serve, especially those who have been sidelined in the past. The Council is grounded in the principles of justice and equity, elevating perspectives and priorities that have historically been marginalized in decision-making.

CCA intends to use this Council to ensure that there is consultation with all stakeholders in higher education, serving as a convening authority that can inform technologists, policymakers, and funders in their decisions around who has access to use, test, research, study, and inform AI.

Genuine Equity and Artificial Intelligence

Complete College America has simultaneously released a position paper to accompany this AI playbook.

The position paper frames the development of the Council on Equitable AI in Higher Education and the imperative for corporate technology leaders and local, state, and federal regulators to consider equity in the rise of artificial intelligence on campuses and among students, faculty, and staff.

We argue that AI adds additional urgency beyond the moral and ethical imperative to disrupt historical inequities:

- **Preparing students for the workforce of the future.** The future workforce will not just be influenced by AI; it will be interwoven with it.⁶ As AI increasingly becomes a staple in various industries, today's students face a tomorrow where their ability to engage with, understand, and even shape AI technologies will be integral to their career success. Colleges and universities serve as the critical bridge to this future workforce. By integrating AI tools strategically and responsibly, institutions can equip students with the skills and knowledge necessary to excel in an AI-augmented world.
- **Creating efficiencies for access-oriented colleges.** In a time when many colleges, especially MSIs and community colleges, are grappling with limited resources, AI presents a new opportunity. AI can automate administrative tasks, streamline institutional processes, and help faculty personalize and scale their teaching—all without sacrificing quality.

For access-oriented institutions, this means freeing up precious time and energy that can be redirected from administrative burdens to direct, meaningful engagement with students, helping them to succeed academically and personally. We advocate for developing sliding fee structures and other cost-reducing measures for educational technology products, making them accessible while minimizing institutional risk.

⁶ Goldstein, J. (2023, August 14). New IBM study reveals how AI is changing work and what HR leaders should do about it. *IBM Blog*. Retrieved from: <https://www.ibm.com/blog/new-ibm-study-reveals-how-ai-is-changing-work-and-what-hr-leaders-should-do-about-it/>.

- **Embody humane technology and human-centric values:** In addition to reinforcing the “humans in the loop” model put forth by the Department of Education,⁷ we wish to expand this model to emphasize that forthcoming AI developments are designed to uplift and support the best of humankind, scale access to educational resources, and disrupt systemic inequity and injustice in our society. Grounding technological innovations in the ideas put forth by the Center for Humane Technology is a promising start.

“Humane technologists must build the skill of mitigating harm in the short term while still having an eye to the horizon: enabling broader systems change that doesn't incentivize the creation of negative externalities in the first place.”
— Center for Humane Technology⁸

- **Ethical and privacy considerations:** The adoption of AI in higher education and the ideas detailed throughout this report necessitate robust privacy and ethical standards. It is paramount to ensure data security, protect intellectual property and student privacy, and use transparent algorithms to prevent biased decision-making. College leaders should consult their information technology, information security, and legal counsel departments before introducing new forms of AI on campus.

Smart, equitable AI use and resourcing for such use is about future-proofing the education we provide to students, making them resilient and adaptive in a dynamic job market, and empowering colleges to operate more effectively and efficiently, allowing them to focus more keenly on their core mission: student success.

⁷ United States Department of Education: Office of Educational Technology. (2023, May). *Artificial intelligence and the future of teaching and learning: Insights and recommendations*. Retrieved from <https://www2.ed.gov/documents/ai-report/ai-report.pdf>.

⁸ Center for Humane Technology. (2023). <https://www.humanetech.com/>; Doughnut Economics Action Lab (DEAL) - <https://doughnuteconomics.org/about-doughnut-economics>

Deliberate Language

In discussing the people affected by racial inequity in education, CCA aims to choose words that underscore essential ideas, acknowledge those affected by inequity, and are clear and consistent across our communications.

We use the following terms in this report:

- **Historically excluded/historically under-represented/historically underserved.** All these terms refer to groups with inequitable access to resources (e.g., education and health care) because of institutional racism. In the past, CCA used the word marginalized in this context. CCA uses the term historically excluded now because it most accurately describes the cause of institutional performance gaps. The term racially minoritized underscores that minority groups are a designation created by those in power so certain groups could be marginalized or excluded.
- **BILPOC (Black, Indigenous, Latinx, People of Color).** CCA chose this term in the context of its work on educational attainment. Using CCA's metric of college completion, the data shows consistent institutional performance gaps for Black, Indigenous, and Latinx students.
- **Students from under-resourced communities.** CCA uses this term instead of low-income students or students from low-income communities to emphasize the many barriers income inequality creates for students.
- **Students from under-resourced families.** In college data, Pell Grant status is a proxy for family income, which typically correlates with completion rates. CCA says students from under-resourced families instead of low-income students or students from low-income families. We use this term because we recognize that family income also correlates with access to food, health care, technology, and other resources that affect students' ability to succeed.
- **Institutional performance gaps.** These are gaps among student groups in completion rates and other outcomes. This term puts the focus on the institutional barriers that are the root causes of inequities, whereas the term equity gaps implies that students are the cause of (and/or are responsible for changing) gaps in performance and completion.

In our evolving educational landscape, AI must be integrated with a steadfast commitment to equity, ensuring that AI can uplift and empower all students, particularly those from underserved communities.

Using this Playbook

The “Do Now, Do Soon, and Work Toward” Framework

We urge college stakeholders to proceed cautiously through these early days of the AI transformation, as much of the emerging guidance around AI regulations and legal implications is still evolving. The context in which each institution operates is critically important to consider, so we recommend that readers work with their internal teams to devise an appropriate strategy for moving forward.

Here are some questions institutions might consider when determining the best next steps:

Laying the Groundwork

Questions to start conversations with your internal experts



Recognizing that many institutions may not be ready for some (or any) of the most advanced AI practices, this playbook categorizes its over 200 practical applications under three key phases:

Do Now: Immediate steps institutions can take to begin their journey with AI. We include, at minimum, the first step to begin work on these tasks throughout the playbook.

Do Soon: Intermediate steps that build on initial efforts and move institutions further toward full AI integration. Institutions should only adopt these practices if they have access to tenanted instances of AI platforms.⁹

Work Toward: Long-term goals for institutions that have implemented initial and intermediate steps and are ready to fully integrate advanced AI practices into their operations, teaching, and student engagement strategies.

This tiered framework is designed to meet institutions at varying resources and readiness levels across campuses while emphasizing the urgency to start now.

⁹ "Tenanted" references unique instances of AI platforms that are protected and secure, similar in concept to an institution's instance of an SIS or LMS. New AI platforms are in varying stages of maturity on the market, but we want to urge leaders to be cautious when implementing ideas in the "Do Soon" category and consult with internal experts to protect student privacy and institutional security.

Getting Started with AI

For practitioners new to using generative AI, familiarize yourself with some of the generative AI platforms available. If you haven't yet tried one of these tools, try some simple prompts and exercises in each one to determine your preference for which to use. CCA doesn't endorse any one platform over another, though we note in some sections if a specific generative AI platform may be better suited for a particular task or project.

At the time of publication, some popular generative AI platforms include:

- **ChatGPT**: ChatGPT stands for Chat Generative Pre-Trained Transformer, and it is among the most well-known generative AI tools. It is a large language-model AI tool that runs using a prompt and reply chatbot tool, which makes each prompt and response look like a conversation. ChatGPT's basic features are free to use, with options to pay for additional features or faster responses, especially during peak usage times. You will need to create an account to use ChatGPT.
- **Claude**: Claude is another AI chatbot that uses a prompt and response feature. Claude has some features that differ from ChatGPT, including the ability to receive files via upload and process larger volumes of data. Like ChatGPT, Claude's basic version is free, but a paid version with additional services is also available. You will need to create an account or connect to a Google account.
- **Bard**: Bard is another conversational chatbot AI tool, this one developed by Google. Unlike ChatGPT and Claude, Bard pulls information from the internet rather than a specific large language model's training data, so it will have access to more recent, though perhaps unverified, information. Bard is free and requires a Google account to use.
- **Bing Chat**: Microsoft's Bing Chat tool is another prompt and response generative AI tool. Like Google's Bard, Bing Chat is connected to the internet and can pull from recent sources. It also provides sources for its responses. Bing is free to use and does not require a login, though your network may restrict your use of the tool based on SafeSearch settings.
- **Pi**: Pi is a conversational AI tool that is available as an app on mobile devices. This app allows you to have verbal conversations with the AI and can be helpful for practicing live interactions like negotiations, pitches, and more. This tool can also be used for brainstorming where a verbal interaction can feel more natural or generate different ideas than a written conversation.

In the opinion of the authors, Bing and Bard are more useful for searching the web for specific content and gathering updated information and less useful than Claude or ChatGPT for generating content.

For additional resource on getting started with AI, check out pages 72 and 73 in the Appendix.

Personalizing the Playbook for Your Campus

In this playbook, we present a wide array of possible tools that meet the needs of many different roles across myriad types of campuses. As you review the tools shared in this playbook, consider how your campus might use AI to build out new resources or innovate with resources currently in place on your campus. Some recommendations in this playbook that might be a "Do Now" strategy for your campus but a "Work Toward" for another campus, and vice versa. Using the "Do Now, Do Soon, and Work Toward" framework, you can consider if there are areas where your campus can implement some tools now and scale them or implement new resources later in the work toward phase.



ORGANIZATIONAL EFFECTIVENESS

AI holds immense potential to assist schools with scaling up practices that will increase their organizational effectiveness. Its potential uses encompass key institutional areas such as leadership and culture, strategic planning, IT infrastructure, and financial management. AI offers expansive tools and approaches to optimize operations and foster innovation.

As we navigate this topic, we focus on the pivotal questions: "What are the most impactful opportunities to increase organizational effectiveness on college campuses given the advancements in AI? How can college leaders nurture a culture of innovation while ensuring AI's responsible, secure, and ethical use?"

This section presents insights and strategies to guide institutional leaders in leveraging AI technologies effectively and ethically. Our goal is to create a blueprint that not only encourages the adoption of AI but promotes a thoughtful, responsible approach to its implementation. We also hope to inspire new ideas as college leaders consider our suggestions throughout this chapter.

Leadership and Culture

AI Ethics and Governance Training: Integrate AI ethics training into professional development programs to ensure responsible and ethical use of AI technologies within the institution.

Do Now: Develop the following processes, documents, policies, and procedures at your institution.

Determine your "AI Lead": Designate a specific role as your institution's lead on all things AI governance. Grant this individual the capacity to seek professional development and coordinate this work. Be sure to garner cabinet-wide buy-in. Communicate the selection and responsibilities of this individual to the entire college.

Making the selection: Select a role, not an individual, such as the CTO or CIO, for this responsibility. Incorporate these new responsibilities into their job description to ensure the role will outlive any personnel transitions. Use this as an opportunity to develop new leadership among your existing staff, as AI literacy will undoubtedly be a necessary competency in the workforce in the future.

While it would be ideal to dedicate an entire position to managing AI at an institution, we understand this is not realistic for many schools. Even if this is not possible, we strongly encourage schools to incorporate these tasks into an existing job description for a current senior-level stakeholder and provide additional compensation and training, perhaps through a stipend.

AI Governance: Create an AI Governance Committee or Advisory Board chaired by the AI lead.¹⁰ This committee should comprise college-wide stakeholders, including students, faculty, staff, and administrators across all departments and seniority levels. This committee should focus on critical tasks, including:

- Policy Development and Review
- Ethical Oversight
- Technology Review
- Risk Assessment and Compliance Monitoring
- Education and Training
- Auditing and Reporting
- Incident Response

Do Soon: Task your newly formed AI Governance Committee to co-create professional development and training around responsible and ethical use of AI with your professional development and IT partners.¹¹ Plug shared resources into this work to reduce duplicative efforts (e.g., tap into system- or state-wide training modules rather than create from scratch).

Diversity, Equity, and Inclusion (DEI)

DEI Policy Audit: Train AI models to identify potential bias in institutional practices and policies, thereby supporting efforts to create a more inclusive and equitable environment.

Do Now: In an immediate timeframe, college stakeholders can begin using ChatGPT to review individual institutional policies by uploading (through copy and paste) the content of policies into ChatGPT or other similar free language model (LLM) tools.

¹⁰ Coffey, L. (2023, September 28). Advisory boards aid in alleviating AI anxiety. Inside Higher Ed. Retrieved from https://www.insidehighered.com/news/tech-innovation/artificial-intelligence/2023/09/28/higher-ed-ai-anxiety-advisory-board-could?utm_source=Inside+Higher+Ed&utm_campaign=4f33d2687b-DNU_2021_COPY_02&utm_medium=email&utm_term=0_1fcbc04421-4f33d2687b-197618113&mc_cid=4f33d2687b&mc_eid=4ced06d932.

¹¹ Links to some of the resources we found helpful for understanding AI, especially generative AI, are included in the Appendix.

Prompt Example:

You have been hired as an external consultant to review policies at a community college located in *[state]*. The college is keen to improve its student success outcomes, focusing on completion rates, retention rates, and fostering a sense of belonging among students.

Background Information on the Institution:

[Include a 2-3 sentence blurb about the college here. This might include the college's mission, the student body's demographics, notable programs, or recent initiatives related to equity and inclusion.]

Task:

I will share the text of a specific college policy with you. Your role is to analyze this policy with a critical eye, paying close attention to potential equity issues that may be present. This includes, but is not limited to, structural racism, unclear language, and any other elements that may pose a barrier to student success.

Structure your findings in the following format:

1. Equity Issues: Identify any aspects of the policy that may disproportionately affect certain groups of students.
2. Language Issues: Highlight any portions of the policy that are unclear, ambiguous, or may be interpreted in multiple ways.
3. Possible Unintended Consequences: Predict potential side effects of the policy that may not be immediately obvious and could be detrimental.
4. Recommended Changes: Summarize your proposed policy modifications that would help to resolve the identified equity issues.
5. Action Items: List specific steps the college can take to address the identified equity issues.
6. Possible Challenges of Changes: Outline potential hurdles the college might encounter when implementing the recommended changes.

Before you begin your analysis, clarify any aspects of the policy or the institution that are unclear to you. This will help ensure your review is as thorough and accurate as possible.

Are you ready to begin?

Do Soon: Train an LLM on your college catalogs and all policy documents publicly available in the United States. Conduct a systematic review of all institutional practices looking for barriers to access and providing recommendations to each organization. Incorporate Integrated Postsecondary Education Data System (IPEDS) data and other public outcomes data to inform analysis, suggestions, and prioritization.

Work Toward: Train institutional LLMs on the entire suite of institutional policies (including catalog/trustee-approved policies, syllabi, HR and employee handbooks, and more). More extensive analyses of institutional inequities or barriers to inclusion may surface through this dataset. Additional prioritization may be identified if the institution layers access to internal student data so that the policies can connect to student outcomes (e.g., readmit policy, drop deadline, withdraw policy, grade requirements for prerequisites).

Cultural Competency Training: Leverage AI to assist with developing cultural competency training for employees, specifically designed to address topics relevant to the institution and the students it serves. Incorporate real-time feedback from generative AI to enhance learning and comprehension.¹²

Do Now: Reflect on the types of DEI and/or cultural competency training from which your employees would benefit most. Collaborate with your institutional research team to disaggregate data by key demographic variables to understand your student population better and identify possible institutional performance gaps where training might be most impactful.

- What do your appointment and alert data tell you about which students receive the most help on campus?
- How do these findings add urgency to your institution's priorities or perpetuate current performance gaps?

Task a leader with managing the design and implementation of this type of initiative.

Professional Development

Synthesize Existing Research for Practical Applications: For busy higher education leaders, provide synthesized and personalized newsletters on key research findings and news.¹³

Do Now: Upload existing academic literature into a generative AI tool to engage with the material. Rather than just asking the tool for a summary, ask it to have a conversation with you about the content, allowing readers to interact with the material more. Readers should ask questions about methodology, findings, theoretical frameworks, etc.¹⁴

¹² CoA study by PWC (Likens & Mower, 2023) found that virtual reality (VR) simulations, compared to learning within a classroom or online learning, increased employee confidence, taught new competencies faster, and helped them connect on a more emotional level to the training materials. These findings are not only for technical skills but also were applied to scenarios like DEI training, customer service, and more.

¹³ A similar application of this idea involves searching for and synthesizing vast amounts of academic research on teaching and pedagogical practice so faculty can more readily access this information. Toppo, G. (2023, September 11). How new AI chatbots could help teachers with their toughest problems. *FastCompany*. Retrieved from https://www.fastcompany.com/90950362/stretch-ai-chatbot-for-teachers?partner=rss&utm_source=rss&utm_medium=feed&utm_campaign=rss+fastcompany&utm_content=rss.

¹⁴ We have tried both ChatGPT and Claude for reviewing and engaging with academic literature. As of September 2023, we prefer Claude for this type of use case.

Prompt Example:

Engage with me in a conversation about the article I am uploading for you. Specifically, I am interested in discussion around:

- How I can apply the findings from this study to the practicalities of my job.
- How I might incorporate these tactics to advance my institution's focus on *[insert priorities like equity, student graduation, etc.]*.

Prompt Example:

I read this article recently and want to share it with my team during our next retreat. I want you to review the article, extract the key lessons learned, and provide a series of discussion questions I can use to engage my team on this topic. *[Copy and paste text of article or upload it as a PDF]*.

Do Soon: Use AI to create custom newsletters pulled from the high volumes of news, research, and commentary (e.g., LinkedIn, Reddit, Medium). Provide keywords to the AI tool to better curate your articles for inclusion in the newsletter based on your interests. Receive summarized key takeaways in the newsletter with direct links to the articles for further reading.

Interpersonal Training and Professional Development: Use existing AI training tools to simulate or role-play, giving feedback to direct reports/team members.¹⁵ Implement AI tools to assist in performance evaluations, goal setting, and feedback mechanisms, fostering a culture of continuous improvement.

Do Now: Increase efficiency with drafting self, peer, and direct report reviews. Create drafts of performance goals based on review. Help managers produce more actionable, specific feedback in the review process. Craft more specific drafts of performance improvement plans for employees with low outcomes. Crosswalk the strategic plan to goals and targets included in the employee's plan for the next review cycle to increase a sense of employee ownership over the strategic plan. Conduct a holistic metrics review to evaluate employees to surface underemphasized or unrecognized contributions and create updated role descriptions.

Prompt Example:

I am drafting a section of my self-evaluation for my annual review. I want you to help me draft the section around my leadership competencies. I think that I have improved in these areas *[list areas]*, and here is an example that is evidence of this improvement: *[insert summary of example]*.

¹⁵ Kellogg, K. C., Hadley, C. N. (2023, June 21). How AI can help stressed-out managers be better coaches. *Harvard Business Review*. Retrieved from <https://hbr.org/2023/06/how-ai-can-help-stressed-out-managers-be-better-coaches>.

Do Soon: Connect and synthesize large volumes of employee reviews across the institution. Identify areas for institutional, departmental, and unit professional development for focus. Tailor LinkedIn Learning and/or other learning platform recommendations based on the reviews. It is important to emphasize this is not a surveillance tool but a means of creating a better support infrastructure based on where support is most needed. For privacy considerations, anonymize the data from the reviews wherever possible.

Sample Observation: Multiple staff reviews reference a high rate of “cold-handoffs” rather than “warm-transfers,” or when students need assistance from another department, employees direct students to that department without making the introduction personally, walking the student to that area or sending the email on behalf of the student.¹⁶ The learning platform recommendations might be tailored to review the value of warm leads in improving the student experience and retaining more students throughout complicated administrative processes.

Work Toward: Leadership and Professional Development: Use AI-powered simulations and scenarios to provide leadership training for faculty and staff.¹⁷ This can help cultivate effective leadership skills and decision-making abilities. Refine manager and team members’ emotional intelligence (EQ) skills through simulation and real-time feedback. Create safe and simulated environments for leaders and community stakeholders to grapple with complex scenarios, including ethical and logistical challenges, managing conflict, and more.¹⁸

Customer Service Training: Deploy similar AI platforms to create safe environments for customer service training for student-facing staff. Provide real-time feedback for staff on key aspects of customer service, including time, efficiency, accuracy, etc. Document exemplary scenarios for future training and identify departmental growth areas.

Faculty Professional Development (PD): Develop affordable and accessible teaching PD for faculty members, especially for those who may not have prior teaching experience. Design these professional development opportunities so AI can provide real-time coaching for faculty, both in classroom delivery/management and with students. Offer all training opportunities for faculty in multiple modalities depending on the learner's preference to ensure the greatest success.

¹⁶ Barnett, E. A., Bickerstaff, S. (2022, June). Implementing caring campus with nonacademic staff: Lessons from participating colleges. *Community College Research Center*. Retrieved from <https://ccrc.tc.columbia.edu/media/k2/attachments/implementing-caring-campus-nonacademic-staff.pdf>.

¹⁷ Great care must be taken when developing these applications to stave off unintended and/or implicit bias or misuse of new technologies.

¹⁸ Likens, S., Mower, A. (2023). What does virtual reality and the metaverse mean for training? *PricewaterhouseCoopers*. Retrieved from <https://www.pwc.com/us/en/tech-effect/emerging-tech/virtual-reality-study.html/>.

Institutional Culture

Culture Surveys and Analysis: Surveying students, faculty, and staff is a powerful way to understand the culture of your campus. However, reviewing a survey's written responses can be an arduous and resource-heavy task, especially when it comes to objectively analyzing those responses. Using AI for the analysis can remove subjectivity that can otherwise be part of the process.

Using natural language processing (NLP) or another type of AI to conduct sentiment analysis of survey responses from students, faculty, and staff can efficiently and precisely analyze the results. It can provide valuable insights into your campus's prevailing culture, which can help you lean in on the positive parts of that culture and address any challenges.

For example, upload qualitative datasets from an employee engagement survey to save time and surface themes or sentiments that institutional researchers might inevitably miss because they are part of the internal culture and not neutral external observers.

Do Now: Use machine learning to conduct sentiment analysis of large qualitative data sets.¹⁹

Prompt Example:

"Given a dataset comprising thousands of responses from a college-wide culture survey:

1. Conduct a comprehensive sentiment analysis to categorize sentiments into 'positive,' 'neutral,' and 'negative.'
2. Further, delve into the sentiments to discern nuanced emotions such as 'joy,' 'trust,' 'fear,' 'surprise,' 'sadness,' etc.
3. Identify and highlight sentiments specifically related to:
 - a. Inclusivity and diversity within the campus
 - b. Faculty-student relationships and interactions
 - c. Mental health and well-being support structures
 - d. Openness to and support for innovation and new ideas
 - e. Safety and security on campus
4. Isolate any responses that exhibit unusually strong emotions, either positive or negative, that might indicate areas of acute concern or commendation for the college administration.
5. Where possible, correlate sentiment patterns with specific departments, years of study, or other demographic data to identify if any specific group feels strongly about particular issues.

¹⁹ Buffalo State University created a robust campus culture, employee engagement and satisfaction survey that generated over a 50% response rate and resulted in an overwhelming volume of qualitative data that needed analysis at the start of the COVID-19 pandemic and was subsequently postponed due to capacity issues.

Buffalo State University Professional Development Center. (n.d.). Campus culture and employee engagement/satisfaction survey. Retrieved from <https://professionaldevelopment.buffalostate.edu/campus-culture-and-employee-engagementsatisfaction-study>.

Buffalo State University. (2020, May 22). Campus culture, employee engagement and satisfaction survey: Update and next steps. The Daily Bulletin. <https://dailybulletin.buffalostate.edu/campus-culture-employee-engagement-and-satisfaction-survey-update-and-next-steps-0>.

Do Soon: Expand the analysis and scope of potential changes to include non-traditional sources of data into culture survey analysis, such as:

- Strategic planning documents
- Exit interviews
- College-wide meetings/Town Hall transcripts
- Chatbot interactions
- Ticketing system (e.g., help desk) exchanges

AI-Powered Sentiment Analysis: Many brands conduct constant scans and analyses of sentiment toward their brand. Similarly, colleges and universities could apply a similar technique to monitor real-time attitudes about the student experience at their institution. Insights from these analyses might help surface necessary process changes, barriers to student success, areas requiring additional professional development for staff, and more.²⁰

Some colleges may already use free AI tools like R and Python to conduct sentiment analysis, and in a vacuum, AI is likely not the most cost-effective means of this type of analysis. However, we view AI as a means of democratizing access to analytical techniques (e.g., coding in R and/or Python) that require staff competencies that are not always within a realistic budget for institutional research or other administrative departments.

Prompt Example:

Given a dataset comprising thousands of feedback entries from college students:

1. Conduct a comprehensive sentiment analysis to categorize sentiments into 'positive,' 'neutral,' and 'negative.'
2. Further break down the sentiments to understand more nuanced emotions such as 'joy,' 'trust,' 'fear,' 'surprise,' 'sadness,' etc.
3. Identify and highlight sentiments specifically related to:
 - a. Campus facilities (e.g., library, classrooms, labs)
 - b. Quality of teaching and faculty interaction
 - c. Extracurricular activities and clubs
 - d. Administrative services (e.g., registration, financial aid)
 - e. Overall campus environment and culture
4. Pinpoint any feedback entries that showcase unusually strong emotions, either positive or negative, that could be of particular concern or praise for the college administration.

[This prompt is tailored to a college context, emphasizing areas typically of interest to students and administrators. Adjust the specifics based on the actual feedback topics, the type of data you provide, or areas you expect to find in your dataset.]

²⁰ Kinzie, J., Silberstein, S., Palmer, D. (2021, March 26). Elevating student voice in assessment: Approaches to using NSSE's student comments. *Assessment Update*, 33(2), 1-16. Retrieved from <https://onlinelibrary.wiley.com/doi/10.1002/au.30245>.

Efficiency and Capacity Building

Knowledge Management System (KMS): Colleges undergo myriad changes and generate vast amounts of documentation each year, from reorganizations, new policies, new curricular pathways, new technology platforms and processes, new data sets and dashboards, and more. Rather than expect college members to stay abreast of all changes, colleges could train an LLM to serve as an internal chatbot aware of all official institutional changes. Colleges should help the KMS become more competent by conducting subsequent analysis of questions asked, questions unable to be answered, refining the model, and/or developing documentation.

The KMS should be designed to enhance productivity and provide quick access to crucial information for staff and faculty while ensuring that data used to train the chatbot is limited to only the users with the appropriate access. For example, a faculty member should not be able to ask the chatbot about the internal meeting notes of the cabinet.

Colleges might also deploy this tool to address common pain points in communication efforts:

- **New Home for Daily Announcements:** Colleges can cut back on visual clutter on portals or in email inboxes by training the model to answer questions such as “What is the soup of the day in the cafeteria?” or “Why is the flag at half-staff?”
- **Notes from College, Division, or Department-Wide Meetings:** Train the LLM on notes from meetings like the Board of Trustees meetings, Academic Affairs Committees, college-wide town halls, Data Governance Committees, and more.
- **Survey College Faculty and Staff:** Rather than ask the faculty and staff to complete laborious surveys throughout the year, the college can train the chatbot to ask one question per interaction or month and synthesize the findings into valuable data for college leadership. These questions might pertain to perceptions of culture, innovative ideas, suggestions, concerns, and more.

Increased Meeting Quality and Efficiency: Faculty and staff feelings of burnout have made the higher education news for the last several years.²¹ Encourage your team to take back some of their time by reinforcing a culture of efficiency.

AI-Powered Meeting Organizer: Implement AI assistants that assist meeting organizers in creating clear agendas and reminders for participants, fostering a more structured and productive meeting culture.

Do Now: Managers should set the expectation that all meetings going forward must include agendas. Encourage staff to send meeting agendas in advance and use AI to assist when developing agendas. Though this practice can be completed without the help of AI, many leaders might find themselves over-scheduled, tired, and in need of help thinking of inclusive agendas. Assuming no confidential or institutional data is shared, leaders can now use AI to generate these agendas.

²¹ Lederman, D. (2022, May 4). Turnover, burnout, and demoralization in higher ed. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/news/2022/05/04/turnover-burnout-and-demoralization-higher-ed>.

Prompt Example:

I need to create an agenda for an upcoming meeting with stakeholders in the higher education sector. The primary focus of the meeting is *[insert primary focus here]*. Additional topics that should be covered include:

1. *[insert topic 1]*
2. *[insert topic 2]*
3. *[insert topic 3]*

We have a time duration of *[insert time duration]*, and the following key individuals will be present: *[list names or roles]*.

I want to ensure the agenda is engaging, covers all the key points, and allocates appropriate time for each topic. It should also leave room for open discussion and future planning.

Generate an agenda that meets these criteria.

Automated Meeting Notes: Use AI algorithms to transcribe and summarize meeting discussions, providing comprehensive notes to share with all attendees easily. While this practice might be effective for specific one-on-one meetings, it has the most potential to assist in documenting meetings where a significant decision is being made, such as a curriculum review or a data governance institution-wide change. Take special care to document individuals in attendance when decisions are made. When appropriate, load these automated meeting notes into the chatbot's training set to enhance its knowledge of the overall institution.²²

Do Soon: Once your institution has access to a secure and vetted LLM, meeting attendees can upload a meeting transcript and ask it to summarize the conversation. Several products exist for this purpose but may bring additional costs.

Prompt Example:

You are my personal assistant. I will provide a transcript of our meeting *[meeting name]*. I want you to give a summary that includes the following:

1. Summary of meeting
2. List of meeting attendees
3. Record key decisions made
4. Record action items, owners, and deadlines
5. List important discussion points, ideas, concerns, or insights
6. Recommend an agenda for the next meeting

[Paste your meeting transcript. Do not upload sensitive or confidential data.]

²² As with all the AI platforms discussed in these materials, carefully vet AI notetaking and transcription tools for privacy and security compliance. We have used and like Fathom AI.

Staff against Predicted Peak Demands: AI technologies can comb external data sources and behavior traffic (e.g., call volume, web traffic, in-person visits) to identify peak times and predict future demand through a process called time-series forecasting. This type of project will require training a model based on data. Developing this type of model, unless outsourced to an external platform or provider, will require relatively strong technical competencies, including data preprocessing, engineering the model's features, training and evaluating the model, and deploying it to make predictions. Leaders should staff student-facing departments anticipating predicted high-traffic times to improve the student experience and the institution's efficiency.

Do Now: Given the technical knowledge required to build a time-series forecasting model, we recommend that you evaluate the following before pursuing this project:

- **Does this problem exist at your institution?** First, consult with managers of front-line staff teams to understand if unexpected peak traffic times are a frequent or challenging pain point. Consult student feedback to understand if long wait times are regular.
- **What is the size of the problem you wish to solve?** Are you a large institution serving tens of thousands of students, where you might need to employ numerous additional staff during peak periods? Or is your institution small enough that peak time periods might entail hiring one or two additional temporary support staff? How do these costs compare to the overall cost of developing this type of model?
- **How much data do you have available to train a time-series forecasting model?** Does your institution have access to data such as call logs with time stamps, reasons for calls, website visit logs, in-person visits to campus facilities, detailed records of time spent in various departments, email, video conference (e.g., Zoom, WebX, Teams), and chat traffic?
- **Do you have internal resources to develop this type of model?** Do you have the financial means to collaborate with a vendor to create and implement this model?

Strategic Planning

Strategic Goal Setting

AI-Enhanced Strategic Planning: Utilize generative AI to analyze historical data and trends, helping institutions identify realistic and achievable targets for enrollment, retention, graduation rates, and other key performance indicators.²³

Work Toward: Once institutions have access to a tenanted AI tool,²⁴ they could proceed through a version of the following steps while incorporating components of their existing strategic planning process:

²³ Many colleges may have alternative methods for scaling analysis of large qualitative datasets (e.g., programming languages like R or Python, or qualitative analysis software); for colleges that don't yet have these means or technical skills, generative AI can serve as a useful stop gap.

²⁴ In this context, 'tenanted' means an institution can use a segregated 'instance' of a technology platform. Major technology vendors in higher education, such as SIS, LMS, and CRM providers, erect barriers to keep student data isolated between institutions, creating a tenanted platform. Similarly, exercise caution when developing generative AI and other AI platforms that involve student data. Such endeavors should await thorough testing and approval by institutional experts to safeguard student privacy.

- **Data Aggregation and Preprocessing:** Gather extensive data from any available internal college databases, such as student management systems, faculty publications, alumni feedback, financial records, etc. Ensure data consistency and remove anomalies or outdated records. If data needs to be anonymized, remove identifying data at this stage.
 - **Scale Up Stakeholder Input:** Use GPT-4 or other generative AI to gather more strategic planning stakeholder perspectives through “chats.” Use generative AI and LLMs to analyze large qualitative data sets for strategic planning processes (survey data, etc.). Apply generative AI to analyze feedback from various stakeholders, including students, faculty, staff, and community members. This can help identify areas for improvement and shape strategic priorities.
- **AI-Driven Analysis:**
 - **Historical Trend Analysis:** Use AI to recognize patterns from historical data regarding enrollment rates, faculty-student ratios, research publications, financial health, and other indicators that may be available on your campus.
 - **External Factor Analysis:** Analyze data from external sources, like job market trends or global educational shifts, to anticipate potential impacts on the college.
- **Predictive Modeling:**
 - **Enrollment Projections:** Predict student enrollment based on past trends, marketing efforts, course popularity, and broader educational trends.
 - **Retention and Graduation Predictions:** Utilize data such as student satisfaction, course difficulty, and available support resources to predict student retention and graduation rates.
 - **Financial Forecasts:** Analyze historical financial data to predict future budgets, potential shortfalls, or surpluses.
- **Automated Gap Analysis:** Implement AI algorithms to analyze existing institution-written plans and identify potential gaps or areas for improvement, ensuring comprehensive and well-rounded strategies.
- **Competitive Analysis:** Train generative AI models to monitor and analyze data from peer institutions, government policies, and global trends. This can help colleges and universities identify their strengths, weaknesses, and potential opportunities for improvement. Apply this training in the academic program context, too.

- **Generative AI for Goal Formulation:**

- **Scenario Planning:** Use generative AI to create multiple 'what-if' scenarios, helping in decision-making processes. These scenarios might include funding packages from the state, various enrollment projections, or programmatic offerings. AI can also suggest pathways that offer the best growth, sustainability, and institutional reputation outcomes.
- **Risk Assessment and Mitigation:** Train AI models to assess potential risks, such as financial challenges or accreditation issues, and generate strategies for risk mitigation.
- **Feedback Loop for Continuous Improvement:** Depending on if the college is allowed to create a “flexible” strategic plan that can adapt to new inputs (e.g., the COVID-19 crisis or a major economic recession), the college can continue to feed new data into the AI system, updating predictions and adapting to changing contextual circumstances.
 - **Example:** If your state wins a major grant to invest in advanced manufacturing, and it makes sense for your institution to expand your academic offerings and corporate partnerships in response, you could work with generative AI to adjust the strategic plan to incorporate the new strategies into the broader framework of your goals and metrics.
- **Integration with Other AI Systems:** Combine Predictive Goal Identification with other AI tools, like sentiment analysis, that can gauge community member satisfaction and perception of the institution.

Stakeholder Chat and Rubric Development: Colleges often struggle with helping their institutional stakeholders “see themselves” and their respective responsibilities in the details of strategic plans.²⁵ After training an institutional LLM on the college’s strategic plan, managers could encourage their staff to engage in a conversation with the chat tool to brainstorm ways that the goals in the strategic plan connect to individuals’ roles at the college. Use generative AI to allow stakeholders to chat about how they can apply the strategic plan to their everyday work.

Prompt Example:

Our college recently finalized our new strategic plan, which I am including as a PDF. Review the document and make note of specific metrics, goals, and possible action items. Engage with me based on my job at the college and ask me questions to help me think through the strategic plan and how I can tailor my daily work to help my college achieve its goals.

Then, work with me to create a rubric I can use to keep track of my progress toward helping my institution improve.²⁶

²⁵ Eckel, P. D., [2023, May 23]. The trouble with strategy. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/opinion/career-advice/2023/05/23/trouble-strategy>.

²⁶ As of September 2023, Claude, by Anthropic, was a more useful tool for reviewing lengthy PDF documents.

Academic Program and Enrollment Planning

Identifying Emerging Fields: Use generative AI to scan research papers, job market trends, and industry developments to identify emerging fields and potential growth areas for the institution's academic programs. Several technology vendors offer these types of analyses, but institutions might want to develop their own versions they can fine-tune to meet their needs.

Data-Backed Program Planning: Utilize generative AI to analyze historical data and academic performance metrics to identify potential program enhancements and areas of focus for achieving specific outcomes. Identify patterns in program enrollment, including key stop-out points, course combinations, or course enrollment progressions, for example, that have historically been challenging to analyze.

Academic Program Retrospective Analysis: Implement AI-driven evaluation tools to assess the effectiveness of academic programs, leading to evidence-based program improvements.

Work Toward: Build an AI platform that can ingest multiple data sources (as outlined below) and assess the efficacy of academic programs based on data, evidence of effective practices from benchmark institutions, and more. This practice will likely require extensive gathering of and cleaning of useful data, which may include:

- Student outcomes data (e.g., graduation and retention rates, transfer outcomes, course grades)
- Student demographic information
- Faculty information²⁷
- Course content and curriculum
- Employment outcomes
- Non-instructional costs (e.g., labs, expensive equipment)
- Employment demand
- External benchmarks

Targeted Program Marketing: Utilize AI-generated insights from the web-scraped data to tailor program marketing efforts and better reach prospective students based on their interests and preferences.

Do Now: Input marketing strategies into generative AI tools to solicit feedback on how messages will be received by prospective students. Use generative AI to brainstorm customized messaging based on target student audiences.

²⁷ Data regarding faculty must be treated with sensitivity but can provide important insight.

Prompt Example:

You are a community college marketing professional. Your job is to help me create a tailored message for three different types of prospective students about our new advanced manufacturing certificate. The program takes only six months to complete, was developed in partnership with an employer, and results in a guaranteed job interview, with high demand for positions in this field in our region. The three student audiences are:

1. Adult learners with some college and no degree
2. High school students who might be interested in entering the job market sooner rather than entering a four-year or two-year degree program.
3. Current advanced manufacturing entry-level workers that want to upskill.

Craft three unique messaging campaigns in a casual and engaging style and suggest how I can ensure these audiences see the message created for them.

Do Soon: Use AI to support prospective student recruitment. Sync marketing messaging with AI tools that can analyze the effectiveness of timing and messaging channels. Refine the timing of marketing messages based on this data and real-time feedback. Begin to incorporate external data sources to inform and predict the best time for future communication (e.g., prospective students will likely not check their email during major events, but they might be on specific social media platforms during that time).

Do Soon: Use AI to support stop-out recruitment. Train an internal LLM on admissions data, historical data around enrollment communications, and—if possible—student-specific data. Work with the LLM to inform institutional strategy around the two following categories, using questions listed below to generate ideas and refine the approach.

- Messaging
 - Does the sender of the message influence students' likelihood of returning? (E.g., advisor, former professor, etc.).
 - What kind of messaging works best (e.g., language, tone) for each type of registration barrier?
 - What is the best time (day, hour, week, month) to send the message?
 - What messaging channel is most effective? (phone, text, email)
- Prioritization
 - How do you prioritize the students who have yet to re-enroll to help problem-solve barriers to registration? (e.g., holds, course not offered, cost of attendance, transportation issues, etc.)
 - Use predictive modeling to identify students most likely to return if small barriers are removed (e.g., outstanding balances, administrative holds), and waive or remove barriers to encourage registration.

Work Toward: AI-powered technology that customizes its messaging to everything the college knows about prospective student interests, goals, and concerns.

SEM Plan Assistance: Utilize AI to assist in the development of strategic enrollment management (SEM) plans by providing data-driven insights, best practices, and recommendations.²⁸

Do Now: Utilize generative AI to research and identify contextual datasets to inform Strategic Enrollment Management Plans. Create draft plans or templates using widely available generative plans and input institution-specific data.

Example: Using available data about stop-out student course history, academic program offerings at your institution, and current job demand in your region, send targeted communications to each stop-out to encourage them to re-enroll. Add additional customization to your messaging strategy by incorporating other relevant data like:

- Student aid information
- How fast can you graduate with X degree
- Academic standing

Work Toward: Employ AI systems to continuously monitor and update SEM plans based on changing circumstances, ensuring adaptability and responsiveness to evolving institutional needs.

Example: In the context of expanding career opportunities and enhancing educational pathways, it is vital to leverage the wealth of data available on employment trends and educational qualifications. One practical strategy is to analyze this data to pinpoint opportunities for students to further their education at your institution.

Consider a scenario where your institution offers credentials in the Information Technology sector. By looking at the career trajectories of graduates who have already secured entry-level positions as computer support analysts, you can work to identify the next logical steps in their career paths.

Utilizing generative AI, you can discern the most suitable programs for these individuals to pursue should they wish to advance further in their fields. For instance, promoting bachelor's degree programs that lead to roles as computer systems analysts or information security analysts could be a viable path.

This strategy involves a focused analysis of the regional job market and a deep understanding of the progression in IT roles. It creates a roadmap for students to visualize and plan potential career advancements through further education at your institution.

²⁸ This is another practice that has high potential to cause disparate impact if not designed to intentionally address equity gaps. Be cautious when using generative AI for these purposes to avoid excluding groups the algorithm views as lower-priority targets based on historical data. (For example, an ill-informed generative AI SEM tool might unintentionally tailor a marketing strategy to target ZIP codes where residents can afford to go to college and who have historically had high enrollment rates rather than identifying new strategies to recruit and tailor services to ZIP codes with lower college-going rates). We recommend one possible remedy – the “Equity Validation Checklist” to help counteract potential risks of inequity.

To Do: Create an Equity Validation Checklist

Depending on your institution's goals, the ways you use AI, and the specific equity concerns you have, create a checklist before deploying your AI platform to check for potential disparate impacts or the risk of perpetuating inequity. For example, before launching an AI-generated SEM plan, leaders might (at minimum) want to analyze the recommendations made by the model by looking at:

- What zip codes are represented or excluded from the SEM plan and the marketing strategy?
- Is the messaging different depending on student race or ethnicity?
- Has the model excluded any populations entirely? Why?

Be sure to add and incorporate additional nuances to your checklist and treat it as a "living document" that will be improved and grow over time. A human, not AI, should complete this exercise.

Information Technology (IT)

Automated IT Support: Develop AI-powered chatbots to provide 24/7 automated IT support for students, faculty, and staff. These chatbots can handle common IT queries, troubleshoot technical issues, and provide step-by-step guidance.

Examples of queries IT chatbots can assist with:

- FAQs and basic queries (example: setting up WIFI access)
- Submitting help tickets that meet the needs of IT support staff
- Resetting passwords
- Real-time system status (and outage) updates

Be sure to train the chatbot to ask end-users to specify the level of guidance they would like to receive in troubleshooting their issue to mitigate potential frustration about the lack of human support. This level of automated support may be particularly valuable for moments of peak demand but should not entirely replace human-driven technology support. Be sure to provide easy-to-locate options for users to "opt out" of the chatbot and "opt in" to live support.

Predictive IT Maintenance and Resource Allocation: Use generative AI to analyze IT infrastructure data, manage an IT inventory list, maintain an upgrade schedule that anticipates the life of a piece of computer hardware, and predict potential hardware or software failures. This proactive approach can help prevent downtime and optimize IT maintenance schedules.

Do Now: If your institution does not have an existing IT maintenance plan, gather examples of challenges from past outages, technology failures, and other pain points experienced by senior stakeholders. Using these examples, build a case for your institution to take a proactive rather than reactive stance against IT maintenance. Determine the objectives and scope of your predictive maintenance plan and begin collecting data, including:

- Inventory of technology assets, including hardware and software
- Other data sources (e.g., logs, error reports, outage reports, and other usage statistics)

Once you have developed urgency, buy-in, and gathered your data, begin selecting the suitable algorithm or type of AI for your specific objectives, training a model, and refining it.

These types of algorithms could be expanded upon, enabling optimal resource allocation, including the management of bandwidth, distribution of servers, and access to software licenses.

AI for Smart Campus Management: As colleges upgrade both technology and infrastructure, more products become part of the Internet of Things (IoT). Depending on your campus's size and available resources, you may want to consider everything from kiosks and card readers to sensors that monitor energy usage. College leaders can leverage predictive AI, trained from existing data from the IoT and other data sources, to find efficiencies in expenses, develop more fine-tuned budgets, and use less energy, reducing the institution's overall expenses and carbon footprint. Apply these same concepts to building maintenance, parking management, etc. Importantly, this data could also serve as a key source of training data for the algorithms referenced throughout this playbook, including:

- Staff against peak demand
- Smart course scheduling

Institutional Effectiveness (IE) and Institutional Research (IR)

Administration and Compliance

Compliance Reporting Optimization: Use generative AI to assist in developing code to streamline the automation of as much compliance reporting as possible. Well-resourced institutions may have already developed internal tools or purchased platforms that nearly automate the IPEDS reporting process, but colleges that have less capacity in their institutional research offices might benefit from the feedback that generative AI tools like ChatGPT can provide on queries and code. IR offices can then reallocate resources to fine-tune the outputs of these reports, increasing opportunities for end-users to engage in data inquiry and more.

Do Now: Use Code Interpreter (a ChatGPT tool) to fine-tune SQL or other language queries that can be deployed to rapidly increase the time required to manually pull and manipulate data for reporting like IPEDS and other state requirements. Colleges with existing SQL queries could also request feedback on their existing code or use ChatGPT to update current code if and when reporting requirements change.

Prompt Example:

Your job is to help me craft basic SQL queries to against my Banner9 SIS database to generate a first draft of my IPEDS 12-Month Enrollment Report. Ask me any questions you need to know about my request and then provide SQL statements that I can input to start generating the report. You will not have access to the data, but I can describe Banner Tables and Field Names if you need to know them.

Grant Administration

Grant Administration: Implement AI-driven research administration systems to streamline grant application processes, track research or outcomes progress, and manage compliance requirements.

Do Now: Analyze successful grant applications. Upload past successful grant applications to ChatGPT to analyze what common elements they share, aiding future applications.

Prompt Example:

Analyze the following successful grant applications and identify common elements contributing to their success. Look for similarities in structure, language, key points emphasized, and other factors consistently present in successful applications. Provide a summary of these common elements and actionable recommendations for incorporating them into future grant applications. *[Next step: copy and paste past successful grant applications along with the application criteria.]*

Do Now: Use AI to sort through grants to identify those that align well with college goals, needs, departments, or faculty research areas, facilitating better matches.

Prompt Example:

Review the following list of available grants and their criteria. Compare these against our college's goals, identified needs, the focus of various departments, and faculty research areas. Identify which grants align most closely with our institutional objectives and provide a ranked list. Include a brief explanation for each match, specifying how it aligns with our goals, identified needs departments, or faculty research. *[Next step: copy and paste the specific grants and your institution's strategic plan.]*

Do Now: Automate report drafting. Use AI to draft preliminary reports for various grants, which humans can later fine-tune. This can save time on routine reporting tasks.²⁹

²⁹ Note: While some aspects of grant reporting can be drafted in public-facing LLMs, users should take great care to ensure no externally facing data is shared.

Prompt Example:

Draft a preliminary report based on the following grant performance metrics, objectives met, and work carried out during the grant. The report should include an introduction, a section on objectives met, a section on challenges faced, and a conclusion summarizing the impact of the grant. This draft will be reviewed and fine-tuned by our team.

- Grant Name:
- Grant Period:
- Performance Metrics:
- Objectives Met:
- Challenges Faced:
- Other Relevant Information:

Do Soon: Once institution-specific access to an LLM is available, train the tool as a “grant repository” based on current, prospective, and past grants, and design the features to conduct basic grant management activities to free up capacity for more involved aspects of grant administration. This might include reminding grant managers of annual grant submission deadlines and requirements, identifying commonalities among grants, suggesting connections between strategic plans and metrics in the grant proposals, and recommending future components based on past grant outcomes and analysis. The LLM might also be deployed to execute the following tasks:

- **Grant FAQ Chatbot:** Implement an AI-powered virtual assistant that answers common questions from staff regarding grant processes, freeing up grant administrator time for more complex tasks.
- **Compile Data Narratives:** AI can help translate complex data into understandable narratives that can be included in reports or presentations to stakeholders.
- **Generate Abstracts for Stakeholder Updates:** AI can summarize grant status updates into short abstracts suitable for broader audiences, such as college newsletters or websites.
- **Resource Allocation:** Input data about resource needs and current allocations and let AI suggest ways to optimize based on goals or past outcomes.

Data Literacy and Dashboards

Data Dashboard Tools: Use ChatGPT and other LLMs to assist with dashboard development. Develop interactive dashboard tool plugins for institutional fact book websites, Tableau and Power BI dashboards, and more that encourage users to explore data further by asking additional questions and drilling down into specific insights. Business intelligence (BI) dashboard platforms are expected to release this type of functionality in the coming year.

Do Now: Prompt ChatGPT or another LLM to guide you step by step through the development of a dashboard, including data preparation, transformation, visualization, and validation. Institutions or team members learning a new BI platform can rapidly increase their skills by getting step-by-step guidance from AI.

Prompt Example:

You will be my Tableau guide. Walk me through creating a data visualization for a large dataset I am working with for my college. The data contains PII, so I will not share it with you, but I can share headers and describe the data for you if that will help. Provide the following: 1) Recommend the best data visualizations for the type of data I am presenting. 2) Provide sample visuals so I can get a better idea and pick one before we begin. 3) Provide me with a step-by-step guide on how to create that visual.

If you already use a business analytics platform, check their website and your subscription details to find out if you can access new AI-related features as they become available. If you have a Tableau account, Tableau has begun rolling out “TableauGPT,” a new tool that will allow users to create visualizations by simply asking questions of the dataset.

Question Prompting Features: Implement AI-driven question-prompting features that suggest relevant questions based on the data displayed on the dashboard, fostering a more exploratory and curious mindset. Sample questions:

- What are some possible explanations for this dip in 2020?
- What types of disaggregation (breaking down the total data into smaller groups) would help you understand this information better? (e.g., race, ethnicity, gender, first-generation status, full- or part-time status)
- How does this goal relate to our institution’s strategic plan?
- What leading indicators of this goal could I focus on in my daily work?

Data Management

AI-Enabled Data Governance Administration: Reduce the role college politics plays in data governance and refocus on effective data governance and management by using generative AI tools (IR/IE/Data/IT) to more rapidly develop and update data governance documents, processes, policies (e.g., metadata policy draft, data governance committee charters, etc.).

Do Now: Review existing data governance documentation for gaps. Upload current institutional data governance documentation (e.g., charter, policies) to generative AI tools and prompt the tool to provide a comprehensive review. If your college does not have an updated data governance policy, use generative AI tools to draft initial versions and modify and customize them to meet your institution's unique needs.

Prompt Example:

You are a college data governance expert. Your task is to review the data governance policy uploaded and identify any gaps, weaknesses, or areas for improvement with a focus on ensuring data quality and usage across the institution. Provide actionable feedback segmented into categories such as Clear Definitions and Scope, Data Quality, Data Usage, Governance and Compliance, Technology and Security, Transparency and Communication, Specific Data Categories, and Legal Compliance. Recommend immediate and secondary next steps the institution should take based on the actionable feedback. Once you submit this prompt, you should copy and paste the policy text into the platform.

AI-Driven Data Dictionary Development: Reduce administrative burden on institutional staff by using AI technologies to expedite the creation of a comprehensive data dictionary, employing natural language processing and data profiling to generate data definitions and metadata automatically. The data dictionary should have a user-friendly interface that is easy to navigate and allows access from all interested stakeholders.

Do Now: Crosswalk IPEDS data definitions and state reporting data definitions to the institutional data dictionary. Create an internal knowledge-set of the deltas between the various definitions for training a future internal LLM.

Prompt Example:

Your job is to help me create a comprehensive data dictionary for my college. Review our internal data dictionary, the dictionary for our state reporting system, and IPEDS. Be sure to highlight any key distinguishing factors between various data definitions to have one living record. As new data dictionaries are released, I will provide them each year, and you will integrate the updates into the master dictionary. The purpose of this master dictionary is for us to have a single source for individuals to reference when they have questions and eventually to train our internal knowledge management Chatbot so data consumers can ask clarifying questions about the data.

Do Soon: Train your internal LLM on your data dictionary. If the institution has created an internal knowledge management system chatbot (referenced earlier), the data dictionary should be included in the training dataset for the chatbot so users with less technical expertise can quickly understand key terms and data calculations used in various departments.

Data and Legacy Report Standardization: Some colleges have upgraded to more sophisticated data reporting tools but continue maintaining reporting systems containing decades' worth of legacy reports. The task of reviewing and cleaning up these legacy systems can be daunting.

Do Soon: A collaborative effort between departments like student and academic affairs, institutional research, and IT could leverage generative AI to provide summaries of the reports available in a legacy platform, statistics on frequency of use, and recommendations for streamlining. Additionally, generative AI tools can also find redundancies or overlaps in reporting and data elements used by different areas of the college to reduce the number of reports that require maintenance.³⁰

Accreditation

Accreditation Support: Implement generative AI to assist in preparing reports and documentation required for accreditation processes, ensuring compliance with standards and benchmarks.

Do Now: For content that is safe to share publicly, use generative AI to assist with drafting or editing content of accreditation reports based on outlines provided by college employees.

Do Now: Crosswalk your strategic plan with your accreditation standards.³¹ As colleges embark on either developing their accreditation report or writing a new strategic plan, leaders might find efficiency by using generative AI tools to rapidly find opportunities to connect strategic plan priorities with accreditation standards or review findings.

Prompt Example:

I want to align our college's strategic plan with our accreditation standards. Could you assist me in creating a crosswalk between these two important documents? Here are the URLs for both:

1. *[College's Strategic Plan URL]*
2. *[Accreditation Standards URL]*

Specifically, I'm interested in focusing on *[insert any specific focus area here]*.

Work Toward: Mapping accreditation standards. Once colleges can share PII and other confidential institutional data within a tenanted AI platform, Institutional Research offices could train AI models to map institutional data and practices to specific accreditation standards, ensuring alignment and easy identification of areas requiring improvement.

³⁰ Remember that many college units rely on these reports for daily operational tasks. Leaders spearheading this type of project must generate extensive buy-in and safeguard against any data loss or downtime to maintain collaboration and ensure the initiative's efficacy.

³¹ To test this prompt, we used a paid account of ChatGPT. We had to copy and paste the specific components of the strategic plan and the accreditation standards we wanted to crosswalk, but imagine that once colleges have access to train their own models, they can easily include accreditation standards and strategic plan documents in their training datasets, making this exercise much simpler. Even so, this prompt took only 5 minutes from start to finish to create a list of all an accreditation agency's standards around assessment and evaluation against the colleges' goal around informed improvement.

Resource Optimization

Event Management: Utilize AI in planning and organizing campus events, from academic conferences to student activities, to enhance event efficiency and attendee satisfaction.

Do Soon:³² Deploy AI to analyze key contextual data like traffic patterns, local event schedules, and historical weather patterns to identify the best times and dates for scheduling upcoming events. For example, open houses scheduled during Senior Prom might have lower attendance rates. Additional data generated by the Internet of Things (IoT), referenced in the IT section of this report, can be leveraged to inform this analysis.

Academic Affairs Optimization:³³ Develop AI algorithms to optimize faculty workload distribution, considering factors such as expertise, class sizes, and research commitments. Generating institutional buy-in will be vital in developing this practice meaningfully.

Do Now: Use AI to expand upon existing course offering database to include often untracked data elements such as:

- Semesters in which each course is typically scheduled
- Campus in which each course (and/or section) is typically scheduled
- Historic trends in course fill rates
- Trends in course fill rates by department against other important institutional milestones (e.g., new campus opened, program expanded, new professor hired)
- Courses that were added late or canceled before the start of the semester to adjust for demand in enrollment
- Classroom capacity

Do Soon: For future terms, train an LLM on the above datasets and other institutional data, like course enrollment, course outcomes, and enrollment data such as when courses were added, which courses were canceled, etc., to generate optimized course schedules.

Optimize Course Scheduling

Course Availability Prediction: AI can predict the demand for specific courses in advance, helping institutions better plan course offerings and avoid scheduling bottlenecks.

Optimized Resource Allocation: AI algorithms can optimize the allocation of classrooms, labs, and other resources, ensuring efficient use of facilities and minimizing scheduling challenges.

Customizable Schedule Preferences: AI-powered scheduling tools can allow students to set preferences, such as avoiding early morning classes or clustering classes on specific days, to create schedules that align with their preferences.

Adaptive Course Timings: AI can adjust course timings based on historical data of students' attendance patterns and preferred learning times, maximizing class engagement.

³²This idea requires AI platforms to have web connectivity that enables scraping and searching, which is not currently widely available or particularly effective. Generative AI platforms in this space, such as Bard and Bing, are rapidly evolving, so this type of use case may become feasible soon.

³³ Note: We offer additional student-centric ideas and suggestions around smart course scheduling and academic plan alignment in the Student Experience chapter.

Transportation and Logistics: Employ AI to optimize transportation routes, manage vehicle fleets, and improve logistics efficiency for campus operations. In creating this platform, leaders might also consider creating a student-facing version that could reduce time spent managing logistical aspects of being a college student (referenced in the Student Experience section of this playbook).

Strategic Finance

Budget Optimization and Analytics

IPEDS Data Analysis: Utilize AI to train models on the IPEDS dataset, providing institutions with specific feedback based on finance surveys. The AI can conduct comparative analyses within specific groups, states, cohorts, and enrollment sizes, offering insights into different financial models. Many colleges liberally interpret the meaning of the data definitions provided by IPEDS when completing their mandatory reporting based on their institutional priorities. Whenever comparing data across the IPEDS universe, remember that most comparisons are not apples to apples.

Example: Colleges are faced with a decision of when to “freeze” their data for reporting. Colleges that select a freeze date early in the semester (e.g., right after the add/drop period) will inevitably appear to have higher enrollment numbers but may have lower course completion rates as students drop after the freeze date. Alternately, colleges more interested in improving their retention data can select a freeze date later in the semester when more students will have withdrawn, meaning the overall denominator for their analysis is smaller and increasing the odds that their retention data improves. These data points often factor into performance-based funding formulas.

Composite Financial Metrics for Student Success: AI, like machine learning algorithms, optimization algorithms, or natural language processing (NLP), can recognize patterns and make predictions based on student outcomes and financial data. Then, use these tools to identify the most crucial composite financial metrics that impact student success. This will aid institutions in optimizing their financial strategies to enhance student outcomes. Example composite metrics include the return on educational investment (ROEI) or cost to degree completion ratio.

Budgeting with Constraints: Deploy AI to create budgets under specified constraints, assessing the impact of eliminating specific fees. This analysis can help institutions make informed decisions about fee adjustments.

Prompt Example:

You are a community college budget expert, and I need your help creating several different budget scenarios based on some adjustments we might make to our business model. I will share our budget with you, and you will propose opportunities to improve it. Then, I will share specific adjustments we are considering (e.g., eliminating one of our student fees), and you will update the budget and highlight any important findings.

- When you upload the budget, be sure to include notes about:
 - Revenue streams
 - Expenses
 - Financial metrics that are top priority for your institution (e.g., performance-based funding metrics, specific outcomes tied to grants, etc.).

Business and Financial Strategy

Equity-Focused Resource Allocation: Leverage AI-driven data analysis to guide resource allocation decisions, addressing disparities in access to academic support services and extracurricular opportunities. This approach ensures a more equitable distribution of resources among students but must be intentionally crafted to avoid disparate impacts caused by biased AI training datasets.

Example: Multi-campus colleges often face difficult decisions about which campuses should receive resources to offer specific services, given that budgets rarely allow for carbon copies of all services and offerings on all campuses. College leaders could leverage predictive modeling and generative AI to optimize the resources allocated to each campus, with a particular emphasis on equity.³⁴

Business and Financial Management

- **Real-Time Financial Reporting:** AI can generate real-time financial reports, providing higher education leaders with up-to-date insights to make timely, data-driven decisions. Versions of the data inquiry tools, mentioned in the Data Literacy section of this toolkit, could be adapted and deployed to help leaders engage with budgets and cash flow projections.
- **Cash Flow Forecasting:** AI can analyze historical financial data and patterns to generate accurate cash flow forecasts. This allows institutions to manage their finances better, plan for contingencies, and optimize investment decisions.

³⁴This practice has an immense potential to increase equity on campuses, and so it also comes with greater risk. Without properly fine tuning and testing the models used to make these decisions, leaders risk following the advice of AI tools that might route resources toward historically high-performing student groups, rather than those that have been historically excluded. Remember, biased data in leads to biased data out!

- **Expense Management:** AI-powered systems can automate expense categorization, flag unusual spending patterns, and identify potential cost-saving opportunities. This helps in streamlining financial processes and reducing unnecessary expenditures.
- **Risk Management:** AI can assess financial risks and market trends in real time, enabling proactive risk management strategies. This helps higher education institutions mitigate financial uncertainties and make more informed investment choices.
- **Optimizing Debt Management:** AI can assist in optimizing debt structuring, refinancing decisions, and debt repayment schedules to minimize interest costs and manage debt obligations more effectively.

Procurement, Vendor and Contract Management: AI can analyze vendor performance and contract terms, assisting in negotiating better deals and managing vendor relationships efficiently.

Prompt Example:

You are assisting a college in procuring new educational software and need to create a list of essential questions to ask potential vendors. Consider the following areas and provide specific questions for each:

1. Purpose of the Software: How will the software address specific needs within the institution?
2. Key Features and Functionality: What essential features must the software have?
3. Integration Requirements: How should the software integrate with existing systems?
4. Budget and Pricing Structure: What are the budget considerations and preferred pricing models?
5. Security and Compliance: What security protocols and compliance standards must be met?
6. User Experience and Accessibility: What are the considerations for user-friendliness and accessibility?
7. Support and Maintenance: What are the expectations for ongoing support and updates?
8. Timeline and Implementation Process: What are the desired timeline and processes for rolling out the software?

Provide a detailed list of questions that can be used in discussions with vendors to ensure the selected software aligns with the institution's unique needs and requirements.

Advancement

Donor Prospect Identification: AI can analyze vast amounts of data, including alumni interactions, engagement with institutional social media accounts, and giving histories, to identify potential major gift prospects. Use generative AI to rank and prioritize individuals with the highest likelihood of making significant contributions, helping advancement teams focus their efforts more efficiently.

- **Prospect Research Automation:** AI can streamline the research process for potential donors by aggregating and summarizing relevant information from various sources, providing advancement teams with comprehensive donor profiles quickly.

Do Soon: Train an LLM on historic giving data sets to help identify major gift prospects and even optimize the travel schedules of advancement team members.

Donor Cultivation and Stewardship

- **Develop Internal Knowledge Base about Donors:** Develop an internal database of donor interests, preferences, and giving history, as well as publicly available information about the donor (e.g., news announcements, new jobs on LinkedIn, etc.).
- **Personalized Donor Engagement:** AI-powered systems can craft personalized communication strategies for donors based on their interests, preferences, and giving history. This includes tailored email campaigns, social media interactions, and event invitations, leading to more meaningful and impactful donor engagement. It can prompt busy advancement professionals or institutional leaders with proactive suggestions about institutional news and announcements that crosswalk to donors' specific interests and significant life updates.
- **Automated Donor Follow-ups:** AI-powered chatbots and virtual assistants can handle donor inquiries, acknowledgment messages, and follow-ups. This frees staff time to focus on high-touch interactions and relationship-building activities.
- **Donor Sentiment Analysis:** During an institutional PR crisis (e.g., changing a mascot or ending a major), AI can analyze donor sentiment by processing feedback, emails, and social media posts. This sentiment analysis helps advancement or leadership teams understand donor or alumni concerns, enabling them to address issues promptly and strengthen donor and alumni relationships.
- **Fundraising Campaign Optimization:** If your institution has done any fundraising campaign in the past decade, AI can assess historical campaign data, donor behaviors, and external factors to optimize future campaigns. It can recommend the most effective strategies, messaging, and timing for fundraising initiatives, leading to higher success rates.

Do Soon: Based on institutional giving datasets, generate gift pyramids that illustrate the feasibility of major fundraising initiatives like Capital Campaigns. Gift pyramids illustrate a realistic breakdown of potential gifts within the small, medium, and large donation sizes.

Real-Time Fundraising Analytics: AI can provide real-time fundraising analytics, tracking progress toward campaign goals, monitoring donor responses, and making immediate adjustments to optimize fundraising efforts.

Government Relations

Quorum and Fiscal Strategy: Leverage AI-powered tools to develop effective lobbying and appropriation strategies by analyzing policy-making trends. AI can identify optimal funding approaches based on current conditions, such as recommending capital appropriations when operational appropriation requests face challenges in approval. By utilizing AI-driven insights, institutions can make informed decisions to increase their chances of securing funding and achieving their financial objectives.

Stakeholder Mapping: Use AI to identify key government stakeholders, such as legislators, policymakers, and influential officials. Analyze their positions on higher education funding and issues to tailor communication strategies for more effective advocacy.

Legislative Sentiment Analysis: Apply sentiment analysis to understand the views and opinions of lawmakers on higher education issues. This insight can help tailor messaging and outreach to address specific concerns.

Do Now: Upload recent local news articles, transcripts and minutes from recent higher education committee legislative sessions, and other informative policy maker materials to ChatGPT. Use the prompt below to fine-tune your advocacy strategy for the coming year.

Prompt Example:

Conduct a sentiment analysis on recent legislative activity in [state] concerning higher education. I'm interested in understanding the general attitudes toward higher education and funding. The analysis will help inform our college's advocacy strategy for the following year. Include any recommendations based on the sentiment analysis.

Issue Monitoring and Alerts: Employ AI-powered tools to monitor government proceedings, legislative agendas, and budgetary discussions. Receive real-time alerts on topics relevant to higher education finance, enabling institutions to respond promptly and proactively engage with policymakers.

Data-Driven Advocacy: Utilize data analytics and AI to present evidence-based arguments and case studies that demonstrate the impact of higher education on economic growth, workforce development, and community prosperity. This strengthens the institution's advocacy efforts and justifies funding requests.

Budget Impact Assessments: Use AI to assess the potential financial impact of proposed policies or budget cuts on the institution. By quantifying the consequences, institutions can better communicate the risks and benefits to policymakers.

Student Finance and Financial Aid

Tuition Price Optimization: Employ AI to analyze market trends, competitor pricing, and student preferences to optimize tuition pricing strategies. This can help institutions strike a balance between affordability for students and maintaining financial sustainability.

Student Loan Management: Develop AI-powered tools to assist students in managing their student loans efficiently. These tools can provide personalized repayment plans, loan forgiveness eligibility assessments, and budgeting advice.

Equitable Opportunities

Scholarship Matching: AI can match students with relevant scholarship opportunities based on their academic achievements, interests, and background, making it easier for them to access financial aid.

Help students avoid the "August surprise": Financial aid offices require that students report all outside scholarships, which could reduce an institution's calculation of the student's overall "need," potentially impacting their aid package. Many students factor these outside scholarships into their budgets for costs of living that are not included in overall "need" calculations for financial aid packages based on tuition and fees. AI in this use-case should be designed intentionally to help students identify scholarships that match their needs and qualifications and must also provide abundant transparency to reduce the risk that a student's overall qualifications are not impacted. **Be sure to not only identify relevant scholarships but also identify and flag the impact these scholarships might have on students' existing financial aid packages.**³⁵

Automated Application Processing: Implement AI algorithms to streamline and automate the financial aid application process. AI can extract relevant information from documents, verify data, and expedite eligibility assessment, reducing processing times and administrative burden.

Predictive Modeling for Aid Eligibility: Use AI to build predictive models that assess a student's financial need based on various factors, including family income, assets, and household size. This allows institutions to tailor financial aid packages more accurately.

Aid Package Optimization: Implement AI algorithms to optimize financial aid packages based on the combination of grants, loans, scholarships, and work-study opportunities. AI can find the best mix to meet each student's needs while maximizing financial aid efficiency.

³⁵ Marcus, J. (2023, August 2). 'August surprise': That college scholarship you earned might not count. The Hechinger Report. Retrieved from <https://hechingerreport.org/august-surprise-that-college-scholarship-you-earned-might-not-count/>

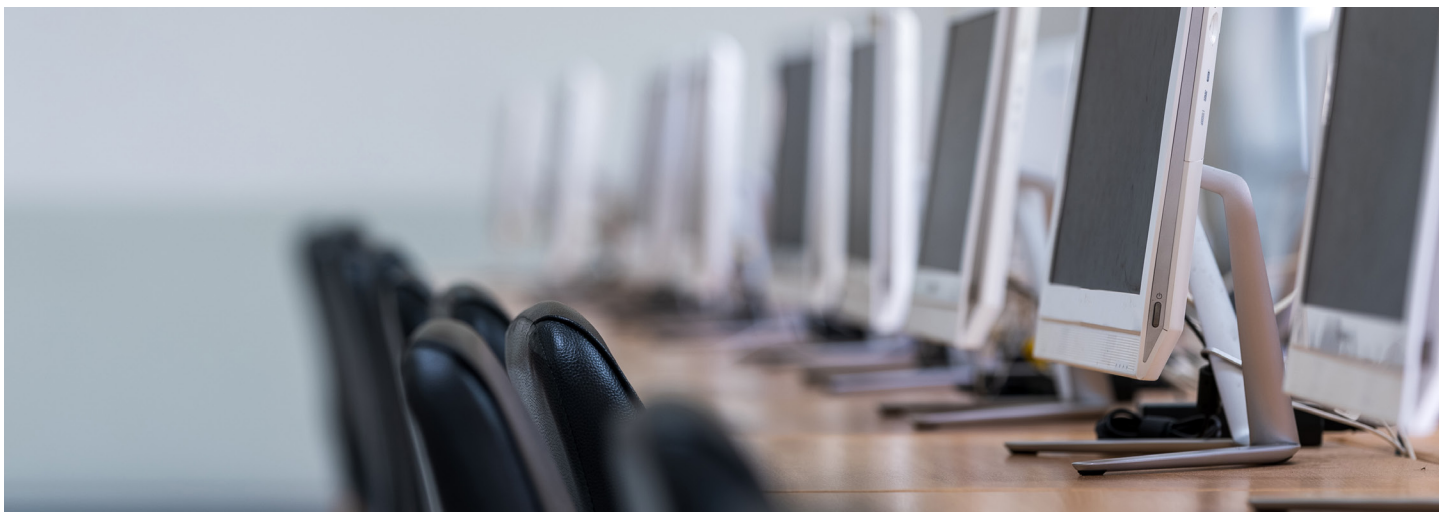
Identifying Unmet Need: Use AI to identify students with significant unmet financial need, enabling institutions to target additional resources and support services to those who require them the most.

Dynamic Verification Process: Apply AI to streamline the verification process by automatically identifying discrepancies or inconsistencies in financial aid applications. This can speed up verification and ensure accuracy in aid disbursement.

Retention and Financial Aid Analysis: Employ AI to analyze the relationship between financial aid packages and student retention rates. This insight helps institutions assess the effectiveness of their aid offerings and make data-driven improvements.

Optimizing Engagement with Students about Financial Aid

- **Financial Aid Outreach and Communication:** Utilize AI-powered communication tools to send targeted messages and reminders to students regarding financial aid deadlines, required documentation, and important updates.
- **Student Budgeting Tool:** Using generative AI, create a budgeting tool where students can input various sources of financial aid, possible course load, cost of living expenses, and anticipated income based on various job opportunities or shifts. Design the tool to be engaging and approachable and to teach helpful financial literacy skills throughout the interactions.
- **AI-Enhanced Student Support:** Integrate AI-driven student support systems that provide proactive financial aid counseling and recommendations for managing educational expenses. Deploy AI-driven chatbots to provide instant responses to students' financial aid queries. These chatbots can answer frequently asked questions, guide students through the application process, and offer personalized support.



TEACHING AND LEARNING

In recent years, there has been a burgeoning interest in and experimentation with generative AI within educational communities. This enthusiasm forms a rich bedrock for further exploration and collaboration. We encourage educators to actively engage with existing knowledge hubs, such as listservs and dedicated faculty AI websites, and to share their insights and learnings. The collaborative spirit of the academic community can foster a vibrant and continuously evolving repository of knowledge and best practices. This section proposes possible answers to a critical question: "How can faculty employ AI in their classes to foster a more enriched learning environment and promote positive postgraduate outcomes?"

We remind higher education practitioners of the importance of using an asset-based approach, which encourages a focus on leveraging students' strengths rather than concentrating on their deficiencies. Through the appropriate utilization of AI tools, faculty can offer tailored guidance and resources, fostering an environment that recognizes and nurtures each student's individual strengths.

Expanding on the notion of an asset-based approach to learning, we also hope to contribute to the growing conversation around challenging traditional conceptions of cheating. Students with access to resources like tutors, prep courses, and schools with small class sizes undoubtedly have an advantage in higher education. We hope to drive the use of AI in a direction that will lead to a positive disparate impact: one that will equalize access to resources that previously were financially out of reach for many. Many practices throughout this section challenge these notions of "cheating;" for example, we suggest an AI real-time feedback tool that helps students adapt colloquial language into academic writing. We encourage readers to keep an open mind about these types of practices.

Finally, as we advocate for integrating AI in education, we emphasize that AI should be regarded and deployed as a tool to assist faculty members, not a replacement for them. Ensuring this requires well-articulated institutional policies that underline the role of AI as a facilitator rather than a substitute. The essence of teaching — the human connection, understanding, and empathy that educators bring — remains central to the learning process.

Personalized Learning and Content Customization

Learning Preferences and Dynamic Adjustments to Materials: Many instructors are now implementing start-of-term surveys,³⁶ used to help the faculty member get to know the students while also soliciting important information about how much students already know about the material, learning preferences, and more. Instructors can expand upon this by gathering learning preferences from students at key milestones throughout the semester and then using AI to rapidly interpret results and support the instructor with customizing materials to meet each student's learning preferences and even interests.³⁷

Prompt Example:

I am looking to create a survey for my second-year college students to administer at the beginning of the semester. This survey aims to understand their individual learning preferences and foster a better connection with them.

To ensure the students can comfortably and accurately express their preferences, the survey should avoid using higher education jargon or technical language concerning learning styles. Instead, I aim to use accessible language that everyone can understand.

Assist me in developing questions that will encourage students to share their preferences clearly. This will help me tailor classroom exercises, assignments, and interactions to suit their specific learning styles, promoting a more inclusive and effective learning environment.

Interactive Learning Guides: Provide generative AI prompts as a handout, teaching students how to use ChatGPT and other AI tools to ethically ask questions, explore course content, and create educational games with AI support. Draw examples from existing open-source prompt library websites such as Prompt Vine or shared resources among faculty listservs.

Prompt Example:

You are assisting a Philosophy 101 instructor in creating engaging and interactive prompts for their students. The instructor is looking for prompts that can be used in a chat-based AI environment to encourage dialogue, debates, quizzes, and virtual conversations with philosophers. They want to incorporate gamification and interactive elements, focusing on inclusivity and accessibility for various learning styles. Provide 10 prompts that align with these objectives, considering themes like ethical dilemmas, diverse perspectives, technology's impact on philosophy, personal philosophy exploration, and global philosophical issues.

³⁶ Mowreader, A. (2023, July 25). Engagement tip: create a first-day survey. Inside Higher Ed. <https://www.insidehighered.com/news/student-success/academic-life/2023/07/25/how-professors-can-use-first-day-class-survey>.

³⁷ Bhagat, A., Vyas, R., & Singh, T. (2015). Student's awareness of learning styles and their perceptions to a mixed method approach for learning. International journal of applied & basic medical research, 5(Suppl 1), S58–S65. <https://doi.org/10.4103/2229-516X.162281https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4552069/>

Smart Content Recommendation: AI algorithms can recommend supplementary learning resources, open educational resources (OER), textbooks, and online materials that the instructor can provide to students based on their assessment of students' preferred learning styles and interests. This ensures they have access to relevant content that enhances their understanding, as many textbooks and learning resources are currently cost-prohibitive. Make these resources open by default to expand the OER movement.

AI-Powered Catch-Up Support in Corequisite Courses:

Utilize AI technologies to provide targeted and personalized catch-up support for students enrolled in corequisite courses, addressing individual learning gaps and strengths and facilitating successful progress through the curriculum. AI algorithms can identify

specific areas where students struggle, recommend customized exercises and resources, and offer real-time assistance, enhancing their understanding and mastery of the material. This practice also seeks to reduce the additional costs of supplemental course materials.

- **Peer Course Match:** AI can match students with peers taking corequisite courses, facilitating collaboration and additional support to reinforce learning.
- **Intelligent Scheduling of Support Sessions:** AI can assist in scheduling corequisite support sessions when students are most likely to benefit, based on their availability, and create "cohorts" across shared learning patterns.

Inclusive Adaptive Curriculum: Design a curriculum with true adaptive learning capabilities that cater to learners' individual needs, regardless of their background or prior competency, fostering a supportive and equitable learning environment for all students.

Do Soon: Work with your IT department and teaching and learning experts to identify if any existing LMS plugins (also called LTIs or Learning Tools Interoperability) exist that will give your students access to a customizable and adaptive curriculum. Make sure these tools are compliant with your institutional policies.

Interactive and Immersive Learning

Gamification and Interactive Learning: AI can design interactive educational games that adapt to each student's learning pace and style. Gamification enhances student motivation and helps reinforce key concepts effectively.

Revisionist Historic Immersion through AI: Use AI-assisted AR/VR/XR for immersive learning, enabling learners to experience historical and sociological events firsthand, and fostering empathy and alternative perspectives beyond the traditional narratives. (For example, re-telling the story of the Lewis and Clark Expedition from the perspective of Sacagawea).

Optimized Student Learning Resources: Implement AI-driven curation and enhancement techniques to identify and deliver the most relevant and effective learning materials for students, ensuring a comprehensive and engaging educational experience.

Prompt Example:

I plan to include these resources in my lesson plan and module around *[insert topic]*. I have students from various backgrounds and want to be sure the material comprises a spectrum of learning styles. Review these resources and ensure I am not excluding any learning styles or backgrounds.

Recommend alternatives and classify each resource by the learning style with which it is most aligned so I can help my students find the resources that will work best for them. *[Insert the resources via cut and paste, links, or PDFs depending on the type and the LLM you are using.]*

Real-Time Competency Assessment: AI-powered assessment tools can continuously evaluate students' skills and knowledge, providing immediate feedback and helping learners identify areas of strength and weakness. AI-generated real-time assessment functionality might support professors' growing efforts to deviate from traditional modes of grading to methods that better evaluate student learning while also including the learner in the process, a variation on concepts of "ungrading."³⁸

Teaching Support and Assessment

Judgment-Free Learning Zone: Create a generative AI chatbot available 24-7 to answer student questions and discuss or explore concepts from their coursework. Alternately, educate students on how to use existing generative AI chatbots as learning partners. For example, teach students to craft prompts that will help the chatbot understand how to optimize the students' learning before working with them.

³⁸ Kenyon, A. (2022, September 21). What is ungrading? Duke: Learning Innovation. Retrieved from <https://learninginnovation.duke.edu/blog/2022/09/what-is-ungrading/#:~:text=Ungrading%20is%20a%20practice%20which,to%20the%20course%20learning%20goals>.

Prompt Example³⁹:

You are a friendly and helpful tutor. Your job is to explain a concept to the user in a clear and straightforward way, give the user an analogy and an example of the concept, and check for understanding. Ensure your explanation is as simple as possible without sacrificing accuracy or detail. Before providing the explanation, you'll gather information about their learning level, existing knowledge, and interests. First, introduce yourself and let the user know that you'll ask them a couple of questions that will help you help them or customize your response and then ask four questions. Do not number the questions for the user. Wait for the user to respond before moving to the next question.

- **Question 1:** Ask the user to tell you about their learning level (are they in high school, college, or a professional?). Wait for the user to respond.
- **Question 2:** Ask the user what topic or concept they would like explained.
- **Question 3:** Ask the user why this topic has piqued their interest. Wait for the user to respond.
- **Question 4:** Ask the user what they already know about the topic. Wait for the user to respond.

Using the information you have gathered, provide the user with a clear and simple two-paragraph explanation of the topic, two examples, and an analogy. Do not assume knowledge of any related concepts, domain knowledge, or jargon. Remember what you now know about the user to customize your explanation.

Once you have provided the explanation, examples, and analogy, ask the user two or three questions (one at a time) to ensure that they understand the topic. The questions should start with a general topic. Think step-by-step and reflect on each response.

Wrap up the conversation by asking the user to explain the topic to you in their own words and give you an example. If the explanation the user provides is not quite accurate or detailed, you can ask again or help the user improve their explanation by giving them helpful hints. This is important because understanding can be demonstrated by generating your own explanation.

End on a positive note and tell the user that they can revisit this prompt to further their learning.

Automated Content Creation: AI can generate educational content, including practice exercises, quizzes, and simulations, to supplement traditional course materials. This provides students with additional learning resources tailored to specific topics or concepts. Generative AI could also develop exam questions, reducing faculty workload and ensuring a diverse set of assessment items. Special care must be given to ensure that AI is viewed and deployed as a tool to aid faculty rather than replace them, and institutional policy will be vital to the successful implementation of these practices.

³⁹ Mollick, E. (2023, August 20). Now is the time for grimoires. One Useful Thing. Retrieved from <https://www.oneusefulthing.org/p/now-is-the-time-for-grimoires>.

Confidence-Based Assessment: Implement generative AI to assess students' confidence levels in their answers, allowing instructors to identify and address areas of uncertainty. Create content adaptations to strengthen the students' confidence with the material in response. Reinforce students' growth with ongoing positive affirmations, through both autogenerated affirmations and by nudging faculty to send personalized messages to encourage students as they learn.

Real-world Integration and Interdisciplinary Exploration

AI Literacy Curriculum: As much as AI might be used to help students learn through real-world scenarios, there is also a high likelihood that students' real-world experiences will also involve responsible, effective, and ethical use of AI. Faculty should collaborate to create artificial intelligence Literacy content that can be embedded into pertinent courses. The type and scope of "AI Literacy" will vary depending on a student's progress through their degree and the context of their learning. Some examples:

- **First-Year Seminar, Orientation, or Other Entry-Level Courses:** Consider adding new modules or adapting existing ones to incorporate conversations around the appropriate use of AI in college for homework. Be sure to differentiate between using AI to learn versus using AI in an academically dishonest way.
- **Specialized Coursework:** As students reach more specialized levels of courses, care must be given to incorporate lessons about applications of AI that are taken directly from the relevant occupational fields. For example, a junior in a business program might explore using AI to generate a business proposal, while a junior in creative writing might explore the implications of generative AI on creativity. Just as important, students in sociology, legal, or criminal justice fields might examine the role of AI in the criminal justice system.⁴⁰

Incorporating Real-World Challenges: Use AI to identify and integrate real-world challenges and scenarios into the curriculum. This approach enhances students' critical thinking skills and ability to apply theoretical knowledge to practical situations. Engagement through incorporating multiple senses and "living a scenario" could enhance authentic learning and move away from memorization and "giving the answer that they anticipate is desired."

Prompt Example:

I am a professor, teaching a class on *[course subject]*, for *[student age group]*. This week, our *[length of time]* session is about *[topic]*. Create a real-world scenario that my class can use for an in-class exercise. During this exercise, they should focus on *[insert competencies or topics]*.

I am teaching a class on public health, and this week's class is about community engagement and pandemics. Help me create a real-world scenario that my class can use for an exercise in the classroom. We have 45 minutes, and I would like them to focus on the topics of surveys, outreach, and education on a relevant topic.

⁴⁰ Ontario, Law Commission Of. (2020, October 28). The rise and fall of algorithms in American criminal justice: Lessons for Canada. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3773651.

AI-Enhanced International Immersion: Leverage AI to enhance international immersion experiences using artificial reality (AR)/virtual reality (VR)/extended reality (XR) technologies, maintaining student interest and accelerating learning. AI can personalize the immersion content, adapt to individual learning styles, and provide real-time support, making the experience more engaging and effective for students.⁴¹

Interdisciplinary, Discovery-Based Curriculum: Develop AI-powered curriculum with "what-if" scenarios that encourage cross-disciplinary exploration, connecting concepts from different subjects to promote deeper understanding, creativity, collaborative problem solving, and a holistic mindset to solving the world's greatest challenges.⁴²

AI-Powered Predictive Insights and Recommendations

Learning Analytics: We would like to see current learning management systems (LMS) begin to offer features that will provide real-time insight into students' learning progress and curate tactical recommendations faculty can incorporate into their classes to support student learning.

Work Toward: Develop generative AI-powered analytics dashboards for instructors, providing actionable insights on student performance and engagement.⁴³

Work Toward: Create predictive learning analytics. AI-generated insights can help educators predict learners' success rates and intervene with targeted support when needed, enhancing completion rates and overall learner success.

Workforce-Driven Curriculum Development

Co-Creation Platforms: Develop AI-driven platforms that enable faculty and business representatives to collaborate on curriculum development. These platforms can facilitate real-time discussions, version control, and agile updates to the curriculum.

Rapid Iterations: Generative AI can assist in rapidly generating course materials, simulations, and assessments. It allows faculty and business experts to collaborate on curriculum modifications efficiently, adapting to evolving industry needs and emerging technologies.

Microcredential Recommendations: AI algorithms can suggest stackable microcredentials and certifications based on learners' specific skills and career goals, fostering a more personalized and practical learning pathway.

⁴¹ Immense interest and progress are being made around AR/VR/XR in education. Recent research by PWC (Likens & Mower, 2023) found that learners are four times more focused during learning, more confident in what they have been taught and that VR can be more cost-effective at scale. When combined with innovations in generative AI, the opportunities to incorporate VR into more learning contexts and subjects are noteworthy.

⁴² Civic Learning and Democracy Engagement Coalition. (n.d.) College Civic Learning: Goals and priorities. Retrieved from <https://www.collegeciviclearning.org/about>.

⁴³ We recommend CCA's Data Management Guidebook for more insight into how to leverage data for college completion.

Assessment and Evaluation

Accreditation and Evaluation

AI-Enhanced Accreditation and Evaluation Analysis: Employ generative AI to streamline the accreditation process and break down silos by collating, interpreting, and analyzing program evaluations across entire departments or institutions. AI algorithms can efficiently process vast amounts of data, identify trends, and provide comprehensive insights, leading to more effective decision-making and continuous improvement in educational quality and outcomes. These tools may also be used to inform resource allocation and strategic finance decisions.

- **Automated Data Collection:** AI can automate the collection of accreditation-related data from various sources, such as student records, faculty credentials, and institutional performance indicators. This eliminates manual data entry and reduces the time required to gather necessary information.
- **Data Analytics for Compliance:** AI-powered analytics can quickly analyze the collected data to check compliance with accreditation standards. This allows institutions to proactively identify areas that need improvement and address any issues.
- **Real-Time Monitoring and Reporting:** AI can continuously monitor institutional performance indicators and generate real-time reports. This ensures that institutions can detect potential accreditation concerns promptly and promptly take corrective actions.
- **Predictive Analytics for Performance:** AI-driven predictive models can assess institutional performance trends and anticipate potential areas of concern before they become critical. This foresight allows institutions to address issues proactively, improving the overall accreditation process.

Course Objectives and Assignment Linkages

AI-Driven Course Objectives and Assignment Linkage: Utilize AI to brainstorm and effectively link course objectives to assignments. Use similar methods to develop aligned syllabi for courses.

Prompt Example:

Can we explore ways to address ethical considerations and foster responsible citizenship through the contents of my syllabus, aligning with institutional learning outcomes?

Help me find strategies to make my syllabus foster a more diverse and inclusive learning environment and how this might contribute to institutional learning outcomes.

I have the following assessment methods in my syllabus. Can we discuss how these methods can effectively measure student achievement in relation to my institutional and departmental learning outcomes?

Streamlined Rubric Creation Process: Utilize AI-powered tools and templates to streamline rubric development, simplifying the task and ensuring the creation of clear and objective criteria for assessing student work. AI can assist in generating rubric structures, providing language suggestions, and incorporating best practices to save time and improve the quality of rubrics.

Scaled Artifacts Evaluation and Learning Outcome Assessment: Faculty members can leverage generative AI to explore innovative approaches for evaluating their artifacts and evidence to demonstrate that learning outcomes are being met. AI can assist in identifying patterns and connections within the data, providing valuable insights that help instructors refine assessment methods, ensure alignment with learning objectives, and continuously enhance the teaching and learning process.

AI-Enabled Student Self-Assessment and Feedback Mechanisms: Implement AI to create additional opportunities for students to self-assess and provide feedback on the course more regularly, taking advantage of the adaptability of coursework.

Student Engagement and Digital Learning Infrastructure (DLI)

Equitable Writing Assignments and Learning

AI-Powered Colloquial to Academic Writing Supports: Implement AI tools that offer asset-based support to students in converting colloquial writing into academic/formal report writing. AI can provide constructive feedback, suggesting appropriate academic language and style while acknowledging and valuing the students' unique expressions.⁴⁴

- **Example Feedback:**

- **Student Drafted:** I liked reading the chapter on the great depression because the writer talked a lot about their personal experience.
- **AI Updated:** I appreciated reading the chapter on the Great Depression as it offered first-hand insights through the author's personal experiences.

Equitable Faculty Grading with AI: Utilize AI-driven grading assistance to retrain faculty in providing equitable feedback and removing bias toward formal language. AI can offer guidelines to ensure grading focuses on content and critical thinking, promoting fair evaluation of student work regardless of writing style or background.

⁴⁴One example of a colloquial to academic writing guide (source included below) was created by the Writing Center at the University of South Florida. It provides sample sentences in which students might be writing too casually and suggests an alternative, more academic tone. Real-time suggestions might make writing in an academic tone more accessible to students who have historically been given fewer opportunities to practice and be exposed to this type of writing, thus creating new opportunities to meet students where they are and increase access to learning. The Writing Studio, University of South Florida. (n.d.). Academic versus colloquial. Retrieved from <https://www.usf.edu/undergrad/academic-success-center/documents/revised-academiccolloquial-ws.pdf>.

Enhanced Student Support and Engagement

AI-Enhanced Learning Partners and Debate Opponents: Implement AI-driven virtual learning partners and debate opponents to support shy or neurodiverse students in their learning journey.

Prompt Example:

You are assisting a teacher who wants to engage their students in a debate on a specific topic they're teaching in class. The teacher plans to use AI as a debate partner to challenge and stimulate students' critical thinking. Create a customized prompt that can be used to initiate a debate with the AI on the chosen topic. Include guidelines for structuring the debate, identifying key arguments and counterarguments, and ensuring a balanced and thought-provoking discussion. The topic for the debate is *[insert specific topic here]*, and it should consider various viewpoints and ethical considerations related to the subject. *[Insert any other key details that will enhance the specificity of the debate and learning experience for students].*

Continuous Support and Encouragement through AI-Powered Prompting: Use AI technology to provide learners with round-the-clock support and encouragement, tailored to their individual strengths and assets..

AI-Enhanced Rapid Conversation Simulation for Online Discussions:

Students must wait for responses when submitting discussion posts for online courses, sometimes resulting in long gaps between engagement with the material. Professors might, instead, consider asking students to engage in a conversation or discussion with an AI tool about a specific discussion topic – informed by the course materials – to encourage the student to extend the length, breadth, and quality of their interaction with the concepts and assist in learning.

"I liked the fact that I had an idea of what classes would take and how to get there. But I just feel like as far as support, it could have been better. I honestly feel like if we had something more digitalized and online ... that would be helpful."

-Student at a rural, public HBCU⁴⁵

Curriculum Design and Accessibility

Syllabus Design: Creating engaging, relevant, and accessible syllabi that clearly articulate a professor's expectations for the student and a plan for the course is a key faculty responsibility. Gaining a fresh perspective from an external, neutral party that can provide input on relevance, accessibility of language, and connection to student learning outcomes is a novel way to apply ChatGPT or other Large Language Models to course design. LLMs and ChatGPT could also be deployed to connect faculty with alternative pedagogical approaches and delivery.

⁴⁵ Complete College America. (2023). The digital HBCU: Integrating technologies to power Black student success.

Do Now:

Research and Content Curation: Use the LLM to gather the latest research, articles, and resources on a particular topic. This is especially helpful for rapidly evolving subjects. For example, faculty can ask AI tools to quickly summarize potential literature to help narrow the selection of new materials to include in a course.

Feedback on Drafts: Before finalizing the syllabus, the instructor can input the content into the LLM and ask for feedback to improve its clarity, coherence, or depth.

Diversifying Reading Lists: Ensure a broader range of perspectives by asking the LLM for sources from diverse authors, cultures, or time periods related to your subject.

Content Summaries: For each topic in the syllabus, the LLM can generate concise summaries that can serve as introductory reading for students or overview notes.

Accessibility: Ensure that the syllabus is accessible for all students by asking the LLM to critique the syllabus for potential accessibility pitfalls and recommend actionable changes.

Jargon Reduction: Review and adapt content to plain language and minimize jargon.

AI-Powered On-Demand Learning Packages: AI can facilitate the creation of personalized, adaptable learning packages that allow learners to access materials and content as, when, and where they desire, moving away from traditional linear instructor-driven curricula limited to "on-site only." This helps instructors and institutions meet the students where they are. We expect many vendors and versions of this type of product to become available in the next year.

AI-Enhanced Universal Design Implementation⁴⁵: Universal Design in education involves ensuring that the language, layout, fonts, and every aspect of a document is built to have the highest level of accessibility possible. For example, some fonts are easier for individuals to read than others, and evidence supports these best practices. Yet, redesigning massive amounts of existing curriculum is a daunting task. To make this task more seamless, professors can use AI technologies to rapidly implement universal design principles or similar accessibility concepts into existing course materials.

Do Now: Use tools like ChatGPT and Claude to make your course materials more accessible.

Prompt Example:

You are an expert in Universal Design principles for accessible learning. Review my syllabus and update it to meet the Universal Design standards. Also, make notes about the changes you made and explain them to me so I can more seamlessly incorporate them in the future into my work.

AI-Enabled Integration of Humanistic Skills in Technical Courses: Humanistic skills include empathy, communication, and critical thinking, all of which can not only improve a student's learning and engagement with the material but also improve their future job performance.⁴⁶ Professors might consider leveraging AI to help break down the barriers between the two disciplines of STEM and humanities. For example, AI could be used to facilitate the design of interdisciplinary projects between a history and biology course. Alternatively, AI could be used to provide writing suggestions to students in their technical assignments to suggest opportunities to incorporate more humanistic competencies.

Math Pathways

Competency-Based Math Progression: AI can support competency-based math pathways, allowing students to advance through math courses at their own pace as they demonstrate mastery of key concepts.

Adaptive Math Content: AI-driven platforms can deliver adaptive math content, dynamically adjusting the difficulty level and format of math problems based on individual student performance, promoting deeper understanding and engagement.

AI-Powered Contextual Math Exercises: Utilize AI to generate career-specific math exercises that contextualize math concepts within students' chosen career pathways. By incorporating real-world scenarios related to their career goals, students can feel engaged and motivated to apply math skills early in their academic journey, even before taking relevant coursework in later semesters. The dynamic nature of AI allows for an endless iteration of math problems with career-specific contexts, enhancing students' learning experience and relevance for them.

Math Course Sequencing Optimization: AI algorithms can optimize the sequencing of math courses and consider prerequisites and potential knowledge gaps to create more coherent and effective math pathways.

Faculty Support

AI-Powered Teaching Assistants (TA) and Tutor Coaches

In a classroom setting, it's not uncommon for more than one student to raise their hand at a time. Often, professors can scale up the amount of support they provide to students using TAs, but AI may offer an alternative or additional resource. While one student gets help from a professor, another student can begin to receive help using an AI-TA and then discuss more complex questions or personal topics with their professor.⁴⁷

⁴⁶OBourdeau, D. T., Wood, B. L. (2021). Humanistic STEM: From concept to course. *Journal of Humanistic Mathematics*, 11(1), 33-53. Retrieved from <https://scholarship.claremont.edu/cgi/viewcontent.cgi?article=1772&context=jhm>.

⁴⁷For an interesting webinar on how Khan Academy is approaching developing its AI learning tool, "Khanmigo," and incorporating AI into its portfolio, visit this Keynote Address. DiCerbo, K. (2023, August 7). Keynote: Building AI applications at scale. AI x Education. Retrieved from <https://www.youtube.com/watch?v=djE72ds-kcE>.



STUDENT EXPERIENCE

In the rapidly advancing world of educational technology, AI emerges as a critical tool with the potential to significantly elevate the student experience. From enhancing engagement to providing tailored support structures, the applications of AI are vast and continually evolving. While some of these advancements are already integrated into existing technology products, it is incumbent upon vendors to foster inclusivity by setting fair and affordable pricing standards. By doing so, we can ensure that cost does not become a barrier to accessing these invaluable tools, thereby promoting an equitable educational landscape. Although many of the recommendations throughout this section may be partially or entirely available in some form of existing technology products, we chose to include them to promote new ideas and solutions.

As we explore the different facets of the student experience through the lens of AI, this section structures the discussion around CCA's established pillars: Purpose, Structure, Momentum, and Support. This framework allows us to dissect the intricate ways AI can augment the student experience, providing a comprehensive view of its transformative potential.

Guiding our discourse are key questions aimed at unearthing cross-sector opportunities and institutional strategies to enhance the student journey:

"How can we improve the student experience through AI, both at the institutional level and across the postsecondary space? Are there cross-sector opportunities to enhance access to information and facilitate better decision-making?"

Finally, we want to remind readers that no one can inform and help improve the student experience better than students themselves. While the ideas we share below might be exciting, they are still informed by our combined decades of experience in higher education. Regularly convening students and student leaders (e.g., student government, student trustees, or even creating an AI student advisory council) are crucial conversations to inform and influence decisions.

Purpose

Onboarding

Personalized Orientations for Diverse Students: Some colleges offer specialized orientations for student subgroups like TRIO or other special populations. Generative AI, however, presents a new opportunity to customize these orientations even further through online or in-person modules that are more specifically tailored to student identities, interests, or goals. Develop individualized orientation segments for students based on their backgrounds and interests, tailoring the content and support to meet the unique needs of various groups, such as veterans and transfer students, ensuring a smooth and inclusive transition to campus life.

Do Soon: Use an institutionally trained generative AI tool that has access to your incoming students' data. Segment your incoming students into subgroups and customize their onboarding or orientation modules according to their specific and predicted needs. Consider the following questions and remember to validate for equity throughout development and especially prior to launch:

- Based on the profiles of our incoming students, what are some segments of our student population we have not yet considered for orientation content?
- Create a customized "path" through our orientation modules for each student in our newly enrolled class.
- How can we incorporate AI-recommended social engagements (e.g., clubs, activities, events) into our orientations?

Career Exploration⁴⁸

Career Interest Assessment: AI can administer career interest assessments to students, identifying their passions and potential career paths. This information can then be used to suggest relevant academic programs and courses.

Skills Gap Analysis: AI can assess the gap between students' current skill sets (through multiple measures, including resume analysis) and the requirements of various career paths, providing targeted recommendations for skill development and training opportunities.

Simulated Externships for Career Exploration: Utilize simulated externships and virtual job shadowing as an AI-powered tool for students to explore different career paths, providing an initial discovery and assessment of interests, allowing them to gain insights into professions such as accountancy or mechanical engineering to make informed career choices.

Industry Trend Analysis: The same tools that can inform institutions about emerging industries for the sake of new program development can also communicate with students to share updates on job market demands and emerging professions as they progress through their program of study.

⁴⁸We provide additional practices and ideas for transitioning from graduation to the workforce later in this chapter.

Accessibility and Inclusion

Inclusive Language and Content: AI-powered platforms can be programmed to use inclusive language and ensure that educational materials, communications, and resources are sensitive to diverse identities and backgrounds. Much like professors might update their course content to align with Universal Design principles, non-academic staff should also review content to ensure that language and design of resources (e.g., websites, policies, course catalogs) are inclusive.

Prompt Example:

Here is our Satisfactory Academic Progress policy. Update it, simplifying the language so it is more accessible to any reader and defining any important college terminology. Be sure not to remove any important aspects of the policy itself. *[Insert policy by copying and pasting, adding the URL, or uploading a PDF.]*

Enhanced Accessibility: AI can and should be used to improve accessibility for students with disabilities, offering automated captioning, voice commands, and other assistive technologies to enhance learning experiences. Deploy AI to audit curriculum and course materials for accessibility as well. To start, this might include increasing the availability of the following features:⁴⁹

- Keyboard navigation assistance
- Text/image-to-speech
- Color contrast, dyslexia-friendly fonts, and clear language

Adult Learner Engagement and Resources

AI-Enabled Reconnect Program: Develop an AI-driven equivalent of Tennessee Reconnect, offering personalized support and guidance to adult learners seeking to return to education and complete their degrees or certifications.

Data-Driven Adult Learner Engagement Strategies: Utilize AI-developed analysis of census and National Student Clearinghouse data to identify and share the most effective engagement ideas for adult learners, tailoring support and interventions to enhance their success and completion rates.

AI Personal Learning Assistant: Implement an AI-powered personal learning assistant for adult learners that intelligently manages their commitments, schedules, and academic tasks, providing reminders, time management support, and personalized study plans to help them effectively balance school with other responsibilities.

⁴⁹ Henneborn, L. (2023, August 18). Designing generative AI to work for people with disabilities. Harvard Business Review. Retrieved from <https://hbr.org/2023/08/designing-generative-ai-to-work-for-people-with-disabilities/>

Meta Majors, Academic Planning, and Scheduling

Do Now: Depending on where your institution is in its work to implement guided pathways, AI might be a powerful tool to accelerate the upfront work of creating meta majors and aligning them with institutional course offerings. Faculty and academic affairs buy-in and engagement in guided pathways design and implementation is crucial for initiative success and should not be overlooked or eliminated in favor of the speed that AI provides.⁵⁰

- **Designing Meta Majors:** Use machine learning, optimization algorithms, or NLP to analyze academic program groupings and best course sequences, thus creating a new or updated set of data-driven meta majors.
 - **Meta Majors and First Semester Consistency:** Implement a structured approach in meta majors where the first semester of coursework is relatively similar across all programs within the meta major, reducing the risk of excess credits if a student changes their mind. Combine this with a career-focused first-year experience to help students quickly assess if they are in the right major for their interests and aspirations.

Work Toward: There is still much to be desired in the academic planning and degree auditing technology space, especially when it comes to providing students with customized, relevant, and flexible academic plans. We propose several possible applications to enhance the academic planning technology space below.

- **Generative AI for Predictive Academic Plans:** Use generative AI to create full semester-by-semester academic plans, initiated by students or institutions. The process begins with capturing preferences such as pathway, part-time or full-time, day or time preferences, and online or on-site learning. The AI-generated maps can potentially feed into your student information system (SIS), but it would require funding due to the need for internal AI capabilities for data privacy and controls.
- **Intelligent Course Recommendations:** By using AI algorithms, students can receive tailored course recommendations based on their academic strengths, career aspirations, and individual learning preferences.

Enhanced Degree Auditing with AI: Utilize AI to improve degree auditing tools, providing students with clearer insights into their academic progress and requirements to finish their degree faster and stay on track. AI-driven scenario planning can be applied at a larger scale, enabling better support for academic planning and timely degree completion. AI can provide students with visual progress trackers, helping them stay on top of their academic goals and achievements throughout the first year.

⁵⁰ Jenkins, D., Griffin, S. (2019). From pockets of excellence to engaged innovation at scale. Community College Research Center. Retrieved from: <https://ccrc.columbia.edu/media/k2/attachments/guided-pathways-case-study-1-tri-c.pdf>.

- **Automated Progress Tracking:** While some SIS platforms can show students visual reminders of their academic progress through their degrees, not all vendors offer this functionality. Colleges interested in increasing student awareness of progress toward degree completion could use generative AI to automatically conduct degree audits and provide real-time progress displays within the user interface. Additional interventions might be designed based on data from this degree progress tracking such as:

- Create visual guardrails to nudge students back on track
- Alerting an advisor when a student has "stalled" in their progress toward a degree
- Automatically send messages of encouragement when students hit milestones toward their degree.

AI can provide students with visual progress trackers, helping them stay on top of their academic goals and achievements throughout the first year.

- **Credential Progress Tracking:** At most colleges, students must specify a degree to see their progress toward earning that degree. While "what if" scenarios exist in some degree audit tools, colleges explore new forms and types of stackable credentials more frequently than students review their options in a degree audit. Rather than rely on the students to select the degrees they are interested in earning once they have started accumulating any credits, colleges should auto-populate a list of credentials (including microcredentials, certificates, and two- and four-year degrees) that they are on the way to earning. Even further, colleges could use AI to help students understand the possible gaps between their current degree path and additional credentials.
 - We imagine a scenario where a student who is earning an A.S. in Engineering but also has selected most electives that are included in a manufacturing program. Machine learning, constantly searching for commonalities and trends, could alert the student (and even their advisor) that they are only one or two classes away from earning a certificate in advanced manufacturing.
- **Predictive Analytics for Course Load:** AI can assess students' course loads and suggest optimal schedules based on workload, difficulty level, and potential conflicts, leading to a balanced and successful first-year experience. Often, students might be hesitant to share their extracurricular schedules out of concern they will be blocked from enrolling in a full course load. Students should be assured, throughout their interaction with this tool, that the information is purely for "what if" scenario planning, and then recommended additional resources, including scholarship or grant aid (if available) and other tools to help minimize their external conflicts, especially if these conflicts are childcare related or involve working a high volume of hours to afford the cost of college attendance and cost of living.

Early Meta Major Switch Detection

Train an AI-driven early warning system to learn behaviors that indicate when a student might be considering changing their meta major and then offer tailored support and guidance.

Optimized Transfer Student Schedule: Create a schedule for transfer students based on co-enrollment opportunities and the fastest path to degree completion in their area of interest and/or high-demand workforce needs, ensuring a seamless and efficient transition into their chosen academic and career pathways.

Customized Transfer Recommendations: Create customized recommendations for students at community colleges to transfer to selective colleges and universities based on student academic performance. AI's ability to rapidly provide highly customized recommendations can be used to ensure that students learn about opportunities that might seem unattainable but could actually be within reach (e.g., encouraging students to apply to transfer to schools like Princeton that have need-blind or similar policies but might seem financially out of reach to students at a community college who do not know about these policies).

Stackable Credentials and Certificates

AI-Driven Analysis for Stackable Certificates: Utilize generative AI to analyze program requirements from the academic catalog and identify potential stackable certificates. Develop an AI-based recipe that enables easy and quick identification of courses that can be combined to create stackable credentials, empowering educational institutions and students to explore flexible and tailored learning pathways.⁵¹

- **Stackable Credentials Integration:** Utilize data from workforce and labor data sources⁵² to help build stackable credentials within existing four-year programs, enhancing students' employability and career progression opportunities.

Do Soon: Using your existing academic catalog, your institutional LLM, and recent student outcomes data from your academic programs, prompt the tool to begin analyzing the tool for possible new ways to segment existing programs.

Personalized Stackable Program Curation: Implement AI-powered curation of courses from modular components to create personalized stackable programs tailored to the needs and goals of adult learners, enhancing the effectiveness and relevance of their educational journey.

- **Prior Learning Assessment:** AI-powered systems can assess and recognize students' prior learning, work experience, and informal education, allowing them to stack relevant credentials without redundant coursework.
- **Credit Transfer Optimization:** Build an AI platform that can optimize the transfer of credits between different institutions and programs, ensuring that others recognize stackable credentials earned at one institution..

⁵¹ A recent study by IBM found that while the median half-life for skills in the workforce was 10-15 years, it has dramatically shortened to around five years, and even two in some technical sectors. Even if this trend continues to accelerate, expect a sharp increase in demand for upskilling and re-skilling workers. Stackable credentials are one newer approach to meeting these workforce retraining needs.

LaPrade, A., Mertens, J., Moore, T., Wright, A. (n.d.). The enterprise guide to closing the skills gap: Strategies for building and maintaining a skilled workforce. IBM: Research Insights. Retrieved from <https://www.ibm.com/downloads/cas/EPYMNBJA>.

⁵² This might include tools like ONET, the Bureau of Labor Statistics (BLS), and tech vendors like Lightcast.

- **Learning Pathway Analytics:** AI can analyze data on students' learning pathways, identifying common success factors and potential barriers to inform improvements in credential design and delivery.
- **Stackable Credential Portfolios:** AI can help students build and manage digital portfolios that showcase their stackable credentials and make them easily shareable with potential employers.

Momentum

Credit for Competency

Accelerated Competency Assessment for Course Credit: Utilize AI for rapid assessment of career-derived competencies, enabling students to earn course credit based on their existing skills and knowledge. AI can determine the specific modules or components needed to complete courses, allowing for a more targeted and efficient learning experience without having to take the full course.

AI-Guided Credit for Prior Learning (CPL) Support: Develop an AI-driven guided process to assist students in completing the necessary steps and requirements to receive Credit for Prior Learning. AI can provide personalized guidance, resources, and feedback, streamlining the CPL assessment process and facilitating a smoother transition for students with relevant knowledge and experiences.

Competency Assessment and Mapping: AI can assess students' competencies and map them to specific course credits, enabling them to advance in their educational journey based on demonstrated skills rather than traditional coursework.

Predictive Competency Gap Analysis: AI can predict competency gaps for specific career paths and suggest additional learning opportunities to bridge those gaps, aligning students' learning with industry demands.

AI-Driven Remediation Reform and Quality Standards: Consider adopting an AI-based emporium model, inspired by Khan Academy and Instructure, to enhance personalized learning experiences. Collaborating with vendors like Canvas could offer valuable technological support for implementing these reforms effectively.

Multiple Measures

Holistic Student Profiles: AI can create holistic profiles of students, incorporating academic, social-emotional, and behavioral data to better understand their strengths, challenges, and learning preferences.

Data Integration and Analysis: AI can integrate data from various sources, such as academic records, standardized tests, projects, and extracurricular activities, to provide a comprehensive view of students' abilities and achievements.

- **Early Identification of Corequisite Needs:** AI can identify students needing additional support in corequisite courses based on their academic performance and learning patterns.
- **Personalized Corequisite Recommendations:** AI algorithms can recommend specific corequisite support.

Dual Enrollment

AI-Enabled Cross-Institutional Course Tracking: Implement AI systems to facilitate seamless tracking of students' coursework across different institutions, especially for dual enrollment students. AI can integrate and analyze academic data, ensuring comprehensive and accurate records, supporting efficient credit transfers, and enhancing the overall educational experience.

Early Identification of Eligible Students: AI can identify high school students who demonstrate academic readiness for dual enrollment courses, helping to expand participation and access.

Virtual Dual Enrollment Programs: AI can facilitate virtual dual enrollment programs, enabling students from remote or underserved areas to participate in college-level courses offered by partner institutions.

Support

Nudging, Encouragement, and Sense of Belonging

Improved Messaging: Introducing new AI tools will undoubtedly lead to increased communication with students. If your institution has not already, we recommend conducting an audit of your student communications to reduce excess noise for students.

Like the marketing messaging techniques mentioned earlier, college leaders should constantly refine and test the timing, content, and modality of their messaging to students; AI platforms can serve as a low-cost way to begin this work. AI tools should integrate with students' calendars and send proactive notifications about upcoming classes, assignments, and exams to help them stay organized and on track.

Do Now: Audit your student communications. On top of reducing the overall volume of messages sent, especially those sent during peak times, college leaders should ensure current student communication is accessible, concise, engaging, and easy to read. For years, colleges and organizations have used the Gunning-Fog Index to identify a grade level for their written materials and, with it an increase in the use of plain language to ensure that campus messaging reaches all students. Leaders can quickly copy and paste messages into ChatGPT or another LLM and prompt the AI to generate a more readable version or make recommendations.

Prompt Example:

I will copy and paste the text from an email my college will be sending to students. Review the email for jargon, confusing language, or overly complex words. Then, draft a new and improved version of the email. *[Copy and paste text of the email.]*

AI-Powered Mentors: AI-driven virtual mentors can provide 24/7 guidance, support, and encouragement to students, answering common questions and offering resources to enhance the first-year experience. These AI-powered mentors must be designed to escalate interactions, conversations, and observations that suggest a student requires human intervention. CCA's recent work with HBCU Digital Learning Infrastructure (DLI) supports these recommendations.

"Any tech should connect us, [and] our data, to the campus folks who make decisions, will advocate for us, and those who could mentor us in life/career."

-Student from a Primarily Black Community College (PBCC)⁵³

Virtual Inclusive Spaces: AI-powered virtual platforms can create safe and inclusive spaces for students from diverse backgrounds to connect, share experiences, and support one another.

Campus Community Engagement: AI-powered systems can track students' involvement in campus events, workshops, and community service initiatives to understand the level of engagement and its influence on their sense of belonging, including their well-being and academic success.

- **Early Identification of Corequisite Needs:** AI can identify students needing additional support in corequisite courses based on their academic performance and learning patterns.
- **Personalized Corequisite Recommendations:** AI algorithms can recommend specific corequisite support.

Transfer Student Engagement and Resources:

- **Transfer Credit Database:** AI-driven platforms can maintain a comprehensive database of transfer equivalencies and articulation agreements between institutions, making it easier for students and advisors to access up-to-date information.
- **Transfer Credit Evaluation:** AI-powered systems can analyze transfer students' previous coursework and automatically evaluate their credits for equivalencies at the new institution, reducing the time and effort required for manual credit evaluation.
- **Transfer Student Communities:** AI can facilitate the formation of online communities for transfer students, connecting them with peers with shared experiences and offering a support network during their adjustment period.

⁵³ Complete College America. (2023). The digital HBCU: Integrating technologies to power Black student success.

- **Predictive Analytics for Transfer Success:** AI can analyze historical data to predict transfer students' likelihood of success in specific programs and majors, enabling early interventions and support for those at risk.
- **Personalized Transition Plans:** AI can generate personalized transition plans for transfer students, mapping out their academic pathways and providing guidance on course selection to ensure they stay on track toward their degree goals.

Proactive Support and Advising

First-Year Coach: Leverage AI to improve student navigation through registration, financial aid processes, and other administrative tasks by tailoring the steps based on information gathered during the admission process, streamlining procedures, and enhancing the overall student experience. Then, encourage the student to use the AI coach to continue navigating their first year, assisting them in understanding campus culture and processes, providing personalized support, and ensuring a successful transition to college life.

- **Data Note:** This tool should be trained by a subset of the data used to create an institutional LLM. Then, data generated from this coaching tool could be fed back into the institutional LLM to help improve processes and other aspects of the institution that are barriers to student success.

AI-Enhanced Early Warnings and Student Support Outreach: Utilize student surveys and sentiment analysis to identify students needing support. AI can proactively reach out to students based on their identified needs, providing relevant information and resources while respecting data privacy and confidentiality. Alerts can be further informed beyond purely academic performance to include real-time behaviors such as online coursework attendance, participation, and more. Institutions should focus on rolling out these systems in gateway courses to ensure students' learning is not derailed.

Advising Rubrics and Assessment Tools: Develop AI-powered advising rubrics and assessment tools to measure and evaluate student support. These tools can track the effectiveness of advising sessions, identify areas of improvement, and provide data-driven insights to enhance the overall support services for students.

Do Now: Encourage your advising managers to deploy existing AI platforms to create documentation and training materials as soon as possible. These platforms can rapidly provide clear and highly customized job aids to ensure consistency across a department and lead to a more uniform student experience.

Prompt Example:

As the advising director at a community college, I need to develop a comprehensive advising rubric and curriculum to better serve our first-year students. The curriculum will comprise a two-meeting advising series: one before course registration and one within the first month of the semester. The rubric should map onto this curriculum to guide the advisors in effectively evaluating and aiding the students.

- Advising Rubric
 - Create an advising rubric that includes the following key areas:
 - Academic planning
 - Skill and resource awareness
 - Career and transfer planning
 - Personal development
- Two-Meeting Advising Curriculum
 - Map the above rubric onto a sample curriculum for two advising meetings with first-year students. Include the following details:
 - Duration of each meeting
 - Goals for each meeting
 - Agenda points to be covered in each meeting
 - Materials needed for each meeting

Make sure the rubric and curriculum are closely aligned and can serve as complementary tools for the advising team.

AI-Powered Advisor Coaching: The private business sector has been using customer service training tools - and more recently AI-based tools - for years, in which simulated or real customer interactions are recorded and then real-time feedback is captured and shared with the sales representative.⁵⁴ Similar technology can be adapted to support advisors or other front-line staff to improve their customer service or advising skills. These simulations can provide realistic scenarios and feedback, allowing advisors to enhance their skills and effectiveness in supporting students through various situations.⁵⁵

Fine-Tuned, Consistent Advising: Leverage AI to provide advisors with access to even more real-time data around upcoming workforce needs in one-on-one interactions with students. AI can analyze labor market trends, job demands, and industry requirements to offer students tailored guidance on course selections and academic pathways, ensuring their education aligns with real-world employment opportunities. Provide advisors with access to results of career interest assessments, skills gap analysis, and more (mentioned earlier in this chapter) to ensure the student receives unified and consistent messaging and support across both human and AI interactions.

⁵⁴ Paykamian, B. (2023, June 23). Marketing professor uses AI to coach sales professionals. Government Technology. Retrieved from <https://www.govtech.com/education/higher-ed/marketing-professor-uses-ai-to-coach-sales-professionals>.

⁵⁵ VR Training opportunities, as described in Likens & Mower (2023), that focus on student experience and DEI could also reduce bias, increase cultural consciousness among staff, and more.

360 Degree Coaching

Time Management and Study Habits: AI can monitor students' study patterns and time management, providing insights on improving their study habits for better academic outcomes. It can send reminders for assignments and help students prioritize tasks.

Life Skills Training: Develop AI training tools that can focus on a range of student life skills, including financial literacy, time management, interpersonal communication, nutrition, healthy living, emotional intelligence, problem-solving, decision-making, resilience, and stress management.

Basic Needs Support

Students often express anxiety and shame around asking for help when they are basic needs insecure.⁵⁶ Yet, many colleges have invested heavily in resources to help students meet their basic needs. Colleges can use generative AI to proactively identify students who would benefit from this support and give students an anonymous (if the student prefers), judgment-free chat tool that can connect students with the right resources in an empathetic fashion.

AI-Driven Student Support Identification: Conduct composite analysis using AI to identify students' basic needs and the types of support they require based on external data sources such as socioeconomic factors, demographics, and academic performance. This comprehensive approach aims to understand the unique needs of different student groups and tailor support accordingly.

Proactive Support and Outreach: When AI detects a change in sentiment or engagement, it can proactively flag these students for human advisors. The advisors can then reach out to the identified students, providing personalized support, guidance, and encouragement to help address their concerns and re-engage them in the learning process.

Personalized Support Prediction: Utilize AI algorithms and internal LLM data, ensuring privacy through PII protection, to predict the specific support each student needs. The AI can determine the optimal timing for interventions and the appropriate level of support that would benefit individual students the most, fostering a proactive and personalized approach to student success.

- **Food and Housing Insecurity Detection:** AI can analyze student data to identify signs of food and housing insecurity. Based on this information, institutions can offer targeted support and resources to students in need.
- **Personalized Well-Being Plans:** AI can assess students' well-being and mental health needs through periodic check-ins or surveys and generate personalized well-being plans. These plans can include recommendations for self-care practices, mindfulness activities, and resources tailored to individual students' preferences.

⁵⁶ Peterson, N., Freidus, A., Tereshenko, D. [2022]. Why college students don't access resources for food insecurity: Stigma and perceptions of need. *Annals of anthropological practice*, 46(2), 140-154.

Transportation and Logistics Mapper: Enrolling in college can be daunting, especially when considering the number of logistical factors students must analyze to make sure they pick a schedule that will work for their needs. Factoring in public transportation, the distances across or around campuses, institutional transportation schedules (e.g., shuttles), class schedules, and traffic history, generative AI could assist students with optimizing their own schedules so they can get to class on time.

Emotional Intelligence and Well-Being Support: AI-powered chatbots can engage in natural language conversations with students to understand their emotional state and provide appropriate support. The AI can offer stress-reduction techniques, mindfulness exercises, and referrals to campus resources like counseling services.

Collaboration with Community Organizations: AI can facilitate partnerships between educational institutions and community organizations that offer support services, creating a more comprehensive network of resources for students' Emotional Analysis and Intervention.

Career Advising, Post-Graduation, and Transitioning into Workforce

Do Now: Engage with your Career Services Department to begin discussions, if they have not already begun, around the role that AI will play in employment and HR processes. Empower your Career Services leaders to infuse equity and access to AI – which is already deeply part of hiring processes – as much as possible to give students access to the tools they will need to be comfortable with when they begin working after college. Additional practices or examples for applying generative AI to the post-graduation transition into the workforce are detailed below.

Career Portfolio Development: AI can help students build and maintain digital career portfolios, showcasing academic achievements, projects, and skills that align with their desired career paths.

Employer Matchmaking: AI can match students with potential employers based on their skills, interests, and values, facilitating connections and internships that align with their career aspirations. Reduce the harm of traditional elite institution recruitment tactics, where Fortune 500 institutions typically recruit from Ivy Plus institutions, by using AI to better match talent with open jobs.

Interview Preparation and Job Application Support: AI-driven mock interview platforms can simulate real job interviews, providing students with valuable feedback and tips to improve their interview skills. AI-powered tools can offer personalized feedback and optimization suggestions for students' resumes and LinkedIn profiles to enhance their visibility to potential employers.

APPENDIX

Important AI Terminology

Algorithm: A set of rules or instructions a computer follows to perform a task.

Bias: In AI context, this refers to errors in predictions due to flawed assumptions in the learning algorithm. This can arise from issues in the training data or the model itself, and it is a major concern in discussions about ethical AI.

Inference: The process by which a trained machine learning model makes predictions or decisions based on new, unseen data.

Large Language Models (LLMs): These are a type of ML model specifically designed to understand, generate, and respond to human language. They are trained on vast datasets of text and are capable of tasks such as translation, question answering, and text generation.

Machine Learning (ML): A subset of AI, ML involves the use of statistical techniques to enable computers to learn from data. Rather than being explicitly programmed to perform a task, an ML model uses patterns and inferences from data to make predictions or decisions.

Natural Language Processing (NLP): This branch of AI focuses on the interaction between computers and humans through natural language. The ultimate objective of NLP is to enable computers to understand, interpret, and generate human language in a meaningful and useful way.

Neural Network: A type of machine learning model designed to recognize patterns. It interprets sensory data through a kind of machine perception, labeling, or clustering raw input.

Training Data: The dataset used to train a machine learning model, enabling it to learn patterns and make predictions or decisions.

Selected Resources for Understanding Ethics, Equity, and Responsible Use of AI

- The Aspen Institute - [Building and Distributing Artificial Intelligence for Equitable Outcomes: A Blueprint for Equitable AI](#)
- Center for Humane Technology:
 - [Podcast: Your Undivided Attention](#)
 - [Free Course: Foundations of Humane Technology](#)
- [Ethical Institute for AI in Education](#)
- UNESCO Report - [ChatGPT and Artificial Intelligence in Higher Education: Quick Start Guide](#)

Selected Resources for Understanding and Using AI

- Broadview Press: [Talking about Generative AI – A Guide for Educators](#)
- Coursera Course: [Prompt Engineering for ChatGPT](#)
- Data Camp: [How to Use ChatGPT's Code Interpreter](#)
- EDUCAUSE: [Generative AI Primer](#)
- Office of Educational Technology: [Artificial Intelligence and the Future of Teaching and Learning](#)
- Stanford University: [Defining AI](#)
- UNESCO: [Guidance for Generative AI in Education and Research](#)

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Funding for Complete College America's general operations and activities, including the development of publication, is provided through generous philanthropic support. CCA would like to thank its funders, including :

Bill & Melinda Gates Foundation

Carnegie Corporation of New York

Kresge Foundation

Lumina Foundation

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