The portrayal of faculty wellbeing in popular media: a comparison of STEM vs non-STEM faculty

Faculty are key players in the success of colleges and universities, performing the teaching, research, and service necessary to keep programs thriving. However, it is often challenging to balance their multiple commitments, resulting in lower motivation [1]. Such challenges are heightened for faculty from different marginalized groups [2]. The perceived challenges of faculty work, including those of poor work-life balance, have been identified as a deterrent to new generations of graduate students to pursue faculty careers [3]. In a large survey of graduate students at the University of California System, it was identified that students' career goals changed during their doctoral training. From an initial 45% of men and 39 % of women entering a PhD program, who claimed they wanted professor positions at research-intensive institutions, percentages dropped to 36% and 27% respectively by the end of the program. Reasons behind such changes included not wanting "lifestyles like those of their advisers" (p. 2) and women recognizing the lack of role models that could manage work and family successfully [4].

Popular media plays a role in changing views or perpetuating existing stereotypes and also creates the space for difficult dialogues [5], [6]. This has been documented extensively when considering role modeling in particular fields, like those in Science, Technology, Engineering and Mathematics (STEM). With the current efforts in U.S. higher education to address the mental health crisis, in connection with people leaving the academy [7], it is important to revisit which stereotypes are still prevailing. Exploring the portrayals of faculty wellbeing in popular media will allow us to question which stereotypes are being perpetuated and might hinder the efforts to integrate wellbeing in academic spaces. In this work, we explored the representations of college faculty in popular media under the framework of the eight dimensions of wellness for educators [7]. Our main research question is how is faculty wellbeing portrayed in media? We also explored if there were any differences in such portrayals between STEM vs non-STEM faculty.

Methods

We conducted a content analysis of movies and TV series with representation of faculty in STEM and non-STEM fields. We framed our work using the eight dimensions of wellness for educators offered by Montoya and Summers [8], summarized in Table 1. In such framework wellness is recognized as a holistic and multidimensional state of being which involves consciousness and self-direction oriented towards maximizing human potential.

Table 1. Dimensions of wellness for educators as defined by Montoya and Summers [7]]

Dimension	Definition
Emotional	Awareness, acceptance, expression, and management of emotions.
Environmental	Perceptions of working environment, including temperature, lighting, safety, décor, cleanliness, and comfort.
Intellectual	Engaging the mind, continually learning, and developing and applying knowledge.
Physical	Functional operation of the body, achieved through conventional aspects of healthy living such as exercise, diet, and sleeping habits.
Social	The degree to which individuals interact within their communities to improve their social environments.
Spiritual	Ability to find purpose in life and profession and to practice one's value system. Addresses one's beliefs, ethics, and philosophy not limited to one's religious beliefs.
Occupational	The ability to contribute unique skills and formal education to personally meaningful work.
Financial	Economic stability and ability to make informed financial decisions. Includes the ability to live comfortably, invest in savings, save for retirement, and prepare for unexpected emergencies.

Data collection: A list of movies that had educators as main roles was identified from online sources. Inclusion criteria consisted of movies with college professor as the main role, used spoken English as the primary language, and were not science fiction. Movies focused on professors with transient or temporary positions such as visiting professors or adjuncts were not included. For the exploratory work and manageability only movies produced after 1995 were considered. There was a total of 20 movies satisfying these criteria, among them only four had a women lead, and 2 had LGBTQI lead. Finally, four movies had a STEM faculty. The final list of movies is listed in the appendix.

For each movie we gathered the compounded plot descriptions from various sources, including movie databases such as IMDb, the movie Wikipedia space, and the official movie website when available. The rationale for using this data is that it captures the main elements represented in the movie from different perspectives, including those of the viewers and critics.

We also identified current TV shows that portrayed faculty in main roles. The Big Bang Theory (TBBT) [9] and The Chair (TC) [10] were selected as the STEM and non-STEM series respectively based on their popularity. Because there was only one season of The Chair, the analysis of TBBT was limited to the first season. Every episode was coded according to the dimensions of health explained above.

Data Analysis: We used Content Analysis to analyze the collected data. Content Analysis is a research technique aiming to identify and interpret meaning in recorded forms of communication [11]; it determines the presence of elements such as words, concepts, or themes in qualitative data (e.g. texts, video). The process of content analysis starts with the identification of units of meaning, in this case words or scenes. Then it is followed by coding of the units with labels that distinguish them. In our case we conducted this inductively, although under the framing considerations of wellbeing. Our inductive coding identified any instance where one of the eight dimensions of wellness were portrayed. The process continues with the grouping of similar codes to find themes, which in our case correspond to the alignment of the established dimensions of wellbeing. The main grouping performed resulted in labeling codes as positive (e.g. healthy eating) or negative codes (e.g. substance abuse). The summary of the identified codes found in the movies is presented in Table 2. Results can be presented in terms of prevalence of the codes, and the grouping established, in this case we will be presenting the summary of prevalence of positive and negative codes in each of the analyzed body of data.

Results

The resulting themes summarized in Table 2 show that while most dimensions of wellness had both positive and negative dimensions, the codes identified for the financial dimensions were only negative. The analysis of the proportion of positive versus negative representation of each wellness dimension in the movies is summarized in Table 3. The Emotional dimension of wellness was the one with the most instances (n=31), the proportion of negative instances was slightly higher among movies that had STEM main roles (84%) than among those with non-STEM main roles (76%). The social was the next dimension with the highest prevalence (n=21) with 76.2% of instances being negative, and close proportion of negative instances among STEM and non-STEM main roles, a recurrent negative code showing was the ability to put work responsibilities before social life, while a recurrent positive code was the passion for mentoring. The occupational dimension followed in instances (n=20) with negative instances showcasing a highest proportion in movies with non-STEM main roles (85%) examples of such instances were the consideration of teaching as a “consolation” job, gender discrimination, and the fact that work advancements was depending on the opinion of colleagues.

Table 2. Summary of identified codes in movies.

Dimension	Positive Codes	Negative Codes
Emotional	• Healthy love relationships • Identity acceptance	• Loss of loved one • Depression • Substance abuse
Environmental	• Activism	• Institutional instability
Intellectual	• Recognized expertise and opinion • Positively challenged by students and colleagues	• Losing professional identity
Physical	• Healthy habits	• Uncurable illness • Alcoholism • Drug use
Social	• Contributes to good cause • Passion for mentoring •	• Limited social support • Work responsibilities before social life
Spiritual	• Religion as support	• Conflicting identities base in spiritual beliefs
Occupational	• Commitment to institution • Passion for supporting students' development & teaching	• Teaching as "consolation" job • Discrimination due to gender and sexual orientation • Changing restrictions (e.g. sexual harassment laws) • Job jeopardized by students • Work depending on colleagues' opinion
Financial		• Bribes • Financial strain as motivation to teach • Loss of job

Table 3. Summary of results for the analysis of movies.

		Emotional	Environmental	Intellectual	Physical	Social	Spiritual	Occupational	Financial
STEM	Positive %	16	0	25	0	25	33	42	0
	Negative %	84	100	75	100	75	67	58	100
	N =	6	1	4	4	4	3	7	2
Non-STEM	Positive %	24	75	73	8	24	100	15	0
	Negative %	76	25	27	92	76	0	85	100
	N =	25	4	11	12	17	1	13	3
All	Positive %	22.5	60	60	6.25	23.8	50	25	0
	Negative %	77.5	40	40	93.75	76.2	50	75	100
	N =	31	5	15	16	21	4	20	5

Portrayals of intellectual wellbeing were highly positive (73%) in the non-STEM group while they were highly negative (73%) for the STEM group. Physical health was almost always showcased under a negative light for both groups. Spiritual, financial, and environmental dimensions of wellbeing were the ones with the least presence in the analysis. In particular, for STEM main roles the presence of attempted bribes to pass their courses was a distinguishing factor from the non-STEM main roles.

Table 4 summarizes the results of the analysis of the TV series data. The social, emotional and occupational dimensions were also the ones with the strongest presence in this data. The emotional dimension showcased more negative portrayals in STEM (90%) than in non-STEM (68.8%), as well as the social dimension, STEM (95%)-non-STEM(77.5%). On the other hand, the occupational dimension had a largest proportion of negative instances in the non-STEM data (81.4%) than the STEM data (37.5%). The intellectual dimension was also more negative among non-STEM (95.3%) than in STEM (50%), the physical and similar proportion of negative representation. The environmental dimension had similarly negative representation between both areas. The financial dimensions had a slightly higher prevalence of negative representation such as the loss of job. The spiritual dimension was not evident in the STEM series at all and had a marginal presence in the non-STEM series.

Table 4. Summary of results for the analysis of TV series

		Emotional	Environmental	Intellectual	Physical	Social	Spiritual	Occupational	Financial
STEM (TBBT)	Positive %	10	14	50	0	5	0	62.5	50
	Negative %	90	86	50	100	95	0	37.5	50
	N =	10	7	10	10	77	0	8	2
Non-STEM (The Chair)	Positive %	31.4	0	4.7	9	22.5	100	18.6	33
	Negative %	68.8	100	95.3	91	77.5	0	81.4	67
	N =	54	8	21	22	71	1	59	3

Discussion and Future work

Portrayals of different dimensions of wellness varied between the different types of data analyzed; however, negative portrayals of emotional wellbeing were prevalent. Nevertheless, they were usually tied to larger dimensions of the faculty life and somewhat tangential to their life as faculty. Similarly, negative portrayals of physical wellbeing were showcased which reinforce existing stereotypes of a lack of work-life balance in academia [12]. From the analysis of TV series, it was evident that a significant amount of boundary crossing between personal and professional dimensions was present. The analyzed movies and TV series touched on issues of racism, sexism, and ageism, which are relevant issues in academic spaces [13]. Although the movies with STEM main roles highlighted instances of racism and sexism more clearly. The financial dimension was among the ones the were less prevalent in the data, but from its instances there was a clear difference, and it was that only STEM faculty were offered bribes, enhancing the narrative of STEM faculty as gatekeepers [14].

Next steps for this research involve an extension of the analysis, to include a curation of the list of considered films, the full watching and coding of the movies, and the execution of an interrater reliability analysis to ensure validity. By engaging in content analysis of STEM vs. non STEM portrayals of media characters, we have created the space for a difficult dialogue in higher education.

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Appendix

Movie	Year
The Nutty Professor	1996
Flubber	1997
Wonder Boys	2000
Wit	2001
Mona Lisa Smile	2003
The Life of David Gale	2003
The Visitor	2007
Disgrace	2008
Elegy	2008
A Single Man	2009
A Serious Man	2009
Still Alice	2014
The Historian	2014
The Rewrite	2014
Irrational Man	2015
Submission	2017
Professor Marston and the Wonder Women	2017
The Professor	2018
Radioactive	2019
Uncle Frank	2020