

# Technology for Academic and Drop-In Advising (Project TADA!)

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## OVERVIEW

As society and culture changes, institutions also must adapt to be more responsive to consumer needs. This also applies to university settings. Universities are increasingly faced with a group of students who are diverse in many ways, including race/ethnicity, ideology and preparedness for college. Therefore, universities must find innovative solutions to meet the *individual* needs of a more heterogeneous group of students. In response, some peer universities, such as Texas A&M, have moved towards the use of technology to customize the student experience.<sup>1</sup> Early and ongoing exposure to technology is often one common denominator amongst a diverse student body. Therefore, this project focuses on the development and use of a mobile app to supplement students' academic advising experiences, which is one means by which universities can begin to customize the student experience.

## RATIONALE

The first question is - *Why focus on academic advising?* The short answer is that there are increasing numbers of nontraditional students enrolled in universities, and unfortunately, these students are at greater risk for dropout or delayed graduation. In their 2017 report on higher education, Fishman and colleagues wrote, "As students with 'nontraditional' backgrounds become more of the norm, traditional support structures, such as daytime-only office hours for advising and student affairs, will likely become inadequate" (p.4).<sup>1</sup> In this first section of the report, we focus on (a) changing student demographics that increase the need for novel academic advising supports, (b) how other universities are currently using technology within academic advising, (c) why a mobile app is a potential solution, and (d) the current academic advising environment at UNC-CH and NCCU that led to the proposed solution of a mobile app.

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<sup>1</sup> Fishman, T., Ludgate, A., Tutak, J., (2017). *Success by design: Improving outcomes in American higher education*. Deloitte University Press.

## CHANGING STUDENT DEMOGRAPHICS

Nontraditional students are the new normal at most colleges and universities throughout the United States. The following demographic trends support this conclusion:

- 44% of university students are 24 years of age or older,
- 30% attend class part-time,
- 26% work full-time while enrolled,
- 28% take care of children or other dependents,
- 52% are first generation students,
- 42% are from communities of color, and
- 18% are non-native English speakers<sup>2</sup>

At issue is that colleges and universities are still trying to determine the most effective ways to meet the unique and diverse needs of this growing group of students; however, current graduation and retention rates suggest that universities are struggling to do so. Based on the latest National Student Clearinghouse report, 30% of students who entered college in 2014 did not return for their second year; in addition, approximately 42% of students are not able to graduate within six years.<sup>3</sup> Specific to the UNC System and students entering as full-time, first-time students in fall 2009, 18% overall did not return in fall 2010 and 37% did not graduate within six year. For the fall 2009 entering undergraduate students, first to second year persistence ranges from a low of 67.5% at NCCU to a high of 95.7% at UNC-CH and six-year graduation rates range from a low of 31.7% at FSU to a high of 90.1% at UNC-CH. In response to changing student demographics and troubling graduation trends, universities have begun to implement changes.

## HOW PEER INSTITUTIONS ARE ADAPTING TO CHANGING STUDENTS

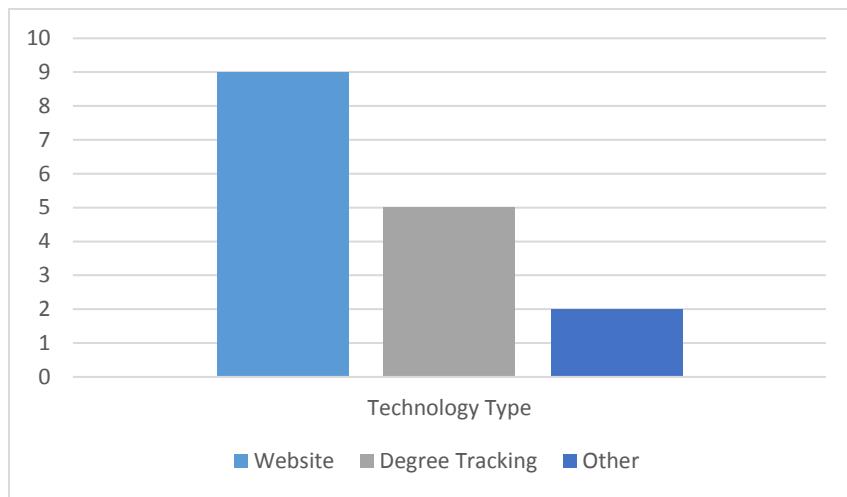
One of the ways that universities are responding to changing student demographics is through increased use of digital services. Thus, using digital means to deliver traditional face-to-face services such as counseling, financial aid or advising. As our project is focused on academic advising, we successfully contacted and interviewed academic advisors at 9 (from a list of 15) peer universities across the continental U.S. to ask how they currently did (or did not) infuse technology into the academic advising experience (See Appendix A). As can be seen in Figure 1, advisors from all 9 universities indicated that students had access to an academic advising website, advisors from 5 of 9 universities indicated that they also used either a commercially-available or custom-built degree tracking / audit system as part of advising to help students track academic progress, and advisors from 2 universities mentioned other types of technology use (i.e., use of a virtual advisor or Skype-based advising sessions). *Importantly, our team found that none of the nine universities were currently using a mobile app for the sole purpose of academic advising (note: Texas A&M University does provide students access to an app that includes other student services), but all advisors we interviewed agreed that such technology would be useful and beneficial for academic advising purposes.*

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<sup>2</sup> McNair, T. B., Albertine, S., Cooper, M. A., McDonald, N., & Major Jr, T. (2016). *Becoming a Student-Ready College: A New Culture of Leadership for Student Success*. John Wiley & Sons.

<sup>3</sup> National Student Clearinghouse Research Center, *Snapshot report—Persistence and retention*, May 3, 2016, <https://nscresearchcenter.org/snapshotreport-persistenceretention22/>.

*Figure 1. Academic Advising Technology Use at Peer Universities.*



## **USING A MOBILE APP TO DRIVE CHANGE IN ACADEMIC ADVISING**

The second question is – *Why use a mobile app for this problem?* First, we have proposed a mobile app because of the ubiquitous nature of technology in society. For instance, even among families from lower socioeconomic backgrounds in the U.S. (household income of  $\leq \$30,000$ ), 75% have a mobile phone.<sup>4</sup> Second, reports on higher education clearly indicate that students want access to more digital services.<sup>5</sup> Our project capitalizes on these trends by proposing the development of a Smartphone-based, mobile app to facilitate students' academic advising experiences.

## **CURRENT ENVIRONMENT AT UNC-CH AND NCCU**

Before proposing a solution to the problem, it is helpful to understand the current academic advising landscape at both UNC-CH and NCCU. Based on interviews with administrators involved in academic advising at both universities, we learned that advisors wanted to spend more time using their skills to guide and advise students, but had difficulty doing so because of high advisor to student ratios (approximately 1:450 at UNC-CH) and software that was either unwieldy or lacking in sophistication. Thus, while advisors indicated that a mobile app or other technological solution would be well-received, there remain other foundational changes that should be addressed for students and advisors to fully realize the benefits of any new technology.

<sup>4</sup> Smith, A. (2010). Americans and their gadgets. *Pew Internet Research*.

<sup>5</sup> Fishman, T., Ludgate, A., Tutak, J., (2017). *Success by design: Improving outcomes in American higher education*. Deloitte University Press.

## SOLUTION

To become drivers of change, universities must first ensure they are meeting student expectations. According to a report by the research firm IHS Markit, the number of smartphones in circulation will reach 6 billion by 2020 and “global consumer spending on mobile apps is set to reach \$74 billion by 2020”.<sup>6</sup> As such, more and more students will rely on smartphones and mobile apps in their day-to-day lives and will want to use those devices to manage their academic life as well. Academic advisors also will face challenges if working with outdated systems and large student-to-advisor ratios. A mobile app that allows advisors to interface with students in real time and provide accurate and tailored information would assist students and advisors in meeting a myriad of challenges. In this section of the proposal, we describe Project TADA (Technology for Academic and Drop-in Advising), or rather the features of our proposed mobile app that would allow NCCU and UNC-CH to become drivers of change in student academic advising.

UNC-CH and NCCU are not unique in facing challenges related to meeting student expectations, delivering timely and accurate advising services to students, and improving graduation rates. Therefore, both institutions would benefit from an advising mobile app. An advising mobile app has the potential to meet many current needs, while allowing flexibility to evolve with student needs and wants. We propose that the mobile app should initially provide features to prospective and current students (See Appendix B) as well as academic advisors (See Appendix C). Figure 1 provides a menu of features that would be included on the mobile app.

### MOBILE APP FEATURES FOR CURRENT AND PROSPECTIVE STUDENTS

Using TADA, current students would be able to track their own degree progress through the advising app. The advising app would allow students to see what classes they have completed toward their degree, what required courses they still need to complete and which courses they can take as electives to complete their degree requirements. An interactive ‘roadmap’ would help students to see their path to graduation by allowing them to create scenarios through choosing classes and then seeing how those choices would affect the time it takes to complete their degree. The advising app would have a “calendar” with alerts that would remind students of important dates, such as course enrollment or drop dates, or required meetings with their academic advisor (See Figure 4). In addition to the calendar, all new students would receive a “to-do list” of items that new students must complete (See Figure 5), including connecting with their academic advisor. Students would have the ability to modify and update this list each semester they are enrolled. Through the “scheduler”, students would be able to schedule an in-person or a video meeting with their advisor (See Figure 3). Further, the advising app would allow students to “chat” with their advisor in real time to allow for quick questions that can be resolved without a face-to-face meeting (see Figure 2).

An advising app also would be useful to prospective students who are exploring their degree interests. Another TADA feature is a “career quiz” would allow prospective students to explore their degree options based on their interests. An interactive quiz might ask students to select a personality trait that best describes them or a subject that they find interesting. The advising app would then provide students with a list of degree programs that best suits their response. These features would provide students with more control of their academic journey by enabling them to stay on track and in the right courses. As a result, advisors could spend less time engaging in bureaucratic tasks and more time helping students to explore their interests and career options.

### MOBILE APP FEATURES FOR ACADEMIC ADVISING

Similar to students, academic advisors would be able to use the mobile app to chat or video conference from their smartphone or computer allowing advisors to more quickly respond to student needs. The advising

<sup>6</sup> Kharpal, A. (2017, January 17). Smartphone market worth \$355 billion, with 6 billion devices in circulation by 2020: Report. Retrieved from <https://www.cnbc.com/2017/01/17/6-billion-smartphones-will-be-in-circulation-in-2020-ihs-report.html>

app also would provide academic advisors' access to each students' academic record in order to easily track degree progress. In addition, academic advisors would have access to analytics based upon the student's degree progress which would help advisors identify students that are at risk for not graduating on time (See Figure 6). Finally, the advising app would provide advisors with up-to-date information from the Bureau of Labor Statistics Occupational Outlook Handbook so they can provide guidance for students regarding their career interests (See Figure 7). Advisors would be able to access the median pay, job outlook and required education and experience for thousands of jobs across the United States.

### **MOBILE APP FUTURE USERS**

The launch of an advising app at NCCU and UNC-CH should be immediately useful for prospective and current students as well as academic advisors. Future users of the advising app could include parents, provided students grant permission for parents to view their degree progress. We also envision that the career quiz and degree program information could be useful for high school counselors and college recruiters to help prospective students decide which college to attend and/or which degree to pursue.

Audience	Features	Timeframe
<b>Students</b>	Chat with Advisor ; Schedule Advising Appointment Degree Progress; Career Test Explore Degree Programs Calendar Alerts; To Do List; Link to Sakai	Current
<b>Prospective Students</b>	Career Test Explore Degree Programs	Current
<b>Advisors</b>	Career Trend Data Student Degree Progress Chat with Student	Current
<b>College Recruiters, Guidance Counselors, Parents</b>	Career Test Explore Degree Programs Calendar Alerts To Do List	Future

### **MOBILE APP SECURITY AND ACCESSIBILITY**

It is important to note that a mobile advising app that allows advisors and students to access confidential student records would require appropriate security measures to comply with FERPA. The advising app would need to include secure logins to protect from information hacking. In addition, academic advisors would need internal policies to ensure that they access student information through the appropriate firewalls. The advising app also should be accessible to individuals with disabilities. UNC-Chapel Hill's Digital Accessibility Advisory Team (DAAT) would be a required resource throughout the creation and implementation of the advising app.

## PATHWAY TO THE SOLUTION

Making TADA a reality for students and advisors requires successful execution of a technology project. This section of the proposal focuses on how we get to our proposed solution and who would benefit from the use of a mobile app for advising.

### KNOW WHY, SAY WHY

A successful project begins with knowing why it is worthwhile. The end goal of almost all our work within university contexts is service to students. Still knowing why the work is meaningful will help to motivate project team members as they embark on mobile app development. A project charter is one useful tool that can be used to indicate to the team why the project is valuable. Below are some examples – negative and positive – that may go into a project charter.

Negative Example	Positive Example
We are beginning a project to reconcile curriculum data in the catalog and web site so that the data will be accurate in all places.	We are beginning a project to reconcile curriculum data in the catalog and web site so our students can easily follow the requirements to graduate.
We are beginning a project to put advising data in a mobile application so that students can access the data on their phone.	We are beginning a project to make advising information available and convenient so our students can easily plan their academic selections and graduate on time with a degree that best meets their interests.

### ENSURE SUPPORT

Leadership support is critical to the success of a project that needs input from many areas of the university. A project charter also should identify the university leaders who actively support the project, can negotiate conflicting priorities and can secure the resources - time, talent and technology - needed for success.

### TIME

The project leader, with input from the subject-matter experts, lists the project tasks and the estimated time to complete. Sufficient time is required to complete each of these tasks successfully or else the advising application is at risk of providing inaccurate data to students or of not functioning properly.

### TALENT

In addition to a project leader and the app developers, talent from subject areas such as academic departments, registrar's office and advising will need to comprise the project team. We recommend this multifunctional team review the curriculum rules, prioritize and test features on the mobile application and help select the best team – vendor or in-house staff – to build the application. For the duration of the project, the project leader and team members need support to allocate a portion of their work week to their project tasks.

### TECHNOLOGY

Technology refers to the development of the actual app and to the infrastructure that supports it. Infrastructure may include database servers to house the data, network bandwidth to facilitate sufficient speed when using the application and security infrastructure that protects student records from unauthorized access.

## PHASES

We propose the project be divided into three phases (i.e., foundation, RFP and mobile app) and two to three potential subprojects or tangents.

### FOUNDATION

The foundation of advising information is curriculum data. Faculty, department chairs, program directors and other stakeholders can be heavily invested in curriculum requirements. The balance between academic rigor, depth/breadth in curriculum and efficient paths to graduation is vital. For this reason, we recommend that the resources dedicated to the Foundation phase should be internal campus staff as opposed to external consultants or a contracted agency. Internal staff can share the same goal of ultimately serving students' best interests and can build cross-functional relationships that ease the anxiety that comes with change.

### RFP – BUY VS. BUILD

The Request for Proposal (RFP) process is the opportunity to identify what features and functionality of a mobile app are most important and who is best positioned to create the product. It is an exercise in due diligence to ensure goals are understood and developers can deliver on those goals. There are several vendors in this space and there is in-house capability. Proposals received should be evaluated against criteria such as cost, demonstrated past success, ability to integrate with campus systems, technical support, customer service references, security protocols, etc. A subset of proposals would be invited for product demos and presentations to the selection committee. The committee then compares capabilities and cost by an outside vendor with in-house resources and decides to contract for the service (buy) or to have an in-house team develop (build) the app.

### MOBILE APP

Developing the mobile app is the reward after the other phases are completed (or close to completion). Depending upon technical capacity and resources, this phase can proceed relatively rapidly. Students, in the form of focus groups or surveys, can participate in reviews of Beta versions. Operations areas who benefit from the app – faculty, advisors, department chairs, and registrars – can participate in user acceptance testing (UAT). The end of this phase is a functional app, assisting students with advising needs.

Phase	Description	Resources	Timeline Estimate
<b>Foundation</b>	Build the curriculum foundation. Ensure all of the “rules” for graduation are accurate and consistent in all forums.	Internal: Project Lead; Analyst Academic Departments (all) Registrar Office; Advising Office; IT (Content Management); IT (Degree Audit)	6 months to 1 year, coordinate with catalog publication dates
<b>RFP</b>	Request for Proposal - Define what features are desired for student's navigation of curriculum. What additional features are needed? What needs to be built and what needs to integrate with existing campus technology like content-management, degree-audit or ERP?; Solicit proposals for solutions, timeframe and cost.	Internal: Project Lead; Academic Departments (representative) Advising Office; Registrar Office; IT Legal/Purchasing Admissions/Transfer Evaluators	6 months to prepare, submit and review external proposals versus in-house capability. Work could start before the first phase is complete.

<b>Mobile App</b>	Build and publish the mobile app with ability for students to seamlessly review curriculum requirements and other desired features identified in the RFP.	Internal or External developers, depending on comparison of RFP responses to in-house capability (build vs. buy) Academic Departments Advising Registrar Office	3-12 months depending on desired features
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Potential subprojects or tangential projects may be identified in the course of working toward the mobile app. These are projects that are not directly needed for the mobile app, but that may enhance the value of the mobile app to users. Examples:

Potential Subproject	Description	Relationship to Mobile App
<b>Curriculum review</b>	Review curriculum rules that may be impeding student progress to graduation. For example, requiring 124 credits for a bachelor's degree means students have to maintain an average of more than 15 hours per semester to be on track for graduation in 4 years. Reducing this requirement to 120 would help students but will require negotiation with academic departments and curriculum committees. A limitation on the number of credit hours that can be taken via distance education may be reviewed. If distance education quality is the same as in-person quality then this restriction could be removed.	Building the foundation of curriculum rules is required for accurate advising. Inevitably discussion will go to the reason for some rules. This discussion should not impede progress to the app, but can also lead to positive outcomes for students. Simplifying curriculum rules can be managed as a separate project either concurrently or sequentially with the main project.
<b>Content Management System (CMS)</b>	If one does not already exist, then a separate project may include looking for a solution that manages catalog content. This centralized system would then feed content in the catalog, web pages, academic department pages and advising checklists.	The mobile app depends on accurate content. Having a CMS may ease the maintenance of content but can be handled as a separate project.
<b>Degree Audit</b>	If one does not already exist, or if one exists and can be updated then implementing a degree audit system that essentially confirms students have met degree requirements prior to graduation may also be a desirable project.	The rules for the mobile app and for a degree audit system would be the same so there can be efficiency in work here. The degree audit could be part of the mobile app RFP or it could be distinct, depending on what capability the university already has.

## BUDGET

Expenses for Project TADA will primarily be in the form of human resource hours. Those are approximated by project phase.

Phase	Resource	Estimated Cost	Estimated Duration	Estimated Total \$
Foundation	Project Lead	0.75 FTE * 100K	2 years	75K
	Analyst	0.75 FTE * 70K	1 year	52.5K
	Developer	0.2 FTE * 110K	0.5 years	11K
	Subject Area Experts	4 FTE * 60K	0.8 years	192K
	Total			≈\$300K
RFP	Project Lead	0.2 FTE * 100K	0.5 years	10K
	Analyst	0.25 FTE * 70K	0.5 year	9K
	Developer	0.1 FTE * 110K	0.2 years	2K
	Subject Area Experts	1 FTE * 60K	0.5 years	30K
	Total			≈\$50K
TADA	Project Lead	0.8 FTE * 100K	0.8 years	64K
	Analyst	0.8 FTE * 70K	0.8 years	45K
	Developer	2 FTE * 120K	0.5 years	120K
	Subject Area Experts	2 FTE * 60K	0.3 years	36K
	Total			≈\$250K

Technology infrastructure also may need to be added. Ultimately, expense would depend on current capacity versus the needed capacity – servers, network, databases – required for TADA.

## WHO TADA BENEFITS

The aim of the mobile app for advising is to put information into students' hands. Project TADA makes accessible the information needed to ensure graduation requirements are fulfilled and to help students assess their preference of majors and career choices. All stakeholders in student success, as measured by on-time graduation and transition from graduation to workforce and, specifically university leadership, advisors and students benefit from TADA.

## INTENDED AUDIENCE FOR REPORT

The primary audience for this report is academic advisors working at both UNC-CH and NCCU because a mobile app would directly impact their work. Additional audiences include the university planning teams charged with allocating budget, technology and human resources to advising. Further, the teams charged with student retention such as, the Office of Undergraduate Retention Office of the University Registrar, and the Carolina Covenant and Achieve Carolina Scholars Programs, may benefit from this technology.

## INTENDED TARGET FOR SERVICE

Ultimately, students would be the direct beneficiaries of a technology-infused academic advising experience, if the universities carry this idea to fruition. Academic advising staff and administrators within the UNC system indicated that it may be more feasible to initially target a specific group of students for this project (e.g., students at higher dropout risk due to low GPAs, or first generation students) before launching it with the entire student body.

## MEASURING SUCCESS

The inspiration for such technological support systems emerges from an awareness of advising advancements introduced by various organizations. Project TADA will have many avenues to explore for measuring success. Those avenues include measuring the mobile app's data analytics, enhanced student-advisor relationships, and finally the UNC System's strategic plan metrics.

With the design of a new mobile app, each university should utilize the reporting features provided by mobile app's data. We recommend that both UNC-CH and NCCU analyze the app's number of users, session length, frequency of use as well as the exit rate off each of the app's subpages. Measuring the retention rate, or frequency of use, will allow universities to create better targeting opportunities and personalization of the app experience for both students and advisors.<sup>7</sup>

In addition to basic app metrics, it is important to understand and measure the app's larger impact, in particular, how it affects the quality of the student-advisor relationship. Recently, two universities invested in examining the impact of enhanced student advising technologies on the student-advisor relationship. George Mason University's Department of Psychology contracted researchers to analyze why students face difficulty in navigating the academic advising process, and determined that minor adjustments to current practices greatly enhance students' experiences. From the student's perspective, poorly designed tools prevent success by not allowing the student to reference materials when academic advising is not available.<sup>8</sup> Thus, it is vital that the mobile app is functional and supplements but not replaces the student's advising experience. The other important takeaway from this example is this University's willingness to analyze current advising strengths and weaknesses in order to enhance current practices. We believe the use of mobile app analytics would allow both UNC-CH and NCCU to improve upon this example. As stated, the end goal should be improved student-advisor relationships, and a mobile app could accomplish this by making tasks more manageable for the advisor so he or she has the time to focus on advising, and by allowing students to have a more customized advising experience.

In addition to George Mason, in 2013, the University of Kentucky published findings from a survey of students enrolled between 2009 and 2011 on their advising attitudes and needs. Their goal was to design components to automate an academic advising support system that would help enhance the advisor-student relationship. The software developed from this survey was not designed to replace face-to-face advising, but to provide students a starting place in their conversations with advisors. In fact, one of the key reasons we use face-to-face advising models is to involve students in a dialogue about their academic and career journey.. Thus, we propose, as did university officials at George Mason and Kentucky, that the mobile app be used to enhance current academic advising efforts, which should contribute to improved student-advisor relationships.

Finally, advancing advising technology at both UNC-CH and NCCU will allow both universities to increase degree efficiency and graduation rates. This metric is one of the key components of the University of North Carolina System's Strategic Plan: *Higher Expectations: The Strategic Plan for the University of North Carolina, 2017-2022*.<sup>9</sup> The inclusion of web-based and mobile apps for advising should contribute to degree efficiency by providing students and advisors ready access to degree progress information, allowing more options for meeting in order to have important questions addressed in a timely manner, and putting relevant content all in one place for ease of access. In 2011, The American University of Beirut in Lebanon

<sup>7</sup> AppDynamics (Publication). (2015). doi:<https://www.appdynamics.com/media/uploaded-files/1432066155/white-paper-16-metrics-every-mobile-team-should-monitor.pdf>

<sup>8</sup> Diederiks, Y., & Figueroa, I. (2016). The Usability of Academic Advising Forms. *Human Factors and Ergonomics Society*, 1384-1388. Retrieved October 18, 2017.

<sup>9</sup> University of North Carolina General Administration. 2017. "Higher Expectations: The Strategic Plan for the University of North Carolina, 2017-2022." Accessed May 31, 2017. [https://www.northcarolina.edu/sites/default/files/unc\\_strategic\\_plan.pdf](https://www.northcarolina.edu/sites/default/files/unc_strategic_plan.pdf)

found that 90% of students utilizing web-based advising technology found it effective, and 96% indicated that it provided them with an increased awareness of the curriculum offered.<sup>10</sup> Importantly, the study authors also emphasized that online/web-based advising systems are only as good as the information programmed into that system. Therefore, it is important that ongoing support and resources are provided to keep any developed mobile app functional, up-to-date and user-friendly.

Finally, improving students' knowledge regarding their degree progress should allow them more time to reflect on other opportunities they may want to take advantage of while at the university to make them more attractive to potential future employers. Those options include high impact practices such as study abroad, participation in undergraduate research or co-curricular activities. Both UNC-CH and NCCU are interested in involving more students in these high impact activities – decreasing student worry about degree progress while providing easier and more efficient access to academic advisors who can make students aware of such activities allows for optimal use of a technology-infused advising experience.

## CONCLUSION

Students are changing and universities must also change to be more responsive to their needs. The use of technology allows one means to meet the individual needs of an increasingly diverse group of students. Project TADA proposes a solution to the challenges many students and advisors currently face within the academic advising context. While there are important steps that will need to be taken to reach this solution, the use of a mobile app to facilitate the academic experience should lead to improved outcomes for students and advisors.

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<sup>10</sup> Feghali, T., Zbib, I., & Hallal, S. (2011). A Web-based Decision Support Tool for Academic Advising. *Educational Technology & Society*, 14(1), 82-94.

## Appendix A

Table 1. Responses to mobile app survey from peer universities.

Peer Universities	Academic Advising Contact Information	What technology does your academic advising office currently use to interact with students?	Do students have access to a mobile app that can be used to connect with the academic advising office?
NC State	919-515-8130	Virtual Advisor: a student can send a question to askadvisor@ncsu.edu. NC State also has walk-in Advising and a list of apps on their website that may be helpful to students.	No
East Carolina	252-328-6001	Avising Contact list on the website. Students can email or call the Advisor for the department that they are looking for.	No
UNC Charlotte	704-687-8622 Transfer to Academic Advising	Website: Advising.uncc.edu.edu. To make an appointment with an advisor visit My UNC Charlotte-Select Starfish-Select My Success Network	No
Appalachian State University	828-262-6987	Website for Advising: advising.appstate.edu	No
NC A&T State University	336-334-7855	Website for advising: ncat.edu/coe	No
University of Texas - Austin	Michael Raney, Assistant Dean, College of Natural Sciences	Email, secured academic notes and online advising worksheets, use Facebook and Twitter. Facebook- CNS Advising Twitter- @CNS_Advising.	No
University of Virginia	Kathryn Densberger 434-924-1285	Have a custom-built system that allows faculty advisors to see the list of advisees & schedules appointments. Use PeopleSoft for Degree Tracking	
Johns Hopkins		Students may schedule a Skype meeting with their advisor.	No
Clemson University	Aaron Howard (Asst. Director of Advising for 1 of the Colleges)	Have IROAR that's web-based, but not specific to advising. Sort of all in 1 shop for students (e.g., registration info, student services). Seems more local advising with email if students want to set up an appt. Use degree tracking software.	No

Table 1. Continued

Peer Universities	If yes, then what does it allow the student to do? Do you think it's helpful?	If no, do you think a mobile app would be helpful to support academic advising?	Additional Notes
<b>NC State</b>	N/A	Couldn't speak on whether it would be beneficial.	Student Worker. She answered the questions but the Staff was in a meeting.
<b>East Carolina</b>	N/A	Yes	You can do it one of two ways. You can have a mobile set-up like the State Employees Credit Union where you can sign up to the mobile site or the full site. Or you can have a app that will be more phone friendly for the new generation of students coming in.
<b>UNC Charlotte</b>	N/A	Yes	I think it would be beneficial because the students use cell phones for everything.
<b>Appalachian State University</b>	N/A	Yes	
<b>NC A&amp;T State University</b>	N/A	Yes	They would love to see the App when it is developed.
<b>University of Texas - Austin</b>	N/A	Yes	Would like to see app features including short, concise, video modules like a frequently asked questions page. The platform should have students as the narrator to increase viewer interest and to add value. Easy to find navigation bar. Calendar of deadlines and upcoming events relevant to the student population. How to contact advisors and other important staff (email addresses, office addresses, etc.) Student Handbook and FAQ page.
<b>University of Virginia</b>	N/A	She's going to find out if EAB is mobile-based.	Considering moving to EAB (Education Advisory Board) Student Success Collaborative. Allows student demographic data to be entered & used to help identify red flags. Some faculty felt it was too "big brother", but features can be de-coupled. Has built-in appointment system, waiting room management, and allows faculty to "converse" about a red-flagged student. UVA wants to move to "total advising" model.
<b>Johns Hopkins</b>	N/A	Yes	
<b>Clemson University</b>	N/A	Yes, it seems that what students want nowadays. Great idea. "Digital one stop shop"	Considering moving to EAB (Education Advisory Board) Student Success Collaborative. Allow faculty to examine class trends at individual student level (e.g., if student got a C in a course, then could compare to other students how have taken the same course) in order to identify at-risk students. Includes an online appoint system.

## Appendix B

### Mobile App Images of Student Features

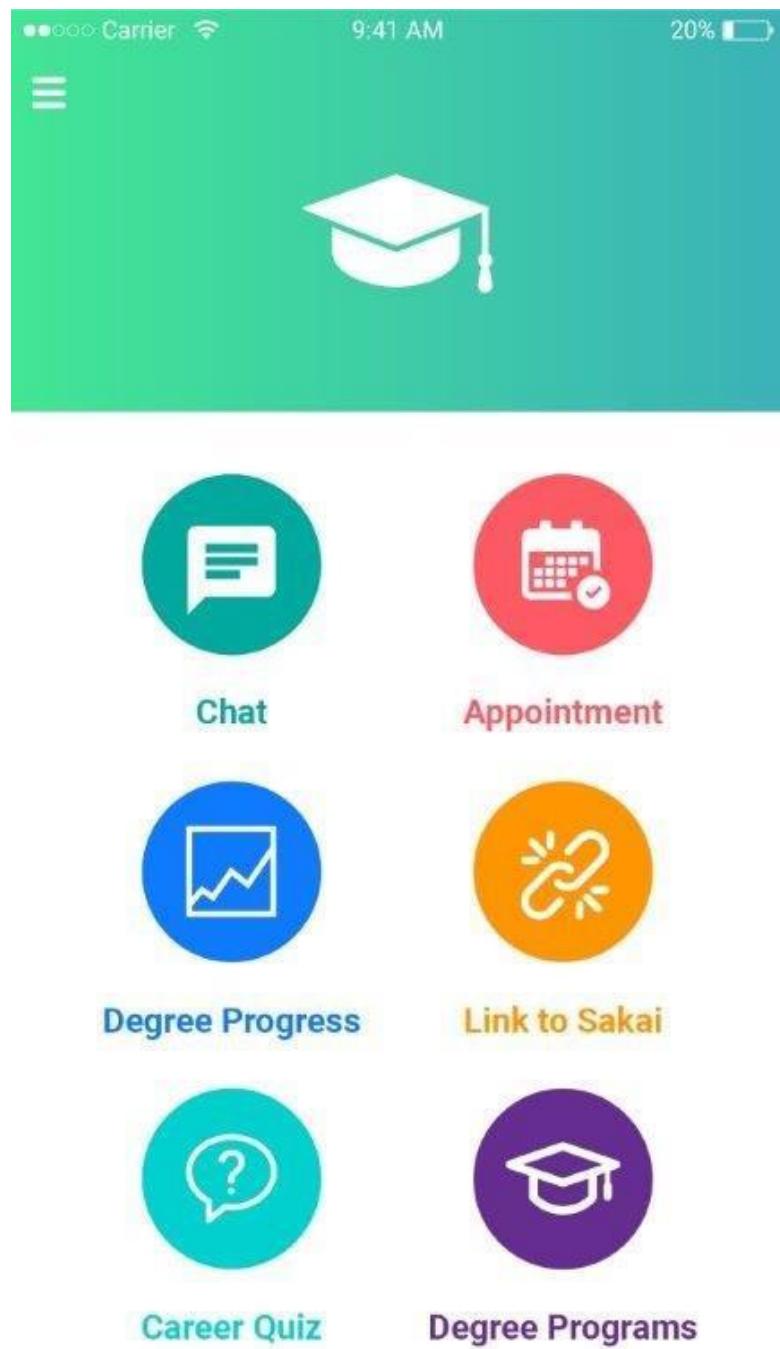


Figure 1. Mobile app menu page with links to available student features.

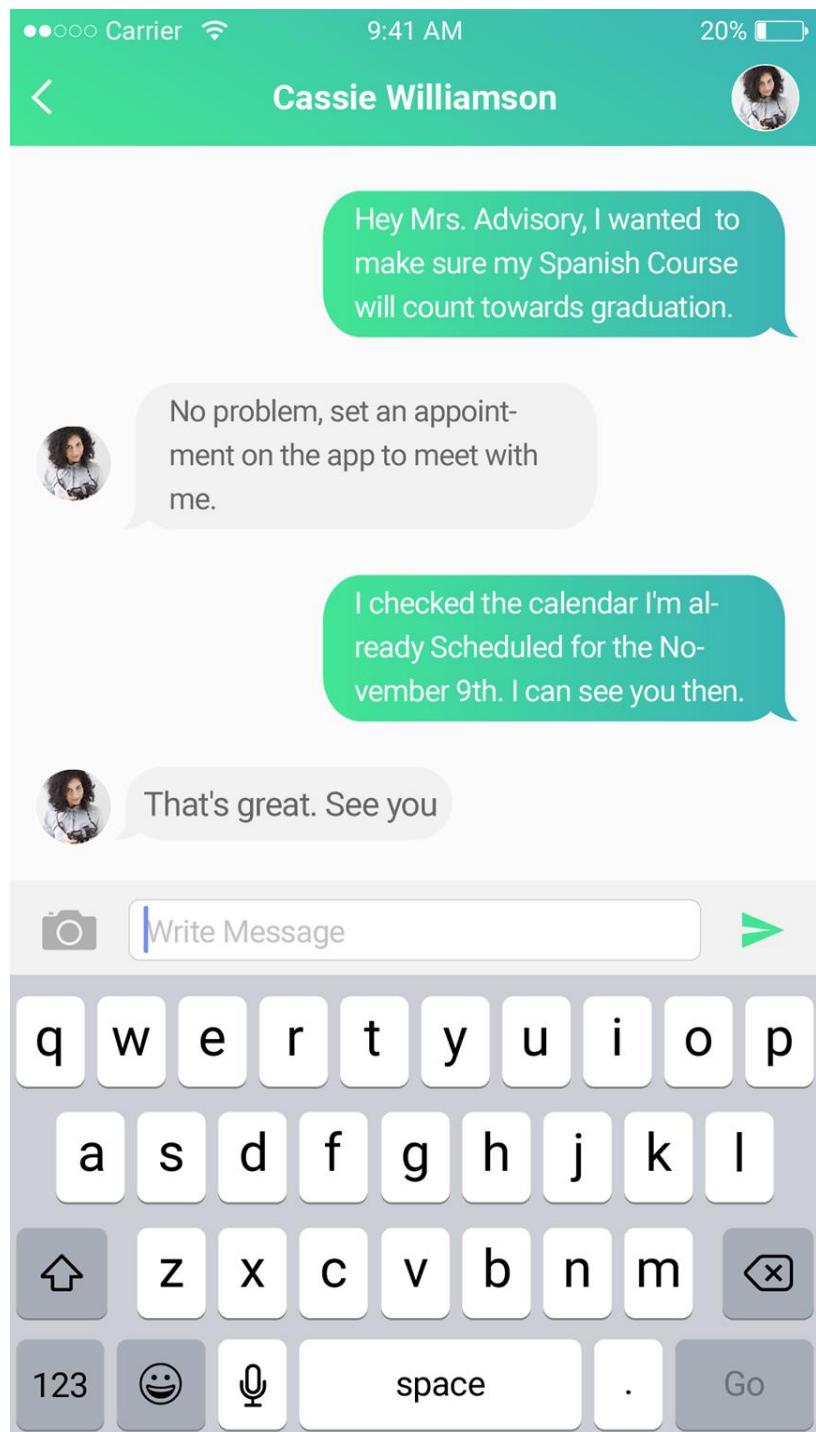


Figure 2. Advisor chat feature allowing current students to chat with an academic advisor.

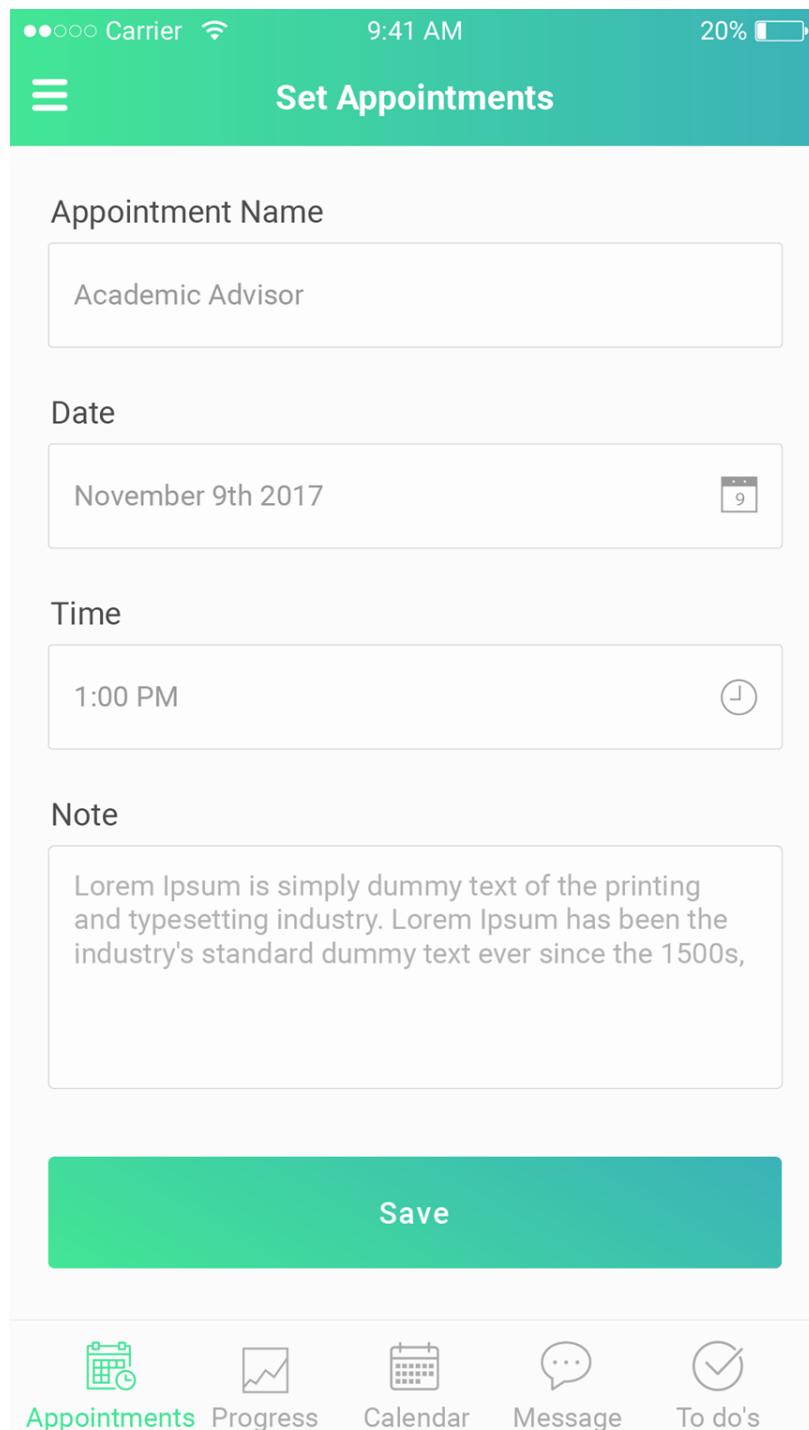


Figure 3. Scheduling feature that allows students to schedule both in-person and face time meetings with an academic advisor.

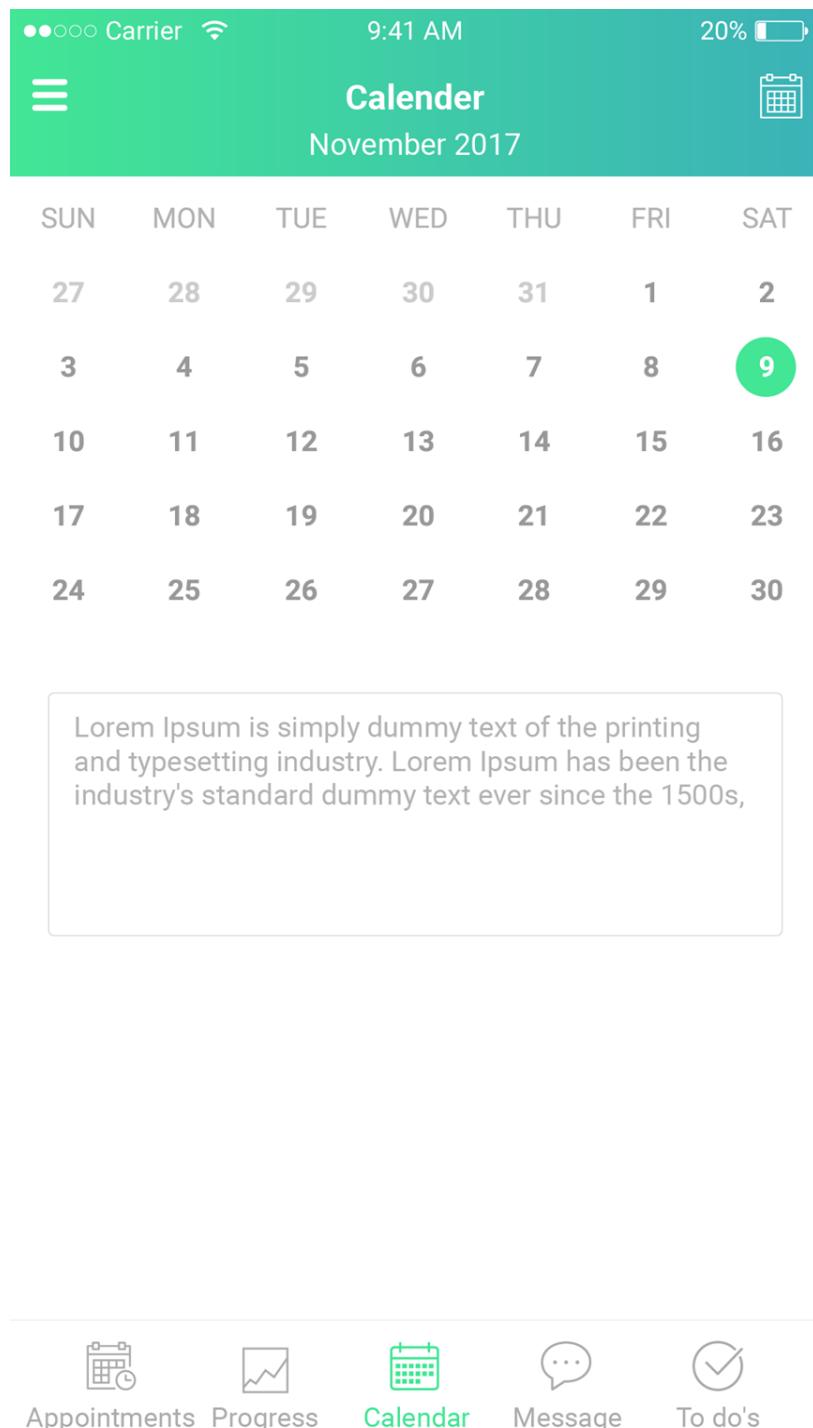


Figure 4. Calendar feature displays meeting reminders.

The screenshot shows a mobile application interface titled "To Do List". At the top, there is a header bar with the text "Carrier" and "9:41 AM" on the left, and "20%" with a battery icon on the right. Below the header is a navigation bar with three horizontal lines on the left and the text "To Do List" in the center.

The main content area is divided into sections for different academic years:

- First Year Students**
  - Orientation** 10:00 AM  
November 9th 2017  
Lorem Ipsum is simply dummy text of the printing and typesetting industry.
- First Semester**
  - Before fall semester begins** 10:00 AM  
December 15th 2017  
Lorem Ipsum is simply dummy text of the printing and typesetting industry.
  - First half of first semester** 10:00 AM  
January 20th 2017  
Lorem Ipsum is simply dummy text of the printing and typesetting industry.
  - Second half of first semester** 10:00 AM  
February 5th 2017  
Lorem Ipsum is simply dummy text of the printing and typesetting industry.
- Second Semester**
  - First half of second semester** 10:00 AM  
March 15th 2017  
Lorem Ipsum is simply dummy text of the printing and typesetting industry.
  - Second half of second semester** 10:00 AM  
April 20th 2017  
Lorem Ipsum is simply dummy text of the printing and typesetting industry.

At the bottom of the screen, there is a navigation bar with five items: "Appointments" (calendar icon), "Progress" (graph icon), "Calendar" (calendar icon), "Message" (speech bubble icon), and "To do's" (checkmark icon). The "To do's" item is highlighted in green.

Figure 5. To-do list feature with important reminders for students.

## Appendix C

### Mobile App Images of Advisor Features

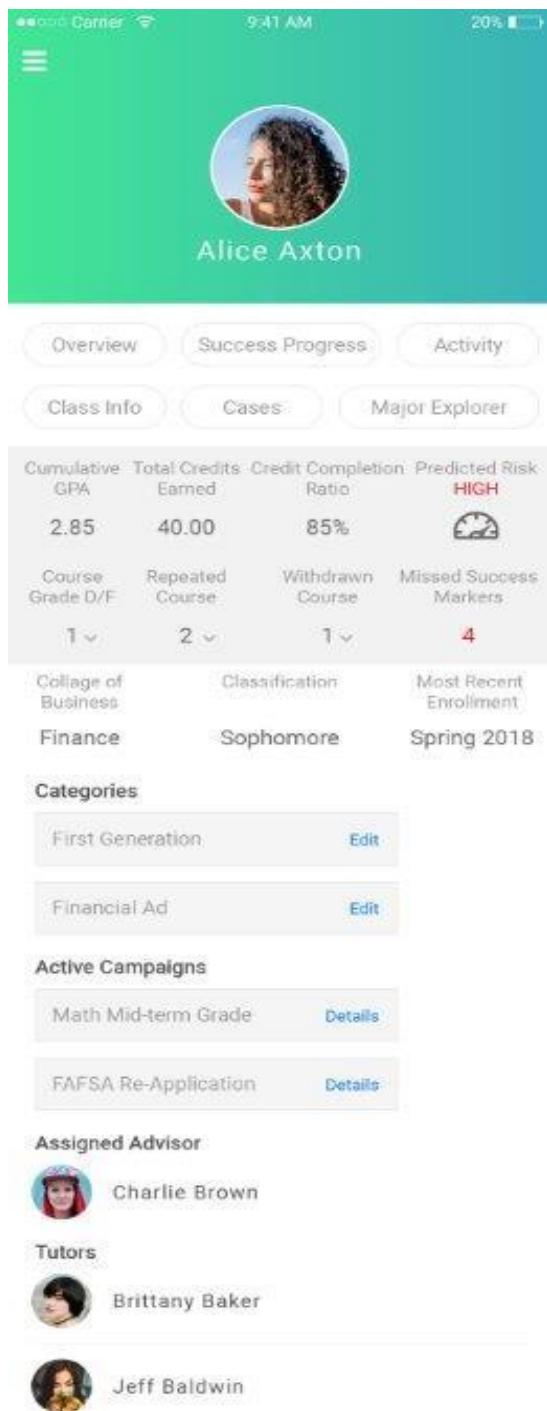


Figure 6. Student degree progress for academic advisors featuring analytics to determine student risk of not graduating on time.

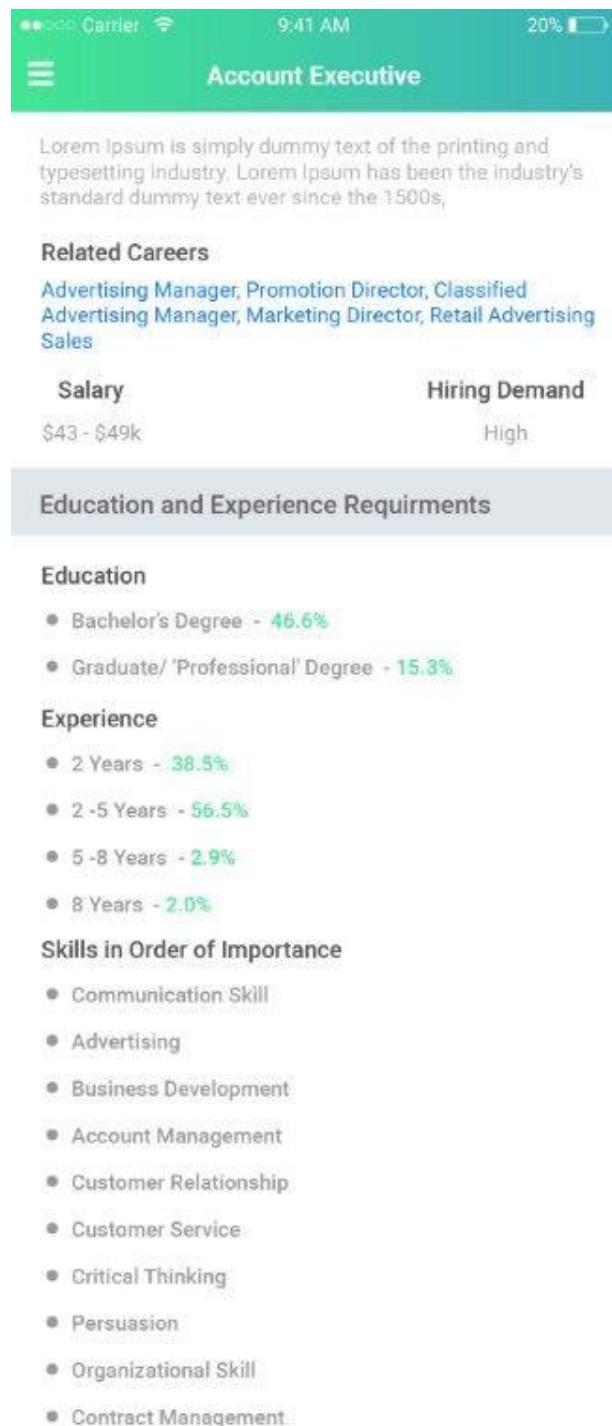


Figure 7. Career trend data sourced from the Bureau of Labor Statistics Occupational Outlook Handbook.