What's in a story? Comparative analysis of role model and mentor narratives

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Abstract

Role models, mentors, and coaches play a key part in the development and ultimate success of students in higher education. In particular, underrepresented minorities (URMs) in STEM may not see themselves in the faculty and support staff in their disciplines and may struggle to make strong professional connections with those who do not share their multiple identities and cultural values. In this study, we compare narratives shared by 36 potential role models and 29 mentors in STEM and how those narratives might differentially impact the viewer based on their identity-based and culturally-situated themes. Our results suggest that, despite the many contextual differences (e.g., age, point in professional career, race, ethnicity, etc.), role models and mentors share many of the same kinds of narratives around their values and aspirations. However, the apparent differences are often identity-relevant, and the role models' narratives generated deep emotional responses in the researchers as viewers. Future work will explore students as viewers based on these results.

Introduction

This work-in-progress study is part of a larger project to facilitate personal values-based matching of role models, mentors, and coaches with the populations they serve to support the success of underrepresented minorities (URMs) in STEM. In particular, underrepresented minorities (URMs) in STEM may not see themselves in the faculty and support staff in their disciplines and may struggle to make strong professional connections with those who do not share their multiple identities and cultural values. This can lead to a host of challenges related to their identities; these include, but are not limited to, imposter syndrome and a lacking sense of belonging. Role models, mentors, and coaches are different forms of support relationships that can positively impact URMs' attainment of their goals and field-specific identities. Here, we differentiate role models, mentors, and coaches as follows:

- A role model inspires from a distance; they are seen by their junior in a particular context, but no personal relationship or interaction exists.
- A mentor engages with their mentee and is often an established individual whose own career is unaffected by the mentee's success.
- A coach, the closest relationship, has "skin in the game;" their personal or professional success is tied to the success of those they coach.

While these relationships can be impactful, they largely depend on the quality of the match between the role model, mentor, or coach and the individual they are supporting. Matches can be dictated by convenience, availability, and perceived (often surface-level) similarities between individuals. A good match can provide essential support, whereas a poor match can leave an individual feeling continued (or increased) isolation. Because of differences in cultural capital between various identity-defined populations, even the initial ability to access the support is a potential issue beyond the quality of the match itself [1]. There are fewer URMs in STEM

compared to other populations [2], and thus, limited individuals to serve in these capacities when seeking demographics-based matches.

In previous work, the authors developed a profile format for role models (STEM alumni of a predominantly white institution who identified as URMs) to communicate their personal and professional narratives to those that may look up to them (STEM URM students of the same institution) despite having no personal connection or engagement with that population [3]. These narrative-focused role model profiles intrinsically focused on values – such as relationships, success, and recovery from failure - identified as important to the STEM URM population. These "values-based" role model profiles were well received by the population they were designed to serve, and we have built upon this success by exploring values-based profile creation as a means for building mentoring relationships [4]. In this study of mentoring relationships, the mentors were upper-level undergraduate students (mostly juniors and seniors), and the population they are serving includes all students in introductory STEM courses (although we remain particularly interested in URM students) [4]. While the role models in our previous work were STEM alumni who identified as URMs [3], the undergraduate mentors were predominantly white or Asian (majority populations on campus and in STEM more broadly). Based on these differences between the role models and mentors, we present a qualitative comparative analysis between the two cohorts' profiles. Our research questions are as follows:

1. What differences exist in the language used by the two cohorts?
2. What differences exist in the content and experiences shared in the profile narratives between the two cohorts?
3. How does the content and experiences shared in the profiles affect viewers' responses to the role model or mentor in relation to the viewer's own STEM identity?

In this paper we share preliminary results for research questions (1) and (2), and address (3) with the perspective of the researcher as the viewer.

Methods

Our two cohorts of participants for comparison include 36 role models and 29 mentors. Detailed descriptions of these populations of interest are shown in Table 1 and have been reported previously [5]. The list of questions which the participants answered to create profiles are provided in Table 2.

Table 1. Populations of interest in the role model and mentor studies

	Role Model Study [3]	**Mentor Study [4]**
Institution Type	Private, undergraduate	Private, research
Participant Population	Alumni	Current Students
Demographics of Participants	All URMs (minority in STEM)	Predominantly White and Asian (majority in STEM)
Interaction with Profile Viewers	None	Weekly
Number of Participants	36	29

Table 2. Survey Questions Compared

Role Model Case	Mentor Case
Within the realm of your professional work, what is your passion? What drives you?	Within the realm of your work/studies, what is your passion? What drives you?
Do you have a close connection with your family? If so, please share how you maintain and support this connection and what it means to you.	Do you have close connections (with family and/or others)? Share how you maintain and support these connections and what they mean to you:
Describe your the community and area you grew up in. (please include the specific geographic location(s))	Describe the community/area you grew up in:
What motivated you in college? What did you aspire to become? What mattered to you?	What motivates you at <University Name>? What matters to you?
	What do you aspire to become?
What was it like coming to <University Name> from your high school/community socially and academically? How did you manage each aspect of the transition?	What was it like coming to the <University Name> from your high school and/or community, socially and academically? How did you manage each aspect of the transition?
Have you ever been involved in giving back to your community? Or taking action towards a good cause? If so, please tell about what it was like and what motivated you to do so.	Have you ever been involved in giving back to your community or taking action toward a good cause? Please tell about what it was like and what motivated you to do so:
Have you ever failed professionally? If so, please share how you felt and explain how you dealt with it and worked past it.	Have you ever failed professionally/academically? Share how you felt and explain how you dealt with it and worked past it:
Tell of a time that you took a risk or made a crucial change in a professional context in order for you to stand by your values and/or beliefs	Talk about a time you took a risk or made a crucial change in a professional/academic context in order for you to stand by your values and/or beliefs:
Extracurricular Activity	What kinds of extracurriculars are you involved with?
Think of a time that you felt successful in your professional career. Please share your challenges and the way you handled your personal life at the time in terms of relationships with family and friends.	Thinking of a time you felt successful, share your challenges and the way you handled your personal life at the time in terms of relationships with family and friends:
Think of a time that you felt successful in your professional career. Please describe what your success entailed in terms of courses of action, decisions, personal development, outcomes.	Thinking of a time you felt successful, describe what your success entailed in terms of courses of action, decisions, personal development, and outcomes:
What was it like leaving [institution] and going into your workplace?	[no similar question]

Profile narratives of the two cohorts were coded through emergent thematic analysis [6]. The analysis process consisted of all authors immersing themselves in the data and coding for concepts or ideas that emerged from their experience of the data. The resulting codebooks were then shared and discussed. Because this is a work-in-progress, we present only exploratory themes as they currently stand, rather than a full-consensus thematic description. Further

consensus-building, iterative coding, categorization, and final thematic development are ongoing and will be presented in full in future publications.

Results and Discussion

Emergent thematic analysis of the profile narratives points to multiple similarities and differences (e.g., context, level of detail, nature of information shared, etc.) between the two cohorts. To frame these results, note that mentors knew that their profiles would be shared with students in the context of an introductory STEM course. Role models were similarly aware that their profiles would be shared with current URM STEM students to expose them to differing models of success. However, unlike mentors, role models had no direct contact with the students. Cohort differences in career stage, demographic background, context of profile use, and relationship to the profile viewer are important lenses for interpretation.

Similarities: Shared Experiences

Despite the apparent differences between the two cohorts, both role models and mentors provided similarly detailed accounts of maintaining their close connections with family and the significant role that family plays in their day-to-day lives. Mentors described these connections within the context of college life and coping with being away from home. Mentors found family as a source of motivation and emotional support in both academic and personal pursuits. For role models, post-college factors such as post-graduation geographical proximities, family and extended-family priorities, and job relocations away from established communities came up as impacting their relationships to family, which highlights the way contextual differences between the cohorts (i.e., pre-graduation versus post-graduation) inform the differences in their narratives even when the content is largely similar.

Another similarity between the two cohorts arose when role models and mentors were asked what they aspired to be. Answers ranged from specific professions (e.g., dentist, mechanical engineer, etc.) to type of position (e.g., vice president, chief financial officer, etc.) to the kind of industry (e.g., military, real estate, etc.) to personal attributes or states they hoped to attain (e.g., be happy, be a successful mother, impact others, etc.); all of these aspects of aspirations were present across cohorts. Those in the role model cohort who had significant post-graduation experience sometimes specified both what they had wanted to be as a college student and what they eventually became, thus realizing those aspirational goals. Overall, both role models and mentors offered inspiring, yet attainable goals to which the researchers as viewers could relate.

In describing giving back to their communities, or taking actions toward a good cause, both role models and mentors shared examples of community service or volunteer activities they engaged in. Role model responses detailed post-college community engagement initiatives that leverage professional knowledge to support specific local communities. For example, one role model described contributing to company-sponsored outreach programs designed to get local students excited about STEM and offer motivation to URM college students. Another role model shared the experience of working with underserved youth in a local school district:

> …to see 60 kids graduate and rise above the financial issues that try to hold them down and make them another bad statistic. My kids are amazing. I know it, and I work every day to get them to see it.

Meaningful mentor responses echo these desires to make a difference in local communities, just through the lens of their academics and position as a near-peer.

Despite their different contexts, ages, identities, and life circumstances, mentors' and role models' responses were surprisingly similar when asked about dealing with failure. Both cohorts answers were of similar depth, and the only notable difference is once again contextual in nature; mentors were more likely to describe failures in their academic work, while role models were more likely to describe being fired or laid off. The most common idea across both cohorts was making the best of whatever mistake or failure had occurred and taking away whatever lesson or feedback could be gleaned from the situation.

Overall, these similarities in narratives across the two cohorts could indicate the questions that generated the similarities as vital components of helping URM students in STEM see themselves in their mentors and role models; that is, if URM alumni in STEM professions, some of whom are decades older than traditional college students, share the same kinds of stories around topics so closely entwined with important values like family, aspirations, giving back, and failure as do White and Asian undergraduates, then hearing their majority peers describe failure in ways that speak to them may indeed be an underlying reason behind the increased attendance in introductory STEM courses by URMs seen in our previous work [4].

Differences: Identity and Culture Shock

When asked about their transition from high school to college, role models were much more likely to bring up their race, ethnicity, and academic identities. Role models were more likely to describe their background and preparation prior to entering college, in particular by implicating themselves as unprepared. One role model describes the transition as "a complete change, socially and academically, that I was unprepared for." Further, role models described being too proud or "reluctant to ask for help" in a way that mentors did not, and were more likely to compare themselves to others in a negative way, as this role model shares: "Socially I come from a more humble background than many [of my peers] so adapting to this was the biggest challenge." Even comments about the transition being easy or college being no different than their previous experiences were couched as being "in spite of" the identities that the role models held. For example, one role model explains:

> I went to a mostly White, private boarding school (I was the only Black person on my hall my entire time at the school), so dealing with the racial composition at [college] was not an issue for me.

Ultimately, some role models described the transition to college as a kind of "culture shock" that caused them to lose sight of who they were and shattered their expectations about college life in a negative way. For example, one role model shares that "[College] was the worst time of my life, I struggled and lost my sense of identity…. I had to redefine/find myself." Another role

model's narrative ties all of the ideas together as a moment of racial identity gaining sudden (undesirable) salience:

> Although I came from an all-White neighborhood and grew up in a competitive private school where I was the only African American from kindergarten to 6th grade, I still was not ready. I had not been around so many people that had never had a genuine encounter with a person of color. I had been stereotyped before but it was the first time I truly recognized my race.

As a result of these stark differences in the form of absence from the mentor dataset, mentors' descriptions of their worries about making friends or having to drive further to visit their parents may ring hollow to URM students who are struggling to retain their identities within the chilly climate in STEM that permeates across institution types or career stage [7].

When considering the differences between cohorts and the impact on the viewer, particularly in the case of culture shock and destructive identity moments, one concern becomes whether questions which were answered very differently between the two cohorts should be asked and shared at all. If majority mentors, role models, and coaches express narratives that are seen as "tone-deaf" or completely unaligned with URMs' identity-linked values and experiences, could this not create even more distance rather than help URMs see themselves in STEM fields and careers they are pursuing? Or is more information good information, and any response, even a very "privileged" one, is additive to a more humanizing climate in STEM? More detailed investigation of demographic differences in profiles and interviews with the student viewers of mentor profiles are warranted and will be pursued in future work.

Conclusions and Future Work

Despite the many differences between the role models and mentors in our study, their values-based narratives shared many of the same themes. While contextual language often differed between the two cohorts, similar goals, challenges, and triumphs were described. The most notable difference between profiles came from moments where role models' URM identities were made salient in and felt discordant with the majority experience of STEM.

The next phases of this project will be 1) to complete the theme development process and 2) to identify a sample population of students to invite for in-depth interviews about their experience when viewing the profiles. We seek to understand what attributes contribute to an effective profile within each context under study (role models or mentors) and how these attributes compare across contexts. These results will be used to further refine the profile creation surveys for each context and form the basis of adapting the survey for new contexts as we continue to work towards reducing the barriers to success for URMs in STEM.

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