

Research & Grants Expo

March 26, 2025

9:00-12:00

Research Participants

Researcher (Department)	Researcher (Department)
Jacob Peng (Accounting & Taxation)	Gabriel Moreno (Marketing)
Rijasoa Andriamanana Josoa (Rooney Scholar)	Samantha Gibson (Marketing)
Jianyu Ma (Finance)	Artemisia Apostolopoulou (Marketing)
Yun Chu (Marketing)	Armand Buzzelli (Marketing)
Rob Ambrosini (Computer & Information Systems)	John Clark (Marketing)
Judit Trunkos (Social Sciences)	Hasan Celik (Management)
Frank Hartle (Computer & Information Systems)	Zhou Yang (Social Sciences)
Judit Trunkos (Social Sciences)	Benjamin Campbell (Engineering)
Qin Yang (Management)	Samantha Monda (Psychology)
Anna Abdulmanova (Finance)	Susan Parker (Education)
Stanko Racic (Finance)	Andrew Ames (Media Arts)
Patricia Kardambikis (Education)	Kihyun Park (Management)
Nicole Szalla	Jameela Al-Jaroodi (Engineering)
Jennifer Tepe (Education)	Samantha Gibson (Marketing)
Patricia Kardambikis (Education)	Barbara Burgess-Lefebvre (English & Media Arts)
Susan Parker (Education)	

Research Participants

Researcher (Department)	Researcher (Department)
Rika Carlsen (Engineering)	Sun-A Park (Communication & Organizational Leadership)
Manik Bansal (Post-Doc)	Ann Summerall-Jabro (Communication & Organizational Leadership)
Rika Carlsen (Engineering)	Ping Wang (Computer & Information Systems)
Yaohui Wang (Post-Doc)	Sushma Mishra Computer & Information Systems)
Vicki Donne (Education)	Noory Etezady Computer & Information Systems)
Noory Etezady (Computer & Information Systems)	Natalya Bromall (Computer & Information Systems)
Ping Wang (Computer & Information Systems)	Steve Mancini (Computer & Information Systems)
Sangho Shim (Engineering)	Noory Etezady (Computer & Information Systems)
John Stewart (Computer & Information Systems)	Parul Yadav (Computer & Information Systems)
G. Alan Davis (Computer & Information Systems)	Jamie Pinchot (Computer & Information Systems)
Rika Carlsen (Engineering)	Hongguo Wei (Management)
Anastasia Tzoumaka (Post-Doc)	Hongguo Wei (Management)
Isabella Roebuck (Post-Doc)	Daria Crawley (Management)
Anu Tripathi (Post-Doc)	Parul Yadav (Computer & Information Systems)
Rika Carlsen (Engineering)	Sushma Mishra (Computer & Information Systems)
Anu Tripathi (Post-Doc)	Natalya Bromall (Computer & Information Systems)
Isabella Roebuck (Post-Doc)	Jasmin Lin (Management)
Anastasia Tzoumaka (Post-Doc)	Richard Mills (English & Media Arts)
Chen Yang (Communication & Organizational Leadership)	

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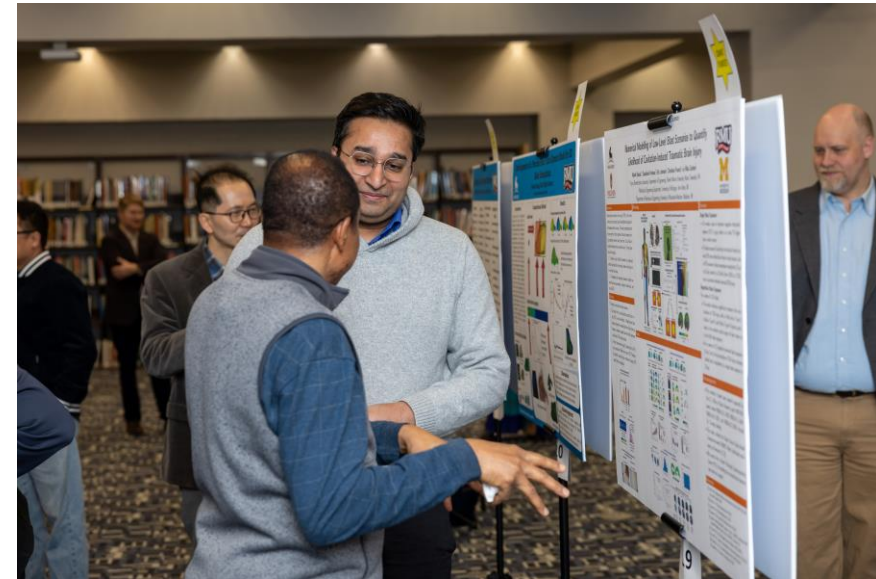
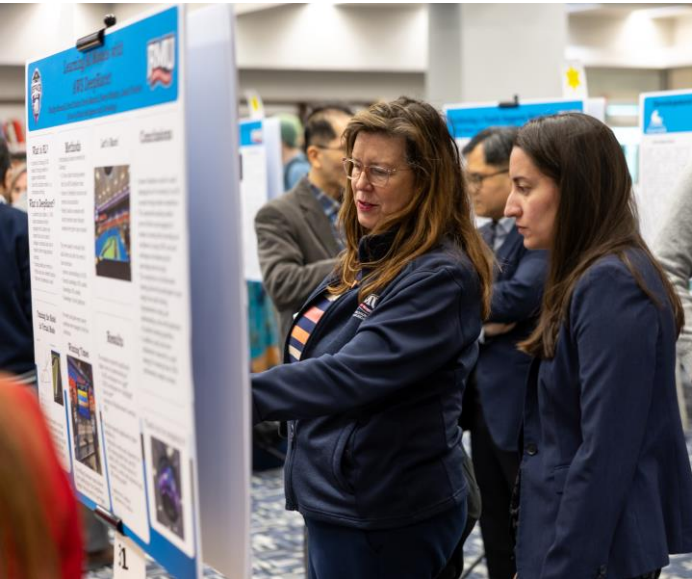
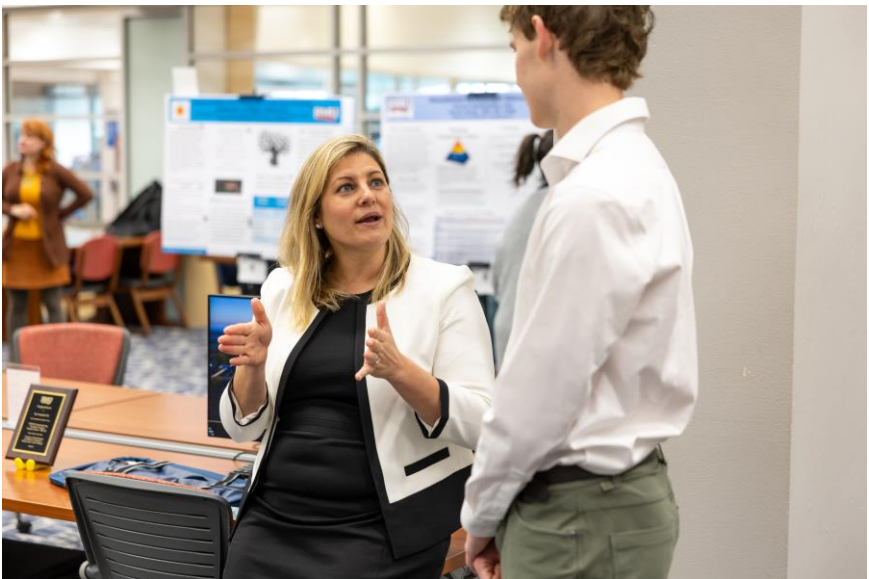


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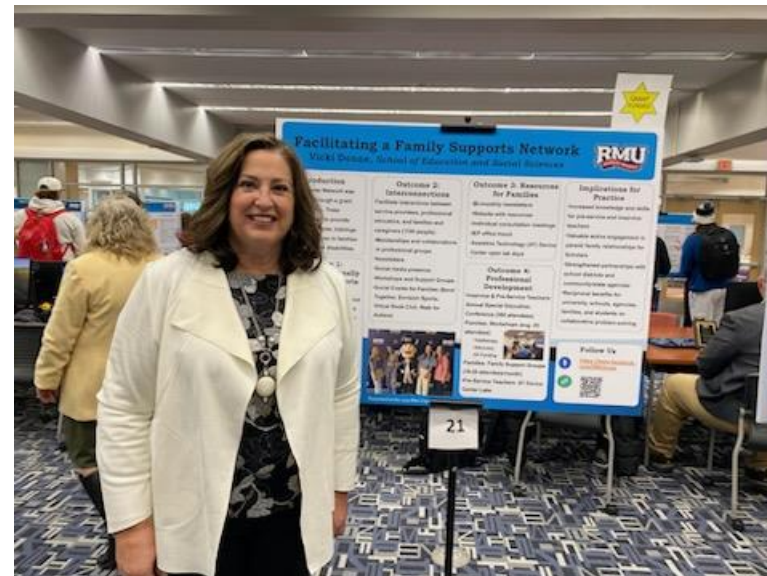
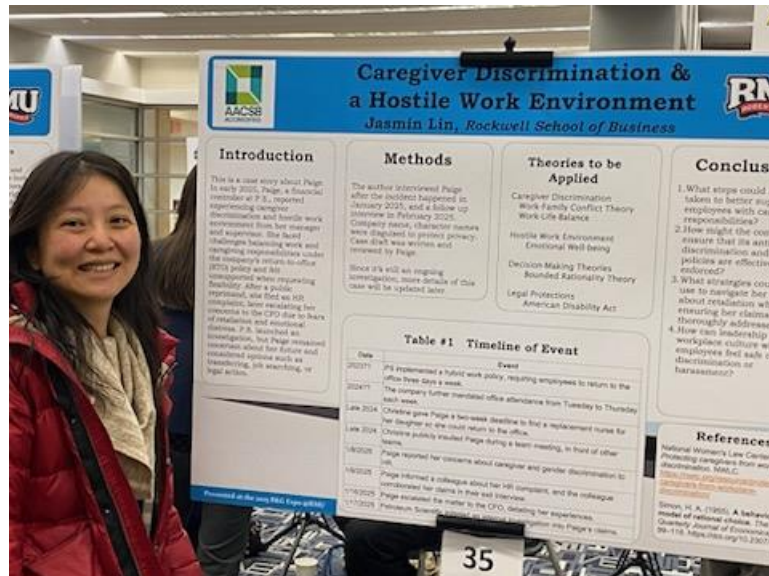
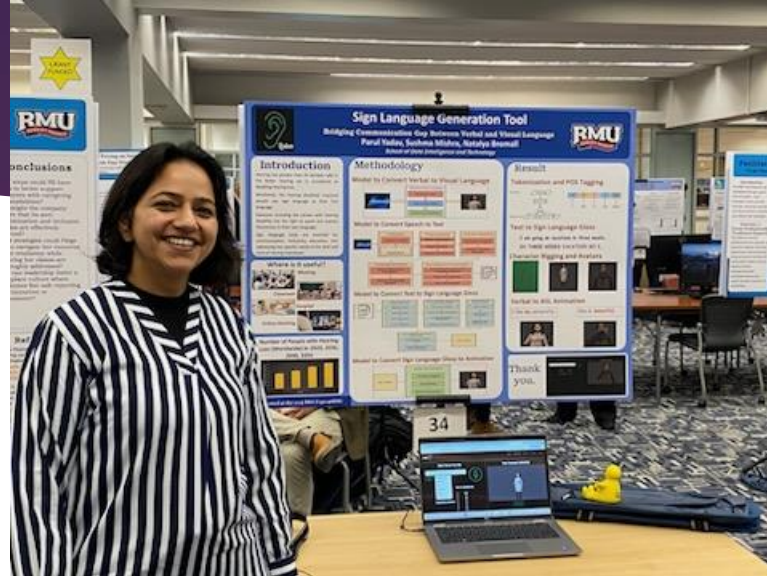
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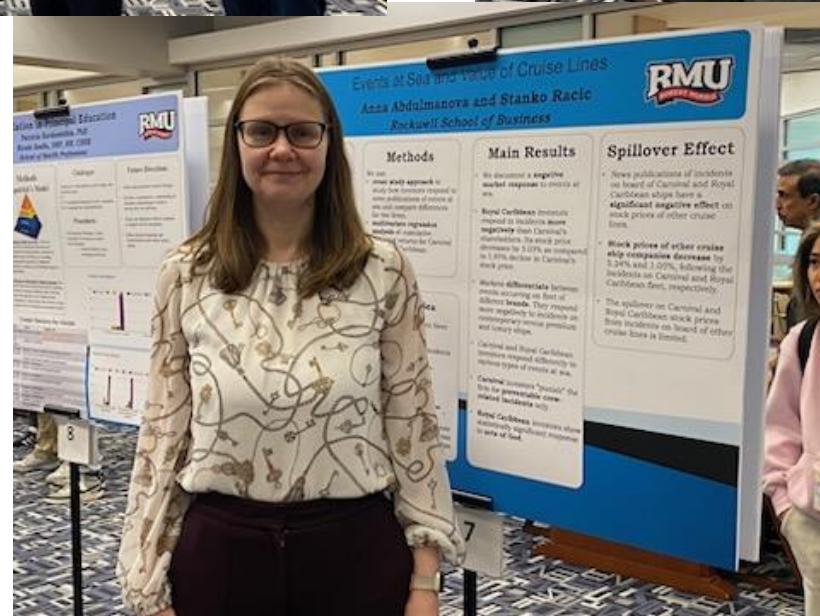
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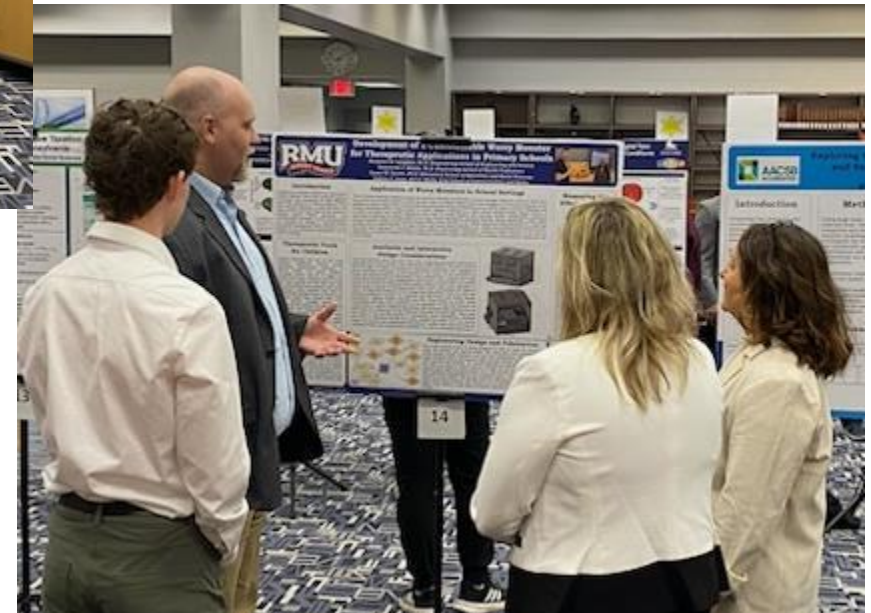
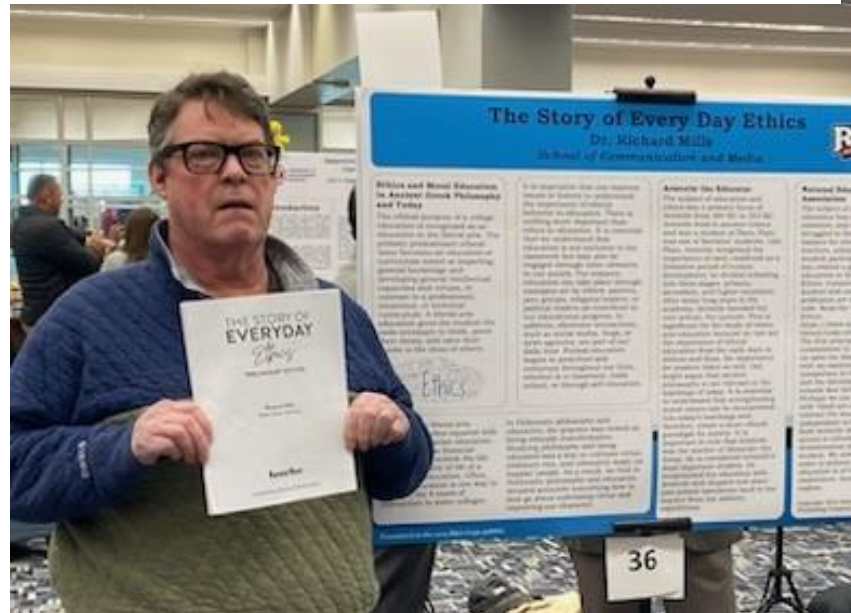
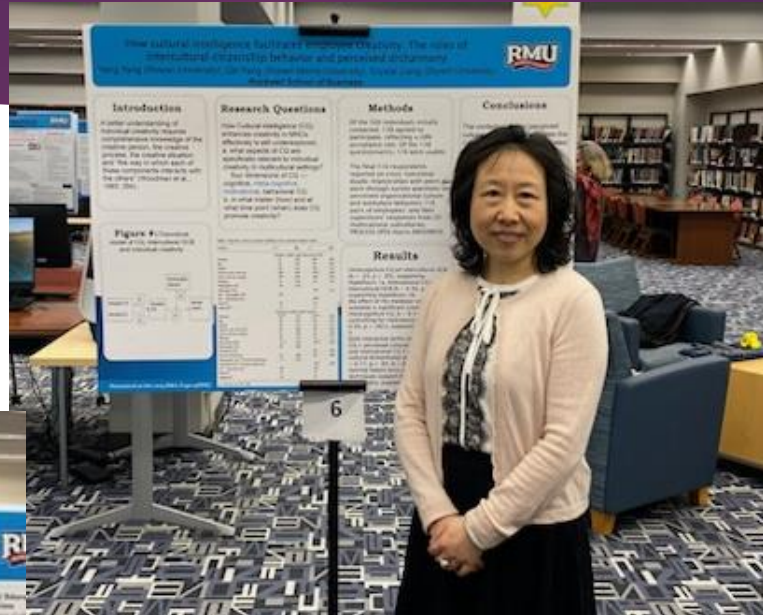
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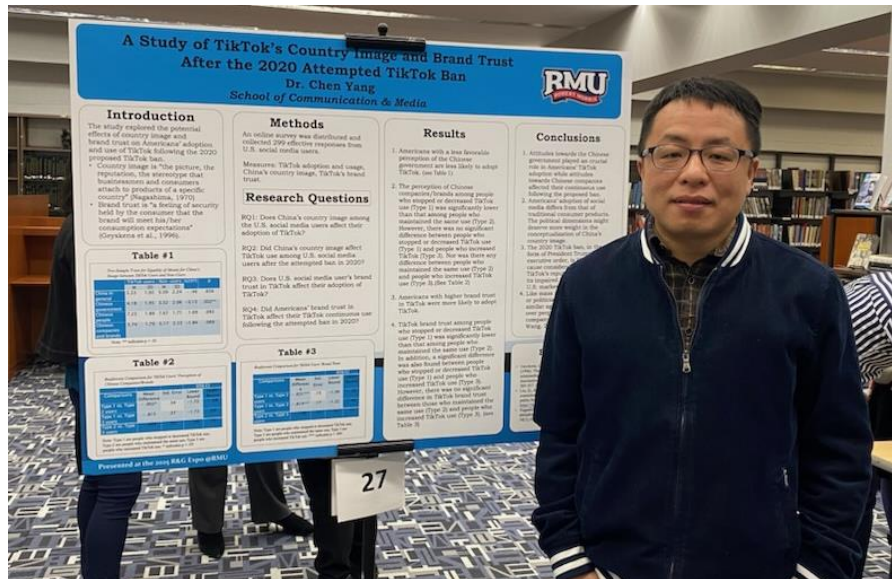
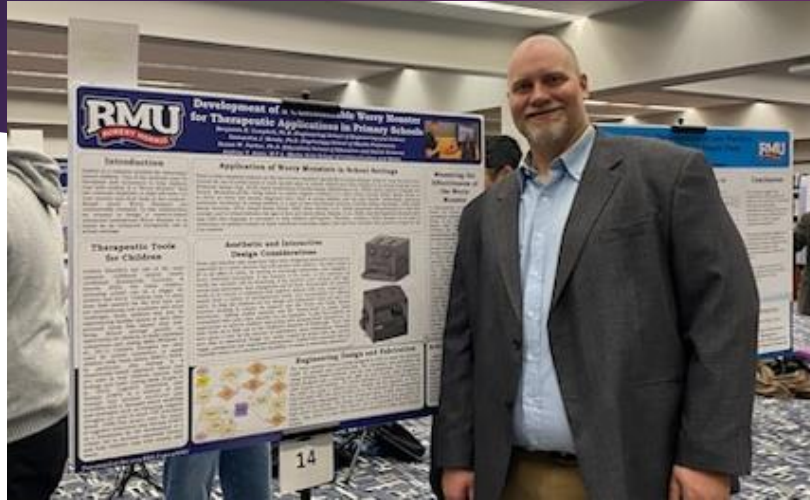
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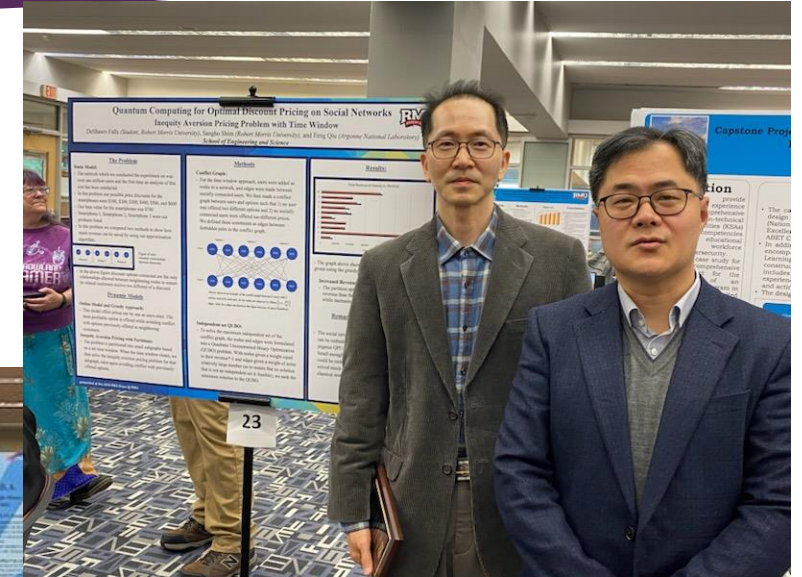
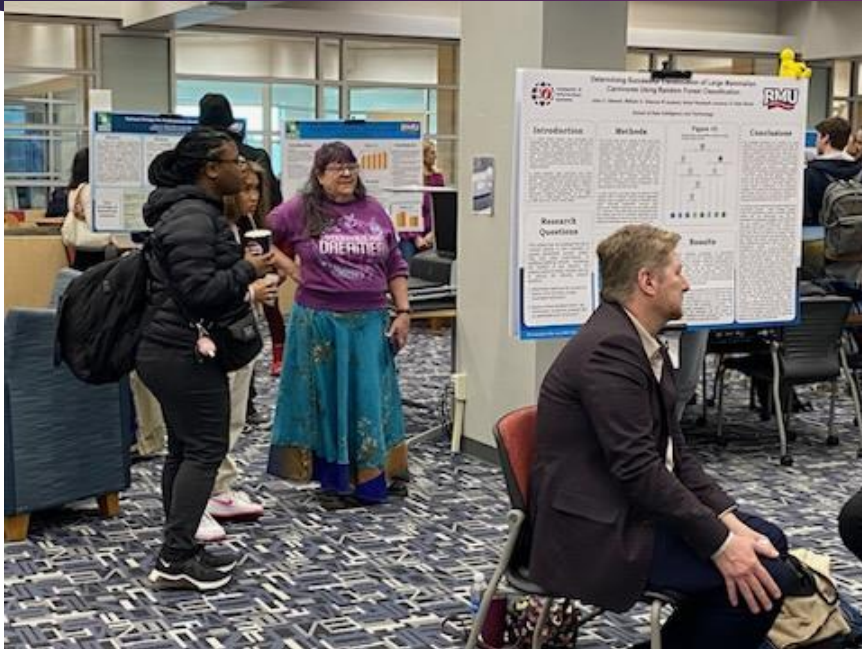
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Research Posters from RMU Schools

The Influence of Visual Complexity on AI-Driven Accounting Data Extraction



Jacob Peng, Ph.D., CISA
Richard J. Harshman Professor of Accounting
Rockwell School of Business



Artificial intelligence (AI) has been gaining traction in business, with many Enterprise Resource Planning (ERP) and Robotic Process Automation (RPA) tools incorporating AI capabilities. Traditionally, Optical Character Recognition (OCR) has been used to digitize accounting tasks by scanning source documents and feeding the raw data into the accounting system, but AI now offers the potential to significantly improve this process. This research investigates the impact of document design on the accuracy of AI-driven accounting data extraction. Using invoices as a representative source document, I examine how visual complexity, color choices, and background characteristics influence the performance of the Gemini AI platform. My findings reveal that **visual complexity and the number of colors used in invoice design significantly affect AI's ability to extract data accurately**. Additionally, the interaction between these two factors suggests that document design considerations for optimal AI performance are multifaceted. While AI demonstrates considerable potential in automating accounting tasks, my research underscores the importance of considering source document design factors that facilitate or hinder the automation of data extraction using AI. This study contributes to the ongoing development of AI in accounting and auditing by highlighting the interplay between document design and AI performance.

Business Case

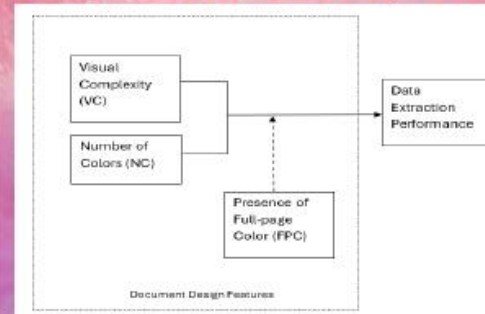


Their Global Business Services unit struggled with processing 824,000 invoices annually through manual data extraction from PDFs and entry into ERP systems. After implementing AI-powered document understanding technology, they achieved a 70% reduction in invoice processing time, with 53% of invoices now handled without human intervention, dramatically reducing the workload of eight full-time employees. The solution operates with 82.4% accuracy in reading documents and has proven scalable across multiple regions and business units, demonstrating how automation can transform traditional financial operations.

Research



Quantity	Description	Unit Price	Amount	Invoice Number	Invoice Date	PO Number	Due Date
1	Front end rear brake cables	100.00	100.00	US-001	11/02/2019	2312/2019	26/02/2019
2	New set of pedal arms	15.00	30.00	US-001	11/02/2019	2312/2019	26/02/2019
3	Labor 3hrs	5.00	15.00	US-001	11/02/2019	2312/2019	26/02/2019



Panel A. Variable Descriptive Statistics: Mean (Standard Deviation)

	Success	Failure
VC	0.814 (0.040)	0.804 (0.056)
NC	15.472 (1.134)	15.348 (0.668)

Panel B. Analysis of Covariance (ANCOVA) Results

	SS	DF	F	p-value
MODEL	1.538	4	1.715	0.153
Intercept	0.754	1	3.363	0.070
FPC	0.001	1	0.004	0.948
VC	0.674	1	3.007	0.086 *
NC	0.669	1	2.982	0.087 *
VC x NC	0.667	1	2.975	0.088 *

Variable Definitions:

FPC = Whether the invoice has full-page color other than white
VC = Visual complexity of the invoice design
NC = The number of colors used in the invoice design

Note: * Significant at 0.10 level



Empowering FRAM¹ Teachers in Rural Madagascar through Collaborative Action Research

Rijasoa Andriamanana Josoa, Ph.D.
*Robert University University / University of Mahajanga
Rooney Scholar*



Introduction

This project, led by Dr. Rijasoa and three graduate students, addressed the critical need for effective training for FRAM teachers—locally funded educators in remote schools, many lacking formal qualifications. The 12-week initiative, implemented in two southern sites with 23 teachers, shifted from traditional training to a collaborative, classroom-based approach.

Methods

The methods are:

- Volunteer training
- Collaborative lesson planning
- Group class observations
- Peer feedback sessions
- Reflection meetings

Lead researcher collected data from field notes, interview responses, lesson plans, and photographs of volunteers and teachers in action.

Practice changes in the classroom



Conclusions

- Teacher trainers should have pedagogy expertise and a genuine passion for children.
- Myth of FRAM teachers' incapacity was debunked as those teachers can excel in teaching.
- In-service training is more suitable than traditional workshops in a fancy venue.
- When teachers are empowered, they can and willing to empower their students.
- Training for teachers in rural classrooms should be unique and responsive to their local contexts.
- Professional development for teachers in remote areas should be a continuous effort to address the divide between rural and urban students.
- Rural students are as high performing and bright as their urban counterpart when provided with appropriate educational support.

The researchers in a rural classroom



Volunteer training



Results

1. Student participation: Teachers assigned tasks to students to engage them in learning process.
2. Questioning: Teachers encourage students to ask questions.
3. Group work: Teachers promoted student working together and helping each other.
4. Positive reinforcement: Teachers acknowledged student efforts.
5. Collaborative learning: Teachers started to realize that they also learned from their students to form a community.



¹ FRAM is Fikambanan ny Ray Amandrenin ny Mpianatra, which is the Parents' Association who pays the wages of rural teachers. FRAM teachers do not receive salary by the government, yet they make 90% of teacher body in Madagascar.



Can Police Officers Handle Mental Health Cases in Western PA?

R. Ambrosini, J. Trunkos, F. Hartle

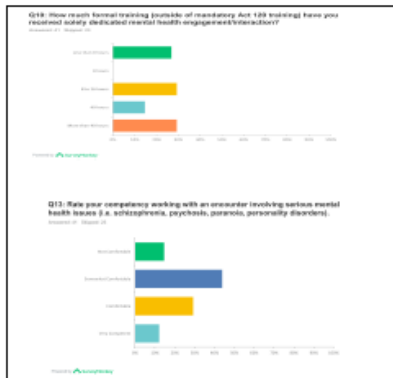
School of Data Intelligence and Technology & School of Education and Social Sciences



Abstract

An increasingly important question in law enforcement is whether officers can handle a variety of mental health cases. The authors are specifically interested in the attitudes of police officers specifically about two questions: 1) how prepared they feel they are; and 2) if they feel like they need more training

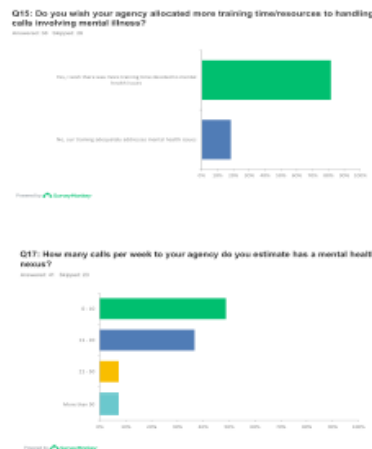
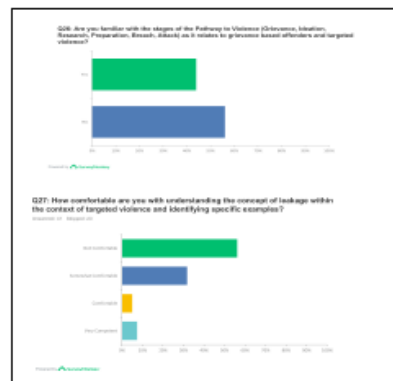
Training and Competence



Survey

This survey was sent to 340 members of the Western Pennsylvania Chiefs of Police Association in late 2023 - a group of current and retired law enforcement officials spanning federal, state and local jurisdictions in Western Pennsylvania. The authors received 64 responses to the survey questions. The purpose of this study was to identify the current competency levels of law enforcement departments in Western Pennsylvania on issues related to mental health as well as targeted violence/threat assessment cases. We also want to gauge if officers receive enough training and resources for these cases

Threat Assessment



Results



Overall, the findings of the survey show an uneven and unregulated amount of mental health training required and provided for officers. The survey results also indicate that training and resources for specifically threat assessment is even less consistent. Based on responses of the 64 officers show that they are open to more training in this area.

Steps Forward

Police and all first responders likely act as intermediaries between the mental health world and the criminal justice world.

- Form and alliance with the subject to arrive at the truth or desired outcome
- Obtain CIT training and knowledge on specific mental illnesses
- View interviewer behavior thru optics of modeling and 'looking glass effect'
- Project empathy, identify discrepancy, and preserve self-efficacy of the subject.
- Be aware of suggestibility issues
- Employ Active Listening and Reflective Listening Techniques
- Create and egalitarian dialogue and environment
- Link on language
- Be aware of body language

Q21: Based on your experience, do you believe having Threat Assessment Training and working with a multidisciplinary team on cases may reduce the likelihood of arrests of persons of concern (POC)?



School of Thought

Prevention v Punishment in Virginia Schools (JustChildren/Cornell 2013)



By implementing training initiatives now, the dividends will be observed for decades to come as mental health concerns rise and continue to challenge our schools and communities

Chapter 1: Global Soft Power Use: Introducing a New Global Theory and a New Global Measure of Soft Power Use

Dr. Judit Trunkos, School of Education and Social Sciences



Introduction

This is Chapter 1 of a book project titled "Why Countries Use Soft Power: A Global Approach to Countries' Soft Power Reliance". This book is the first one to offer a systematic quantitative measure of 55 countries' soft power use for the time period of 1995-2010.

Concept and Theory

The ability to get what you want and make others want what you want using attraction in foreign policy is what Nye called soft power (Nye 2011).

Soft power actions are a government's *activities* undertaken to increase its national attractiveness abroad.

Balancing against a threat: Soft power can be used as a defense mechanism.

Conceptual Separation

Soft Power Actions	Hard Power Actions
make a public statement, engage in symbolic act, return or release person; appeal for diplomatic cooperation, nation building, supporting women's rights and education, host a visit, make a visit, cooperate economically, cooperate militarily, deployment of peacekeepers	demand diplomatic cooperation; reject plan or agreement to settle dispute; accuse of crime or corruption; reject request for rights; threaten to boycott, embargo or sanction; threaten to stop aid, use conventional military force, violate ceasefire

Table 1: Conceptual Separation of Soft Power Actions and Hard Power Actions

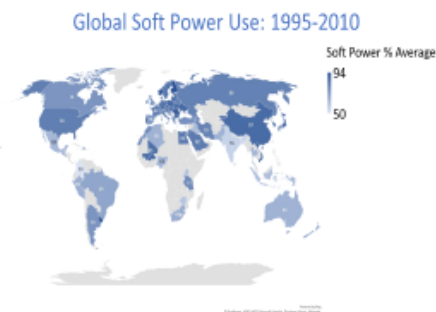
Method

This book first offers a new conceptualization of soft power paired with an operationalization so the concept can be measured.

Recoding ICEWS events data into soft power actions.

Calculate the % of soft power actions over all interactions (soft power actions plus hard power actions).

Figure 1. Global Soft Power Use



Results

All 55 countries use at least 50% of soft power.

The highest soft power percentage action countries:

Finland (94%), Slovenia (94%) and Lithuania (92%),

Lowest users are India (55%), Philippines (52%) and Colombia (50%).

Conclusions

1) All countries use soft power, not just democracies or rich countries.

2) Soft power can also be used as a defensive tool in times of geopolitical threat.

3) Countries closer to a geopolitical threat use more soft power than those who are further away.

Bibliography

Nye Jr, J. S. (2011). *The future of power*. Public Affairs. New York.

How cultural intelligence facilitates employee creativity: The roles of intercultural citizenship behavior and perceived disharmony

Yang Yang (Rowan University), Qin Yang (Robert Morris University), Crystal Jiang (Bryant University)
Rockwell School of Business



Introduction

A better understanding of individual creativity requires comprehensive knowledge of the creative person, the creative process, the creative situation and “the way in which each of these components interacts with the others” (Woodman et al., 1993: 294).

Research Questions

How Cultural intelligence (CQ) enhances creativity in MNCs effectively is still underexplored.

a. what aspects of CQ are specifically relevant to individual creativity in multicultural settings? four dimensions of CQ --- cognitive, meta-cognitive, motivational, behavioral CQ

b. in what matter (how) and at what time point (when) does CQ promote creativity?

Methods

Of the 500 individuals initially contacted, 138 agreed to participate, reflecting a 28% acceptance rate. Of the 138 questionnaires, 116 were usable.

The final 116 respondents reported on cross-functional dyadic relationships with peers at work through survey questions on perceived organizational culture and workplace behaviors. 116 pairs of employees' and their supervisors' responses from 20 multinational subsidiaries. PROCESS SPSS macro (MODMED)

Conclusions

The contextual factor, perceived cultural disharmony, moderates the CQ-creativity relationship mediated by intercultural OCB.

The combination of high intercultural OCB and high perceived disharmony is positively associated with creativity of individuals in the MNCs.

Figure #1 Theoretical model of CQ, intercultural OCB and individual creativity.

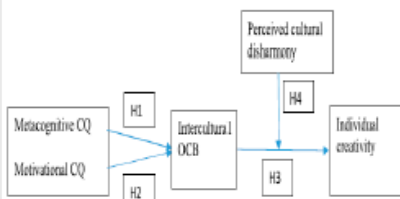


Table 2. Regression results for estimated coefficients of the moderated-mediation model.

Predictor	B	(SE)	B	(SE)
Mediator variable model: Intercultural OCB				
Constant	-1.51	(.98)	-1.88*	(.85)
Age	.02	(.01)	.02	(.01)
Gender	-.09	(.16)	-.08	(.15)
Tenure at the current job	-.09**	(.03)	-.09***	(.03)
Tenure with the company	.07**	(.02)	.08**	(.02)
Education	-.15	(.16)	-.20	(.15)
Metacognitive CQ	.24*	(.12)		
Motivational CQ			.36**	(.11)
ΔR ² – Metacognitive CQ	.03*			
ΔR ² – Motivational CQ			.08***	
Model R ²	.18		.23	
Adjusted R ²	.14		.19	
Dependent variable model: Creativity				
Constant	2.92***	(.72)	2.77***	(.65)
Age	-.02	(.01)	-.02	(.01)
Gender	.03	(.11)	.03	(.11)
Tenure at the current job	.03	(.02)	.03	(.02)
Tenure with the company	.01	(.02)	.01	(.02)
Education	.02	(.12)	.01	(.11)
Intercultural OCB	.51***	(.07)	.50***	(.07)
Metacognitive CQ	.04	(.09)		
Motivational CQ			.08	(.09)
Perceived disharmony	-.01	(.06)	-.02	(.06)
Metacognitive CQ X Perceived disharmony	.17*	(.07)		
Motivational CQ X Perceived disharmony			.18**	(.07)
ΔR ² – Interaction term	.04*		.04*	
Model R ²	.37		.37	
Adjusted R ²	.32		.32	

*p < .05, **p < .01, ***p < .001.

Results

metacognitive CQ on intercultural OCB ($b = .24, p < .05$), supporting Hypothesis 1a. motivational CQ on intercultural OCB ($b = 0.36, p < .01$), supporting Hypothesis 1b. the effect of the mediator on the outcome is significant (controlling for metacognitive CQ, $b = 0.51, p < .001$; controlling for motivational CQ, $b = 0.50, p < .001$), supporting Hypothesis 2. both interactive terms (metacognitive CQ X perceived cultural disharmony, and motivational CQ X perceived cultural disharmony) were significant ($b = 0.17, p < .05$; $b = 0.18, p < .01$). (normal theory tests and bootstrapping techniques support the robustness of our results), supporting Hypothesis 3.

Contributions and implications

Better understand how MNCs may capitalize on the value of cultural diversity.

Although much research has been conducted on innovation in MNCs within international management (IB) (e.g., Buckley, 2016; Michailova and Zhan, 2015; Mudambi, 2011), studies concerning the process of individual creativity in IB are still scarce.



Events at Sea and Value of Cruise Lines

Anna Abdulmanova and Stanko Racic
Rockwell School of Business



Introduction

We examine how financial markets respond to events at sea involving Carnival and Royal Caribbean fleet between 1993 and 2019.



Methods

We use:

- **event study approach** to study how investors respond to news publications of events at sea and compare differences for two firms.
- **multivariate regression analysis** of cumulative abnormal returns for Carnival and Royal Caribbean.

Main Results

- We document a **negative market response** to events at sea.
- **Royal Caribbean** investors respond to incidents **more negatively** than Carnival's shareholders. Its stock price decreases by 5.03% as compared to 1.95% decline in Carnival's stock price.
- Markets **differentiate** between events occurring on fleet of different **brands**. They respond more negatively to incidents on contemporary versus premium and luxury ships.
- Carnival and Royal Caribbean investors respond differently to various types of events at sea.
- **Carnival** investors "punish" the firm for **preventable crew-related incidents** only.
- **Royal Caribbean** investors show statistically significant response to **acts of God**.

Spillover Effect

- News publications of incidents on board of Carnival and Royal Caribbean ships have a **significant negative effect** on stock prices of other cruise lines.
- **Stock prices of other cruise ship companies decrease** by 5.24% and 1.05%, following the incidents on Carnival and Royal Caribbean fleet, respectively.
- The spillover on Carnival and Royal Caribbean stock prices from incidents on board of other cruise lines is limited.

Carnival v. Royal Caribbean

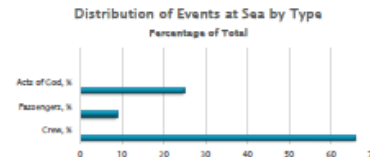
The international cruise ship industry is dominated by Carnival and Royal Caribbean. Combined they carry 70% of global passengers and generate 60% of revenues.

- Carnival has more ships and carries more passengers than Royal Caribbean.
- Royal Caribbean has higher profitability ratios, higher stock returns and larger market capitalization.

Events at Sea

We divide all events into three groups:

- crew-related events
- passengers-related incidents
- acts of God



Carnival fleet experienced more incidents than Royal Caribbean due to a larger number of ships.

What is Simulation?

Simulation-based learning, a proven pedagogy in healthcare education, is increasingly recognized for its effectiveness in preparing future leaders across disciplines. This presentation explores the adaptation of simulation with actors—commonly used in healthcare training—as an innovative teaching strategy for learners in a university-based principal certificate program. By engaging in realistic scenarios, aspiring school principals can develop critical skills such as decision-making, conflict resolution, and effective communication in a controlled, reflective learning environment. This approach provides a safe space for experiential learning, bridging the gap between theory and practice while fostering confidence and competence in educational leadership.

What We Did

The Aim: To prepare Principals as leaders through opportunities in developing soft skills related to navigating challenging professional atmospheres, meetings, colleagues etc.

Course Layering

LEAD 6000:

learners in this course learned what simulation is during a pre-simulation workshop. They were introduced to tools they could utilize in real-time when navigating challenging situations, such as DESC scripts and Reframing. Learners participated in an interactive virtual session with breakout rooms where they learned how to “reframe” complaints and rants.

LEAD 6030:

Learners were provided with a case study ahead of simulation along with learning objectives. The case study was brought to life in a virtual meeting with actors from the RISE Center and the learners had to navigate through the meeting utilizing the tools and skills they practiced in the first course.

Methods

Kirkpatrick's Model



Kirkpatrick's Model Overview: A four-level framework for evaluating the effectiveness of educational and training programs, measuring (1) Reaction (learner satisfaction), (2) Learning (knowledge/skill acquisition), (3) Behavior (application to practice), and (4) Results (Impacts in organizations).

Utilization in Educational Training Programs: This model helps assess training effectiveness by gathering feedback, measuring competency gains, observing real-world application, and evaluating broader institutional or organizational improvements, ensuring programs deliver meaningful and measurable benefits.

Example Simulation Day Schedule

Time	Event	Google Link
6:0-6:15pm	Group Pre-briefing	https://meet.google.com/fun-qxjypza?hs=122&authuser=0
6:20-6:35pm	Student 1 simulation	
6:35-6:40	Student 1 receives feedback from faculty & actors	
6:40-6:50	Touch point with actors and faculty after first run to discuss any changes/adjustments needed moving forward	
6:50-7:05	Student 2 simulation	
7:05-7:10	Student 2 feedback from faculty & actors	
7:15-7:30	Student 3 simulation	
7:30-7:35	Student 3 feedback from faculty & actors	
7:40-7:55	Student 4 simulation	
7:55-8:00	Student 4 feedback from faculty & actors	
8:00-8:15	Student 5 simulation	
8:15-8:20	Student 5 feedback from faculty & actors	
8:25	Group Debriefing	https://meet.google.com/fun-qxjypza?hs=122&authuser=0

Challenges

Working in a virtual platform, power outages, loss of internet access
N=
N=11 completed Kirkpatrick's Level 1 evaluation
N= 15 completed the Guided Reflection

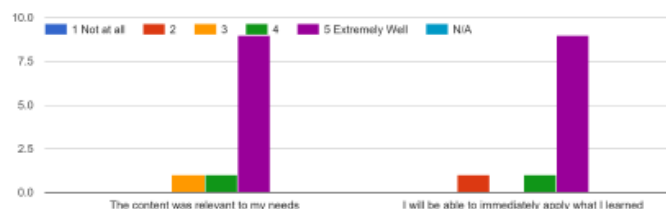
Procedures

- Pre-Simulation Workshop: 2 hours
- Simulation: 20 minutes per student
- Post-Simulation:
 - Guided Reflection using recordings and surveys

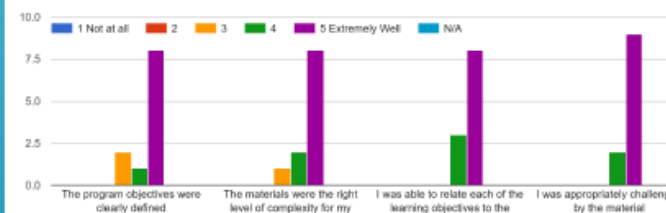
Future Directions

- Collect data and present research findings.
- Develop a comprehensive understanding of simulation methodologies in order to develop their own activities.
- Design and implement authentic scenarios to integrate into the simulations.
- Refine advanced leadership and communication skills within a group setting.

Simulation Content Relevance



Simulation Program Objectives





Gender Disparities in Motivation and Perceived Benefits Among Pickleball Participants: A Comparative Analysis

Armand Buzzelli, Artemisia Apostolopoulou, John Clark, Robert Morris University

Jason Draper, Seton Hill University

Rockwell School of Business



Introduction

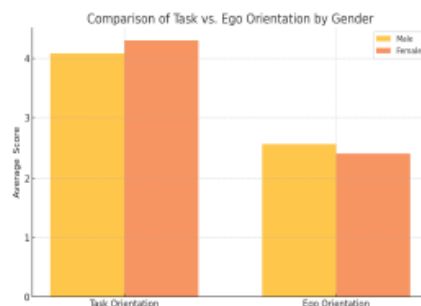
Overview:

Pickleball is a rapidly growing sport in the U.S. with distinct player motivations. This study explores gender differences in motivation and perceived benefits among pickleball participants.

Research Objective:

To understand how male and female players differ in their sport motivation, task orientation and perceived benefits, and how these findings can inform marketing and coaching strategies.

Figure #1

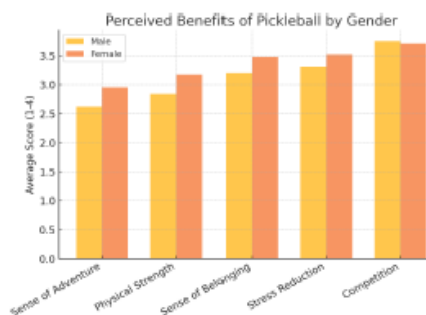


Methods

Survey Methodology:

- An online questionnaire was distributed to USA Pickleball Association members.
- Included four established instruments:
 1. **Sport Motivation Scale (SMS)**
 - Measured intrinsic, extrinsic and amotivation factors.
 2. **Task and Ego Orientation in Sport Questionnaire (TEOSQ)**
 - Assessed participants' task vs. ego orientation.
 3. **Quality and Importance of Recreational Services (QIRS)**
 - Evaluated perceived benefits of pickleball participation.
 4. **Demographic & Skill Assessment** – Collected self-reported participant demographics and skill levels.
- **Sample Size:**
 - **Total responses:** 2,983 (1,162 female, 1,821 male).
 - **Demographics:** Average age: 63.17 years, majority white (93.5%) and college-educated (91.9%).
 - **Geographic Distribution:** Players from all 50 U.S. States and international participants.

Figure #2



Results

Key Gender Comparisons:

- **Motivation:** Women reported higher intrinsic motivation (to know, to accomplish and to experience stimulation) than men.
- **Task vs. Ego Orientation:** Women were more task-oriented, while men showed higher ego-orientation.
- **Perceived Benefits:** Women valued social, psychological and physical benefits (e.g., sense of adventure, strength, belonging), whereas men prioritized competition.
- **Competition & Mastery:** Participants of both genders placed a high value on personal achievement and mastery, though women focused on skill-building over winning.

Conclusions

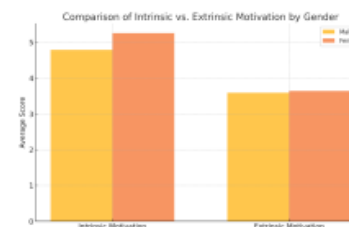
Marketing & Coaching Implications:

- For women, develop promotional campaigns with themes of personal growth, social connection and enjoyment.
- For men, highlight competition, skill improvement and performance metrics.
- Coaches should design task-focused training programs emphasizing skill mastery and personal achievement.

Industry Impact:

- Pickleball associations can create mentorship programs to engage female players.
- The growing professionalization of pickleball (e.g., United Pickleball Association merger) requires tailored strategies to attract different player demographics.
- Future research should examine fan engagement trends in professional pickleball.

Figure #3





Amazon's DeepRacer Event: An Interdisciplinary Experiential Learning Experience for CIS and Public Relations/Advertising Majors



Ann D. Summerall-Jabro, PhD, Comm and Organizational Leadership
School of Communication and Media

Background

- 10 CIS student teams spent more than a month learning how to code algorithms in Python to drive AWS DeepRacers using machine learning.
- The race was the actual training of their models and testing them out on the AWS racetrack.
- Each race was recorded and projected for fans and supporters to watch. Live streaming was considered but not utilized.
- Amazon technical support arrived the day of the race to coordinate with the "drivers" the uploading of their models on AWS (Amazon Web Services) and use their iPads to control the DeepRacer.
- The DeepRacer experience relies on Amazon Web Services (AWS) for computing power and S3 storage.
- The multiple iterations of driving the race track creates data that ultimately results in the generation of AI models.



Infinite Impressions



- Developing, Coordinating and Executing Events is a PR/AD experiential learning course designed for Student Engagement credits in professional development and service.
- Students self-select a team and develop a small PR firm and materials to promote their business: head shots, company name, motto and description of services provided by each member, team operating agreement, conflict styles and conflict resolution plan, leadership rotation, cost-benefit analysis of skills of each member, roles descriptions and performance appraisal instruments.
- The CIS Department Head was approached to develop an interdisciplinary effort to promote DeepRacer. Infinite Impressions utilized a team liaison to meet with the CIS to plan the event.
- Conduct research for clients (DeepRacer/CIS and RMU Colonial Food Pantry)
- Create media plans and artifacts
- Build GANNT charts, budgets
- Seek sponsors and raffle items for the event's execution (generate foot traffic for DeepRacer and meet Food Pantry event goal of 100 items and \$100.00)
- The team translates course content to the event specifics and provides a 25 minute debrief of the experience to the class, complete with photos and evaluation data from the attendees
- An event book is compiled for future reference.

"As I reflect on the past 15 weeks of our event planning course, I am astounded by the amount of knowledge and practical skills I have gained...It has been a journey of learning, challenges, and personal development. I am grateful for the experiences shared with my teammates."

Kennedi Randolph, Infinite Impressions Research Director

Research Questions

RQ1: At what level of knowledge and ability was each event co-coordinator involved in the event execution?

RQ2: What do co-event planners identify as necessary to understand to better execute this event?

MPECs Ranking based on Data Analysis

MBEC content areas	Co-Event Producers	
Strategic planning	Infinite Imp.	CIS
Project management	Manage	Manage
Risk management	Manage	Manage
Financial management	Direct	Direct
Administration	Coordinate	Coordinate
Human resources	Manage	Manage
Stakeholder mgt.	Direct	Direct
Meeting/event design	Manage	Manage
Site management	Coordinate	Coordinate
Marketing	Direct	Direct
Professionalism	Coordinate	Coordinate
*Communication	Direct	Direct
*Key shortcoming was communication within teams and across teams.	Coordinate/Manage	

Intrinsic Case Study

- 70-minute depth-interviews with protocol developed from MBECs conducted with:
 - 3 admins associated with event
 - 2 IT conference center employees
 - 3 Infinite Impressions team members
- Meeting and Business Event Competency Standards - (MBEC) global, industry-endorsed descriptions of KSA's meeting professionals need to be successful. Levels include:
 - Coordinate (person assists mtg. mgt.,
 - Manage (can plan/manage to achieve strategic goals),
 - Direct (connect event strategies to org. strategies/plans.

RQ2: What do co-event planners identify as necessary to understand to better execute this event? Themes from Thematic Analysis

First time - new experience for everyone. Did what we could with information available. Need to trust students' abilities. Amazing experience. Novel experience - so much to learn in so little time. Average hours worked on project by each individual was over 40! Not everyone involved in conversations pertaining to event specifics which may have created additional work for co-event coordinators. Time - 10 weeks to execute a complex event and generate a mechanism to attract non-CIS types - Food pantry support for student population was a good appeal. Change - event location moved to Event Center late in preparations. Graphics, visuals and other content needed different formatting conventions. "Let's use the Ferrari if we've got one." Adaptability- concerns about how much PR, at what time, and what media should promote to conform to Amazon's requirements, CIS department concerns and students' availability.

Considerations Moving Forward

- CIS students not trained to do media interviews. Offer Training.
- PR/AD curriculum needs updating in technologies associated with event planning.
- More Lead time and use of traditional media necessary to expand audience appeal.
- Food pantry goals exceeded and approximately 100 attendees for DeepRacer.



Development of a Customizable Worry Monster for Therapeutic Applications in Primary Schools

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Introduction

Anxiety is a common problem for elementary school children. One of the methods used by therapists and counselors to help children cope with anxiety is a "Worry Monster" that can consume anxieties. A child will write out their worries and feed them to the creature. Simple plush Worry Monsters are commercially available. In this collaboration we attempt to design a research-based interactive animatronic Worry Monster to be tested as an enhanced therapeutic tool in school settings.

Application of Worry Monsters in School Settings

There is little empirical evidence on the use of worry monsters specifically in school settings. However, work has been done around the use of social robots to teach specific tasks in schools. Robots have been designed to be second language tutors (Belpoeme & Vogt, 2018), teach handwriting (Chandra & Dillenbourg, et al., 2019), and to enhance language and literacy (Neumann, 2019). Using robots to reduce negative emotions is a more recent concept (Litler & Alessa, et al., 2021) as worry and anxiety diagnoses have risen in young children over the past decade. Additionally, enhancing emotional vocabulary in young children is a part of best educational practices (Christie & MacMullin, 1998; Gibbs & Kaneley, 2022; Joseph & Strain, 2003; Nook, Stavish, et al., 2020). Emotional comprehension is a skill that emerges and is refined between the ages of four and eleven (Nook, Stavish, et al., 2020), and developmental theorists have long held that language is necessary to help children self-regulate. Therefore, creating a Worry Monster to be used in elementary or primary schools to teach emotional vocabulary aligns tried and true concepts with practices created for the 21st century.

Measuring the Effectiveness of the Worry Monster

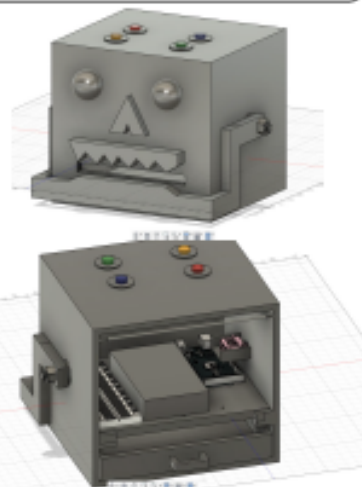
A meta-analysis on the use of robots for young children in educational settings (Teh & Causo, et al., 2016), found 70 papers that qualified to be reviewed, but only 10 provided measurement data. A more recent systemic analysis reviewed the use of reducing negative emotions through the use of social robots in hospital settings (Litler, Alessa et al., 2021), and of the 1,435 papers originally identified, only 10 met the study criteria. Of those 10, three utilized self-reports, three used questionnaires, and four observed children in the hospital setting either in person or via videotape. This study will collect data via a pre/posttest analysis of vocabulary based on Russell's (1980) circumplex model of affect, which identified emotions on a circular continuum. This study will focus on at least one emotion from each quadrant (high-arousal positive, high-arousal negative, low arousal positive, low arousal negative).

Therapeutic Tools for Children

Anxiety disorders are one of the most common childhood mental health conditions (Kowalchuk, Gonzalez, & Zocorob, 2022). For many children, attending school can be a trigger for anxiety and worry. Children may be away from their parents for the first time and are encountering new academic and social challenges. Some children may also be experiencing familial issues or have other personal needs that impact their well-being. School settings provide an opportunity for children to build emotional competence and coping skills (Whiston et al., 2011). Creative therapies are often used by school counselors to assist children with these issues (NBCC, 2024). In particular, play therapy is a theoretically-based approach where toys are used to help children express their feelings and build coping skills (Gupta et al., 2023). Cognitive behavioral play therapy (CBPT) is a subtype of play therapy that involves structured play activities with a therapist where modeling and strategies such as reframing negative thoughts are used to teach CBT principles (Knell, 1998). This project uses the tenets of cognitive behavioral play therapy (CBPT) as a foundation for the development of a robotic toy to increase emotional literacy and help children cope with anxiety and worry.

Aesthetic and Interactive Design Considerations

Form and function play important roles when designing interactive experiences, especially for a worry monster that will interact with children. The form needs to fit in an office or lobby, be inviting to encourage interaction, and engaging to foster extended interaction. If the monster is too scary, or the materials are harsh our monster will be off-putting. If the monster can't respond with light, sound and movement, then engagement will be short. Functionally the monster needs to be robust to withstand how children interact with toys, responsive to inputs from a variety of developmental levels, and customizable for different users. To help the students on our design and fabrication team see form and function working in unison, we explored toys like Furby and Teddy Ruxbin (interactive, talking stuffed animals) and Mr. Potato-Head (a potato easily customized with eyes, ears, mouths etc.) as examples. To give the students an opportunity to observe children interacting with purpose-built experiences, we took them on a field trip to the Children's Museum of Pittsburgh. There they were given a tour by the director of exhibitions, Anne Fullenkamp. Students were able to experience Tough Art, works created by artists that can survive "anger, unexpected and improvised interactions," crafted with materials that are "carefully tested, and reworked for durability, to create a rewarding experience."



Engineering Design and Fabrication

The worry monster frame is being designed in CAD to make the structure easily 3D printed and reproducible. The electronics and mechanics are using Arduino based hardware and low cost components. The monster is being designed with a moving jaw, light up eyes, sound, voice recognition, color sensors and buttons. To convey emotions or worries to the monster, the child can push a colored button, verbally tell the monster, or feed it colored paper with the worry written on it. The monster will be programmed with responses appropriate for the emotional input. A flow chart maps the behavior of the system. The design could be reproduced and assembled by high school level students. The exterior can be customized with fabric, fur, paper, clay, LEGO, or any other decorative material to make each monster unique.



Acknowledgments

Special thanks to students Alexander Marsh, Olin Williams and Lipika Ratakonda. We are grateful for the support of the 2024 RMU Undergraduate Summer Research Academy for supporting Alex and Lipika. In Spring 2025, Alex and Olin are earning ENGR4900 Engineering Practice Credit for their work on this project.



Acorn to Oak: Cultivating SEL in the Ever-Evolving Landscape of Higher Education

Jen Tepe, Ph.D., Patricia Kardambikis Ph.D., Susan Parker, Ph.D.
School of Education and Social Sciences



Introduction

Our exploration delves into building leadership capacity, fostering social-emotional learning (SEL), enhancing self-efficacy and self-worth, and breaking down silos within the educational ecosystem to create a community of practice, all building upon a model of the tree. The roots of educational leadership provide stability, the branches are everywhere, and the trunk represents a foundation rooted in interdisciplinary community of practice.

Growing a Community of Practice

Growing a teacher story: Student teachers reflected on their personal teacher story in seminar through Fred Rogers foundational practices and CoP.

Self-worth and Trust: Student teachers and principal candidates reflected together on new teacher support needs and growing teacher self-efficacy.

Empathy: Through strategic initiatives, educational leaders can create CoP within school communities to grow thriving school environments that benefits principals, teachers, students, and families.

Love and Trust, in the space between what's said and what's heard in our life, can make all the difference in this world-Fred Rogers

Focus Group Themes

- Support Empathy
- Willingness to Fail
- Happiness and Joyfulness
- Relationship and Mentoring
 - Mutual Trust
- Build School Community



Mock Interviews

The mock interview process involves groups consisting of a principal candidate, an acting principal, and a preservice teacher, with three rounds of interviews followed by feedback sessions. Four key strategies were developed: equitable partnerships, practicing tough conversations, developing different modes of feedback, and expanding the CoP.



What we found:

Student Teachers and Principal Candidates were most concerned about growing new branches:

Student Teachers	Principal Candidates
Relationship Building and SEL	Leadership Support
Classroom Management /Behavioral challenges	Social and Emotional Learning
General Support	Community and Climate

Growing Community: Proximity Project

Studio classes were created to embed students distinct communities such as Aliquippa and Mt. Lebanon. Students reflect on how they can be more inclusive, understand differences and create a kinder classroom by being in the classroom and communities that they teach.

Change is impossible when working at a distance.
-Bryan Stevenson

Growing Leadership Capacity

Visioning collaborative leadership as the roots, The branches, symbolize The potential for growth Development in SEL and growing positive self-efficacy.

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Learning Journals in Engineering Courses

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Considerations

- Many perceive engineering and technology courses as dry and difficult
- Students do what it takes to pass, but forget the general learning benefits.
- Students do not have direct mechanisms to give feedback during the semester.
- Many students shy away from asking questions or commenting in class nor during office hours.
- Instructors do not get much feedback on how the students are doing nor on how they are doing.
- Students' evaluations of the instructor and the course come too late to benefit the students.
- These evaluations are mostly brief and superficial.

Journaling

- A good way for someone to express their feelings, understandings and frustrations among many other things.
- Offers a safe medium for private reflections.
- Popular on a personal level.
- Used for learning in writing-type courses, literature and humanities.
- Some limited use in business and science courses.
- In engineering and computing, as far as I could find, they are not used.



The Question

Will the use of learning journals in technical courses help the students and instructors?

Implementation

•The assignment

- Required weekly entries reflecting on the week's learning.
- Carried 10% - 12% of the course total score.
- Offered an opportunity to earn more than the assigned maximum.
- Each week's entry was due midnight Monday the following week.
- 10% was deducted for each late day up to 4 days then they can get up to 50% no matter when they submit.



•The prompts

- Summary of the week's topics
- What they learned from the material
- What they are curious or want to learn more about
- Their favorite/exciting thing about the class/concepts
- The difficult, boring, annoying, or demanding thing(s)
- Suggestions to improve the week's experience/topics/activities
- Any other relevant reflections and concerns (optional)

Stipulations

Students are always assured that the content will remain private and not affect the score to encourage them to be honest and open.

•The instructor's Role

- Review the entries each week.
- Score each entry based on:
 - On time submission
 - Covering all prompts adequately.
- Provide individualized private feedback
- Invite students to meet and discuss their feedback if needed.
- Bring some of the ideas/comments to class if several students mention the same topic.
- Prepare resources for topics the students were curious about.
- Adjust some course activities, content structure, methods, etc. if needed.

Results

•Excellent source of information

- Knowledge on students' understanding of the topics.
- Understanding of their difficulties and issues.
- Ability to identify topics of interest/curiosity.
- Feedback on how well/bad we are doing as instructors.
- Ideas on how to improve or add more useful activities.
- Many students after a few entries became more open and honest in their comments.
- This allowed us to address issues in real-time and adjust our methods as needed.



- Summary of the week's topics
- What they learned
- What they are curious about

- Their favorite/exciting thing
- The difficult, boring, etc.

- Suggestions to improve

- Other reflections and concerns (optional) → Not much was said here :-)

- We can see how they are doing in general
- Helps students focus on what they really learned
- We see if we can incorporate some of these in class or offer suitable resources.
- Prompts us to do more of these or cover similar topics
- Allows us to find better ways to teach these or provide more resources and examples.
- We get a few nice ideas for the course and we learn if we are doing well.

•Challenges

• Students' reluctance to do the assignment:

- Claiming they do not know how to write journal entries
- Saying it is just busy work
- Not seeing the value of journaling in a technical course.

• Students not following prompts and/or not providing useful input:

- Providing 1 or 2 lines as their content summary.
- Always saying they don't have issues or there is nothing to improve.
- Repeating the same statements on multiple entries.

• As instructors we had other issues to deal with

- Finding the time to review all entries on a weekly basis.
- Providing individualized feedback to each student in time.
- Dealing with conflicting comments and addressing them adequately.





Cell phone usage: Impacts on service quality in fast-casual restaurants

Samantha Gibson, *Rockwell School of Business*



Introduction

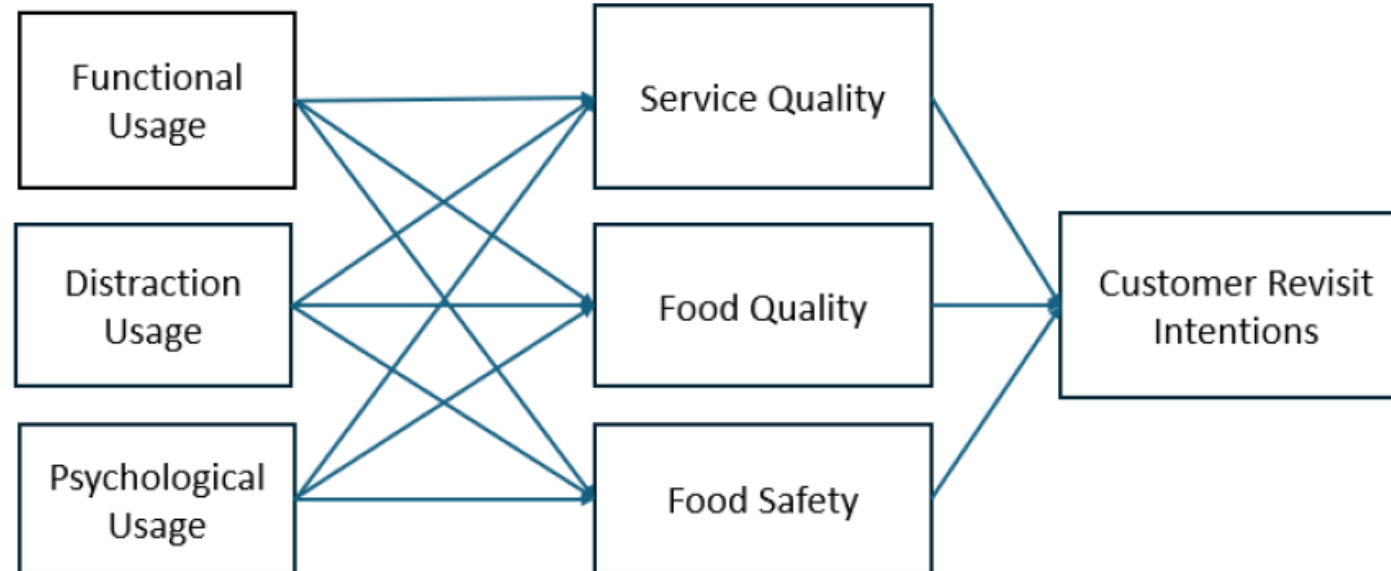
Service quality is paramount in fast-casual restaurants for customer retention. Employees of fast-casual restaurants are often seen handling their phones while at work. Despite cell phone policies, managers often overlook this to ensure they remain fully staffed.

This research will address whether cell phone usage while working in a fast-casual restaurant will affect service quality and customer revisit intentions.

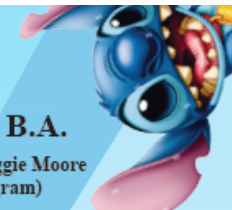
Theory

The Theory of Planned Behavior stems from consumers who have bad experiences often do not repeat the experience, thus leading to declined revisit intentions.

Figure



WHEN... Best Practices in Guest Assistance for Disabilities ...AREN'T



Barbara Burgess-Lefebvre, M.F.A. (RMU) & Johnna Lefebvre, B.A.

School of Communication and Media

Research assistance by Maggie Moore
(Freshman Fellowship Program)

Abstract:

A year ago, we researched various ways that theme and amusement parks made their properties accessible for guests with disabilities. We examined the requirements for accessing disability assistance and the ways that disability access was manifested. Ultimately, we concluded that in many ways, Walt Disney World's "big tent" accessibility made it the best of those evaluated. It most closely adhered (had the best response) to the aphorism in the disabled travel community that: "if someone asks for help, you give it to them."

But much has changed. Disney announced changes to its Disability Access Service (DAS) on April 9, 2024 and the changes went into effect on May 20, 2024 at Walt Disney World and June 18, 2024 at Disneyland. Reaction to those changes from the disability community and those who travel with them appear to be vehement and universally negative. WDW's new DAS requirements are far stricter as to who qualifies for them and who, as a result, needs to find an alternate way to make a pleasant visit to WDW possible.

This year's disability research looks into the changes in WDW's DAS pass and how the changes are affecting the people applying for them. It examines if the changes result in increased worry and anxiety about visiting the parks (or indeed, simply applying for the pass) and if they will ultimately impact people's choice to continue choosing WDW as a travel destination.

Recent changes to Disney's Disability Access Service (DAS) have had the intended results of reducing the number of disabled guests that are eligible for this accommodation. But what is the effect on Disney fans within the disabled community?

Information in the previous DAS system included the language: "Guests who have difficulty tolerating extended waits in a conventional queue environment due to a disability." (from disney.com) Those granted a DAS pass could, on the My Disney Experience app, book a return time to an attraction that was roughly equal to the current wait time. The DAS guests and their party (up to six total) then spent that time outside of a traditional line until they could ride. They then used the Lightning Lanes (the same ones used by guests who had purchased Genie+ or Multi Lightning Lane pass).

To apply for the pass, all accompanying guests needed to be connected to the DAS requester on My Disney Experience. The requester needed to have accepted the terms on the website, then followed the link to a text with a cast member, after indicating their interest in preregistering for DAS, they waited between five minutes and eight hours for a cast member to join a virtual chat. In that chat, they verbalized their need for accommodations (they were reminded not to give a diagnosis). After the chat, a decision was made as to whether or not the requester qualified for a DAS pass. Most applicants seem to have been granted a pass, although guests who had "only" a physical disability were often told to use a wheelchair or scooter as an accommodation.

Guests could also wait and apply in person at the parks, talking live to a cast member who would make a determination at that time.

DAS requests have been on the rise in the last few years.

Len Testa's research showed (Lightning Lane (LL) vs standby admittance,) the ratio of guests getting into each of the lines (impacted by downtime and prices of LL) during a given time period.

During previous DAS accommodations in the Magic Kingdom:

- ★ **Peak times:** 15 LL for every 10 standby (60% of line capacity dedicated to LL).
- ★ **Low times:** 4 LL for every 10 standby (29% of line capacity dedicated to LL).
- ★ **Average times:** 7 LL for every 10 standby (41% of line capacity dedicated to LL).

When FastPass was free to guests, about 80% of line capacity was dedicated to FastPass.

While many were quick to explain the increase in the number of LL users as an increase in DAS "cheaters" additional factors influencing those numbers.

- ★ **Cheaters:** Yes, there were undoubtedly cheaters. Those who were not disabled and lied to obtain a pass. Disabled guests who sold their DAS admittance to folks and functioned as a "guide" to help people "skip the lines." There is no way to put a number on this group to know to what extent ethical failure impacted the number of DAS passes that were disseminated.

- ★ **Increased Awareness:** The internet's ability to inform guests of the possibility of this pass. Whether informing people with disabilities or informing "cheaters," it is certainly easier for people to find out about the existence and advantages of Disability Access passes.

- ★ **Money:** Changes in the Fastpass/Fastpass Plus/Genie+ Lightning Lane procedures. Many guests with disabilities may have found it relatively easy to miss long lines by simply learning how to use the Fastpass system effectively. That system was a free system available to anyone with a ticket to a park. When that became Genie+ and later Lightning Pass Multi-pass, it became a paid service. At that point, disabled guests may have decided that it was now financially advantageous to register for a DAS that they would have always been eligible for but had never bothered with.

- ★ **More guests identify as disabled:** In 2021, the

US Bureau of Labor Statistics reported that 1.2 million more people were identified as having a disability than in 2020. In 2021-22, 7.3 million students in US public schools received special education or related services. This represents 15% of total enrollment. Those numbers continue to grow.

In the spring of 2024, Disney redefined the type of guest who would, moving forward, be eligible for the DAS pass. New language includes the more limiting: "DAS is one of the programs offered at Walt Disney World Resort theme parks intended to accommodate those Guests who, due to a developmental disability like autism are unable to wait in a conventional queue for an extended period of time."

The methods of obtaining a DAS are mostly identical, with the addition of a "healthcare professional" often joining the call if the cast member is unable to make a decision. There are multiple reports of guests being hung up on when they asked about that healthcare professional's credentials.

Guests opting to wait until they are at the park to apply are told to use their phones or given an iPad. Essentially, the on-ground applications have become virtual ones. Guests report some level of discomfort at having to discuss their disabilities while in the presence of other guests.

The granting of DAS passes has decreased significantly; many who were granted accommodations in the past have since been refused. Some report uncivil responses from DAS cast members.

As of this writing (late August 2024) LL/DAS return lanes have been significantly reduced in comparison to standby lines. Touring plans (Len Testa) has counted Lightning Lane vs Standby at key attractions by minute for over a year and can compare ratios.

Magic Kingdom now:

Haunted Mansion: 3 Lightning Lane/DAS to 10 Standby (previously 7 to 10).

Seven Dwarves Mine Train: 7 Lightning Lane/DAS to 10 Standby (40-50% of line capacity dedicated to LL.) Unchanged.

Ratio of LL vs Standby at most MK attractions cut 30 to 50 percent... everyone is waiting less. (The Disney Dish podcast, #492)

A cursory look at those numbers would appear to be a net positive. Both those in LL/DAS return lines and those in traditional standby lines are experiencing shorter wait times. This may be due to a reduction in the number of "cheaters" able to access the DAS. However, there are a significant number of guests who were previously eligible for DAS who find that their disability is no longer covered by the new definition.

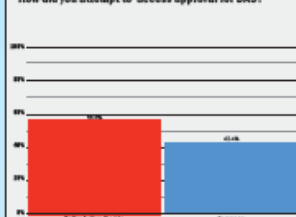
According to DAS Defenders (a Facebook group for guests), recent revisions to Disneyland's DAS program have excluded people with disabilities including:

- ★ Cancer
- ★ Post-traumatic stress disorder (PTSD)
- ★ Multiple sclerosis
- ★ Parkinson's disease

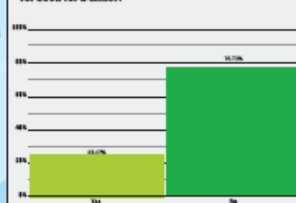
- ★ Amyotrophic lateral sclerosis (ALS)
- ★ Rheumatoid arthritis
- ★ Lupus
- ★ Fibromyalgia
- ★ Long COVID
- ★ Ulcerative Colitis
- ★ Narcolepsy
- ★ Postural orthostatic tachycardia syndrome (POTS)
- ★ Ehlers-Danlos
- ★ Mast Cell Activation Syndrome
- ★ Dysautonomia
- ★ Low vision and blindness
- ★ Brain, heart, or lung conditions
- ★ Panic disorders
- ★ Immune disorders
- ★ Severe allergies
- ★ Heat and sun sensitivity

Additionally, some guests have been told, in essence, that they are not "autistic enough." A recent survey, responded to by guests who had previously been granted DAS, reveals the following numbers:

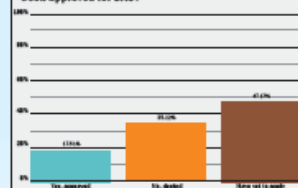
How did you attempt to access approval for DAS?



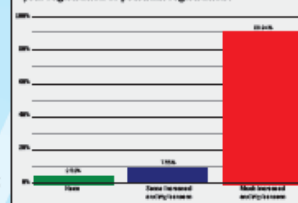
Have the DAS passes that you have utilized or applied for been for a minor?



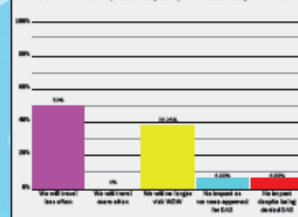
For guests who have utilized DAS in the past, since the changes made in July 2024, have you applied for and been approved for DAS?



How much anxiety/concern did you experience around your registration or potential registration?



How will the new system impact your future trips to WDW?



Results of DAS changes include:

- Significant anxiety/concern surrounding the application process for the new pass. Guests can't apply until 30 days out from their trip, which is also the point at which travel to WDW becomes non-refundable.
- Stories of cast members on the DAS team being dismissive or rude, hanging up on guests, and not listening.
- Guests cancelling trips and annual passes because they are turned down for DAS or because they feel that they will be turned down.
- Increasing suspicions that this is completely a financial decision; forcing disabled guests to purchase Individual Lightning Lanes and Multi-pass to be able to experience the parks the way they are used to.
- Several petitions to pressure Disney into reworking this policy.
- Discussions of Class Action Lawsuits which seem to be limited due to clauses that guests agree to when they apply for DAS.
- Reports to the Department of Justice and to the ADA (Americans with Disability act) office.

Guests who have been turned down report that they were given some proposed alternative accommodations/suggestions which included:

- Using a "Return to Queue," wherein they attempt to stand in a traditional line and exit if needed. Then, their party continues to wait in line, or they could take a photo of where they were when they exited the line. After their medical emergency was over, they could return to the line where they left it.
- They could wait outside the line and send the rest of their party through. Those waiting would test when they reached the point where the standby line and the lightning lane merged, at which point the disabled guest could join them. (That solution was suggested even when the visiting party was a group of two, and one of the two was a seven-year-old child.)
- Guest could rent a wheelchair or scooter.
- Guest (and their party) could purchase Individual Lightning Lane or Multi-pass. (These last two suggestions are problematic in that they propose an accommodation wherein the disabled guest would need to spend money to access that accommodation, which is not legal.)
- Guest was told that they could wear a diaper.
- Guest was told that they would need to ask at each attraction what accommodations were available. This, of course, is a problem because those accommodations have not been made clear to the front-line cast members who were often confused about how to aid guests.

A far from comprehensive (but still a great resource): <https://www.thewalt Disney.com/surveys> guests without DAS after they visit a park and provides details about each attraction's "cast members' responses to request for alternative disability accommodation." It is clear from these surveys that there is no official policy being communicated to the attraction level cast members.

Conclusions:

Disney's guest assistance appeared to be the best practice in last year's research. The changes that they've made have reduced lines but at a serious detriment to disabled guests who are experiencing increased anxiety around applying for the DAS and are suggesting that they will not be attending WDW resorts in the ways that they have in the past. Will reduced numbers of guests or bad press be significant enough to make Disney change their policies? I suspect that this is not the final form this pass will take, but that WDW will never return to the generous disability equity that they offered in the past.

Presented at the 2025 R&G Expo @RMU



Numerical Modelling of Low-Level Blast Scenarios to Quantify Likelihood of Cavitation-Induced Traumatic Brain Injury

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Introduction

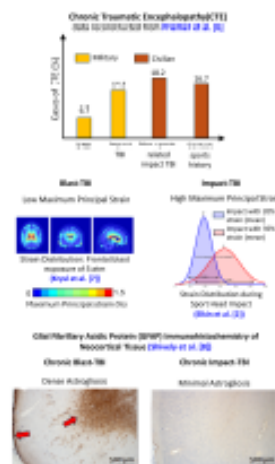
Blast-induced traumatic brain injury (bTBI) is the most common and concerning injury for warfighters during hand-held weapon system training. This study hypothesizes that the occurrence of high negative intracranial pressure during repetitive low-level blast (less than 15 psi) leads to cavitation-induced primary neuronal injury. The key objectives of the study is,

1. To develop a high fidelity framework to numerically predict high-resolution intracranial pressure field maps in the human brain tissue,
2. To understand the relationship between incident low-level blast wave parameters, cavitation bubble size, and risk of bTBI.

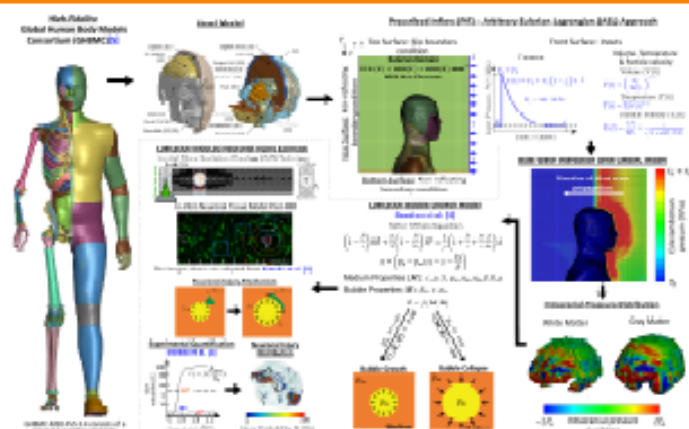
Motivation

This study is motivated by two key reasons,

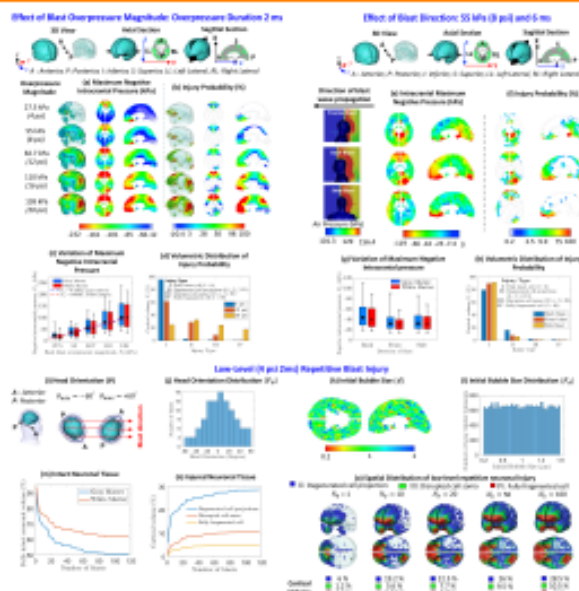
1. The safety limit for blast-induced traumatic brain injury (bTBI) is not well-defined. A 4 psi current blast exposure threshold is deemed safe for military training. However, whether repeated low-level blast exposures could lead to TBI remains unclear.
2. A recent post-mortem study [6] shows that the bTBI injury mechanism differs from impact TBI. Therefore, the specific neuronal injury mechanism causing bTBI needs further investigation.



Methodology



Results



Discussion

Single Blast Exposure

- The median value of maximum negative intracranial pressure (ICP) in gray matter is at least 7% higher than in white matter.
- The blast exposure (8 psi 6ms) to the back of head is at least 35% more lethal than frontal or side impacts, and a 67% increase in blast overpressure magnitude (12 psi to 20 psi) results in a 32-fold (from 0.56% to 17.8%) rise in cavitation-induced neuronal(CIN)-injury.

Repetitive Blast Exposure

For a series of 117th blast,

- The results indicate a significant increase in the accumulation of CIN injury, with a 4-fold rise in Type II, 8-fold in Type III, and 9-fold in Type IV injuries, particularly in the anterior cortical region of brain tissue up to the 50th blast exposure.
- For a series of 117 repetitive low-level blast exposures (4 psi, 2 ms), the accumulation of CIN injury increases tenfold and is equivalent to a single blast exposure at 20 psi.

Acknowledgements

- This material is based upon research supported by the U.S. Office of Naval Research under PANTHER award number N00014-21-1-2855, N00014-21-1-2044, N00014-24-1-2200, and N00014-22-1-2828 through Dr. Timothy Bentley.
- This study utilized the Global Human Body Model Consortium-owned GHBMC Model, distributed exclusively by Elemance LLC [5].
- We would like to thank Pittsburgh Supercomputing Center (PSC) for providing the computational resources and technical support.

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Development of a Porcine Head Finite Element Model for 3D Blast Simulations



Yaohui Wang, Rika Wright Carlsen
School of Engineering and Science

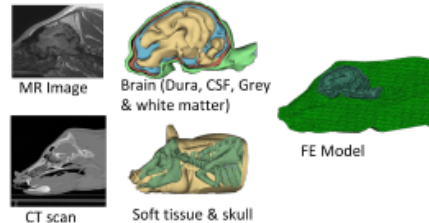


Introduction

To assess the risk of blast-induced traumatic brain injury (bTBI), the translation of mechanical loads on the head at the macroscale to neural cells at the microscale must be investigated comprehensively in the living brain. Animal models are essential for studying the progression of injury in bTBI due to the limitations of acquiring in vivo human data. Since the cortical folding of the pig brain is similar to that of the human brain, porcine models are often chosen to study bTBI. The objective of this work is to develop a 3D finite element porcine head model to conduct a parametric study and aid in the design of future shock tube blast experiments of live porcine subjects. High fidelity 3D FE porcine head models are generated from medical imaging data and used to simulate responses of brain tissue to blast loading. The locations of brain injury are identified based on cellular thresholds of stretch and cavitation-induced injury.

Porcine Blast Tube Model

Model development

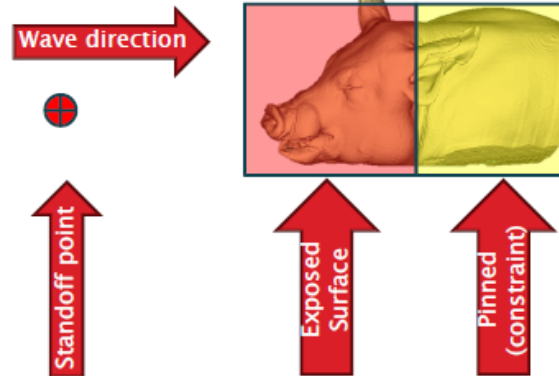


Model setup

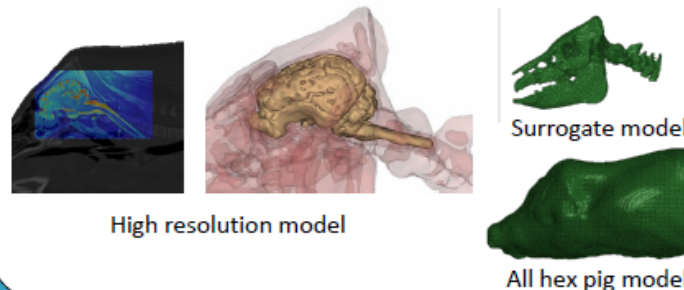
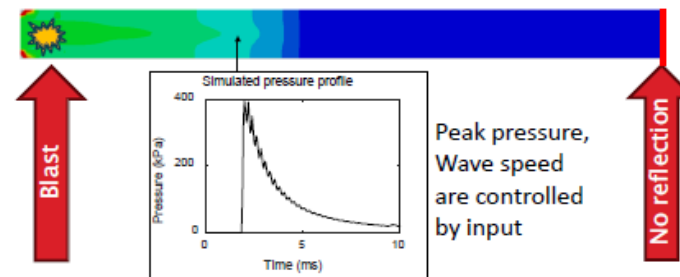


Computational Methods

Incident wave

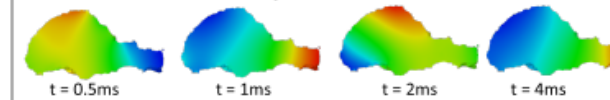


Coupled Eulerian Lagrangian



Results

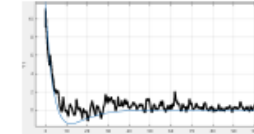
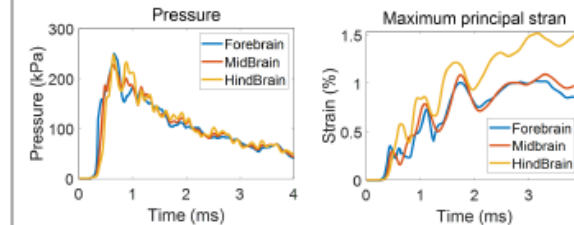
Pressure measurement in porcine brain



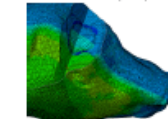
Input peak over pressure: 210 kPa, incident wave.



Result showed good agreement with literature in brain strain and brain pressure (Sundaramurthy et al., 2021)



Blast test data fitting



Sample wave propagation in brain

Discussion

- Is negative pressure expected in brain tissue under a different loading case or occur at a later time step.
- Would animal holding methods alter the results.
- Need to compare outcomes from both methods.

Acknowledgement

We gratefully acknowledge the Panther program and support from the Office of Naval Research (Dr. Timothy Bentley) under grant N00014-21-1-2044. We thank Dr. Philip Bayly and his research group for providing medical imaging data of mini-pig subjects.

Facilitating a Family Supports Network

Vicki Donne, School of Education and Social Sciences



Introduction

The RMU Trees Network was established through a grant from the Edith L. Trees Charitable Trust to provide services, resources, trainings and direct services to families and children with disabilities.

Outcome 1: Create Professionally Facilitated Supports

The Network connects professionals who may/may not share the members' first-hand experiences. Interconnections enhance resource sharing and collaborative problem-solving.

- Network Director
- Outreach Specialist
- 10 Scholars (pre-service special education teachers on scholarship)

Outcome 2: Interconnections

Facilitate interactions between service providers, professional educators, and families and caregivers (1100 people).

- Memberships and collaborations in professional groups
- Newsletters
- Social media presence
- Workshops and Support Groups
- Social Events for Families (Band Together, Envision Sports, Virtual Book Club, Walk for Autism)



Outcome 3: Resources for Families

- Bi-monthly newsletters
- Website with resources
- Individual consultation meetings
- IEP office hours
- Assistive Technology (AT) Device Center open lab days

Outcome 4: Professional Development

- Inservice & Pre-Service Teachers: Annual Special Education Conference (300 attendees)
- Families: Workshops (avg. 25 attendees)
 - Teletherapy
 - Advocacy
 - AT Funding
- Families: Family Support Groups (16-20 attendees/month)
- Pre-Service Teachers: AT Device Center Labs



Implications for Practice

- Increased knowledge and skills for pre-service and inservice teachers
- Valuable active engagement in parent/ family relationships for Scholars
- Strengthened partnerships with school districts and community/state agencies
- Reciprocal benefits for university, schools, agencies, families, and students on collaborative problem-solving

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Capstone Project Design for An Undergraduate Cybersecurity Program

Noory Etezady, PhD & Ping Wang, PhD

Computer & Information Systems Department
School of Data Intelligence and Technology



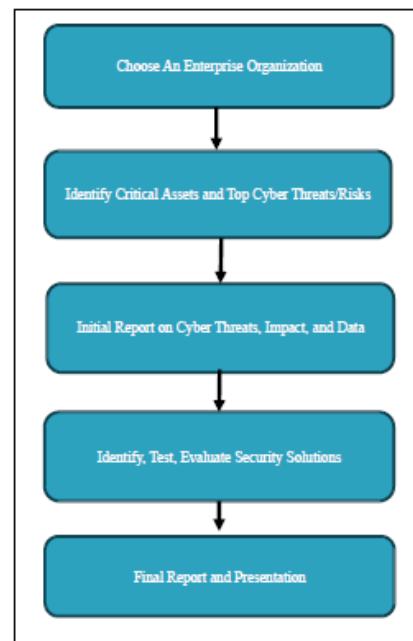
Introduction

- Capstone projects provide integrated learning experience and outcomes for comprehensive technical and non-technical knowledge, skills, abilities (KSAs) and professional competencies needed for the educational assessment and workforce development in cybersecurity.
- This research is a case study for designing a comprehensive portfolio-type project for the capstone course of an undergraduate degree program in Cybersecurity in the United States.
- The proposed design in the case study incorporates the cyber workforce competencies and knowledge units for the National Centers of Academic Excellence in Cyber Defense designation as well as student outcomes for the ABET computing accreditation commission (CAC) standards for quality assurance of cybersecurity programs.



Design

- The capstone project case study design is based on NCAE-C (National Centers of Academic Excellence in Cybersecurity) and ABET Cybersecurity expectations.
- In addition, the capstone project encompasses the Experiential Learning Theory stages for constructing knowledge which includes the processes of experiencing, reflecting, thinking, and acting.
- The design model is shown below.



Results

- Capstone projects have been identified as necessary for undergraduate cybersecurity programs to assess general mastery of cybersecurity knowledge and critical thinking.
- Based on the proposed capstone project design model, this research presents a case study of a sample cybersecurity capstone project for a Bachelor of Science (B.S.) degree program in Cybersecurity at a 4-year university in the United States.
- This degree program of study has been validated for the National Center of Academic Excellence in Cyber Defense (NCAE-CD) designation by the U.S. National Security Agency and Department of Homeland Security.
- The degree program is also in good standing of accreditation by the ABET Computing Accreditation Commission (CAC).

Conclusions

- Capstone projects in the final year of college education assess general mastery of concepts, critical thinking, problem solving, and transferrable KSAs and professional competencies.
- Capstone projects are a necessary component of any accredited higher education programs in computer science, computer engineering, information systems, and cybersecurity, among others.
- Many capstone courses lack activities that center on comprehensive skill development.
- Capstone courses need to be designed to match career trajectories of students and offer an experiential learning opportunity.
- This paper's contribution is a comprehensive portfolio-type project for a capstone course for an undergraduate degree program in cybersecurity.
- The capstone project case study design is based on NCAE-C and ABET Cybersecurity expectations.
- In addition, the capstone project encompasses the Experiential Learning Theory stages for constructing knowledge, which includes the processes of experiencing, reflecting, thinking, and acting.
- To complete the capstone project, students need to possess the general mastery of cybersecurity concepts and have necessary hands-on application skills as well as critical thinking and problem-solving skills.

Quantum Computing for Optimal Discount Pricing on Social Networks



Inequity Aversion Pricing Problem with Time Window

DeShawn Falls (Student, Robert Morris University), Sangho Shim (Robert Morris University), and Feng Qiu (Argonne National Laboratory)
School of Engineering and Science

The Problem

Static Model:

- The network which we conducted the experiment on was over one million users and the first time an analysis of this size has been conducted
- In this problem our possible price discounts for the smartphones were \$100, \$200, \$300, \$400, \$500, and \$600
- Our base value for the smartphones was \$700
- Smartphone 1, Smartphone 2, Smartphone 3 were our products listed
- In this problem we compared two methods to show how much revenue can be saved by using our approximation algorithm.



Figure of only tolerable relationships between discounts.

- In the above figure discount options connected are the only relationships allowed between neighboring nodes to ensure no related customers receive too different of a discount

Dynamic Models

Online Model and Greedy Approach:

- This model offers prices one by one as users enter. The most profitable option is offered while avoiding conflict with options previously offered to neighboring customers.

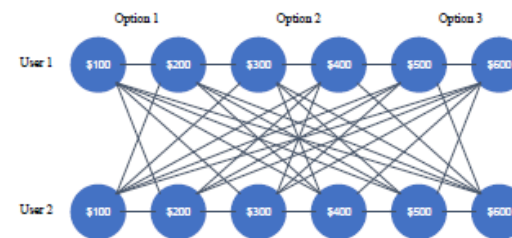
Inequity Aversion Pricing with Partitions:

- The problem is partitioned into small subgraphs based on a set time window. When the time window closes, we then solve the inequity aversion pricing problem for that subgraph, once again avoiding conflict with previously offered options.

Methods

Conflict Graph:

- For the time window approach, users were added as nodes to a network, and edges were made between socially connected users. We then made a conflict graph between users and options such that 1) no user was offered two different options and 2) no socially connected users were offered too-different prices. We defined these constraints as edges between forbidden pairs in the conflict graph.

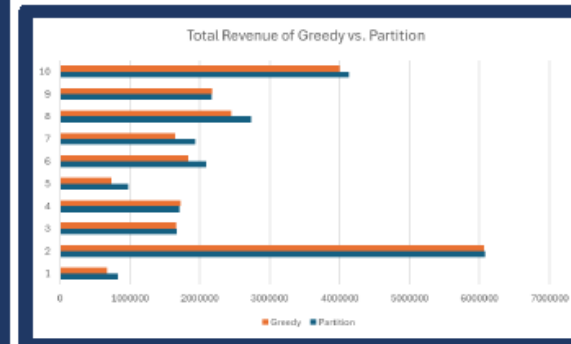


-Shown above is an example of the conflict graph between 2 users with 6 options each (For each user, all six nodes are adjacent by fifteen $\binom{6}{2}$ edges. Only five edges are drawn in the figure because of space limitation)

Independent set QUBO:

- To solve the maximum independent set of the conflict graph, the nodes and edges were formulated into a Quadratic Unconstrained Binary Optimization (QUBO) problem. With nodes given a weight equal to their revenue*-1 and edges given a weight of some relatively large number (as to ensure that no solution that is not an independent set is feasible), we seek the minimum solution to the QUBO.

Results:



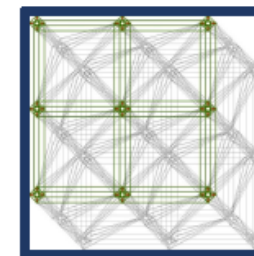
- The graph above shows the total revenues of each test group using the greedy and partition approaches

Increased Revenue:

- The partition approach returned an equal or greater revenue than the greedy approach 87% of the time while increasing revenue by an average of 9.9%

Remark: Quantum Embedding

- The social network graph can be embedded onto a pegasus QPU topology. Small enough partitions could be embedded and solved much quicker than classical methods



Introduction

In a world where humans have dominated and eradicated large numbers of sub-species, and pushed others (including predatory species) to the brink of extinction, there has recently been a movement to correct the ignorant ecological assumptions of centuries past. An understanding of the species and of balance and biodiversity in ecosystems has led to attempts to restore crucial species to areas where they were once integral elements.

In recent decades, large carnivores have been reintroduced to ecosystems where they have been long absent. Several studies have endeavored to evaluate the success or failure of the translocation of different species and determine the success factors of these efforts. In addition, these studies have included large mammalian predators (Stepkovitch, et al., 2022, Thomas, et al., 2023, Bubac, et al., 2019, Resende, et al., 2020, Bull, et al., 2016, Linnell, 2009).

Research Questions

Prior studies have not employed the use of machine learning in their evaluation of species translocation success. Instead, they have relied predominantly on traditional statistical methods. Considering this limitation of past research, this research seeks to employ machine learning to address the following research questions:

1. What factors determine the success (or failure) of the relocation of large mammalian carnivores?
2. Based on these identified factors, can translocation success be predicted with an appreciable level of accuracy?

Methods

The current study uses a dataset of 538 conservation translocations, which is composed of 54 species of terrestrial mammalian carnivores. This dataset was obtained from the Stepkovitch et al. study (2022) and is comprised of variables including family, species, study-area, state or province, country, year, reason for the relocation, reintroduction type, reason for the translocation, release type, number of individual animals, and survival outcome. The data were cleaned and the relevant variables: release type (i.e., hard or soft), reason for translocation (i.e., extinction, research, etc.), reintroduction type (i.e., introduction, augmentation, etc.), and number of individual animals transported, were preprocessed for input into the model.

A model was fit to the data using the Random Forest algorithm (RF) in RStudio. Random Forest aggregates decision trees to optimize the output of individual trees, which maximizes classification accuracy. After determining variable importance to the target variable (i.e., outcome), it was determined that *reintroduction type* and *release type* did not contribute significantly to the model, and therefore, only the *number of animals* and the *reason for translocation* were input into the RF model.

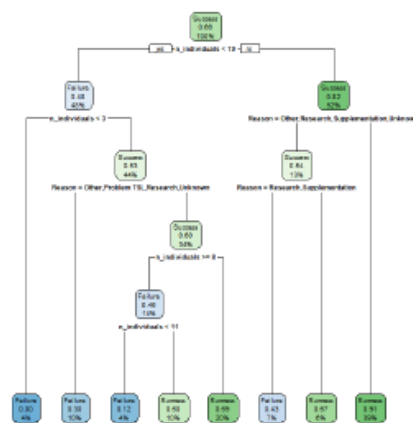
Figure #1

Confusion Matrix Output of RF Models

Random Forest Model	Training Data	Testing Data
Accuracy	0.8788	0.8529
95% CI	(0.825, 0.9208)	(0.7461, 0.9272)
No Information Rate	0.6566	0.6765
P-Value [Acc > NIR]	7.81e-13	0.0007845
Kappa	0.7215	0.6559
McNemar's Test P-Value	0.06619	0.7518296
Sensitivity	0.7500	0.7273
Specificity	0.9462	0.9130

Figure #2

Conservation translocation outcome using random forest model



Results

The overall prediction accuracies of conservation translocations using the RF algorithm yielded superior results with only two variables: *reason for translocation* and *number of individual animals*. Analyzing the accuracy for each of the training and test sets showed accuracy percentages of 88%, and 85%, respectively. These results suggest that overfitting is not a problem, and that accuracy is a significant improvement over simply choosing the positive class (i.e., success) as the outcome.

A decision tree plot was developed from the data set to show specific leaf splits relative to the model variables (see Figure 2). From the decision tree, it can be seen that simply including 19 or more individual animals in the translocation process results in an 82% probability of success. The probability of success increases to 91% when at least 19 individual animals are relocated, and the reason for translocation is *extinction in the ecosystem* (i.e., not for supplementation, research, or any other reason).

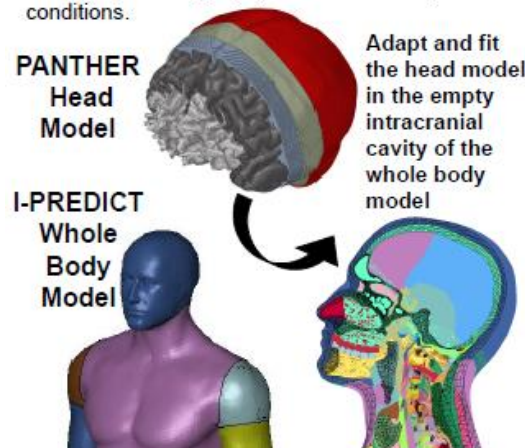
Conclusions

The worldwide decimation and functional (or local) extinction of natural predatory species has been the result of many human-caused factors. The current work sought to determine the factors that might lead to a measurable, successful reintroduction of mammalian carnivorous species into ecosystems. A Random Forest model was developed and implemented to accurately classify outcomes as success or failure. This classification was based on the viable relevant variables in the dataset. The model results yielded high accuracy in both the training and test datasets. Further, a decision tree was developed via the Rpart() function in R that uses Gini impurity to recursively partition the records, based on dissimilarity in the explanatory variables. The decision tree showed that translocations that involved *more than 19 individual animals*, and *extinction as the reason for reintroduction*, resulted in a near guaranteed likelihood of success (i.e., 91%).

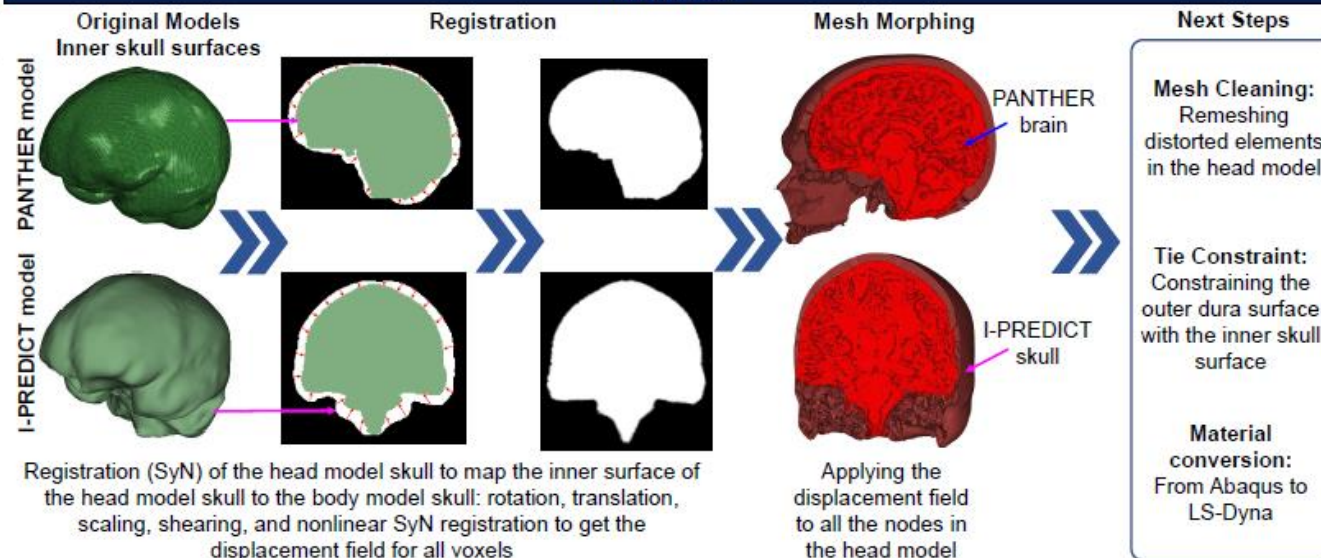
The dataset used contained only variables related to the translocation process. These variables included: reason for reintroduction, number of individual animals, release type, and reintroduction type. After an assessment of contributing variables, it was determined that only *number of individuals* and *reason for introduction* were relevant to the model. It should be noted that most of the variables in prior studies (i.e., those listed above) are beyond the control of those individuals who are involved in the translocation. Many past studies have drawn conclusions regarding the factors affecting the success or failure of a number of translocations. However, if the perspective for undertaking the project is exclusively ecological, the results in the current study indicate that many factors previously discussed may not be critical to long-term survival of the animal subjects. The results of the current study show that if the species has traditionally existed in the relocation ecosystem (and remnants of the original and supporting flora and fauna remain), there is a high probability of survival if enough animal subjects are included in the translocation project. If the location for the transference has been adequately evaluated, the factors influencing the success of the transference are those that can be controlled and decided upon by those overseeing the translocation process itself. The determinants of success, therefore, are those factors that can be controlled by humans involved in the reintroduction process. When considering a species that has previously thrived in an ecosystem, it can be argued that the roots necessary for a successful translocation are essentially in place, and as long as all ecological components are in balance, success is then solely determined by the factors that influence the translocation process itself.

Background and Motivation

The goal of the project is to create a human digital twin for predicting injury risks in military relevant conditions.

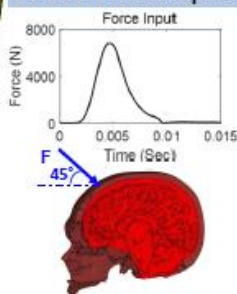


Methods



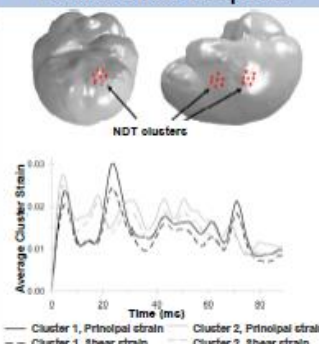
Next Step: Validation

Ex vivo Bulk Response



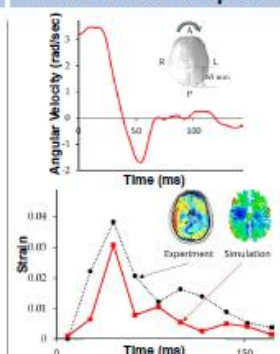
Nahum et al. (1977) and Trosseille et al. (1992) impact experiments to get pressure response at different locations in the brain

Ex vivo Shear Response



Hardy et al. (2007) impact experiments to track the displacement of different points (NDT clusters) in the brain

In vivo Shear Response



Knutsen et al. (2020) tagged MRI experiments under mild head motion displacement field in the brain

Future Work: Case Studies



Severe Impact:
Fuselage Drop



Repetitive Loading:
Fast Boat Ride

Acknowledgment

We gratefully acknowledge the Panther program and support from the Office of Naval Research (Dr. Timothy Bentley) under grant N00014-24-S-B001.

A Study of TikTok's Country Image and Brand Trust After the 2020 Attempted TikTok Ban

Dr. Chen Yang

School of Communication & Media



Introduction

The study explored the potential effects of country image and brand trust on Americans' adoption and use of TikTok following the 2020 proposed TikTok ban.

- Country image is "the picture, the reputation, the stereotype that businessmen and consumers attach to products of a specific country" (Nagashima, 1970)
- Brand trust is "a feeling of security held by the consumer that the brand will meet his/her consumption expectations" (Geyskens et al., 1996).

Table #1

Two-Sample T-test for Equality of Means for China's Image between TikTok Users and Non-Users

	TikTok users		Non-users		t(297)	p
	M	SD	M	SD		
China in general	5.53	1.92	5.39	2.24	-.46	.656
Chinese government	4.18	1.95	3.32	2.06	-3.15	.002**
Chinese people	7.23	1.89	7.67	1.71	1.69	.093
Chinese companies and brands	5.74	1.79	5.17	2.33	-1.84	.069

Note: ** indicates $p < .01$

Table #2

Bonferroni Comparison for TikTok Users' Perception of Chinese Companies/Brands

Comparisons	Mean Difference	Std. Error	Lower Bound	Upper Bound	95% CI
Type 1 vs. Type 2 users	-.502**	.34	-1.72	.71	
Type 1 vs. Type 3 users	-.815	.37	-1.72	.09	
Type 2 vs. Type 3 users	-.344	.27	-.56	.73	

Note: Type 1 are people who stopped or decreased TikTok use; Type 2 are people who maintained the same use; Type 3 are people who increased TikTok use. * indicates $p < .05$

Methods

An online survey was distributed and collected 299 effective responses from U.S. social media users.

Measures: TikTok adoption and usage, China's country image, TikTok's brand trust.

Research Questions

RQ1: Does China's country image among the U.S. social media users affect their adoption of TikTok?

RQ2: Did China's country image affect TikTok use among U.S. social media users after the attempted ban in 2020?

RQ3: Does U.S. social media user's brand trust in TikTok affect their adoption of TikTok?

RQ4: Did Americans' brand trust in TikTok affect their TikTok continuous use following the attempted ban in 2020?

Table #3

Bonferroni Comparison for TikTok Users' Brand Trust

Comparisons	Mean Difference	Std. Error	Lower Bound	Upper Bound	95% CI
Type 1 vs. Type 2 users	-.621***	.15	-1.00	-.26	
Type 1 vs. Type 3 users	-.814***	.17	-1.22	-.40	
Type 2 vs. Type 3 users	-.182	.12	-.47	.11	

Note: Type 1 are people who stopped or decreased TikTok use; Type 2 are people who maintained the same use; Type 3 are people who increased TikTok use. *** indicates $p < .001$

Results

- Americans with a less favorable perception of the Chinese government are less likely to adopt TikTok. (see Table 1)
- The perception of Chinese companies/brands among people who stopped or decreased TikTok use (Type 1) was significantly lower than that among people who maintained the same use (Type 2). However, there was no significant difference between people who stopped or decreased TikTok use (Type 1) and people who increased TikTok use (Type 3). Nor was there any difference between people who maintained the same use (Type 2) and people who increased TikTok use (Type 3). (See Table 2)
- Americans with higher brand trust in TikTok were more likely to adopt TikTok.
- TikTok brand trust among people who stopped or decreased TikTok use (Type 1) was significantly lower than that among people who maintained the same use (Type 2). In addition, a significant difference was also found between people who stopped or decreased TikTok use (Type 1) and people who increased TikTok use (Type 3). However, there was no significant difference in TikTok brand trust between those who maintained the same use (Type 2) and people who increased TikTok use (Type 3). (see Table 3)

Conclusions

- Attitudes towards the Chinese government played an crucial role in Americans' TikTok adoption while attitudes towards Chinese companies affected their continuous use following the proposed ban.
- Americans' adoption of social media differs from that of traditional consumer products. The political dimensions might deserve more weight in the conceptualization of China's country image.
- The 2020 TikTok ban, in the form of President Trump's executive order, is likely to cause considerable damage to TikTok's reputation, resulting in its impaired brand trust in the U.S. market.
- Like mass media, governments or politicians may have a similar agenda-setting effect over people's perception of a company or product (Liu & Wang, 2023).

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Learning AI Models with AWS DeepRacer



Natalya Bromall, Parul Yadav, Steve Mancini, Noory Etezady, Jamie Pinchot
School of Data Intelligence and Technology

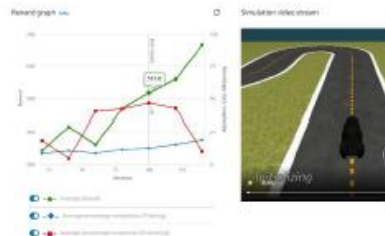
What is RL?

- A method of training AI/ML models through positive or negative reinforcement.
- Used with multiple models, e. g. autonomous driving.

What is DeepRacer?

- A platform that utilizes a 1/18th scale autonomous vehicle equipped with a fisheye lens camera that can be used to navigate a racetrack and can be trained to drive using machine learning.
- Training models are written in Python and use a reward function.
- Fixed set of racetracks is used

Training the Model in Virtual Mode



After training the model in virtual mode, the students were strongly encouraged to try in with the actual track. The real cars may behave differently depending on the glare, wrinkles in track, etc.

Methods

Participating students received the following:

- A 2-hour online training session with the AWS DeepRacer team
- Access to DeepRacer accounts and relevant documentation
- Weekly hands-on sessions with faculty mentors (more frequent sessions were given upon request)

They were asked to evaluate their skills before and after the event in these directions:

- General understanding of AI/ML
- General knowledge of ML models
- Knowledge of RL models
- Knowledge of cloud platforms

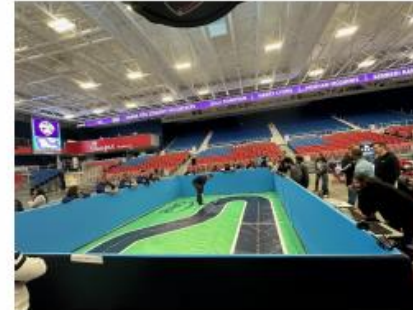
Pre-event and post-event survey questions were mapped to the four directions.

Winning Times



The willing Graduate team showed time qualifying for the DeepRacer League annual event in Las Vegas.

Let's Race!



Results

The students reported significantly higher level of understanding of

- AI/ML techniques as a user**
- AI/ML techniques as a developer*
- cloud tools**
- concepts of Reinforcement Learning (RL)*

They also reported significantly higher confidence in

- being able to write and implement an ML training model that uses RL*
- ability, with a certain amount of research, to write and implement any ML training model*

* - significant with .9 confidence

** - significant with .95 confidence

Conclusions

- Amazon DeepRacer could be a useful pedagogical tool for teaching AI and ML concepts through student competitions.
- This experiential teaching method proved effective and engaging for students, boosting their knowledge and confidence in using AI/ML tools and techniques and enhancing their knowledge about the topic.
- The complexities of reinforcement learning allowed the participants to gain insight into model training, hyperparameter tuning, and understanding a real-world application of machine learning algorithms.
- In addition, study also shows collaborative teamwork is a good strategy for teaching future AI/ML professionals complex concepts.

Thank you for stopping by!





Sign Language Generation Tool

Bridging Communication Gap Between Verbal and Visual Language

Parul Yadav, Sushma Mishra, Natalya Bromall

School of Data Intelligence and Technology



Introduction

Hearing loss greater than 35 decibels (dB) in the better hearing ear is considered as disabling hearing loss.

Worldwide, the hearing disabled/ impaired people use sign language as their first language.

Everyone including the person with hearing disability has the right to speak and express themselves in their own language.

Sign language tools are essential for communication, inclusivity, education, and addressing the specific needs of the deaf and hard of hearing individuals.

Where is it useful?



Meeting



Classroom



Hospital

Online-Meeting



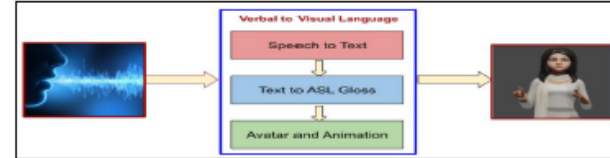
Number of People with Hearing Loss (Worldwide) in 2020, 2030, 2040, 2050



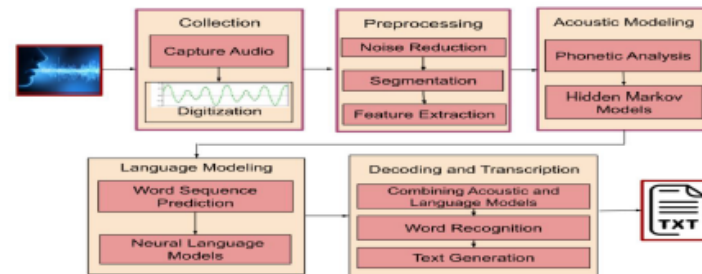
Presented at the 2025 R&G Expo @RMU

Methodology

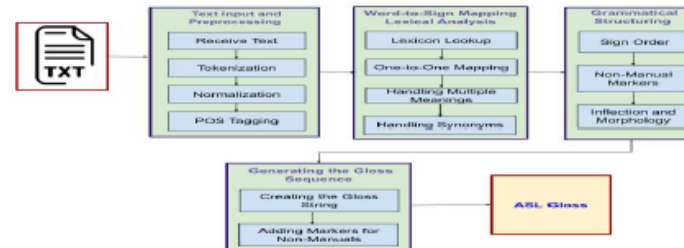
Model to Convert Verbal to Visual Language



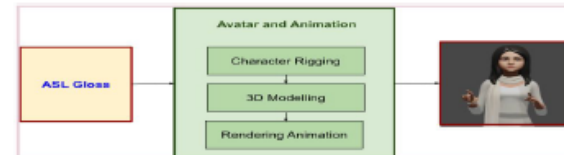
Model to Convert Speech to Text



Model to Convert Text to Sign Language Gloss

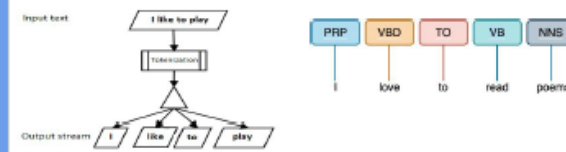


Model to Convert Sign Language Gloss to Animation



Result

Tokenization and POS Tagging



Text to Sign Language Gloss

I am going on vacations in three weeks.

IN THREE WEEKS VACATION GO I.

Character Rigging and Avatars



Verbal to ASL Animation

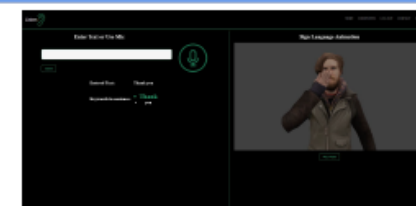
I like my university.



She is beautiful.



Thank you.



Perceived leader's lack of power in China: An examination of LMX dimensions and extra-role behavior



Hongguo Wei (Robert Morris University), Jeremy Meuser (University of Michigan), Teresa Scandura (University of Miami)

Rockwell School of Business

Research Question

When followers perceive their leaders lack of power in a high power distance country such as China, how does it impact their extra-role behavior at work? How does their relationship quality with leaders moderate their appraisal process?

Literature and Theory

High Power Distance Culture. Lacking power is seen as a violation of cultural normative heuristics.

Appraisal Theory. 1) Lower power of the leader, less danger and more freedom. 2) How an employee uses the freedom depends on aspects of their relationship with the leader. 3) Appraisal process, affective experience and actions reinforce each other (Roseman & Smith, 2001).

Method

Sampling. Two Chinese companies. Multi-source design with both leaders and employees participated in the study. N = 184 leader-follower pairs.

Measures. Sense of leaders' lack of power (Anderson & Galinsky, 2006). LMX dimensions (Liden & Maslyn, 1998). Employee voice (Van Dyne et al., 2008). Employee whistleblowing (Park & Blenkinsopp, 2009).

Figure 1. Theoretical Model and Results

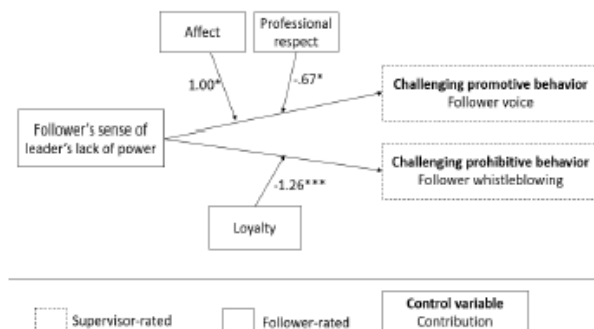
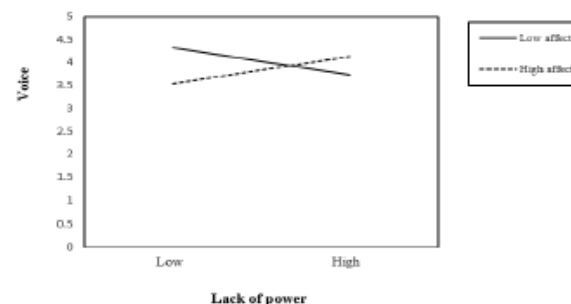


Figure 2. Moderation of affect on the lack of power – voice



Results

1) Affect and professional respect moderates the lack of power-voice relationship such that voice is more likely when affect is high (vs. low), and when respect is low vs. high).

2) Loyal moderates the lack of power-whistleblowing relationship such that whistleblowing is more likely when loyalty is low (vs. high).

Figure 3. Moderation of professional respect on the lack of power – voice

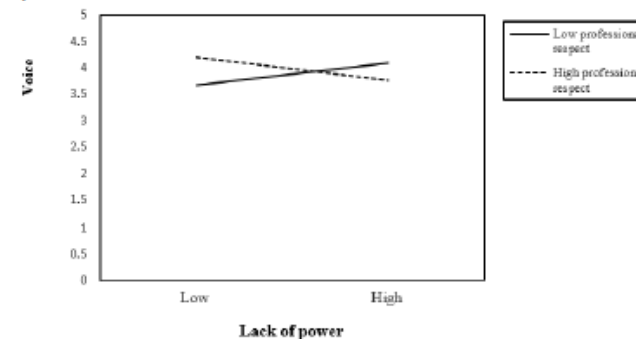
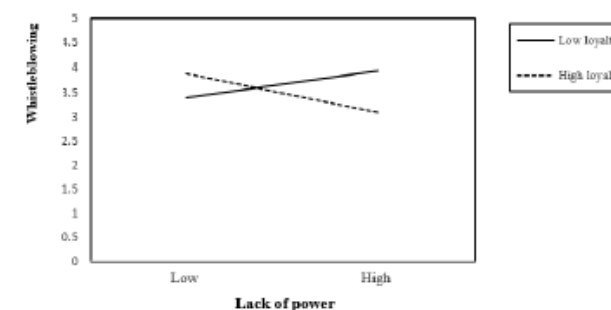


Figure 4. Moderation of loyalty on the lack of power – whistleblowing



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More Pro-Group Unethical Behavior in Employees with In-Group Roles? Conditional Indirect Effects of Perceived Autonomy and Supervisor Identification

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Lili Bao (Eastern Washington University)

Daria Crawley (Robert Morris University)

Shaobing Li (Miami University)



Rockwell School of Business

Research Question

Whether and how an employee with an in-group role protects their own group's interests at the expense of other groups or individuals?

Literature and Theory

1) An in-group role is not merely a membership, but implies a dynamic process of defining and redefining the self that shapes one's perception and behavioral outcomes (Stryker & Burke, 2000).

2) The underlying mechanism and boundary conditions are far from sufficiently understood.

3) Social identity theory (SIT) (Tajfel & Turner, 2004) and self-determination theory (SDT) (Deci & Ryan, 2000) are used to examine the relationship between the in-group role and the self-definition process.

Study 1

2 x 2 vignette-based experiment study design.
In-group role (in-group vs. out-group) & employees' loyalty towards their leader (high vs. low loyalty).
N = 322 professional workers in the U.S.

Results support H1: mediation ($b = .21, p < .001, 95\% \text{ CI } [.09, .34]$).

Table 1. Descriptive Statistics (Study 1)

	Mean	Std	1	2	3	4	5	6	7
1. Gender	1.57	0.53							
2. Age	34.51	13.08	0.03						
3. Education	2.38	1.01	0.03	0.13*					
4. Loyalty	1.49	0.50	0.07	0.06	0.07				
5. In-group roles	1.50	0.50	-0.02	-0.03	0.03	-0.06			
6. Perceived autonomy from the leader	3.06	1.11	0.00	0.13*	0.05	-0.04	0.42**	(.92)	
7. Supervisor identification	2.80	1.17	-0.04	-0.11	-0.06	0.11*	0.58**	0.39**	(.96)

Study 2

Same design as study 1. We added a measure of pro-group unethical behavior in Study 2.
N = 214 professional workers in the U.S.

Table 2. Descriptive Statistics (Study 2)

	Mean	Std	1	2	3	4	5	6	7	8
1 Gender	1.61	0.50								
2 Age	33.52	13.83	0.06							
3 Education	2.28	1.00	0.11	0.23**						
4 Loyalty	1.50	0.50	0.01	0.04	-0.03					
5 In-group roles	1.51	0.50	-0.10	0.08	-0.02	0.24**				
6 Perceived autonomy from the leader	2.99	1.18	-0.14*	0.06	0.09	0.16*	0.46**	(.92)		
7 Supervisor identification	2.76	1.18	0.00	0.03	-0.03	0.65**	0.59**	0.49**	(.96)	
8 Pro-group unethical behavior	1.72	0.93	-0.04	-0.05	0.06	-0.12	-0.02	-0.11	-0.10	(.93)

Note. N = 214. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 1. Theoretical Model (Study 2 results)

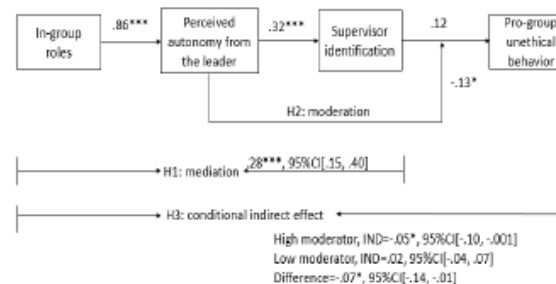
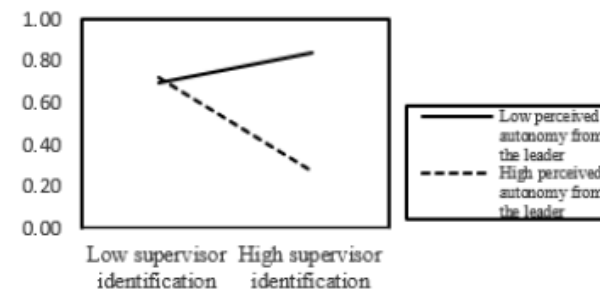


Figure 2. Moderation of perceived autonomy from the leader



Results

- 1) Perceived autonomy from the leader and supervisor identification explain the mechanisms and boundary conditions between in-group roles and employee PGUB.
- 2) The extent to which an in-group role impacts employee PGUB is highly dependent on the level of perceived autonomy.
- 3) Supervisor identification has a negative impact on employee pro-group unethical behavior when perceived autonomy is high.

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The Story of Every Day Ethics

Dr. Richard Mills

School of Communication and Media



Ethics and Moral Education in Ancient Greek Philosophy and Today

The ethical purpose of a college education is recognized as an education in the liberal arts. The primary predominant ethical issue becomes an education or curriculum aimed at imparting general knowledge and developing general intellectual capacities and virtues, in contrast to a professional, vocational, or technical curriculum. A liberal arts education gives the student the tools necessary to think, prove their thesis, and open their minds to the ideas of others.



It is imperative that one explores issues in history to understand the importance of ethical behavior in education. There is nothing more important than ethics in education. It is essential that we understand that education is not exclusive to the classroom but may also be engaged through other elements in our society. For instance, education can take place through examples set by others: parents, peer groups, religious leaders, or political leaders all contribute to our educational progress. In addition, electronic interactions, such as social media, blogs, or news agencies, are part of our daily lives. Formal education begins in preschool and continues throughout our lives, whether in a classroom, trade school, or through self-education.

Aristotle the Educator

The subject of education and ethics was a primary focus of Aristotle from 384 BC to 322 BC. Aristotle lived in ancient Greece and was a student of Plato; Plato was one of Socrates' students. Like Plato, Aristotle recognized the importance of early childhood as a formative period of human development; he divided schooling into three stages: primary, secondary, and higher education. After many long years in the academy, Aristotle founded his own school, the Lyceum. This is significant for the study of ethics and education because we can see the importance of ethical education from the early days in Athens and thus, the importance for modern times as well. One might argue that ancient philosophy is not relevant to the teachings of today. It is essential to understand that strengthening moral values can be incorporated into today's teachings and, therefore, create a more ethical paradigm for society. It is important to note that Aristotle was the teacher of Alexander the Great. He is considered Aristotle's most important student. He reciprocated his education with Aristotle and shipped new plant and animal specimens back to his teacher from his military expeditions.

National Education Association

The subject of ethics and education has always been in existence, and educators have struggled to find the right balance for ethical behavior in teachers, administrators, and student participation. The NEA has created a guideline for educators in their Code of Ethics. Commitment to the student and commitment to the profession are the basis for their code. Read the NEA Code of Ethics:
<https://www.nea.org/resource-library/code-ethics-educators>
The first principle is commitment to the student. Let us open the discussion for today with an examination and comparison to the Code of Ethics and the dilemma that some schools face within our culture. Perhaps we can begin the debate with "shall not reasonably restrain the student from independent action." We learned from Aristotle the importance of access to information and the dissemination of thought to a student. We also learned that, in order to achieve happiness, education is of the upmost importance. Another area to explore

A traditional liberal arts education is often equated with that of a utilitarian education; many weigh the financial benefits and overlook the life-changing quality of life of a liberal arts education. Often, general education is one way to describe the 4 years of instruction in some colleges.

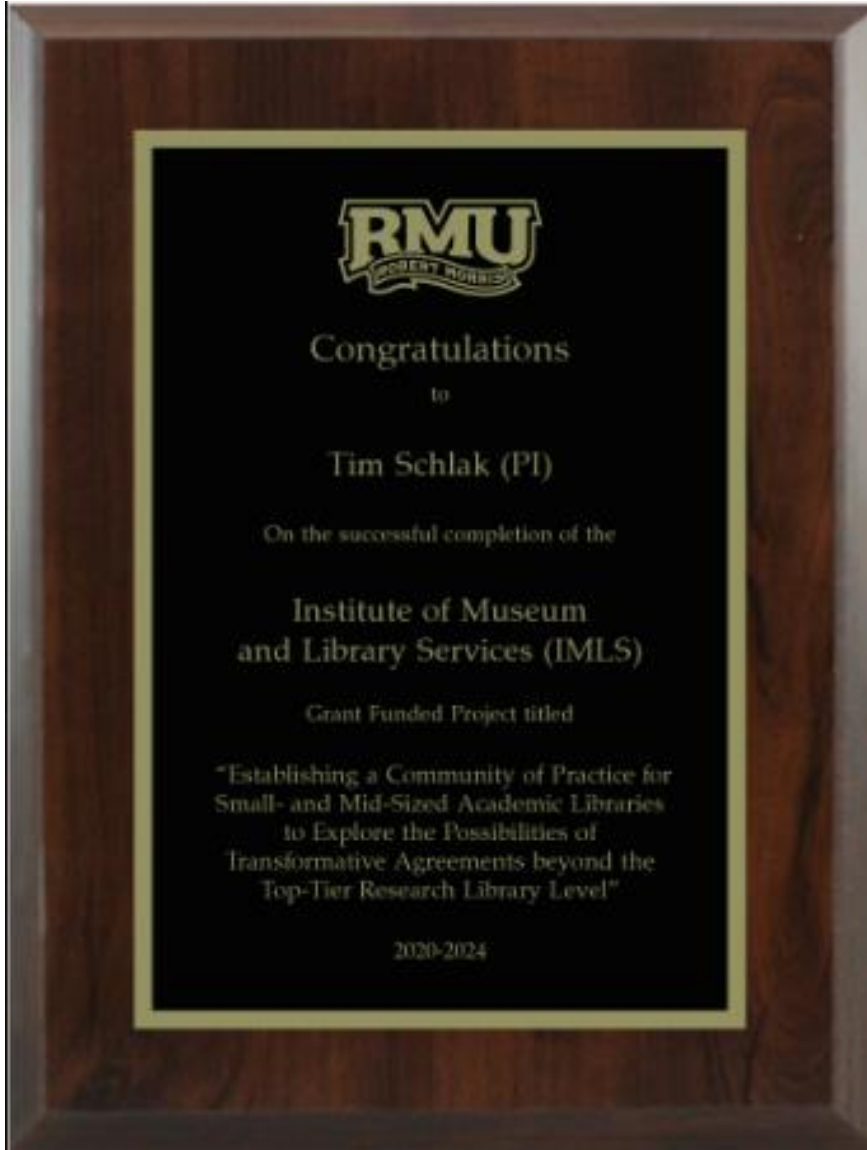
In Hellenistic philosophy and education, the practice was viewed as being ethically transformative. Studying philosophy and being educated was a way to cultivate virtue, eliminate vice, and ultimately make us happier people. As a result, we find in Hellenistic philosophy and education detailed accounts concerning how to best go about cultivating virtue and improving our character.

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Recognitions for the Successful Completion of Grant Funded Projects in 2024









Congratulations

to the project team

Marcel Minutolo (PI)
Brian O'Roark (Co-PI)
Hasan Celik (Co-PI)

On the successful completion of the

DCED-PA,
Military Affairs Council

Grant Funded Project titled

"Western Pennsylvania as a
Military Logistics Lift Hub"

2018-2022



Congratulations

to

Michael Quigley (PD)

On the successful completion of the

The Heinz Endowments

Grant Funded Project titled

"Black Male Leadership
Development Institute (BMLDI)"

2022-2023







