

WiSTEM2D Podcast

How might a WiSTEM2D Podcast inspire, motivate and support women in STEM in all stages of life?

Althea Manalo

Science & Engineering
University of Limerick
Ireland

19233248@studentmail.ul.ie

Clíodhna Caffrey

Science & Engineering
University of Limerick
Ireland

16149858@studentmail.ul.ie

Erona Aliu

Science & Engineering
University of Limerick
Ireland

18228402@studentmail.ul.ie

Ihsan Kamil

Science & Engineering
University of Limerick
Ireland

18219802@studentmail.ul.ie

Jessica Oo

Science & Engineering
University of Limerick
Ireland

19241461@studentmail.ul.ie

ABSTRACT

This contribution aims to investigate the current role of women in STEM2D (science, technology, engineering, mathematics, manufacturing, and design) and reflect on how the use of a podcast may inspire, motivate, and support girls and women surrounding the aforementioned industries. This investigation was undertaken by five University of Limerick female undergraduate students from across the STEM2D disciplines, allowing them to draw from their varying knowledge and experiences and in turn, bridge the sub communities of the Faculty of Science and Engineering. In this paper, the five students will be referred to as the investigators of the project. In addition, the investigators used the initial podcast as a form of research in order to identify whether a podcast would be capable of inspiring and motivating women in STEM2D. This would then allow them to further develop a podcast series and interview other women in STEM2D. The first podcast episode, which is the central element to this investigation, involved an interview with University of Limerick lecturer Dr. Shalini Singh, in which the five investigators conversed with Dr. Singh and discussed topics surrounding women in STEM2D.

SUMMARY

Although female participation within STEM2D careers continues to grow, a large gender gap within these industries still exists. In 2016, it was reported by the STEM Education Review Group that only 25% of 120,000 individuals working in STEM industries within Ireland, were women. With the report concluding in 2018, there was still only 25% of the STEM workforce being representative of women [1]. Moreover, there remains a massive imbalance in terms of pay between both genders in STEM. In 2014 it was reported that on average, women are paid 13.9% less per hour than their male counterparts in STEM. This was again highlighted by the European Commission in 2018, when it was noted that within STEM industries, the gender pay gap in Ireland is the largest within the European Union with women typically earning up to 30% less than males [2].

Noting the gap in gender across the technology and engineering sectors in particular, the objective of the investigation was to connect those in STEM2D using an innovative, engaging and motivating method. The concept of a podcast was decided upon due

to the rise in popularity of podcasts as a passive form of entertainment. It was noted that podcasts appeal to a wide range of users due to the medium's convenience, flexibility and easy integration into users' day to day lives [3]. These aspects would allow for the effective delivery of WiSTEM2D (Women in STEM2D) issues and allow for a greater reach to the target audience.

Given the limited available literature on STEM2D podcasts, the five investigators first developed a preliminary market research survey to identify a target demographic and other logistics for the podcast such as channels of distribution. The investigators also planned to release a sample podcast episode along with a podcast satisfaction survey, should there be an interest in a Women in STEM2D podcast shown from the preliminary research. These surveys would be circulated by social media and forwarded on request by acquaintances known to the investigators. Ethics approval was imperative for the distribution of the surveys, as such, the investigators received approval from the Ethics Committee of University of Limerick before releasing the surveys. The ethics application detailed the sample selection methods as well as the distribution methods.

The podcast and survey were advertised among both undergraduate students and working professionals in which a potential market was established. Two hundred responses were gathered from the preliminary survey and 25 responses were gathered from the satisfaction survey.

From the market research survey findings undertaken by the investigators mentioned above, it was noted that 82% of the respondents were interested in the concept of a podcast focused on WiSTEM related issues. The market research survey also provided data on the logistics of the podcast, such as the preferred channels of broadcast as well as the ideal length of an episode.

The second survey was developed and distributed following the release of the 20-minute podcast interview conducted with Dr. Singh. The podcast episode was distributed via Spotify, Soundcloud and a Google Drive link. The survey consisted of three sections. Section one contained five 'pre-podcast' questions to be answered before the podcast is played, with the first question being that of consent. The other four questions included were:

- Have you ever listened to a STEM Podcast before?
- If so, which one(s)?
- On a scale of 1-5, how enjoyable are you expecting this podcast to be?
- Are you expecting to learn something new whilst listening to the podcast?

Table 1. Results of Preliminary Market Research Survey

	Nr. of 'Yes' responses	
I am aware of what the acronym WiSTEM2D stands for	45%	
I am aware of WiSTEM2D issues	40%	
I have listened to a podcast within the last month	62%	
I would listen to a podcast centred on WiSTEM2D issues	82%	
Preferred length of time for aforementioned podcast:		
<u>Less than 10 minutes</u>	<u>10 - 30 minutes</u>	<u>30 - 45 minutes</u>
32%	54%	14%

Section two consisted of the recording of the interview itself, while section three consisted of the 'post-podcast' questions to be completed after the recording had ended:

- How much of the Podcast did you listen to? (Remember this survey is anonymous)
- How beneficial was the podcast?
- How informative was the podcast?
- How much did you enjoy listening to the podcast?
- How would you rate the length of the podcast?
- What would make the podcast more enjoyable?

Given that twenty-five responses were obtained from the second survey in this investigation, we recognize this is an initial reflective investigation and therefore, it may be assumed that validity will not be high. Ideally, the investigation should have spanned over a longer period of time, between releasing the podcast episode with the survey questions, and closing the survey for review. This may have allowed for an increased number of responses and in turn, higher validity.

Table 2. Results of Podcast Satisfaction Survey

Nr. of 'Yes' responses				
Have you ever listened to a STEM Podcast before?	15%			
How much of the podcast did you listen to?				
<u>Less than 10 minutes</u>	<u>10 - 15 minutes</u>	<u>Entire Podcast</u>		
20%	20%	60%		
How informative did you find the podcast?				
<u>Not Informative at all</u>	<u>Somewhat Informative</u>	<u>Informative</u>	<u>Quite Informative</u>	<u>Very Informative</u>
0%	15%	25%	40%	20%

The aim of the podcast series in the future would be to educate listeners on various topics relating to life in STEM2D thus, tackling the gender differences mentioned above. The podcast would feature a separate guest on each episode to keep the podcast content engaging and enticing to both new and regular listeners. The guests would be drawn from a wide range of STEM2D backgrounds, allowing for flexible, varying content. Podcast listeners may also offer feedback on episodes and suggest potential guests for future episodes, allowing for engagement with listeners beyond this investigation.

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