01 Background Research and Needfinding Plan

Team EduCAUtion
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Project Abstract

Our group is interested in exploring **how academic burnout is identified and managed by faculty and students.** From our literature reviews and exploration of preexisting products within this space, we've found that there is significant research in describing the prevalence of academic burnout and its highly detrimental consequences (to students' health and success). We discovered that burnout can be a result of cynicism among students, homogeneity in the composition of university faculty, and external events e.g. economic depressions leading to stagnant job markets. In addition, many people of all socioeconomic backgrounds feel that work and productivity are directly tied to personal identity.

We were not able to find many products or resources specifically targeting the reduction of burnout, though we were able to identify a few services that indirectly help to alleviate burnout symptoms. Given the wide demographic scope of populations affected by academic burnout, ranging from high school students to higher education students (including those with families and other major responsibilities beyond academia), we believe that a successful project in this domain would be extraordinarily impactful.

In our upcoming interviews, we hope to learn more about how students, particularly undergraduate and graduate students, identify burnout amongst themselves, as well as how faculty and counseling experts identify burnout amongst students. By exploring these questions from expert, faculty, and student perspectives, we hope to gain a better understanding of how burnout is managed on the individual, group, and school-wide level. We hope to discover some of the nuances of different approaches to managing burnout: What types of breaks do different students need? How can we tailor solutions to students' unique needs? How can we identify symptoms and stages of burnout?

Literature Review

[Self-regulation and Study-Related Health Outcomes: A Structural Equation Model of Regulatory Mode Orientations, Academic Burnout and Engagement Among University Students](#)
Shilei Zhang, Rui Shi, Liping Yun, Xuefei Li, Yun Wang, Hongbin He and Danmin Miao

Key Questions: What are some of the more individualized factors in academic burnout and engagement? What are the motivational factors involved in academic disengagement?

Key Takeaways:

★ There are two kinds of process oriented motivation styles:

- - ○ (1) Self-Regulatory: This model emphasizes "getting things started" and "making something happen" as the primary form of stress relief for these students.
    - ○ (2) Assessment: These students benefit from "which option is best" and "what is worth doing

Impressions: How might we foster adaptive, goal striving strategies? What is the role of adaptive, and maladaptive perfectionism in burnout?

Student "Burnout" as a Mediator of the Stress-Outcome Relationship
Gary F. Koeske and Randi Daimon Koeske

Key Questions: How can we define student stress? What are the varieties of student stress that exist, and the outcomes of such stress?

Key Takeaways:
- ★ Non school stress, while correlated with student stress levels, did not directly affect the burnout or outcome measures (i.e. the intention to drop out of school)
- ★ There is little evidence to demonstrate that negative effects of stress are stronger for persons lacking social support (though this may be an anomaly of this particular research paper).

Impressions: How might we create a model to detect student burnout*, with the goal of providing early intervention and retention?

*The Personal Burnout Scale (PBS; Kelley, 2007) is a 10-item scale designed as an applied measure of a general sense of burnout.

Burned out to drop out: Exploring the relationship between school burnout and school dropout
Miia Bask and Katariina Salmela-Aro
Key Questions: What are the components of burnout? What are the differences in burnout levels between students who drop out of school and students who don't? Is school burnout a necessary condition of high achievement?

Key Takeaways:
- ★ There are three components involved in burnout: a cynical attitude towards school, feelings of inadequacy as a student, and exhaustion at school.
    - ○ Three scales: I feel a lack of motivation in my schoolwork and often think of giving up, I feel overwhelmed by my schoolwork, I often have feelings of inadequacy in my schoolwork.
- ★ The most significant factor in students who are burned out and drop out, and those who don't drop out, is a high level of cynicism towards their institution (3.8x more likely), followed by feelings of inadequacy (2.5x more likely).

Impressions: What are the ways in which cynicism for institutions are expressed and detected?

Can a self-efficacy-based intervention decrease burnout, increase engagement, and enhance performance? A quasi-experimental study

Edgar Bresó, Wilmar B. Schaufeli and Marisa Salanova

Key Questions: When is cultivating self-efficacy in student's academic journeys most impactful? How does self-efficacy drop and how can it be cultivated?

Key Takeaways:
  - ★ **Lack of efficacy seems to play an antecedent role in the burnout process rather than comprising an integral element of the burnout syndrome**
  - ★ Intervening before student examinations, through use of anxiety management strategies and cognitive behavioral therapies, have proven to be successful.

Impressions: What are the meaningful, accessible ways in which interventions can be provided to students?

[An Examination of Stress in College Students Over the Course of a Semester](#)
Timothy Baghurst and Betty C. Kelley

Key Questions: What is a stress trigger? What variables inform a student's response to stress triggers? What strategies for stress management are most effective?

Key Takeaways:
  - ★ Meditation and relaxation along with many other psychological variables can be as effective in reducing stress as exercise.
    - ○ Experimental interventions consisting of both exercise and relaxation are more effective in reducing stress than exercise on its own.

Impressions: What are ways to cultivate mindfulness without overwhelming students? How can we personalize stress management therapies?

[Developmental Trajectories of Maladaptive Perfectionism Among African American Adolescents](#)
Keith C. Herman, Kenneth Wang, Reid Trotter, Wendy M. Reinke and Nicholas Ialongo

Key Questions: What is a stress trigger? What variables inform a student's response to stress triggers? What strategies for stress management are most effective?

Key Takeaways
  - ★ Available evidence suggests that perfectionism may be malleable in response to intervention (Arpin-Cribbie et al., 2008; Hawley, Ho, Zuroff, & Blatt, 2006
    - ○ Arpin-Cribbie et al. (2008) found that exposure to a web-based intervention predicted decreases in perfectionism among college students over a 10-week period.

Impressions: What are ways to offer support and environmental manipulations to improve maladaptive perfectionism? What are the characteristics (detectable) of maladaptive perfectionism?

Fear of Being Exposed: The Trait-Relatedness of the Impostor Phenomenon and its Relevance in the Work Context

Jasmine Vergauwe, Bart Wille, Marjolein Feys, Filip De Fruyt and Frederik Anseel

Key Questions: What are the traits of those who suffer from IP?

Key Takeaways:
  ★ Impostor tendencies are positively related to Neuroticism, maladaptive perfectionism, and negatively to Conscientiousness, but not related to introversion or extroversion.

Impressions: What are the situations which trigger Imposter Syndrome?

Burnout; The New Academic Disease
Key Questions: Is burnout a disease? Can burnout be prevented?

Key Takeaways:
  ★ A holistic approach to remedying burnout is:
    ○ Find your own natural stress level and run toward what you accept as your own goal.
    ○ Practice altruistic egoism
    ○ Learn to trust people and feel secure by creating a support system.
  ★ Other strategies include:
    ○ 1. Keep a log of daily pressures and joys and evaluate the intensity of each for one week to one month for the purpose of identifying and mastering patterns in stresses.
    ○ 2. Before reappraising long-term and short-term goals, be realistic and clarify priorities.
    ○ 3. Be realistic in projecting time.
    ○ 4. Be aware of your personal, mental, and physical supply of energy to avoid crises.
    ○ 5. Keep a balance between school and life outside your job to avoid recreating a traumatic experience with persons closest to you.
    ○ 6. Be aware of stresses and recognize danger signs of burnout by acknowledging vulnerabilities.
    ○ 7. Keep your sense of humor

Impressions: Which of the strategies do students find hardest to cultivate?

How To Counsel Overwhelmed Students
Key Questions: What are the strategies to introduce mindfulness?

Key Takeaways:
  ★ Overwhelmed students will benefit from the simplification (at least in the short term) of their objectives.
  ★ Visual representations of smaller scale progress can be essential in reducing feelings of anxiety.

Impressions: What does ideal, mindful organizing look like?

Researchers explore medical students' low-achievement mind set
Key Questions: How does sleep quality, smartphone usage, and perceived stress contribute to student burnout?

Key Takeaways:
- ★ Smartphone addiction was associated with poor sleep quality and higher levels of emotional exhaustion but not with a low sense of personal accomplishment.
- ★ Higher perceived stress scores were likely to contribute to high levels of emotional exhaustion and depersonalization as well as a low sense of personal achievement.

Impressions: How can you measure a decrease in perceived stress?

Academic Capitalism Is Reshaping Faculty Life. What Does That Mean?
Key Questions: How is academic capitalism and market forces shaping faculty (and as a result, student) life.

Key Takeaways:
- ★ Colleges realize they have products that they're able to buy and sell and trade in global markets
- ★ **Risk in programs and quality of learning because they're becoming "entrepreneurial with the marke**t " (when it comes to launching academic programs).
  - ○ Ex: having nontenured faculty
  - ○ **Who's teaching us**: schools try to look for more doile faculty that can easily adapt as necessary.
  - ○ Canvas 24/7: pressures to respond to constant communication-- has grown with respect to enrollment growth

Impressions: What does an ideal learning environment look like, where students, faculty, and staff don't have to pay the price or be concerned with issues like market forces governing the quality of their education?

Capitalist Realism
Key Questions: What is education's relationship with capitalism?

Key Takeaways:
- ★ Capitalism is pervasive and controls and the production of culture and the regulation of education
  - ○ Capitalism regulates work and education, conditions the production of culture, and acts as a kind of invisible barrier constraining thought and action.
  - ○ "'Continuous present' which Jameson argues is characteristic of postmodern temporality"
  - ○ Realities and identities are upgraded like software. This has led to cultural anxiety

Impressions: How can learning environments mitigate how much students have to change and "upgrade" during COVID-19? Students are forced to endure this "continuous present"-- how can they have agency over their sense of time?

[Malcolm Harris's new book on how capitalism has shaped Millennials](#)

Key Questions: How has capitalism shaped student life (and their fears)?

Key Takeaways:
- ★ Capitalism has depleted mobility for the middle and lower class, and has created situations impossible to escape, even for most eager, star students. Students are forced to consider bleak futures
  - ○ student debt-- loans impossible to escape
  - ○ the job market has never recovered from the 2008 recession
  - ○ Competition to get jobs is brutal
    - ■ capitalism emerged as the single dominant mode of organizing society
  - ○ Millennials are the products of an economy designed to cultivate human capital at every stage of life
  - ○ Begins in childhood, continues with standardized tests.
  - ○ No alternative to this rat race

Impressions: How can millennials be motivated to try when economic structures make their prospects so bleak? How can students learn to re-define success on their own terms?

[How Millennials Became The Burnout Generation](#)

Key Questions: How did students become so overwhelmed?

Key Takeaways:
- ★ Feelings of paralysis is the contemporary condition
  - ○ Cultural idea that we should be <u>working all the time</u>. Millennials and Gen-Z are unequipped to deal with the particular ways in which world is now difficult (due to 2008 financial crisis, decline of jobs and middle class)
  - ○ Most remedies encourage further optimization on oneself to cure burnout--example, take up meditation
  - ○ Students have been *told* that the end goal of all of this childhood optimization is doing work that you're passionate about

Impressions: How can we reduce these feelings that we need to constantly optimize ourselves?

[Workism is Making Americans Miserable](#)

Key Questions: Why are college students feeling so overwhelmed with work?

Key Takeaways:

- ★ For the college-educated elite, work has morphed into a religious identity—promising transcendence and community, but failing to deliver. No such thing as leisure
  - ○ Work: focus of one's identity and life's purpose-- even wealthy Americans are putting in more hours to work
  - ○ "We've created this idea that the meaning of life should be found in work,"
  - ○ "burnout" is even outwardly celebrated. It is interpreted as a sign that one is working hard
  - ○ Previously, the goal of working used to be about buying free time

Impressions: How can we make work less central to student lives?

Zoom Fatigue is Real--Here's Why Video Calls are So Draining

Key Questions: Why are video calls more draining than face to face communication?

Key Takeaways:

- ★ People feel like they have to make more emotional effort to appear interested, and in the absence of many non-verbal cues, the intense focus on words and sustained eye contact is exhausting.
  - ○ How they are different: we miss out on a lot of non-verbal communication
  - ○ Limiting the number of Zoom meetings in a day can assist, as well as using messaging and email.
  - ○ And sometimes, the phone is better. On the phone, we only have to concentrate on one voice and walk around which can help thinking.

Impressions: How can we carry these principles to school work?

The Generation That Was Exhausted

Key Questions: What do millennial students mean when they talk about being burnt out?

Key Takeaways: When millennials talk about being burned out, they are pointing to the failures of capitalism.

- ★ Burnout is one word used to encapsulate an entire generation's crisis
  - ○ Burnout: one-word descriptor that is roomy enough to encapsulate an entire generation's crisis
  - ○ affects individuals and groups in wildly different ways.
  - ○ Millennials entered a world that embraced the notion that *children* had to work really hard in order to "make it.

Impressions: There are many different things meant by "burnout"--it's a catch-all phrase used to describe feelings of hopelessness and fear induced by the economy. How do students learn to identify what is causing their own feelings of burnout?

How to Combat Zoom Fatigue

Key Questions: What are strategies to mitigate Zoom fatigue?

Key Takeaways:
- ★ Zoom fatigue caused by constant need to absorb info, stare at face
  - ○ Zoom forces us to focus more intently on conversations in order to absorb information.
    - ■ In real life, you can rely on whispered side exchanges to catch up if you need quick, clarifying questions.
    - ■ During a video call, however, t's hard to replicate this side communication (unless you use the private chat feature)
  - ○ Having to engage in a "constant gaze" makes us uncomfortable — and tired.
  - ○ Staring at a small window of ourselves-- we have to calibrate our facial features
  - ○ Tips:
    - ■ Avoid multitasking
    - ■ Take mini breaks
    - ■ Reduce onscreen stimuli-- choose plain background

Impressions: How can we remind people to regularly incorporate these lessons into their lives?

The Science of Burnout

Key Questions: What factors cause burnout?

Key Takeaways:
- ★ Burnout can be described by an equation-- when reward we get is not worth the amount of effort we put in (need balance between reward and effort)
  - ○ Symptoms: difficulty sleeping, quick to anger, closed off to new ideas, less effective at work.
  - ○ Rewards can correspond to whatever people find personally rewarding, e.g. time spent with family, good grades.

Impressions: Burnout is very common and can be described by the balance equation (reward has to be worth effort). How can we leverage educational tools to help students reflect on these questions?

Burnout and the Fastest Way to Recover

Key Questions: How can we recover from burnout after we have identified it?
Key Takeaways:
- ★ Consider many different factors to recover: how much time is needed to recover from burnout? What does a break look like?
  - ○ Need to go outside or do nothing or go on vacation?
  - ○ Can breakup weekly schedule and plan small breaks
  - ○ Reminder to take a break every 45 minutes while working

- - - Questions to consider: What type of break do you need to recharge? Long or short? How often?
    - What do you like doing in your free time? What leaves you feeling relaxed & recharged?

Impressions: How can these questions be personalized for students? How can they be emphasized or incorporated into school so students can recover from burnout

Comparative Review

[Shiken](#) — AI for mindful learning
- 40,000 questions, quizzes, study tools for math, science, medicine at the university level
- **Pros**
  - AI and gamification to create fun, interactive learning experiences (e.g. "study buddies" and accessories that students can unlock)
  - Combines guided and independent learning
  - Incorporates mindfulness and [pomodoro](#) breaks
- **Cons**
  - Limited to STEM fields
  - Limited flexibility in designing your own resources
  - Novelty of the game may wear off and eventually become a distraction

[Question bot](#) — AI to get student questions answered faster
- A bot that can either answer student questions on its own, or find relevant video clips from past lectures that contain the information. If neither works, it immediately tags a TA who is assigned to the student or who might know the answer.
- **Pros**
  - Lessens the barrier of students asking questions
  - Expedites the Q & A process
  - "As a student, it's nice to know your question has been seen by the tutor, and you feel happier that you will get a response"
  - "As a tutor, it's much more efficient than constantly monitoring the forum for questions, and when tagged you can reply promptly and help the students get what they need."
- **Cons**
  - Doesn't seem to have option for students to answer each others' questions
  - Video search functionality likely only works for simpler queries

[Talkspace](#) — Online therapy with a licensed therapist.
- **Pros**
  - Convenience
  - Easy to switch therapists across the platform if unsatisfied
  - Affordable: "Talkspace online therapy is typically 80% less expensive than face-to-face therapy and there are several payment options to choose from."
  - Frequency: "You'll be guaranteed a daily response from your therapist at a specific time."

- **Cons**
    - No longer provided a physical safe space; must find your own
    - Perhaps not as personable of an environment
    - Reliant on good wifi and a private space and thus not necessarily accessible

Quizlet — Digital flashcards + smart study resource
- "Uses machine learning and data from millions of study sessions to show students the most relevant study material"
- **Pros**
    - Provides adaptive plans and "helps takes out the guessing of what to study", effectively reducing decision fatigue
    - Relevant to us because segmenting study material into bite sized chunks helps with information overload and burnout
    - Effective: 90% of students who use quizlet report higher grades
    - Adds gamification to studying
- **Cons**
    - Not well suited for all subjects/learning styles
    - Purely memorization based

Amazon Alexa as a learning tool
- **Pros**
    - Adding education focused tools to pre existing virtual assistants such as Alexa, Google Assistant, etc.
    - Centralizing where to get information from your education institution
        - Reducing need for content navigation and thus helping with information overload
- **Cons**
    - Not financially accessible
    - General privacy concerns

Expert Interview
Christina Wodtke: 4 - 4:30 P.M. (09/21/2020).

A lecturer in the HCI department at Stanford, Christina focuses her work on high performing teams, and goal setting and organizational focus in a way designed to promote a positive relationship with work.

The interview will focus on the following questions:

1) How do you typically identify burnout within teammates?
2) How do you promote positive goal planning?
3) How do you as a faculty member perceive student burnout?
    a) How have you, if at all, adapted your approach as Stanford shifted entirely to virtual learning?
    b) How do you differentiate between student burnout and academic struggle (academic disengagement vs. student performance)

4) How do you factor burnout into planning courses?
5) How often does burnout come into play in your job (yourself or students)?
    a) Do you feel like there's a dialogue/resources around burnout at the university level?
6) What are key components of a positive relationship with work?
    a) What are ways to cultivate those components that you have found to be successful?

Needfinding Plan and Preliminary Discussion Guide

Our team will be focusing on detection and reduction of student burnout. More specifically, we will be researching the variety of answers to the following questions:

- What does burnout look like at the individual/group levels?
    - How do faculty perceive student burnout?
    - How do students perceive burnout in themselves and in other students?
- What are effective identifiers of burnout?
- What are the different intensities of burnout, and what are effective strategies for reduction at those levels?
    - What is the relationship between "reward" and "effort" at those levels?.
- What does a holistic approach to productivity mean/look like?
- Can we imagine an ideal relationship between students and productivity and how does that differ from the cultural patterns that we see in current students?

For our needfinding stage, we plan to target interviewees who have close contact with higher education, specifically students who are high school seniors and older, as well as faculty and field experts. Our planned breakdown of interviewees is as follows:

- High school seniors (1 participant)
- Undergraduate students (2 participants)
- Graduate students (1 participant)
- Faculty members (1 participant)
- Counselling/wellbeing specialists (3 participants)

We plan to recruit participants through our friends and family, email lists, and personal and professional networks. Each interview will last 30-60 minutes, depending on the interviewees' availability, and we will have two team members present at each interview: 1 person to lead the interview, and 1 person to observe and take notes. We will use Zoom to conduct these interviews.

Discussion guide (early draft)

- **Introduction**
    - Hi [name], thanks for taking the time to chat with us today! We're a group of grad and undergrad Computer Science students who are working on a project this quarter based on education. Our focus is identifying and addressing student

burnout. Would you mind if we recorded this conversation? Do you have any questions before we begin?
- **Topics to cover**
    - Listed above in Focus of the Team's Research Section.
- **Specific questions**
    - What does your schedule look like?
    - Can you describe a typical "productive day"?
    - Can you talk us through any personal experiences you've had with burnout?
        - How long did the "burnout" last for?
        - What were strategies you used that helped, if any?
            - Did you reach out to adults or faculty for support?
    - Do you use any particular applications or technologies you use designed for your productivity?
        - What are your experiences with those apps?
    - How do you define rewards or goals?
    - Describe what your relationship to work is like.
    - What is your relationship to stress?

Recruiting Update

We have confirmed three interviews (including two expert interviews) for early this week and have reached out and/or confirmed interviews for the following weeks as well. Currently, we have a variety of health/wellbeing experts, education faculty, as well as undergrad and graduate students, some of whom are former PHEs and RAs. We have questions prepared that are personalized to each interviewee's relationship to our focus topic of academic burnout.