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Engaging Undergraduate Students with Themes and Hats from Popular Media in a Statics Course

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Engaging Undergraduate Students with Themes and Hats from Popular Media in a Statics Course

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Abstract

A program called "The Many Hats of Statics" was created for use within an engineering mechanics course, statics, to improve the student engagement by incorporating fun activities into the classroom experience. The centerpiece of these activities was a theme and corresponding hat which the instructor would wear, related to a popular movie or TV series. Themes consisted of science fiction movies like Star Wars, fantasy movies like Lord of the Rings, and other iconic pop culture references like the Karate Kid and Robin Hood. The theme was introduced in a theatrical manner by first introducing the theme through a sound clip related to the theme, which was usually a song from the soundtrack. Then, students were given an opportunity to guess the theme in a Name-That-Tune manner before the instructor appeared from behind a screen wearing a hat related to the theme. Then, various activities related to the theme were presented, including a video clip, information about an engineering invention, and an example problem, all of which directly related to the theme.

This program was implemented in two sections of a statics course in Fall 2023 and evaluated using a student feedback survey. This survey assessed the perceived fun of the various elements of the project as well as traditional course activities using a Likert scale ranging from 1 = not at all fun to 5 = extremely fun. The survey also assessed general statements about the student learning experience and engagement in the course ranging from 1 = strongly disagree to 5 = strongly agree. The results of this survey indicated strong student support for the program. Specifically, students reported mean ± standard deviation for the overall project as 4.45 ± 0.577, indicating that they generally found the project to be fun. The highest perceived fun level was indicated for the hat as 4.73 ± 0.532. Students also reported 4.41 ± 0.606 for the project having a positive impact on their learning, and 4.59 ± 0.497 for the project having a positive impact on their engagement, indicating that they agree to strongly agree with these statements. Therefore, this project was determined to be a successful approach for incorporating fun elements into the classroom to help improve perceived student engagement in the course. The ideas presented in this work have the potential to be implemented in other courses including other disciplines to achieve similar benefit.
Keywords: Engineering Education, Engineering Mechanics, Statics, Student Engagement

Introduction

Engineering instruction, particularly in engineering mechanics courses such as statics, often relies on generic textbook problems for students to learn and practice the content. These types of problems rely on generic shapes and objects such as rods, bars, spheres, etc. and applied forces coming from some unknown source. Ideally, relatable examples are developed and provided to the students so that they can apply the course concepts in context and in practice. It is well-established that real-world examples bring great value to engineering instruction[1]. However,

what about non-real-world examples? What about those situations occurring in the realm of fantasy?

With a bit of a stretch of the imagination, and assuming the same laws of physics still apply, why not delve into the depths of Middle Earth, travel to a galaxy far far away, or dance through the halls of Arendelle, Winterfell, or the Mushroom Kingdom? The main idea for this project was to incorporate a novel weekly activity in class on Fridays which involved a themed presentation and a customized example problem based upon a theme from popular media (movies, TV, games, sports, music, etc.). A total of 11 themes were developed for this project. As part of this experience, the instructor wore a hat that was representative of the theme, which is the reason for the project name "The Many Hats of Statics." Hats were selected as a simple and cost-effective solution for providing some theatrics and theming to the classroom environment.

Students like fun things. Fun activities in the classroom can help to improve student engagement in the course[2]. Fun in the classroom can help to improve trust and the overall relationship between the instructor and the students[3]. There are multiple different ways that fun has been incorporated into the college classroom, such as games[4], humor[5], or having the instructor bring in food. Many researchers, e.g. [6,7], have identified fun as a key component in making learning successful. Similar projects were successfully implemented in a fluid mechanics course[8] and a machine dynamics course[9], which reported positive student experiences.

This project resulted in the creation of a novel undergraduate learning experience in the classroom. Institutional Review Board (IRB) approval was obtained to evaluate the effectiveness of the project through a student survey. The details of the implementation as well as the student survey results are provided in the following sections.

Implementation

The proposed learning experience was implemented within an undergraduate Statics course. In the studied semester, this course was offered in two sections, scheduled for Mondays, Wednesdays, and Fridays from 9:05-10:20 am (Section 1) and 10:35-11:50 am (Section 2). The enrollments for the course were 25 students in Section 1 and 27 students in Section 2. Every Friday in each section, an activity named "The Many Hats of Statics" was conducted at the beginning of the class period. This activity was run through a digital slideshow, consisting of eight components:

1. An introductory slide containing pictures of many different hats from various cultures. The same introductory slide was used for all weeks.
2. Without revealing any additional information, a sound clip was played. Students were then supposed to guess the theme based on the sound clip alone.
3. While the students listened to the sound clip, the instructor secretly put on a hat that was selected to reveal the theme. After students have correctly (or incorrectly) guessed the theme, the instructor appeared wearing the hat.
4. A video clip was shown to the class from the selected theme. This was usually a strategically selected clip from the featured movie or TV series that was in some way related to the relevant concepts or example problems.

5. An invention (recent or historical) that is somehow related to the theme. Some general information is provided about the invention including a link to the source content for more information.
6. A short story was written by the instructor to introduce the themed example problem. These stories aimed to create a connection between the theme and the considered statics topic.
7. A themed example problem that is to be solved in the classroom. Most problems were presented in an active learning environment, where students solved the problem individually or in small groups and then the instructor explained the solution.
8. A meme related to the theme. This was included just to add a bit of lightness and humor to the end of the slideshow presentation before transitioning to the example problem solution. Since this content was taken directly from internet sources, this information is not provided to avoid any potential copyright issues.

A visual outline of these key steps is provided in Figure 1 for an example theme.

Figure 1. Visual outline of "The Many Hats of Statics" presentation for an example theme, "The Walking Dead" [Photo Credit: Landen Jamison]

One exciting aspect of this project for the students is the surprise element. That is, all themes are kept secret by the instructor until the in class reveal. This surprise aspect adds some mystery and fun to the experience, while also providing some gamification of the project. The first clue that students receive regarding the theme is an auditory clue by means of a sound clip. Once the sound clip is played, students are given the opportunity to guess the theme. This format follows the popular "name-that-tune" trivia style games. The sound clips generally were taken from the soundtrack of the theme. Details for each of the themes and corresponding selected sound clips are provided in Table 1.

Table 1. Description of sound clues for theme reveal

Theme	Sound Clip Title	Year	Artist/Composer
Star Wars	Star Wars (Main Theme)	1977	John Williams
Lord of the Rings	Theme from The Lord of the Rings	2001	Howard Shore
The Walking Dead	Theme from The Walking Dead	2010	Bear McCreary
Indiana Jones	The Raiders March (Indiana Jones Theme)	1981	John Williams
Harry Potter	Hedwig's Theme (Theme from Harry Potter)	2001	John Williams
Robin Hood	(Everything I Do) I Do It for You	1991	Bryan Adams
The Goonies	Theme From the Goonies	1985	Dave Grusin
Pirates of the Caribbean	He's a Pirate	2003	Badelt and Zimmer
Football	Kernkraft 400	1999	Zombie Nation
Monty Python	King Arthur's Theme	1975	Neil Innes
Karate Kid	You're the Best Around	1984	Joe Esposito

While the sound clip plays, the instructor is concealed behind a portable screen and puts on the hat for the theme. After giving some time for the sound clip to play and students to call out their guesses on the theme, the instructor pops up from behind the screen revealing the hat. Students then have an additional opportunity to guess the theme from the hat, which represents the second clue for the theme. An example reveal is shown in the photo in Figure 2.

Figure 2. Photo showing an example hat reveal [Photo Credit: Sherry Heckman]

Following the reveal of the hat, the instructor then advances the slide which displays an image that names the theme. Then, a video clip is played which shows an important, memorable, or relevant aspect of the theme as it relates to the course concepts. Note that for some themes, the clip is just selected to be a fun part of the movie or TV series. All videos were selected from freely available content on YouTube, with details provided in Table 2. Note that the video clip for The Walking Dead contains some blood, so students are warned in advance of this clip not to watch if they are sensitive to that type of content. The clip for Robin Hood was selected from "Men in Tights," which is a comedic parody of Robin Hood to present a comedic element over the more serious "Prince of Thieves" film which was used for the sound clip. Similarly, Little Giants was selected for a movie clip to provide clean humor for the theme of American football.

Table 2. Description of video clips for the theme

Theme	Video Clip Description	YouTube Link
Star Wars	Star Wars Lego re-enactment of the Ewok swinging trap scene from Return of the Jedi	https://www.youtube.com/watch?v=Icsu969qnX4
Lord of the Rings	"You Shall Not Pass!" scene from The Fellowship of the Ring in the mines of Moria	https://www.youtube.com/watch?v=3bReJswiMGM
The Walking Dead	A scene from the first season of The Walking Dead involving a hoard passing on a highway	https://www.youtube.com/watch?v=zaJKIFrrt4s
Indiana Jones	Scene from Raiders of the Lost Ark where Indiana Jones swaps the idol with a sandbag	https://www.youtube.com/watch?v=0gU35Tgtlmg
Harry Potter	Classroom scene where Hermione teaches Ron how to properly levitate a feather	https://www.youtube.com/watch?v=Qgr4dcsY-60
Robin Hood	Scene from Robin Hood: Men in Tights where Robin Hood battles Little John	https://www.youtube.com/watch?v=PDP245bQ6Fk
The Goonies	Top 10 moments from The Goonies featuring various inventions from the Character Data	https://www.youtube.com/watch?v=jwXE2_sAM4I
Pirates of the Caribbean	Scene from "Dead Man's Chest" where the Kraken (a sea creature) attacks the ship	https://www.youtube.com/watch?v=vEf0o01ghck
Football	Scene from the comedy movie "Little Giants" where antacids are used for intimidation	https://www.youtube.com/watch?v=ixsXkrBV80A
Monty Python	Scene from Monty Python and the Holy Grail where coconuts are used to mimic horse riding	https://www.youtube.com/watch?v=JHFXG3r_0B8
Karate Kid	"Sweep the leg" and the crane kick scene from the original 1984 Karate Kid	https://www.youtube.com/watch?v=8cPM8DaOSFk

One of the more educational aspects of this project was the brief explanation of an invention that is in some way connected to the theme and/or movie clip for each week. The details for the selected inventions are provided in Table 3. Note that the year and culture of origin are approximate, and some of these details vary depending on the historical resources. In each instance, the oldest reported instances found are listed in an attempt to credit the earliest inventors of these engineering marvels. Inventions were selected to represent a variety of different cultures. This was also an opportunity to introduce some historical content into the course and provide some background on various engineering inventions throughout history and from across the world.

Table 3. Description of inventions related to the theme

Theme	Invention	Year	Culture of Origin
Star Wars	Aero-X Hoverbike	2008	United States
Lord of the Rings	Siege Towers	Bronze Age	Ancient Egypt
The Walking Dead	Recreational Vehicle (RV)	1884	United Kingdom
Indiana Jones	Whip	3000 BC	China/Egypt
Harry Potter	Eyeglasses	Late 1200s	Italy
Robin Hood	Bow and Arrow	60000 BC	South Africa
The Goonies	The Boxing Glove	1743	England
Pirates of the Caribbean	Ships	4000 BC	Egypt
Football	The Football Helmet	1896	United States
Monty Python	Domesticated Horses	4000 BC	Kazakhstan
Karate Kid	3D Printing	1981	Japan

An important aspect of this project is the connection between the theme and the relevant course content for Statics. Bridging this gap required some creativity, and sometimes a bit of a stretch of the imagination. To aid in creating this connection, a story was written to introduce the example problem. The full descriptions of these stories are provided in Table 4. The majority of these short stories were written by the author, however in a few cases (as noted in Table 4) other sources were used to provide the appropriate context. The stories were intended to be light, fun, and possibly humorous, while also providing background context for how the theme relates to the Statics problem. The story is displayed on the classroom projector screen and the instructor also reads the story out loud to the students.

Immediately after the story is read aloud, the example problem is presented in a format similar to other example problems in the Statics course. That is, a diagram is provided along with a problem statement. Some example photos of the instructor presenting the example problems is shown in Figure 3. To avoid any copyright issues, the full details for the example problem descriptions are not provided here. These problems were pieced together from various textbook diagrams, internet images, and instructor customized graphics. Note that these diagrams are often a bit silly in the presentation, which adds to the fun for the project. That is, a significant amount of effort is not required to make high quality customized images. Instead, awkwardly placed clipart images on top of textbook diagrams sufficed to provide interesting and amusing problems for the students. After presenting the example problem and giving the students time to work, a slide is shown briefly presenting a meme related to the theme. This content was only added to provide a bit of light humor at the end of the presentation. This content is not shown in this paper to avoid any potential copyright issues since this content was pulled from various internet sources.

Solving the example problems was a good opportunity for active learning in the classroom. With a few exceptions due to the timeline of content, generally the students were given time to work independently or in small groups to solve the problem. Then, after ample time was provided for students to work independently, the instructor worked through the solution on the chalkboard in a format similar to typical classroom lectures in the course. This maintained a level of consistency in the presentation of course content while also incorporating active learning and a fun activity into the class. Some example photos of the instructor working through example problems wearing the themed hat are shown in Figure 4 and Figure 5.

Table 4. Example stories to set up the example problems

Theme	Customized story written by the instructor
Star Wars	Lumat, a woodcutter Ewok, worked diligently to prepare the log trap which was vital to subjugate the imperial forces during the battle of Endor. After securely anchoring a rope into one tree, he fearlessly shimmied up another tree, lifting a heavy log with a rope. He held tightly onto the rope horizontally, waiting for just the right moment to release the rope and spring his devastating trap.
Lord of the Rings	Frodo, whilst holding the One Ring out in admiration, accidentally dropped it. It landed on a hook hanging from a rope. Luckily, Gandalf was able to "You Shall Not Pass" with his staff to stop the rope from falling into the depths of Moria. However, unbeknownst to the Fellowship, Gollum was lying in wait in order to make a grab for the ring. He jumps and grabs the One Ring, holding on to the precious. Legolas and Gimli grasp onto ropes to assist the wizard. Hopefully they can maintain equilibrium…
The Walking Dead	You are walking through an empty street when suddenly you hear the sound of glass shattering. Walkers spill out into the street from a broken storefront window. You manage to sprint towards a house with a gate. You stumble with the latch, breaking it off in the process, but were able to safely make it to the other side. You are tired from running, but hopefully you have enough strength to hold the gate closed.
Indiana Jones	Hats are important. We love hats. Indiana Jones can't leave his hat behind, even at the risk of losing an arm. In the temple, the door consists of two sections, each applying a distributed load on the floor of the temple. If Indiana Jones was unable to pull his arm out in time, could he have withstood the force of the temple door?
Harry Potter	Hermione Granger, a dedicated Hogwart's student, values the importance of note taking, attendance, and organization. She devises a plan to organize her magical equipment and materials using a tube system. She decides to test out the system using her wand, which is a vine wood wand with a dragon heartstring core
Robin Hood	For this story, a summary of the old Robin Hood legend was used rather than a customized story. This content can be found on Wikipedia: https://en.wikipedia.org/wiki/Robin_Hood_and_Little_John
The Goonies	Data, known for his gadgets and inventions, has created the "Bully Buster," which can pop out and strike with a boxing glove attachment. It connects to his chest plate, which activates and readies the contraption if it senses danger, with a ringing bell as an alarm.
Pirates of the Caribbean	For this story, the Ancient Greek legend of Jason and the Argonauts and the quest for the Golden Fleece was used rather than a customized story. For example, see https://en.wikipedia.org/wiki/Golden_Fleece
Football	The football coach was feeling saucy and decided to challenge the players. The coach took a tackling dummy and bolted it down, such that the base of the dummy acted as a fixed support. This would allow the players to see what it is like to try to tackle a player with a solid base. Then, the coach instructs two players to tackle the dummy at the same time from opposite directions.
Monty Python	The legendary sword Excalibur appears in various myths, legends, and stories. One of the popular legends of Excalibur is the sword in the stone. Once again, we are faced with this legend, however, now it is a tale of friction and wedges, rather than wizards and kings. Will you have what it takes to pull the sword from the stone?
Karate Kid	The crane kick is a fictionalized version of the Mae tobi geri (Japanese: 前飛蹴). The move was created by Daryll Vidal for the classic film The Karate Kid. The move involves a one-legged karate stance and launches into a flying jumping kick. Balance is an important element of martial arts and is tied to the concept of centroids. Source: https://en.wikipedia.org/wiki/Crane_kick

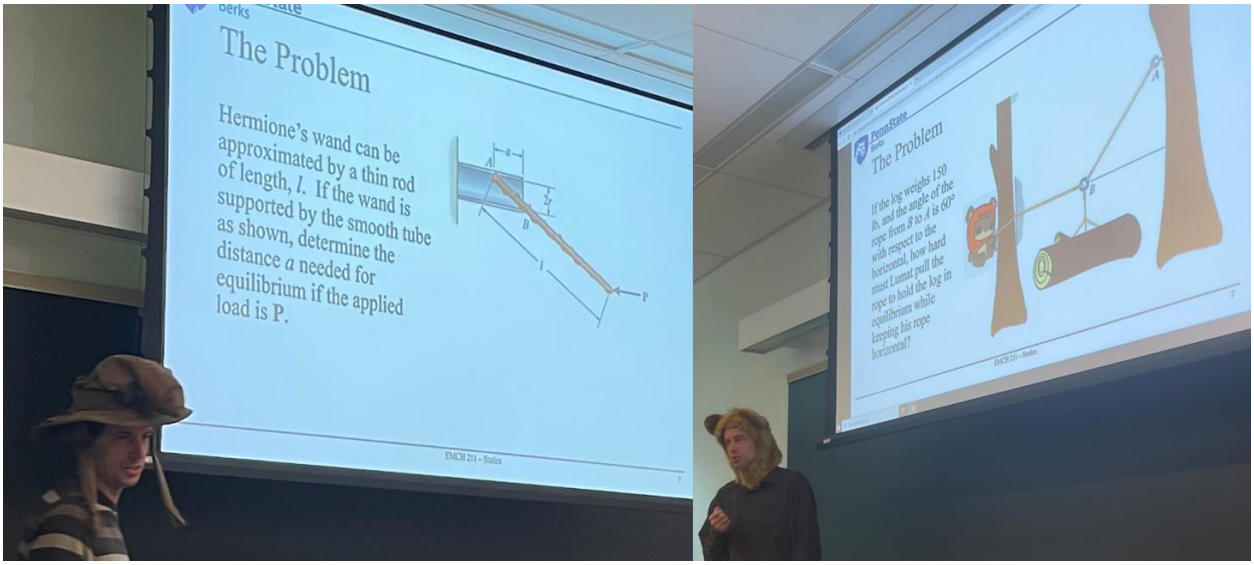

Figure 3. Example photos of the instructor presenting example problems [Left Photo Credit: Mark DeChristopher] [Right Photo Credit: Jocelyn Espinoza]

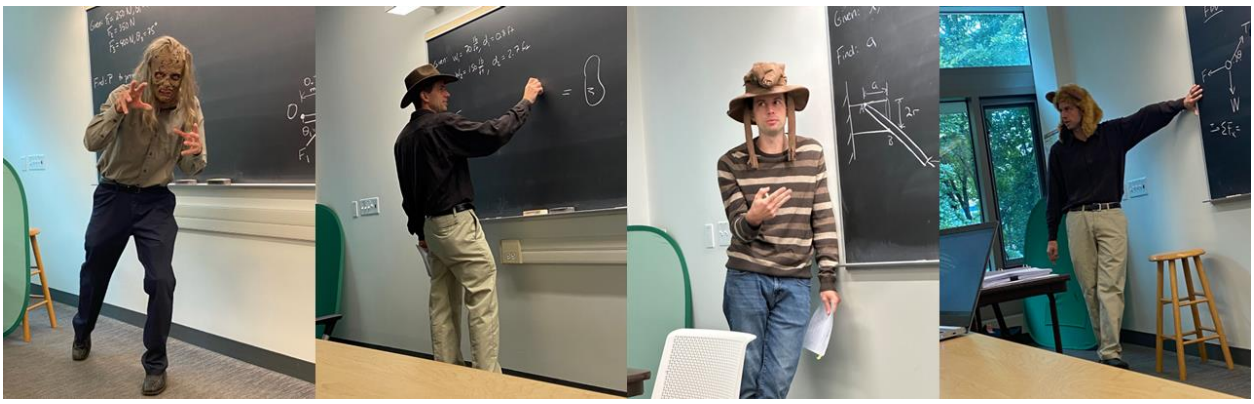

Figure 4. Example photos of the instructor working through example problem solutions [Photo Credit: Deacon Hearing]

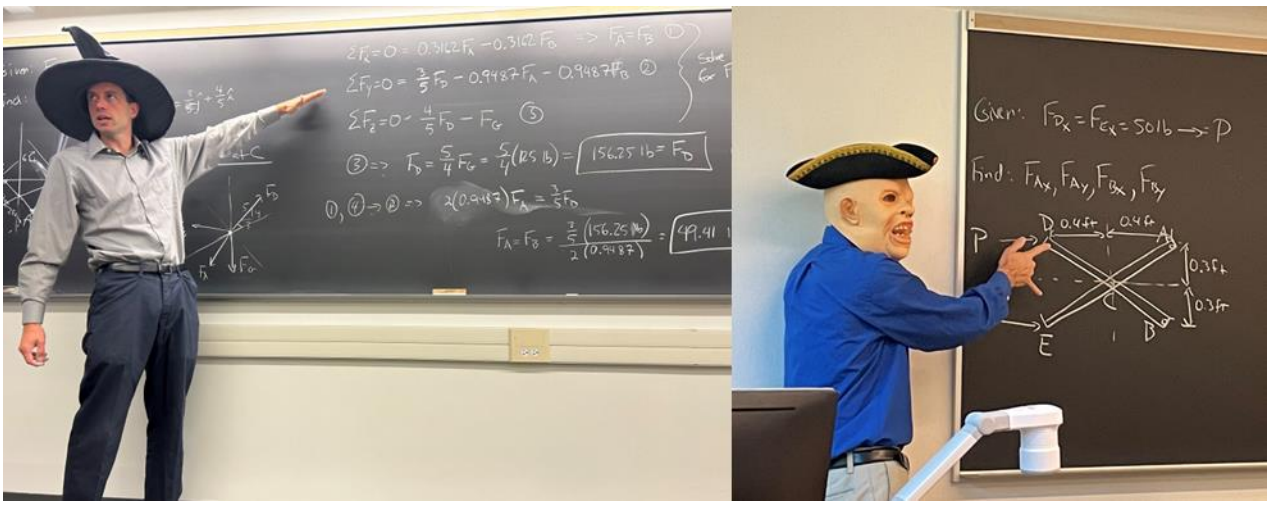

Figure 5. Example photos of the instructor working through example problems [Left Photo Credit: Zachary Smith] [Right Photo Credit: Mark DeChristopher]

To establish connections between the themes and the course content, different methods were implemented. One simple way that was utilized for creating themed example problems was done by adding theme elements to the problem. For the Star Wars, Lord of the Rings, The Walking Dead, Harry Potter, Robin Hood, and Pirates of the Caribbean themes, classic Statics problems were modified in a way that themed elements were included without really changing the fundamentals of the problems. This made the problems more fun and interesting to solve, without any significant change to the content. The example problems for the Indiana Jones, The Goonies, football, Monty Python, and Karate Kid themes, custom problems were created from a key element from the theme. That is, the theme provided a direct inspiration for a new Statics problem. For example, the iconic Crane Kick from the Karate Kid was used to create a new composite bodies centroid problem. Similarly, a frames and machines problem was created based on the mechanism design of the "Bully Buster" invention from The Goonies. These example problems required more effort and creativity than the others but provided a more natural connection between the course content and the theme.

Table 5. Description of statics concepts and connection to the corresponding theme

Theme	Statics Concept	Connection to Theme
Star Wars	Particle Equilibrium in 2D	A 2D equilibrium problem was created based on an Ewok log trap and solving for the force required for an Ewok to hold the trap in place
Lord of the Rings	Particle Equilibrium in 3D	A 3D equilibrium problem was created where various Lord of the Rings characters were pulling the One Ring in various directions
The Walking Dead	Moment of a Force	Students were asked to solve for the force a person would need to apply in order to prevent Walkers from opening a gate
Indiana Jones	Distributed Loads	Distributed loads for a stone door from the Indiana Jones scene where he reaches under the closing door to grab his hat
Harry Potter	Rigid Body Equilibrium in 2D	A magic wand is used as an example rigid body within a problem to solve for necessary forces to hold the wand in place
Robin Hood	Trusses	Modeled after the scene in which Robin Hood and Little John battle on a bridge, a classic Statics truss problem is solved where the loading on the truss consists of the two characters
The Goonies	Frames and Machines	One of the gadgets from the character "Data" is used as the machine to calculate forces in the multiple body system
Pirates of the Caribbean	Rigid Body Equilibrium in 3D	A Kraken attack on a ship mast is used as an example for how forces are applied to the 3D system involving tension forces from the rigging
Football	Internal Forces and Moments	A football tackling dummy with forces applied from two different players is used as an example to calculate internal forces and moments
Monty Python	Friction	The sword in the stone legend is used as the context for a friction wedge problem
Karate Kid	Centroids	A simplified model of the crane kick which defines body segments using rectangles is used to create a centroid problem involving composite bodies

Results

To assess this work, an IRB-approved (Study #00023368) survey was distributed to the students in both sections of the course. The full survey is provided in the Appendix. The purpose of the survey was to assess the students' perceived fun and engagement for the various instructional activities implemented in the classroom. The hypothesis to be tested was that the inclusion of certain instructional activities increased the fun and engagement in the course. Note that while fun was one of the considered metrics in this survey, fun delivery was found to have a positive relationship with student engagement[2], and therefore measures of fun are used as a proxy to assess student engagement. After introducing the survey, the instructor left the room so that students could decide if they wanted to participate or not. Participants were instructed that their participation was voluntary, and they could choose to stop the study at any time with no penalty. Participants were informed that completing or not completing the survey would not impact their grade. If they chose to participate, the answers they gave would not impact their grade. Participants placed their surveys in an envelope which was sealed and delivered to the department administrative assistant. The envelope containing the survey results was not delivered to the instructor until after the course grades had been finalized.

For Section 1 of the course 24 out of 25 students completed the survey, while 27 out of 27 students from Section 2 completed the survey. The survey included assessment of the perceived fun of elements of the "Many Hats of Statics" project, as well as some questions regarding perceived fun of other elements in the course. The final section of the survey asked students to what extent they agreed with various statements regarding their engagement in the course.

Since the proposed intervention was implemented in both sections of the course, the overall results are analyzed by combining the survey results from the two course sections, resulting in a total of 51 responses. The results are shown as percentages of student responses in Figure 6 for the perceived fun of elements of the "Many Hats of Statics" project, in Figure 7 for the other instructional elements of the Statics course, and in Figure 8 for the engagement prompts.

It is shown in Figure 6 that the students perceived a very high level of fun for all elements of the "Many Hats of Statics" project. No items in Figure 6 received a score of 1 = not at all fun, and the majority of responses were 4 or 5 = extremely fun. The highest average score of 4.73 was provided for the hat, which is encouraging reinforcement that the hat was an important aspect of the project. The second highest average score of 4.68 was for the video clip, and the third highest score of 4.56 was for the sound clip, thus supporting the multimedia nature of this project. More details regarding the statistics of the survey results are provided for the three survey sections in Table 6, Table 7, and Table 8. Strong student support of the overall project is indicated in Table 8 from the very high average responses for the project having a positive impact on both learning and engagement in the course. Based on these survey results, this project is considered to be successful in creating a positive impact on student engagement and learning within a Statics course.

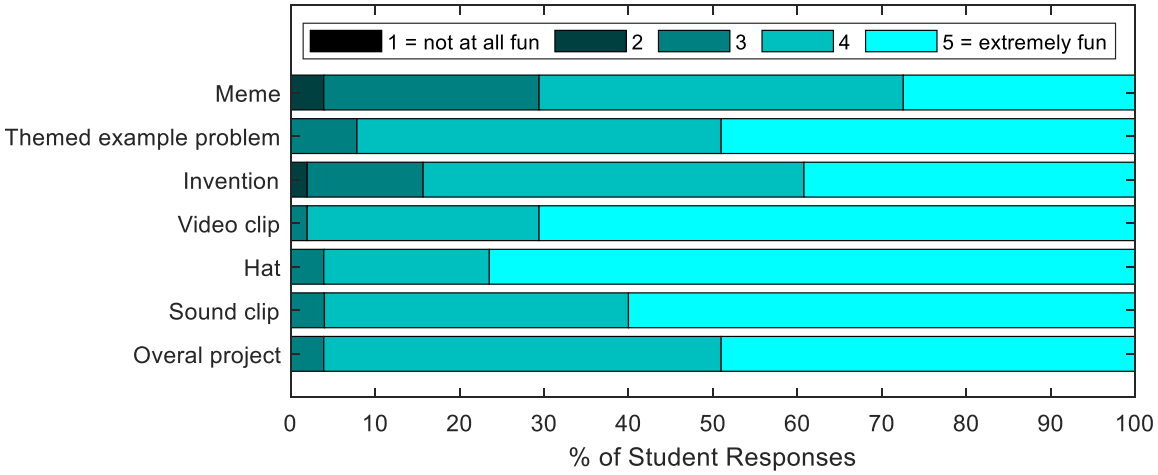

Figure 6. Summary of survey responses for the survey block corresponding to Perceived Fun of Elements of the "Many Hats of Statics"

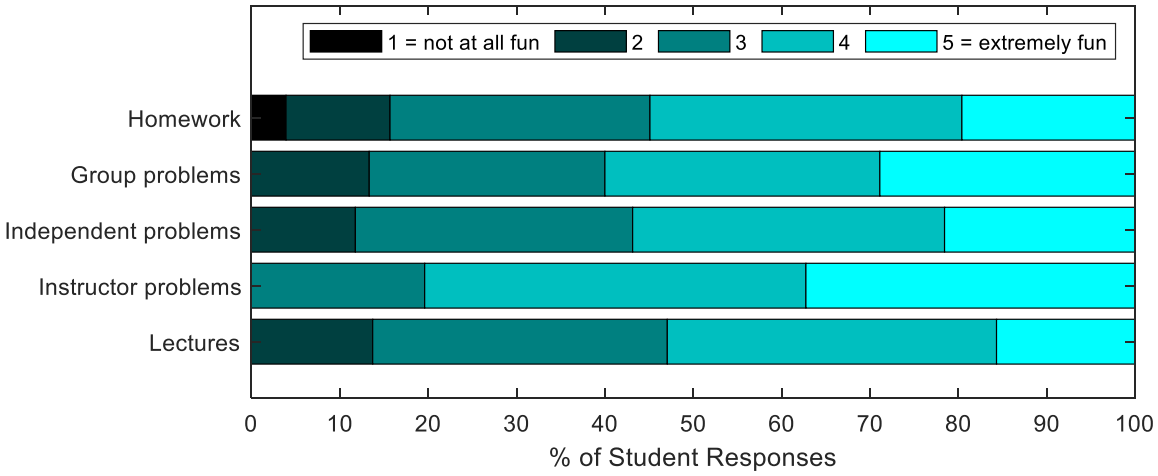

Figure 7. Summary of survey responses for the survey block corresponding to Perceived Fun of Other Instructional Elements of Statics

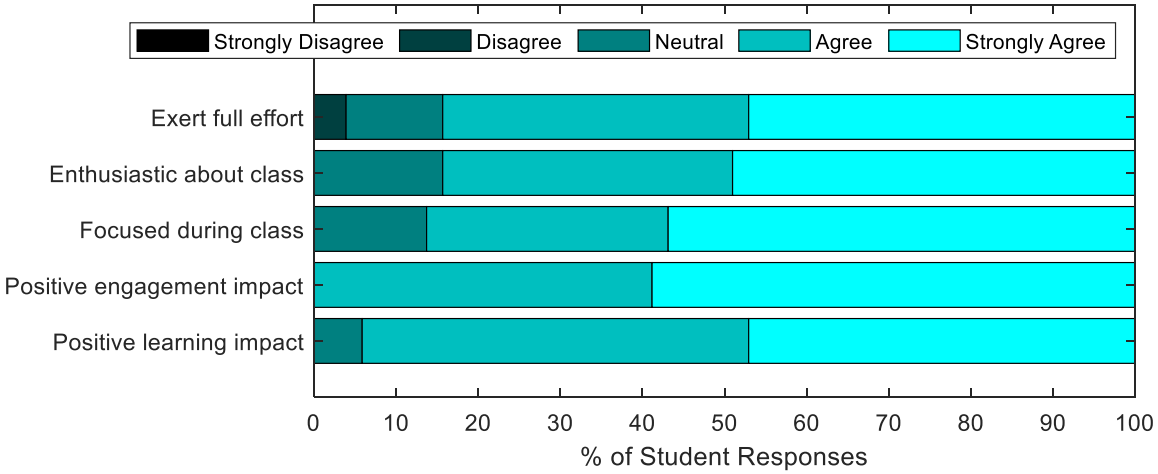

Figure 8. Summary of survey responses for the survey block corresponding to the engagement prompts

Table 6. Survey Statistics for Perceived Fun of Elements of the "Many Hats of Statics"

Element	Mean	Median	Mode	Standard Deviation
Overall project	4.45	4	5	0.577
Sound clip	4.56	5	5	0.577
Hat	4.73	5	5	0.532
Video clip	4.69	5	5	0.510
Invention	4.22	4	4	0.757
Themed example problem	4.41	4	5	0.638
Meme	3.94	4	4	0.835

Table 7. Survey Statistics for Perceived Fun of Other Instructional Elements of Statics

Element	Mean	Median	Mode	Standard Deviation
Class lectures (slideshow presentations)	3.55	4	4	0.923
Example problems by the instructor	4.18	4	4	0.740
Completing example problems independently	3.67	4	4	0.952
Completing example problems in small groups	3.76	4	4	1.026
Completing homework assignments	3.55	4	4	1.064

Table 8. Survey Statistics for engagement prompts

Element	Mean	Median	Mode	Standard Deviation
The "Many Hats of Statics" had a positive impact on my learning in this course	4.41	4	4	0.606
The "Many Hats of Statics" had a positive impact on my engagement in this course	4.59	5	5	0.497
My mind is focused during class for this course	4.43	5	5	0.728
I am enthusiastic about this course	4.33	4	5	0.739
I exert my full effort in this course	4.27	4	5	0.827

Conclusions

This work presented a detailed description of an experimental education project which involved the inclusion of themed activities into a Statics course. The centerpiece of this project was the incorporation of themed hats worn by the instructor which were revealed during some class sessions based on a particular theme. Then, corresponding classroom activities surrounding that theme were integrated into the course content. The success of this project was evaluated through a student perception survey. The survey results indicated strong student support for the project. The students particularly enjoyed the inclusion of the hats, video clips, and sound clips into the classroom experience. Additionally, students indicated that the project had a positive impact on their learning and engagement in the course. With some creativity, this type of project could be implemented in other courses to achieve a similar result.

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Appendix: Student Survey

This survey seeks to obtain student perspectives on the effectiveness of the "Many Hats of Statics" project. By participating in this survey, you consent to your responses being used for research purposes. Participation in this survey is voluntary. If you do not want to participate, you do not need to complete the survey.

Perceived Fun of Elements of the "Many Hats of Statics": Please indicate your experience with the following aspects of the "Many Hats of Statics" activities on a scale of 1 = *not at all fun* to 5 = *extremely fun*.

	Not at all fun <----------> Extremely Fun				
Overall project	1	2	3	4	5
Sound clip	1	2	3	4	5
Hat	1	2	3	4	5
Video clip	1	2	3	4	5
Invention	1	2	3	4	5
Themed example problem	1	2	3	4	5
Meme	1	2	3	4	5

Perceived Fun of Other Instructional Elements of Statics: Please indicate your experience with the regular class activities in EMCH211 on a scale of 1 = *not at all fun* to 5 = *extremely fun*.

	Not at all fun <----------> Extremely Fun				
Class lectures (slideshow presentations)	1	2	3	4	5
Example problems by the instructor	1	2	3	4	5
Completing example problems independently in class	1	2	3	4	5
Completing example problems in small groups in class	1	2	3	4	5
Completing homework assignments	1	2	3	4	5

Please circle the most appropriate response to each of the following:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The "Many Hats of Statics" had a positive impact on my learning in this course	1	2	3	4	5
The "Many Hats of Statics" had a positive impact on my engagement in this course	1	2	3	4	5
My mind is focused during class for this course	1	2	3	4	5
I am enthusiastic about this course	1	2	3	4	5
I exert my full effort in this course	1	2	3	4	5

In the space below and/or on the back of this page, provide any additional comments regarding the "Many Hats of Statics".