



# DEVRY UNIVERSITY

## JOURNAL OF SCHOLARLY RESEARCH

Vol. 6 No. 1  
FALL 2021

# DEVRY UNIVERSITY JOURNAL OF SCHOLARLY RESEARCH



## TABLE OF CONTENTS

A Message from the Dean, Faculty and Center For Teaching Excellence .....	2
A Message from the Managing Editors .....	3
Journal Information .....	4
Peer Reviewers for this Issue .....	5
Institutional Review Board (IRB).....	5

## CALL FOR PAPERS:

Call for Papers, Case Studies, Book Reviews, Letters to the Editor, From the Classroom, and Editors' Instructions for Submission and Deadlines, Spring 2022 Issue .....	6
---	---

## LETTER TO THE EDITORS:

<i>Information Literacy in the Modern Landscape: Developing a Toolset for Lifelong Learning,</i> Joseph Louderback .....	9
<i>A Unified Language of Empathy: Perspectives from an English Instructor turned Admissions Advisor,</i> Emily Patino .....	11
<i>The TFW Virus – The Virus That Infects Us All</i> , Debra Salsi .....	13

## ARTICLES:

### **PAPERS FROM THE COLLEGE OF BUSINESS & MANAGEMENT**

<i>The Evolution of The Leader-Manager in the Robotic Era,</i> Michael Faulkner .....	14
<i>The Global K-Pop Revolution and the Original K-Pop Band: South Korea's Cultural Expansion,</i> Nikolai Ostanpenko .....	24

### **PAPERS FROM THE COLLEGE OF ENGINEERING & INFORMATION SCIENCES**

<i>Internship Platform for Graduating College Students: A Technology Solution to Protect Students' College Degree Investment,</i> Nazila Safavi.....	33
<i>Incorporating Arduino for Remote Hands-On Project-Based Learning,</i> Natalie Waksmanski .....	43

### **PAPER FROM THE COLLEGE OF LIBERAL ARTS & SCIENCES**

<i>Inland Souls, Thoughtful Shoals, and Partial Wholes: A Comparative Analysis of Several "Sea" Poems</i> by Emily Dickinson and Robinson Jeffers, Carol Dietrich .....	52
--	----

## FROM THE CLASSROOM:

<i>Pilot to Help Repeating Students: Analysis and Insights,</i> Jennifer Harris .....	58
<i>Encouraging Student Initiative and Development of Soft Skills: Three Methods and a Bonus,</i> John Kavouras .....	61
<i>Teamwork May Reduce Plagiarism,</i> Sharon Pope.....	64

## BOOK REVIEWS:

<i>Moral Matters,</i> John L. Murphy.....	67
<i>Adult Education and Race,</i> Jacqueline Saldana.....	69
<i>Illustrious Founding Fathers,</i> Shawn Schumacher .....	71
<i>Generation Z Goes to College,</i> Richard Smith.....	73



# A MESSAGE FROM THE DEAN, FACULTY AND CENTER FOR TEACHING EXCELLENCE

We are proud to present the Fall 2021 DeVry University Journal of Scholarly Research. Included in this issue you will discover timely contributions, each providing a view into the diverse scholarly work our faculty are engaged in.

The Letters offer viewpoints around the common theme of seeking greater understanding, empathy, and the importance of language usage and information literacy. For our Papers, Faulkner's work focuses on leadership during this era of robotics. Ostanpenko provides an assessment of how the K-pop Revolution aided South Korea's cultural expansion. Safavi's paper shows how an Internship technology platform can aid the ROI of a college degree. Waksanski's work presents the importance of deploying hands-on Problem Based Learning (PBL) even when our classrooms need to be remote due to COVID. Last, a comparative analysis from Dr. Carol Dietrich is presented regarding several "Sea" poems by Dickinson and Jeffers.

As we continue to modernize our classrooms, readers will see in print our collective command of the remote modern classroom. Harris focuses on a pilot study that assists repeat students. Kavouras notes methods to develop soft skills in the General Education classroom, and Pope suggests team work to mitigate the ever-expanding violations of plagiarism, a nation wide challenge.

Four fascinating book reviews are also available. Murphy reviews *Moral Matters* by Dooley. A handbook on adult education and race is reviewed by Saldana while a history of two illustrious founding fathers is reviewed by Schumacher. Smith reviews a must-read for all faculty, *Generation Z Goes to College*.

As we welcome a new academic year, post pandemic, we are no doubt stronger. We are now more than ever committed to producing diverse scholarly work, guided by Ernest Boyer's scholarship model. Frameworks are in place, university-wide, to support dynamic programming. Finally, it is with great pleasure that we take this opportunity to introduce our new scholar community, The Institute of Online Learning. This university wide community will guide our mission as DeVry University faculty and further confirm our command in the remote learning space for years to come.



**Lynn Marie Burks, PhD.**  
Dean, Faculty and Center For Teaching Excellence



# A MESSAGE FROM THE MANAGING EDITORS

We are excited to present the current issue of the *DeVry University Journal of Scholarly Research Vol. 6, No. 1* (DUJOSR). We can truly say that this recent issue provides something of interest for each member of our DU community! Included in the journal are papers from all three colleges, the “From the Classroom articles” that describe practical approaches that promote success in the classroom for our students. letters from our fellow colleagues, – and a range of book reviews to stimulate interest in recent publications.

This has been another difficult year for all of us at work and in our personal lives, as the plethora of challenges arising from the widespread effects of the pandemic, diversity issues and environmental concerns that continue to test us – yet we are meeting these challenges, moving forward, and growing. Despite the impact of these challenges on our community, our contributors have found the time in their busy lives to grapple with problems that are especially relevant to us and provided us with an issue packed with ideas to build awareness, educate and entertain us.

We would like to acknowledge all the efforts of the members of the DeVry University community who have recently gained doctorates and who have published – in particular we celebrate Dr. Sarbani Sen Vengadasalam and Dr. Lorenzo Bowman who have both published books that are concerned with Teaching and Learning. The former published; *Teaching Business, Technical & Academic Writing Online and Onsite: A Writing Pedagogy Sourcebook* (2021). Cambridge Scholars Publishing. The latter having co-authored the chapter *Adult Education, and Race: A Critical Race Theory Analysis*, a historical and theoretical perspective of race within the field of adult education. (In, Rocco, T. S., Smith, M. C., Mizzi, R. C., Merriweather, L. R., & Hawley, J. D. (Eds.). (2020). *The handbook for adult and continuing education*. Stylus Publishing LLC). This book is reviewed in this issue and Dr Vangadasalam’s book will be reviewed in our next issue.

The DUJOSR continues to uphold the goals of the founding board, and to that end we continue to endeavor to provide a platform to share the scholarship of our community and to offer support to the members of our community who are seeking to publish for the first time - all forms of scholarship are welcome, as we seek to develop our reputation as a university that specializes in online learning.

We are very appreciative of the contributions of the authors and the DUJOSR team. We encourage all the members of our community to consider the opportunities available to publish in the Journal and consider contribution as a reviewer or as a member of the editorial board. Please review our Journal archive in the DU newsroom: <https://www.devry.edu/newsroom/academic-publications.html>



**Deborah Helman, PhD**  
Managing Editor



**Michael Bird, PhD**  
Managing Editor

# DEVRY UNIVERSITY JOURNAL OF SCHOLARLY RESEARCH



## EDITORIAL BOARD OF THE DEVRY UNIVERSITY JOURNAL OF SCHOLARLY RESEARCH

### **DEAN, FACULTY AND CENTER FOR TEACHING EXCELLENCE**

Lynn Marie Burks, PhD

### **MANAGING EDITORS**

Deborah Helman, PhD  
Michael Bird, PhD

### **COLLEGE EDITORS**

#### **COLLEGE OF BUSINESS & MANAGEMENT:**

Wayne Morgan, DBA  
Willie Wilborn, EdD

#### **COLLEGE OF ENGINEERING & INFORMATION SCIENCES:**

Eric Addeo, PhD  
Gina Cooper, PhD

#### **COLLEGE OF LIBERAL ARTS & SCIENCES:**

Shawn Schumacher, PhD

### **BOOK REVIEW EDITORS**

John Kavouras, MA  
Shawn Schumacher, PhD

### **FROM THE CLASSROOM EDITOR/ LETTERS TO THE EDITOR**

Jim Schneider, PhD

### **COPY EDITORS**

Michael Dufresne, MA, MEd  
Julie Hagemann, PhD  
Grover McDaniel, PhD  
Patti Meyer, EdD  
Jim Schneider, PhD

### **DUJOSR ADVISORY BOARD**

Michael Faulkner, PhD

### **JOURNAL INFORMATION**

The DeVry University Journal of Scholarly Research (ISSN 2375-5393 1) is a semi-annual, multi-discipline, peer-reviewed, journal devoted to scholarship and education research.

The journal is the work of the faculty, staff and administration of DeVry University. The views expressed in the journal are those of the authors and should not be attributed to the sponsoring organizations or the institutions with which the authors are affiliated.

### **MANUSCRIPT SUBMISSIONS INFORMATION**

The journal welcomes unsolicited articles, case studies, reviews, and letters on scholarship, education research or related subjects. Text and citations should conform to APA style as described in the Publication Manual of the American Psychological Association (7th ed.). Because the journal employs a system of anonymous peer review of manuscripts as part of its process of selecting articles for publication, manuscripts should not bear the author's name or identifying information.

Electronic submissions of manuscripts (MS Word) and all other communications should be directed to: [DUJOSR@devry.edu](mailto:DUJOSR@devry.edu)

### **EDITORS AND REVIEWERS**

DeVry faculty who wish to apply for positions on the Journal's board of editors or as reviewers of manuscripts should contact Deborah Helman or Michael Bird.

### **PEER REVIEWERS FOR THIS ISSUE**

The following DeVry faculty served as peer reviewers for this issue. We thank them for their service.

John Kavouras, MA  
Chao-Ying Wang, PhD  
Linda Wayerski, PhD  
Penn Wu, PhD

### **INSTITUTIONAL REVIEW BOARD**

DeVry University has an Institutional Review Board (IRB) to protect the rights and welfare of humans participating as subjects in a research study. The IRB ensures the protection of subjects by reviewing research protocols and related materials. DeVry University's colleagues and students who want to conduct research must first contact the IRB for an application. Once received, the IRB will review the application and supporting materials to determine if all criteria have been met before approving the research. In support of helping colleagues and students gain an in-depth understanding of ethical research processes, the IRB obtained a Collaborative Institutional Training Initiative (CITI) membership. CITI provides globally accepted training that aids the research process. Those who wish to submit applications to the IRB are required to complete CITI training beforehand. For additional information, you can contact the DeVry University IRB through the following email address: [dvuirb@devry.edu](mailto:dvuirb@devry.edu).

### **IRB ADMINISTRATOR**

Lorenzo Bowman, JD, PhD  
Senior Professor  
College of Business & Management  
404-583-2340  
[lbowman@devry.edu](mailto:lbowman@devry.edu)

### **IRB MEMBERS**

Andrea Henne, EdD  
Professor College of Liberal Arts & Sciences,  
College of Business and Management  
858-361-5002  
[aheene@devry.edu](mailto:aheene@devry.edu)

Moe Saouli, DPA  
Assistant Dean of Academics-Teaching & Learning,  
Long Beach, San Diego, Ontario, Sherman Oaks,  
Virtual CA & HI  
562-997- 5581  
[msaouli2@devry.edu](mailto:msaouli2@devry.edu)

John W. Weber, DBA  
Senior Professor and National Faculty Chair  
630-829-0208  
[jweber@devry.edu](mailto:jweber@devry.edu)

# DEVRY UNIVERSITY JOURNAL OF SCHOLARLY RESEARCH



## CALL FOR PAPERS, SPRING 2022 ISSUE

The *DeVry University Journal of Scholarly Research* (DUJOSR) continues to expand its pages to include a variety of publishing opportunities for faculty. Academic scholarship remains a staple for the journal, but new categories include Case Studies, Book Reviews, Letters to the Editor, and a “From the Classroom” section, in which faculty can share vital experiences and best practices. These categories of submission are fully described below. Specific deadlines and instructions for submission conclude this “Call for Papers.”

### **ACADEMIC SCHOLARLY ARTICLES**

For the Spring 2022 issue, we continue to solicit “working papers” (3000 to 5000 words) in our scholarly article category.

Papers of all types are welcome including theory, empirical, or methodology papers, as well as literature reviews, from both positivist and naturalistic traditions. Research- and evidence-based papers emphasizing practical relevance that resonate with our readers are preferred. We regard submissions as “working papers” that can be submitted to other journals for consideration (but have not been previously published elsewhere).

The review process requires that each paper is coded and blind reviewed by two peer reviewers with expertise in the author’s discipline. Faculty volunteers (for whom profound gratitude is expressed) comprise the peer review board. Final publication decisions are made by the editorial board, consisting of College and Managing Editors.

Authors who have previously submitted academic scholarly papers for past issues are encouraged to re-submit their revised papers. Papers should be sent with an additional document that specifies detailed responses to reviewers’ and editors’ feedback.

### **CASE STUDIES**

DUJOSR solicits case studies (ranging from approximately 500-word short cases, to 1000 to 3000-word long cases) that have not been published elsewhere but are considered “working papers.” The purpose of this initiative is to create a repository of case studies that can be used by faculty to teach DeVry University graduate and undergraduate courses. Our aim is to provide students with a unique and valuable learning experience that has been generated by our faculty.

Case studies of all types are welcome, including multi-media. We would prefer case studies that emphasize practical relevance that resonate with our faculty and students. Case study submissions must also be supported by a set of directions, i.e., Faculty Teaching Notes. The teaching notes must indicate the relevant courses and TCOs associated with the case study, as well as suggested question strategies and pedagogical practices.

# DEVRY UNIVERSITY JOURNAL OF SCHOLARLY RESEARCH

The case study should be, significant, complete, compelling, inclusive of alternative perspectives, qualitative, sufficiently evidenced, aligned with one or more Course Objectives, and written with accuracy and relevance.

The review process for case studies is the same as for academic scholarly papers. Case studies will be evaluated on the following criteria:

- Timeliness of case & relevancy (tied to 1 or more Course Objectives)
- Theoretical framework, and practical applications
- Opportunity to expand knowledge,
- Implications for field of studies
- Case notes for faculty
- Writing quality: Clarity, conciseness, and organization, grammar and mechanics,
- APA format, including in text citations and reference page.

**There is no submission deadline; case studies will be accepted on an ongoing basis.**

## **BOOK REVIEWS**

Book reviews continue to be a regular feature in the journal pages. They are an important part of scholarly life. They alert colleagues to new developments in the academy, foster discussions that can lead to new scholarship, and ultimately provide us with both a broader and deeper view of the world, which we in turn can share with our students.

Reviews of either fiction or non-fiction works should adhere to the following publication guidelines:

1. Reviews should be between 500 to 1000 words in length, double spaced, and include the following: author, title, place of publication, publisher, year, price, page length (including introduction and text), and International Standard Book Number (ISBN).
2. Reviews should include a brief summary of the scope, purpose, content of the work, and its significance in the literature of the subject. Reviews should evaluate the strengths and weaknesses of the work as well as attend to its use of sources, including documentation, methodology, organization, and presentation.
3. Reviews should be fair, balanced, and treat authors with respect.
4. A signed permission form to publish a review is required.

## **LETTERS TO THE EDITOR**

Letters to the Editor are a welcome addition to the journal pages. Letters that reply to or extend academic scholarship published within DUJOSR pages are particularly welcome, as these add rich texture and dialogue to ideas presented. Letters should be professional, well-tempered, and engage with content meaningfully. Letters that do not necessarily attend to previously published work but are timely and relevant are also welcome.

# DEVRY UNIVERSITY JOURNAL OF SCHOLARLY RESEARCH

Letters responding to published articles in DUJOSR should identify the month and year of the article, review, or previous letter on which it is commenting. The full title of the article, review, or letter as well as the author(s) name(s) should be included. Letters should be double-spaced and 500 to 1000 words in length. Letters may express well-tempered opinions but should include citations in cases where academic integrity requires documentation. Letters should be fair, balanced, and treat authors with respect.

## ***FROM THE CLASSROOM***

This section of the journal is newly offered to faculty who have rich pedagogical experiences worthy of sharing with a larger audience. Papers in this category may use research to support ideas but may also consist of valuable experiences about which research may not have yet caught up. Well-crafted papers that demonstrate increased student engagement in the classroom are particularly prized. In this category, the recommendations for length are 750 to 1000 words, but longer papers of exceptional quality and relevance will be considered. Content should seek to express pedagogies that transcend the commonplace or that provide an interesting new spin on well-trod best practices.

## ***EDITORS' INSTRUCTIONS FOR AND SUBMISSION AND DEADLINES***

All submissions are expected to follow the APA style sheet. Templates and APA source materials are available through the DeVry Commons intranet community site, DeVry University Journal of Scholarly Research, under the following headings:

- Guide to APA Research Writing and Formatting Template Revised 2020
- Guide to APA Research Writing and Formatting Revised Nov 2013
- DeVry University APA Handbook
- APA 7th Guide to Citing Sources

**The submission deadline is March 6th, 2022. Please submit your work and a Turnitin Report in any category to Managing Editors, Deborah Helman and Michael Bird, at [DUJOSR@devry.edu](mailto:DUJOSR@devry.edu)**

The Managing Editors reserve the right to edit all submissions in any category of submission for length, tone, and content, over and above recommendations made by peer reviewers and College Editors.



# LETTER TO THE EDITORS:

## *INFORMATION LITERACY IN THE MODERN LANDSCAPE: DEVELOPING A TOOLSET FOR LIFELONG LEARNING*

Dear Editors,

It has become a truism that the modern information landscape is constantly increasing in complexity. Since the term information literacy was coined in the early 1970's, the formats in which useful information is packaged and the modes for its delivery have grown to include all manner of electronic storage systems and interfaces. At the same time, traditional print formats have not disappeared. As a result of this complex information environment, a certain degree of information literacy has become necessary to be an active participant in modern life. Citizens of a modern society need education to make use of the various information sources available to them. This is even more true in the university setting, where students need to learn new modes of expression, engage with new information sources, and create new knowledge as they progress through their academic programs of study.

The academic library, while not exclusively responsible for information literacy instruction, is understood to be a key proponent of this endeavor. Various standards have been developed to help guide librarian instructors and to provide evaluation criteria for accrediting bodies. In 2016, the Association of College & Research Libraries adopted the Framework for Information Literacy for Higher Education as the scaffold for information literacy instruction, defining information literacy as “The set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.”

Our students need to learn this “set of integrated abilities” to find information within and external to our library and other academic resources, so they can efficiently do the research necessary for course assignments. This skill set helps students assess what they find for its value to the process of completing their academic projects. Students who learn these skills are able to effectively incorporate new information into their coursework and understand why and how to give credit for the contributions of others to their assignments. Further, all of these abilities become part of the toolset for lifelong learning. For, while our graduates can still make use of a range of the library's resources, they will increasingly use resources found outside the library's curated collections. Knowing how to evaluate information claims will help them be informed citizens. Understanding how information is produced and valued will help our graduates understand the value of their own personal information, their contribution to the larger conversation, and their own as well as others' creative works.



A robust information literacy program is valued by accrediting agencies, and it raises an academic institution's profile among its peers. Recognizing this, and the intrinsic benefit it provides to our students, the DeVry university library has long been actively involved with helping to build our students' information literacy skills. DeVry university librarians teach these skills through numerous daily interactions with students seeking research assistance. Every term, our librarians provide instruction sessions targeted toward specific DeVry and Keller courses, and information literacy concepts are incorporated into every library presentation. The DeVry library team also endeavors to share the importance of information literacy for our students with faculty and administrators by presenting at faculty meetings and showcasing the library's resources through the date with a database series.

One of the latest developments by the DeVry library team (in consultation with professors Julie Hagemann, Deborah Helman, and Paula Herring) is an information literacy workshop for faculty. The goal of the workshop is to increase awareness of information literacy concepts, encourage faculty-librarian collaboration, and expand perceptions of the possibilities in information literacy instruction. The workshop, still in development (but open for viewing and comments), has a particular focus on the ideas presented in the aforementioned framework for Information Literacy for Higher Education and how they can be applied in the classroom. The basic concepts of the information literacy workshop for faculty will be delivered asynchronously. There will be ample opportunity for discussion in a regularly scheduled open forum where faculty and library team members can ask questions, share best practices, and learn from each other.

Faculty interested in the workshop or discussion are encouraged to contact any library team member for details.

Respectfully,

**Joe Louderback, MLS**  
Reference & Instruction Librarian



# ***A UNIFIED LANGUAGE OF EMPATHY: PERSPECTIVES FROM AN ENGLISH INSTRUCTOR TURNED ADMISSIONS ADVISOR***

Dear Editors,

During these unprecedented economic times and political changes, it is more important than ever to emphasize a unified language as we speak to our students and each other. As a former college English instructor, I had a narrow perspective on how best to communicate with my students because I had only experienced the teacher and student side of academics. Though I learned how to speak to a broad spectrum of people, utilizing some of the concepts we revisited here at DeVry in the recent Implicit Bias training (among others), still I did not understand how to delicately navigate the intricate lives of each student. I was speaking to them, giving them assignments, strictly proclaiming why things had to be done at certain times in particular ways and how important that academic and professional skill is to learn. It was not until I started teaching classes restricted to non-native speakers and, therefore, teaching students from all over the world, that I truly understood the value of a unified language.

Journal assignments about their lives revealed that many of my students not only already held previous degrees from their home countries, but also that many sacrificed that security to come to the United States, forced to start over academically in some cases and work second and third shifts at the local factories to support their families. One Turkish student in his sixties worked at the Kraft factory and came straight to class at 10am after working all night. Another student from Brazil was in the process of adopting two young girls with her husband. This same student lost those girls, whom they were currently fostering, in the semester she had with me. Flashes of happy eyes still haunt me from pictures she had gleefully shared of them. Still, I encouraged her to push through, and she made it through the class with a smile and a high grade. During my years teaching, I have been humbled to know many stories like these that inspire me to give our students here at DeVry the same care.

As an admissions advisor for DeVry now, I take what I have learned from teaching and add that to my calls to students each day, and I have learned that while cultural experiences are not universal, many of the economic struggles students are facing in the current climate are becoming more common. I spoke to a woman in her seventies recently who had lost her husband, used all of her retirement benefits to pay for his cancer treatments, and is now faced with the daunting reality of going back to school during this pandemic to support herself. Our online platforms were intimidating to her, and yet as an advisor, I am able to listen with empathy. And though we may encounter people from diverse backgrounds who may speak several different languages or may even be learning computer language for the first time, this is the unified language I speak of today: empathy.



Now more than ever, I am convinced that it can be easy to be caught up in the ennui of current at-home work environments and mundane routine, or even sound robotic with our call scripts, and yet more crucial than ever that we resist that complacency in our daily conversations with students and colleagues.

Let us not convince ourselves that routine means lack of growth in our roles as educators, advisors, and communicators. Let us unite in a language of understanding of our students' unique lives and show daily that we value their experiences. Let us show that we empathize with them. And let us extend that same empathy to each other as valued members of an institution that reciprocates that value.

**Emily Patino, MA**  
Admissions Advisor



# THE TFW VIRUS – THE VIRUS THAT INFECTS US ALL

Dear Editors,

If I ask people to define peace, I get thousands of versions. But when I ask people to define what it's like to be "at peace", everyone seems to experience that on the same level. We've all heard the saying, "the map is not the territory" and this comes in so many forms we sometimes forget this pertains to organizations and their culture. Do you realize how much it costs an organization to spend their days and nights arguing about a definition? Wouldn't it be great if we could calculate how much that costs? If the ontological aspects of an organization would be included in decisions, how much more smoothly and productively could an organization run?

There IS a methodology that has been around for over 40 years that does just that. It is the number one change management approach utilized in Europe called the Socio-Economic Approach to Management (SEAM). This method is two-fold. Not only does it include calculating these hidden costs of an organization, but it is geared to turn them into value-added initiatives for the organization. Deeply rooted in recognizing that each individual is not a replaceable cog on the wheel or a calculable piece of human capital to expend and conquer, but instead, a human individual with needs and abilities, that if respected and appreciated, add value to a company in their own unique way. This methodology allows for people to be themselves within an organization without fear, and instead, act with love and passion for what they do.

SEAM is an intervention-research methodology established by Dr. Henri Savall in the 1970s following the reevaluation of the sustainability of the classical theories established by Taylor, Fayol and Weber. This methodology emerges and quantifies the hidden cost in the company that Generally Accepted Accounting Principles (GAAP) do not (Savall, Zardet & Bonnet, 2008). Savall explains that the "TFW Virus" (Taylorism, Fayolism & Weberism) has created methods that dehumanize individuals and create silos and dysfunctional elements within an organization. This virus is prevalent within most organizations by blindly following superficial calculations and linear thinking.

We can cut out territorial and power struggles, fear of legal ramifications, and bizarre responses that are specifically programmed to defend the legal nuances we all position ourselves to defend if we begin to incorporate SEAM, even at the fundamental departmental level, building a foundation of respect that we all want, we just don't always know how to define it cohesively.

Wouldn't it be great to come to work, knowing how and why you are important at what you love to do?

**Dr. Debra Salsi, DM, MBA**

National Program Chair, College of Business and Management

Savall, H. Zardet, V. & Bonnet, M. (2008). *Releasing the untapped potential of enterprises through socio-economic management*. Geneva: International Labour Office, & Ecully, France, ISEOR.



# THE EVOLUTION OF THE LEADER-MANAGER IN THE ROBOTIC ERA

MICHAEL FAULKNER

COLLEGE OF BUSINESS & MANAGEMENT

---

Author Note: Michael Faulkner, PhD. Professor of Marketing, at DeVry University, Iselin, NJ

---

## ABSTRACT

In the entire history of civilization, one thing has remained constant: People have always looked to their leaders to provide authority. Over time, the concept of leadership has evolved from one represented by the fiercest, to the bravest, to be the most intellectually capable. The Industrial Revolution shift from agrarian to industrial societies led to the realization that critical skills other than just heroic leadership were needed; these were the skills and abilities of managers. Initially, people perceived leaders as people we follow and managers as those under whom we work. Increasingly rapid technological innovation began to change the way people lived and worked, making it clear that not all leaders, even the great ones, have great or even good management skills. Also, not all managers, even the great ones, have great or good leadership skills. The exponentially increasing pace of technological change will require the roles and skills of leadership and management to evolve as well. We will need a role and function I refer to as the Leader-Manager. These will be filled by people with a unique set of desirable skills, abilities, and characteristics that have evolved to deal with constant change due to technology. The Leader-Manager will need significant knowledge of relevant technology and the temperament and people

skills to lead and manage the increasingly complex relationships with teams including both humans and robots with artificial intelligence (AI).

---

*Correspondence regarding this article should be addressed to Dr. Faulkner at [mfaulkner@devry.edu](mailto:mfaulkner@devry.edu)*

---

Keywords: artificial intelligence (AI), change management, exponential growth, law of accelerating returns, leader-manager, Moore's Law, Moravec's Paradox, robotic era

Throughout the history of human civilization, certain individuals called leaders stood out from the masses based upon some exceptional or extraordinary physical, mental, or spiritual abilities. Most people allowed themselves to be led and accepted the authority or gave allegiance to the leaders. In *The End of History and the Last Man*, political scientist Francis Fukuyama (1992) cited Hegel's assertion of the "Innate human desire to be recognized as a human being with dignity. The outcome of this was a division of human society into a class of masters and a class of slaves. While there were people called leaders and followers. Neither the leaders nor the followers were ultimately unable to satisfy their desire for recognition" (p. 21).

Mumford (1906) acknowledges that humans seem to believe that the concept of leadership is an indispensable form of human association. Furthermore, the need for leadership arises in a culture wherever essential interactions or reciprocities exist. Hunt and Fedynich (2018) discuss how leadership and its qualities have evolved over time and that the debate over the most effective leadership principles for the modern age can be clarified with a historical overview.

McCleskey (2014) suggests that the concept of leadership characteristics began with the study of specific individuals identified as heroic. In earlier times, individuals who displayed uncommon courage, bravery, strength, fortitude, intelligence, or wisdom were role models for leadership. However, today's exponential growth of technology is redefining what people need and expect of those who lead and manage. Grab et al. (2019) suggest that many of today's senior business executives have readily acknowledged the disruptive power of rapid digital transformation. Furthermore, they believe new approaches are needed to respond to these technological innovations for firms to remain competitive.

In this article, the Leader-Manager refers to someone in the organization with a unique set of desirable skills and characteristics. These include, but are not limited to, strategic vision, tactical courage, and a significant knowledge of

the evolving technological resources available to organizations. Furthermore, the Leader-Manager has the people skills, temperament, dedication, and responsibility to successfully develop, lead and manage the increasingly complex relationships within organizations that will include teams of humans and robots with artificial intelligence (AI). The role of the Leader-Manager will include both traditional leadership and management functions such as ensuring the organization has the appropriate resources, a dependable and secure supply chain, insights into competitors, representation with regulators, and knowledge of the market. In addition, they will need to have the technological expertise to ensure the organization has access to the evolving technological tools to support the firm's strategic goals.

The Leader-Manager is a combination of a visionary, thought leader, strategic planner and tactical implementer of technological resources to help achieve the goals of the organization more effectively. Domanska, (2019) describes Richard Branson as possessing the kind of mentality necessary for a Leader-Manager. Branson is the CEO and therefore does not directly manage teams of humans or robots. However, his vision, thought leadership, mentality, and concern for workers are what the future Leader-Managers need to emulate. Branson's unique approach to leadership, management, and decision-making provides a model for how modern business is lead and managed. He has revolutionized the concepts of leadership and led his Virgin Empire with the motto that could be paraphrased as; the status quo is deadly.

In the future, an organization's CEO, President, or founder may still have strategic, fiduciary and organizational oversight. However, the role of the CEO or President as an organization's traditional authority symbol may disappear. Some current senior executives may not have the temperament, skills, technological expertise, or motivation to perform in the role of the Leader-Manager.

### A BRIEF LOOK AT THE HISTORICAL DEVELOPMENT OF TECHNOLOGIES

In a review of anthropologist Ian Morris's book, *Why the West Rules - For Now: The Patterns of History and What They Reveal About the Future*, Vries (2010) describes why Morris believes that the end of the last Ice Age about 14,000 years ago was the beginning of the technological progress that led to the Industrial Revolution. During this time, inventions included the wheel, ways to start and control fire, weapons, and tools for hunting and fishing. Other inventions included planned agriculture, writing, mathematics, astronomy, chemistry, thermodynamics, and the printing press. Despite these important developments of fundamental technologies that others would later build upon, their immediate impact proved to have limited benefits for society. This is because these early technological advancements were infrequent, geographically dispersed, and were narrowly focused on improvements of labor, production, and resource use for business. Consequently, they did not have much impact on most people who were still in an agrarian culture. Chassignet (2014) suggests that James Watts' improved steam engine, the era's principle technology, ushered in the Industrial Revolution. The significance of the steam engine is that it could turn heat into motion. Watts' steam engines had a profound impact, comparably important to the Internet a century later. Prior to the steam engine generating force and motion for the benefit of society such as sawing, grinding, weaving, pumping water, milling, plowing, and the erection of buildings depended on harnessing natural forces of water, fire, wind, or the muscle power of humans or animals. These natural forces had obvious limitations because work could not be done if the forces were not available. Technology allowed the use of *readily available abundant fuels that could be transported to wherever the engines or machines were located. In similar fashion, the Internet made possible the instant delivery of personally identified communications on a global basis.*

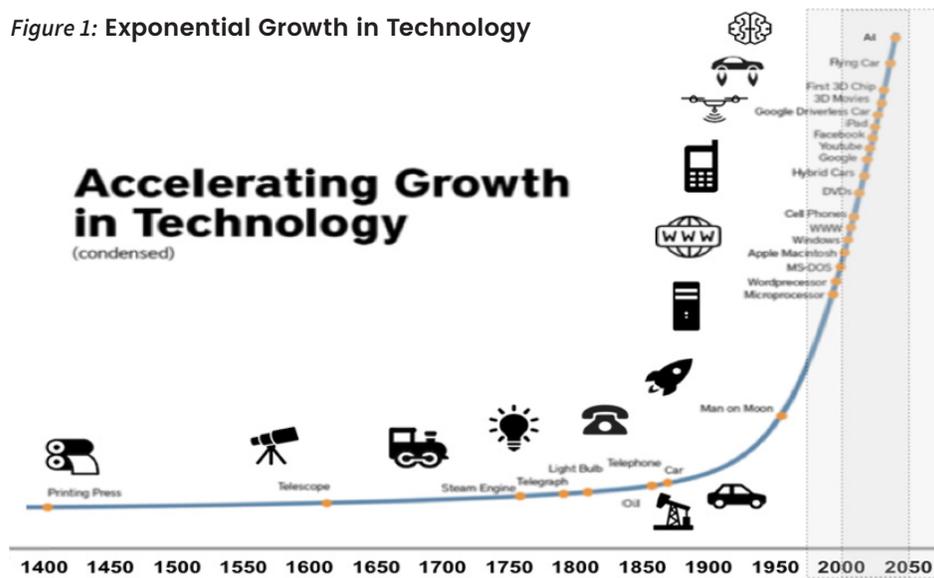
For centuries, the curve of technological innovation was mostly flat. However, the Industrial Revolution saw the curve's elbow point toward exponential growth in the development

and spread of innovations. Important in this age was the recognition that the components of production were becoming increasingly complex as expanding consumers' needs showed up in the supply and demand curve. This led to a growing need for both managers and workers with new skills and abilities to deploy the growing complexity of technological improvements in the production process. Kurzweil (2016) says that civilizations progress by repurposing the ideas and breakthroughs of their predecessors. Correspondingly, each generation of technology builds on the advances of previous generations, and this fact creates a positive feedback loop of improvements. Each new technological innovation occurs because there were technological predecessors to grow on. In this way, innovations in technology enable the next generation to make even better technological advancements.

The continued speed and growth of technological innovation have launched another new era - the Robotic Era - in which computers with artificial intelligence (AI), and other digital technologies supplement human mental powers. What the steam engine and the ancillary technologies did for muscle power, the digital technologies are doing for our cognitive powers. From this point onward it is expected that the Robotic Era's exponential curve will grow more vertical than during the Industrial Revolution. There could be many ways to describe and give this moment in our history a name. However, for the purposes of this article, the term Robotic Era seems to be a convenient and recognizable symbol for a new role, the Leader-Manager.

*Figure 1* depicts this accelerating trend of technology and demonstrates how quickly technological components are changing our lives. This includes but is not limited to how, when, what, why, where and with whom we communicate, the work we do, how we perform work, how we learn, how we manage the workforce, and most importantly, how the Leader-Managers use the resources to accomplish organizational goals.

Figure 1: Exponential Growth in Technology



Note: Hallberg, 2012

The Law of Accelerating Returns and Moore's Law both relate to the concept of exponential growth and its role in our progress. Kurzweil (2016) refers to his Law of Accelerating Returns as the tendency for advances to feed on themselves, increasing the rate of further advance, and pushing well past what one might sensibly project by linear thinking. Blair (2015) suggests that Ray Kurzweil provided a profound yet uncomplicated explanation of exponential growth. Kurzweil's explanation was that in linear thinking 30 steps will advance one step-by-step to 30. However, with exponential thinking and growth, progress doubles with each step, so that the thirtieth step attains the equivalent of a billion linear steps. Chavis (2016) explains Moore's Law as the prediction that would set the pace for our modern digital revolution. Carefully observing an emerging trend, Moore predicted that computing technology would dramatically increase in power, and decrease in relative cost, at an exponential pace. Moore's Law became the golden rule for the electronics industry and a springboard for more innovation. For a technology advancement to be exponential, power and/or speed doubles each year and/or the cost drops by half. These laws have thus far proved reliable measures of the phenomenal growth in technology. However, exponential growth is not intuitive. Humans

mostly still tend to think linear and in terms of things that we know and we can relate to. This works for most of our daily lives, but to maximize business opportunities, overcome obstacles to efficiencies, and solve humanity's biggest challenges, people must stop thinking linearly and start thinking exponentially and start visualizing the future not in linear terms of years but in terms of generations from now.

### THOUGHTS ON LEADERSHIP THEORY

Understanding the role of Leader-Managers in the Robotic Era demands a reexamination of the historical definitions of leadership and managing. The early ideas of leadership based upon various leader types were formed in antiquity by examining traits of individuals seen as heroic. Through times of expansion and industrial revolution the definition of leadership has evolved into many different theories and definitions that identified a leader as that one great individual who had unique skills and abilities.

McCrimmon (2010) refers to as the "The Heroic Leadership Theory" to describe the type of leader who people recognized as heroic. These leaders make decisions unilaterally based upon the power or influence of their position. By contrast, modern leaders tend to be facilitators who use Socratic questioning to help draw out ideas to

encourage the opinions and solutions of others. For thousands of years it had mostly been a way of explaining who became leaders and why, when, and what they accomplished mostly as a result of their brave and courageous actions. The Hero Leader may or may not involve followers in decision-making. Some people may perceive today as an anti-heroic age, but there may be still a need for heroic Manager-Leaders whose vision and adoption of technology is transformative.

For a long time, leadership was not associated with the development, management, or the application of technologies particularly in the production process. That all changed with the Industrial Revolution and is quickly evolving in the Robotic Era. The leaders of the Robotic Era will be identified more by their cognitive thinking skills and less by their physical actions and heroic deeds. The traditional paradigm of vertical leadership has evolved to “a flattened form of dynamic leadership where leaders are interchangeable dependent on the task” (Hunt & Fedynich, 2019).

Murray (2010) takes a rather pessimistic view of today’s corporate leaders and managers. He said modern management is nearing its existential moment. Leaders of major corporations ostensibly positioned their businesses as champions of the free market. However, he believes these businesses were instead created to circumnavigate the free market system. Many of the major corporations were primarily built to deal with the challenge of organizing thousands of people in multiple locations with different skills to perform the tasks necessary to maintain the corporate identity. More recently, most epic management stories have not been about corporate triumphs, but triumphs over the corporation’s original mission. On the other hand, there are noted management icons of recent decades such as Pim de Morree, Jost Minnaar, Elon Musk, Jeff Bezos, Jack Patrick Dorsey, and the thousands of the great leaders whose leadership and management styles were examined in a Gallup study on what makes great managers. Based on that research, Marcus Buckingham and Curt Coffman (2016) examine how great managers stand apart by offering

solutions to getting and keeping higher levels of employee effectiveness and satisfaction.

These great managers excel at meeting all corporate goals and objectives, yet they have reputations for attacking entrenched corporate cultures, by bypassing corporate hierarchies and undermining corporate structures. The best corporate managers have become, in a sense, enemies of the kind of corporation (Murray, 2010). The reasons are clear enough: Corporations are bureaucracies with bureaucratic managers. Their fundamental instincts are toward self-preservation. They are, almost by definition, resistant to change. They were designed and tasked, not with reinforcing market forces, but with supplanting and resisting the market (Murray, 2010).

Organizations like The Institute of Leadership & Management are in the forefront of thought leadership Digitalization 2.0 and other exponential technologies and this suggests to the author that this trend will soon be a reality. Organizational leaders will have to find an effective balance between human/robot capital and design novel approach to ensure higher integrity and efficiency. This idea requires the development of leadership styles based on two axes. They are a focus on technology and a focus on humanizing the work environment.

### THOUGHTS ON MANAGEMENT

Most contemporary academicians and writers credit Henri Fayol or Fredrick Winslow Taylor as the original discoverers of the term management. While they both contributed to the science and application of management, they were late comers to the issues of management. *Table 1* shows that management issues have been around for a long time.

**Table 1: Early Contributions to Management Issues**

EARLY CONTRIBUTOR	OUTCOME
Sumerians	Writing and trade
Hammurabi	Written commands and controls
Nebuchadnezzar	Work and Result Incentives
Ancient Egyptians	Division of labor, coordination, and span of control
Sun Tzu	Division of labor, communication and coordination
Han Dynasty	Development of bureaucracy
Ancient Greeks	Division of labor
Romans	Standardization
Italians	Accounting, corporations, and multinational corporations
Fibonacci	The Hindu-Arabic numeral system including the numeral "0"

**Note:** Adapted from Bright & Cortez, 2019

Muldoon and Marin (2012) describe the forces such as The Crusades and the rediscovery of long-established eastern trade routes, which brought new concepts and ideas on leadership to Europe. Specifically, new ideas on leadership came from the remote cultures including Muslim and Chinese societies. Italy absorbed and refined many ideas that led to a renaissance of knowledge and the development of ideas across Europe. These included the development of the printing press which help to spread these ideas across Europe. The Renaissance emergence of new trade also the development of the idea of the corporation and double-entry accounting. In fact, some of the first multinational corporations have their origins in the Italian Renaissance. Before the industrial revolution, modern management was largely a function of plant owners who handled all the tasks currently learned in textbooks including coordination, planning, controlling, rewarding, allocating resources, and sales. While there was industrial progress, the traditional hero leader myth was still dependent upon the leaders and manager’s use of power, not influence.

In *An Inquiry into the Nature and Causes of the Wealth of Nations*, Adam Smith (1776) proposes the idea of specialization and coordination within corporations as a source of economic growth. Specialization and division of labor were Smith’s major contributions to management thought. Elton Mayo, Henry L. Gantt, Frederick W. Taylor, Henry Fayol, Alfred Slone, Herbert R. Townes, and Peter Drucker, among others, added new ideas and theories that emphasized efficiency, lack of variation, consistency of production, and predictability all to support mass production and mass marketing. The goal at this time was to optimize the outputs generated from a specific set of inputs.

While not the oldest, the most widely accepted school of thought among management practitioners is what Pindur (1995) called the “Classical Management Movement.” This approach to management arose between 1885 and 1940 to provide a rational and scientific basis for the management of organizations. This event, of course, was pre-Internet so classical or traditional management theories no longer seem adequate in the rise of exponential technological growth. The 20th century brought a shift in the management discipline emphasizing managers with specific expertise. Peter Drucker’s 1946 *Concept of the Corporation* was the first business book published that dealt solely with management theory and practice that was applicable to all disciplines and all businesses. Before Drucker’s book, texts, academicians, and journal articles had positioned management as just part of other disciplines such as engineering, finance, production, sales, and R&D.

As the exponential growth in technology accelerates, the leaders and managers of the Robotic Era will have to continually engage in change management evolving with the exponential growth of technology. Constant disruption and innovation will be the order of the day. The Robotic Era will call upon leaders and managers to act and lead in ways never required before. Businesses that want to remain competitive have little option but to embrace the technologies of the Robotic Era. They face another fundamental rethinking of what organizations are

and for what purpose they exist. This issue also changes the roles and values of key operational executives. Businesses are rethinking their role as not only the providers of goods and services but also participants in the social, political and cultural fabric of the society. It is natural to assume the constant disruption innovations will create some fear in people. The root of the fear of change and the inclination of workers to resist change is understandable. It is a self-preservation instinct. The function of the Leader-Manager will require the skills and temperament to find a balance between humans and robots, where knowledge becomes a key driver and requires “real” employees to adapt to the fast-paced environment.

### **LEADER-MANAGER OF THE ROBOTIC ERA**

There have been thousands of articles and books written about what makes a leader and a manager. However, as we began to think about the changes in our society brought about by the constant disruption of rapidly evolving technologies, it became clear that both leadership and management have changed in past eras mainly as a result of technologies. Therefore, as we have entered the Robotic Era, leadership and management need to evolve again. In the Robotic Era, the archetypal great person who knows best what needs to be done to enhance organizational performance, and who has the necessary personal skills to influence or make use of power to do whatever it takes to get others to play their assigned parts may be a thing of the past.

The Leader-Managers of the Robotic Era will be both leader and manager with new, unique roles and responsibilities. They will have to employ a blended compliment of what was formally separate roles. It is not just combining the two roles as they traditionally functioned, and it isn't a hybrid of the best of each role. The Robotic Era Leader-Manager is a new role for people with a unique mindset, abilities, skills, knowledge, character, adaptability, and vision and who are comfortable in the era of disruptive technologies.

The Leader-Manager will be both functionally adept at the technologies and a visionary capable of thinking through different scenarios and

implementing the best strategic and tactical option. The Leader-Manager will function with a new approach to change management; the systematic process of dealing with transition or transformation of an organization's goals, processes, or technologies. The purpose of change management is to implement strategies for effecting change, controlling change, and helping people to adapt to change. The specific roles and responsibilities will necessarily be modified to accommodate teams of robots and humans, and perhaps teams of robots with AI.

The Leader-Managers of the Robotic Era will face not only the organic challenges of the sheer pace of technological changes but also changes they don't initiate that originate from societal and government actions. The Robotic Era Leader-Manager should be knowledgeable and skilled in the digital platform business model (DPBM). These are the collection of cloud-based software and services that allow businesses to form extended networks of interactive product users and providers. They must also implement extended value networks (EVNs) consisting of highly interacting players that include customers, owners of physical assets, producers of goods and services, government regulatory agencies, and so on.

Leader-Managers will need proficiency in current digital technologies and will need to continually adopt new and innovative technologies sooner and reinvest more frequently. They will need to survey the organization's operations to inform smarter tech and human resources decisions. They will direct their organizations toward innovation in key knowledge areas. The key qualities they must possess to succeed in an accelerating world include the following.

- Understand the impact of rapidly accelerating technologies. It is unknown just how fast exponential change will take place. As quantum computing develops into business and daily life functions, it could replace current digital technology.
- Establish a transformative purpose by understanding the classic examples of disruption.

- Leverage exponential technologies such as artificial intelligence, digital biology, Internet of Things, edge or fog computing, cloud computing, blockchain, virtual reality, augmented reality, extended reality, open-source software, 3D printing, robotics, 10 G data flows, deep learning, machine learning, and more.
- See the world through a lens of abundance rather than scarcity.
- Leverage the various experts for expertise, solutions, and capital.
- Launch a personal vision, experimenting, and disrupting oneself.
- Ensure an IT infrastructure including serverless computing, cloud native applications, containers, docker and kubernetes, which are also known as K8s. Casey (2020) describes Kubernetes as a portable, widely available open-source platform supported by Google, Red Hat, and engineers from other businesses.
- Apply digital technology software tools that support digital task tracking, social media tracking and scheduling, document and digital collaboration, calendar synchronization, communications, and mobile devices.
- Communicate clearly, including standards for both the human and machine members. Robots tend to be non-functional without human direction. The Leader-Manager should have a clear understanding of and manage Moravec's Paradox, which is a phenomenon surrounding the abilities of AI-powered tools. It observes that tasks humans find complex are easy to teach AI, while simple, sensorimotor skills that come instinctively to humans are not.
- Accept uncertainty.
- Manage the knowledge base and be capable of sourcing, in the organization or elsewhere, relevant knowledge and expertise needed for improving innovation speed and product performance.
- Ensure the safety and security of both humans and robots in the workspace.
- Think and plan with emphasis on adapting quickly enough to the rapid and unpredictable changes.
- Develop human-centric workplace designs that also accommodate the limitations of robots.
- Lead and manage organizational goals of sustainability, green initiatives, relative social engagement initiatives, customer experience functions, gender and race equality initiatives, and government affairs and regulations.

### CONCLUSION

Throughout human history, leaders and managers have emerged by virtue of birth, skill, heroic deeds, circumstance, wisdom, or the use of force and power. Over time, both leadership and management have evolved, albeit sometimes a bit slowly, to incorporate into their organizations the technological changes that were occurring as well as changes in the workforce. Leadership and management theories were developed to provide insights into the roles and responsibilities of these executives. However, at no time in the history of organizations was there more uncertainty than with the potential impact the exponential growth of technological change and how to adapt and manage it. The speed of technological change has moved so rapidly that human thinking has not yet evolved to fully grasp exponential growth and its impact. Still, the pace of disruptive change and technological growth continues, and it will be necessary to continually reexamine the role of the people who will be responsible for understanding and effectively deploying the changing technological resources that include teams of both human and robotics with AI. The roles and responsibilities of the Leader-Manager are so different from what was needed of leaders and managers in the past that academic, political,

and social thought leaders will all need to engage in the work to find, recruit, train, and effectively deploy this resource. And, it may not be current leaders or managers who can do the work of the Leader-Manager.

### REFERENCES

- Bear, D. (2015, May 27). Google's genius futurist has one theory that he says will rule the future - and it's a little terrifying. *Insider*. <https://www.businessinsider.com/ray-kurzweil-law-of-accelerating-returns-2015-5>
- Bright, D., Cortez, A. H., Hartmann, E., Parboteeah, K. P., Pierce, J. L., Reece, M., Shah, A., Terjesen, S., Weiss, J., White, M. A., Gardner, D. G., Lambert, J., Leduc, L. M., Leopold, J., Muldoon, J., & O'Rourke, J. S. (2019) *Principles of Management*. <https://openstax.org/details/books/principles-management>
- Buckingham, M., & Coffman, C. (1999). *First, break all the rules: What the world's greatest managers do differently*. Gallup Press.
- Casey, K. (2020, June 15). *Kubernetes by the numbers, in 2020: 12 stats to see*. The Enterprises Project. <https://enterprisesproject.com/article/2020/6/kubernetes-statistics-2020>
- Chassignet, M. P. (2014). *The Steam Engine*. Environment & Society. <http://www.environmentandsociety.org/node/6627/>
- Chivas. (2015, September 15). Exponential thinking and why it will change the world. *Huffpost*. [https://www.huffingtonpost.com.au/2015/10/12/exponential-thinking\\_n\\_8254600.html](https://www.huffingtonpost.com.au/2015/10/12/exponential-thinking_n_8254600.html)
- Domanska, A. (2019) Lessons that Richard Branson's leadership style taught us. *Industry Leaders*. <https://www.industryleadersmagazine.com/lessons-that-richard-bransons-leadership-style-taught-us/>
- Fukuyama, F. (1992) *The End of History and the Last Man*. The Free Press.
- Grab, B., Olaru, M., & Gavril, R. M. (2019) The impact of digital transformation on strategic business management. *Ecoforum* 8(1). [https://core.ac.uk/display/236087038?utm\\_source=pdf&utm\\_medium=banner&utm\\_campaign=pdf-decoration-v1](https://core.ac.uk/display/236087038?utm_source=pdf&utm_medium=banner&utm_campaign=pdf-decoration-v1)
- Hallberg, R. (2012, March 23). *The promise of accelerating growth in technology*. Seeking Alpha. <https://seekingalpha.com/article/453871-the-promise-of-accelerating-growth-in-technology>
- Hunt, T., & Fedynich, L. (2018, February 28). Leadership: Past, present, and future: An evolution of an idea: *Journal of Arts & Humanities* 8(2), 20-26. <https://doi.org/10.18533/journal.v8i2.1582>
- Kurzweil, R. (2016, November 29). *Ray Kurzweil on trends in technology* [Video]. C-Span. <https://www.c-span.org/video/?419212-4/ray-kurzweil-trends-technology>
- McCleskey, J. A. (2014). Situational, transformational, and transitional leadership and leadership development. *Journal of Business Studies Quarterly* 5(4), 117-130. [https://www.researchgate.net/publication/272353199\\_Situational\\_transformational\\_and\\_transactional\\_leadership\\_and\\_leadership\\_development](https://www.researchgate.net/publication/272353199_Situational_transformational_and_transactional_leadership_and_leadership_development)

**REFERENCES (CONT'D)**

- McCrimmon, M. (2010) Is heroic leadership all bad? *Ivey Business Journal* (January/February). <https://iveybusinessjournal.com/publication/is-heroic-leadership-all-bad/#:~:text=Heroic%20leaders%20use%20the%20power,for%20the%20groups%20they%20manage>
- Muldoon, J., & Marin, D. B. (2012). John Florio and the introduction of management into the English vocabulary. *Journal of Management History*, 18(2), 129-136. <https://www.bl.uk/collection-items/john-florio-and-the-introduction-of-management-into-the-english-vocabulary>
- Mumford, E. (1906). The origins of leadership. *American Journal of Sociology* 12(2), 216-240. <http://www.jstor.org/stable/2762385>
- Murray, A. (2010, August 21). The end of management: Corporate bureaucracy is becoming obsolete. Why managers should act like venture capitalists *Wall Street Journal*. <https://www.wsj.com/articles/SB10001424052748704476104575439723695579664>
- Pindur, W., Rogers, S. E., & Kim, P. S. (1995), The history of management: A global perspective. *Journal of Management History (Archive)* 1(1), 59-77 <https://doi.org/10.1108/13552529510082831>
- Vries, P. (2012). Why the West rules – for now: The patterns of history and what they reveal about the future. *Journal of Global History*, 7(1), 143-147. doi:10.1017/S1740022811000623

# THE GLOBAL K-POP REVOLUTION AND THE ORIGINAL K-POP BAND: SOUTH KOREA'S CULTURAL EXPANSION

NIKOLAI OSTAPENKO  
COLLEGE OF BUSINESS & MANAGEMENT

---

Author Note: Nikolai V. Ostapenko, PhD is Professor of Marketing, DeVry University, Arlington, VA.

---

## ABSTRACT

The world is finally leaning towards 'live entertainment' especially after the COVID-19 restrictions keep slowly but steadily lifting everywhere. This trend will re-open new avenues for the K-pop global acceptance and it's even more successful global cultural impact. In this study, we seek to better define K-pop as a complex global cultural phenomenon and point out its historical roots and appeal. The article presents a case study of Shinhwa as the first significant representative of the K-pop global industry. The case follows the history and modern day of the uber-successful group in order to better understand the industry and its always evolving survival mechanism. We developed recommendations regarding changing K-pop market, fans' aspirations and staying power of the group based upon our research conducted in China and South Korea. This paper was inspired by the ideas in my presentation at the 4th Global Business and Finance Research Conference, held on 25-27 May 2015, in Melbourne, Australia, published in the Conference Proceedings (Ostapenko, 2015) followed by my further research. The material triggered several positive references from all over the world.

---

*Correspondence regarding this article should be addressed to Dr. Ostapenko at [nostapenko@devry.edu](mailto:nostapenko@devry.edu)*

---

Keywords: K-pop, Korean Wave, Shinhwa, pop-idol, group culture, entertainment globalization.

### SHINHWA AND THE GLOBAL K-POP INDUSTRY

Korean pop music, better known as K-pop, is becoming increasingly popular worldwide as a part of the so-called Korean Wave. K-pop has emerged as country's valuable entertainment export industry. Recent additions to the industry such as BTS pop-group already proved that the industry keeps booming without any signs of slowing down. K-pop presents a very complex phenomenon. It can be defined as a transnational cultural hybrid, representing an artistic fusion of the dance-pop, pop ballad, electronic, rock, hip-hop and R&B musical genres, and it is always accompanied by the impressive well-rehearsed and synchronized group dance moves of performers. Shows are delivered live in concert and via multiple internet-enabled entertainment platforms. The music sales and video recordings, as well as soundtracks of the K-dramas licensed for TV, are available in many languages. Global distribution of the K-pop products as a lucrative cultural export receives substantial support from the South Korean government.

### THE TOUGH COMPETITION AMONG KOREAN IDOL GROUPS

The Korean cultural invasion started in the 1990s with the introduction of the first generation of K-pop idols to the Southeast Asia market and the enclaves of Korean immigrants around the world. One of the original idols was Shinhwa, which means 'legend' in English. This six-member mega male group debuted in March 1998 and now holds cult status among its fans worldwide. Although longevity is extremely rare in the pop genre, Shinhwa is currently preparing to celebrate its twenty-third anniversary. As a member of the first generation of K-pop, Shinhwa reached the peak of its popularity relatively early, in 2004. No other K-pop band has successfully managed to come back after the four-year break due to the country's mandatory military service for young males. After that hiatus, Shinhwa successfully released its tenth album, *The Return*, in March 2012, followed by its eleventh, *The Classic*, in May 2013. The twelfth, thirteenth and fourteenth albums and several singles marking group's 20th anniversary (2018) have also been released with great fanfares and also accompanied by record YouTube views. Shinhwa's Alive tour attracted record numbers of concertgoers worldwide, reaching an audience of

800,000 (Benjamin, 2013). Despite this long record of strong success, however, the group is facing serious competition from many younger solo artists and groups, both in Korea and globally.

In 1991, the Korean group Seo Taiji and Boys pioneered the 'idol group culture' and gave birth to the K-pop formula. Around 1996, the Korean music market and the biggest record labels incorporated the K-pop idol group culture, following the Asian release of the hit 'Candy' by H.O.T., the top idol group in the late 1990s and early 2000s. Shinhwa ranked second in popularity after its debut in 1998. Members of the groups H.O.T. (an acronym for 'High-five of Teenagers'), Sechs Kies and Shinhwa are known as the first generation of K-pop idols. The idol group culture then began to blossom, evolve and later spread beyond the region.

The drop-out rate of new bands is quite high, and of the 32 groups that debuted in 2010, only eight, about 25%, survived and are still performing (The Price, 2013). To preserve success, therefore, today's idol group market in Korea has had to become very well organized, tightly linked to various media, including TV and internet, and highly competitive. Live performances, recording sales, digital downloads, K-dramas, TV shows, chats and multiple commercials are becoming a daily entertainment routine for fans. It is clear that Shinhwa is now performing in an extremely complex and very high-tech entertainment environment, and it therefore faces increasing rivalry on the part of younger newcomers, both artistically and with respect to management. For instance, Super Junior's release of *Sexy, Single & Free* sold 483,191 copies and ranked No. 1 in annual sales in Korea in 2012, while Shinhwa's tenth album, *The Return*, released the same year, sold only about 100,000 copies, earning fourth place in the ranking (20th Choice, 2013). Shinhwa has many other rivals, including Shinee, a male idol group consisting of five members, which debuted in 2008. Shinee sometimes receives more Asian Music Awards than Shinhwa on the music channel Mnet (Gan, Xi Ni, 2019).

Shinhwa is now the 'oldest idol group' to retain a substantial degree of popularity in Korea, and it is the only group of the first K-pop generation that is still touring worldwide. The average age

of the Shinhwa members is 33.4 years old, while Super Junior's members are 27.7 years old on average, and Shinee's performer's average only 21.8 years old. According to the Vancouver Observer, the stereotypical K-pop idol is 'incredibly young, good-looking, and able to carry a melodramatic note' (Hoog, 2013). Because youth appeal is a major advantage for idols, the more 'senior' idol group Shinhwa appears to be in a disadvantageous competitive position, especially if one assumes that other agencies beyond SM Entertainment (JYP Entertainment and YG Entertainment) are actively exploring the same music formulas.

### **NEW GROUPS DEBUT AT AN ALARMINGLY HIGH RATE**

As we suggested above, the music market in Korea is already running out of room for new K-pop artists. Thousands of young boys and girls who have signed with the professional management companies are nonetheless ready to plunge into the pop culture mainstream. Traditionally, the Korean music market accommodates a great many of the new groups that debut each year with various levels of future prospects. These performers are very young, well-coached and energetic, and they work incredibly hard to push the genre's envelope even further. The process of creating idols takes years of rigorous coaching and training, and there is no guarantee of success in the end. It also requires great energy, resources and backing by the leading agencies. This situation places enormous additional pressure on the Shinhwa members. The ability of Shinhwa, the most 'classic' of the idol groups, to compete with these new market entrants represents a serious K-pop 'generational problem'.

### **NUMEROUS SUBSTITUTES DISTRACT FANS' ATTENTION**

The Korean entertainment industry uses a 'trainee system' to produce marketable idols. This tedious process includes lengthy training from a very early age in almost every aspect of performance, including singing, dance and foreign languages, such as Chinese, Japanese and English. The system, on the one hand, can ensure that each performer is equipped with diverse artistic strengths that promote survival in the industry

and guarantee the relevant agency a stable revenue stream. On the other hand, this approach is an 'assembly-line process' for creation of pop stars. It presents a challenge to the performers' cultural uniqueness and relevance as well as to the pop market's short- and long-term survivability.

When a sponsor company (agency) is producing a new group, one of its most important tasks is to identify the role of each member in an ensemble and to keep tight control of the characters ascribed to them, as was done in the marketing of the British sensation Spice Girls, with their Ginger, Scary, Baby, Sporty and Posh 'spice' stories. When Shinhwa debuted in 1998, lead singer Eric was characterized as 'a mature, charming man' because of his exotic looks, and Andy, the youngest member of Shinhwa, was proclaimed 'a cute guy'. He is also a 'dangerous guy' now that his online illegal gambling fiasco has become public knowledge. Some of the traits are quite ordinary ones, however, and nearly every group exploits such characters. For example, most of the youngest members of the idol groups are characterized as 'cute' by the media. The lead performer is often more 'mature' and 'fearless'. Because different groups assume similar public roles, the similarity among groups becomes generally more acceptable to the fans (assuming a Korean group-oriented cultural landscape) than the assimilation of another 'rebellious' group identity. In addition, the idols' public image, fashions, makeup, and stage styling also make them look very much the same. This is especially true regarding the female pop groups, and it explains why most non-fans, as our research suggests, typically comment that all Korean idols look very much alike and are poorly identifiable.

As a result of the rigorous trainee system, the K-pop music genre contributes to the problem of lack of variety with respect to style. Most Korean hit songs are easy dance tunes or hip-hop melodies, sometimes with elements of rap or other Western influences, and most likely accompanied by carefully rehearsed synchronized dance moves. Although these songs may readily meet the expectations of the majority of young people, the mainstream popular genre makes idol groups seem to lack personality of their own.

Shinhwa is no exception. Among the group's twelve officially released Korean albums, eleven were produced in dance or hip-hop styles, and only the eighth album, *Once in a Lifetime*, used a ballad as its lead single.

Since Shinhwa is to some extent a part of this problem, it seems that many other male idol groups could easily replace it. If Shinhwa does not find a way to differentiate its performance style within the K-pop music genre, it could be easily confused with many other contemporary K-pop bands.

### THE NEW TALENT SUPPLY

Today, K-pop artists are scouted from around the world. Auditions are regularly held in Australia and the United States, particularly in Los Angeles and New York. The record companies prefer to find performers who are fluent in English and familiar with Western culture, as this makes it easier for artists to participate in a global marketing campaign and increase their international appeal. Also, the television program 'K-pop Star' and several other shows are major factors in the K-pop landscape, where their influence surpasses that of 'American Idol' on American pop music. 'K-pop Star' has global auditions for talent and is hosted by three judges who represent the three major record labels. The show is judged by Yang Hyun-suk, the founder of YG Entertainment and a former member of the popular South Korean act Seo Taiji & Boys; Park Jin-young, a singer/songwriter and the founder of JYP Entertainment; and the Korean pop icon BoA, from SM Entertainment.

The competition among idol groups is actually competition between big entertainment companies in Korea. Such companies are well positioned in the music industry for three main reasons. First, because big companies have more funds to nurture and promote their idols than smaller companies and they can command the highest market share. Second, big entities have much stronger relationships with the mass media and abundant social media resources that allow them to influence the entertainment industry by selling content from multiple platforms at the same time. Third, big-name companies can attract and pay more to talented and outstanding music

and video directors. They can afford their own in-house production and distribution and provide coaching teams, and they make sure that their idols' skills and music tunes ultimately become catchy and popular.

SM Entertainment is one of the leading entertainment companies in Korea, along with the rivals JYP and YG Entertainment. Founded in 1989 by Lee Soo Man, SM Entertainment has produced many successful idol groups, including H.O.T, TVXQ (Chinese: Tong Vfang Xien Qian, meaning 'Rising Gods of the East') and Super Junior. Shinhwa also debuted under the auspices of SM Entertainment and became an important idol group long before it left SM Entertainment in 2003. In a 2011 interview, Kim Young Min, an SM Entertainment representative, revealed that it generally takes \$2.5-5 million to groom and train a prospective star. This information shows how costly and competitive the pop-idol business has become (Leung, 2012).

As of now, Shinhwa's manager is Shinhwa Company, which was founded by the band members in 2011 and was recently renamed to ShinCom Entertainment following a trademark dispute. The company-owned idol talent is not extensive at present; in fact, Shinhwa itself is the principal idol. Funds for production and promotion are obviously quite limited. Besides, Shinhwa Company's relationships with the mass media, especially popular TV channels and shows, greatly depend on the Shinhwa members' personal network of friends, accumulated over many years. This kind of relationship is quite vulnerable when it faces the resources of big companies such as SM Entertainment. For example, when Shinhwa released its new album in May 2013, SM Entertainment forced In Ji Ga Yo – a nationwide music TV show that largely relies on K-pop idols – not to feature Shinhwa in the program. Because of SM Entertainment's strong influence upon the program, Shinhwa had no chance to perform in this popular show on the air and lost a chance for desperately needed additional publicity (Members, 2021).

### EVER-CHANGING TASTES OF K-POP FANS

The taste of fans keeps changing, depending upon the sociocultural environment and even the available personal technology for the different generations of fans who strongly affect pop-idol popularity and relevance. Instant connection, sharing and communication with fans via social media have become standard practice in the K-pop industry. Incorporating new possibilities to extend the group's popularity is a crucial problem for Shinhwa today.

When the first generation of K-pop idols became popular in the late 1990s and early 2000s, the main idol theme was 'mystic', meaning that idols could not display their ordinary private life to fans and had to maintain distance from them. At that time, the idol culture was new, and fans regarded idols as 'mystery creatures'. The more mysterious the idols seemed to be, the more curiosity they engendered among fans. Shinhwa debuted during that time and originally reflected that perception, now inevitably obsolete.

After the 'mystery period', fans' taste shifted to the 'flower boy' concept, which referred to describe young males with pretty faces and 'unpretentious cuteness'. This trend was imported along with J-pop from Japan, and it contributed to a shift in fan tastes in Korea, starting around 2005. Kim Jea-joong, originally a member of TVXQ, is the most famous representative of this era. He became a star when he was just 'sweet sixteen'.

A few years later, when the group 2pm debuted in 2008, the 'beast idol' suddenly became a mainstream concept. 'Beast idol' refers to a strong, powerful, wild stage image. Unlike the 'flower boy' period, when idols had to look slim and gentle like princes, performers of the 'beast idol' era needed an attractive, well-muscled body and a 'rough' eye expression.

Shinhwa's original positioning concept was built around complicated dance moves powered with mystery. This concept helped the group's members reach the peak of their careers as early as 2008. However, the changing taste of fans forced the group to keep altering its stage image

and to leak personal information, mainly under the pressure of a massive social media intrusion into idols' private lives. This kind of 'image fluidity' is rather tricky to maintain without a threat of losing old fans and failing to find new ones. Image relevance and tailoring is the key issue here. Let's see what could be done in this regard.

### HOW TO LET THE SHINHWA LEGEND GO ON NOW

#### *CREATING A NEW, MATURE IMAGE*

'Idol management' is mainly about a group image and individual role assignment. As Sarah Leung, a researcher from Vassar College, mentioned in a recent paper, 'The ultimate goal of these talent agencies is the creation of the right image' (Leung, 2013). Idols are supposed to maintain their image in order to capture public attention and retain popularity with fans. All the publicity opportunities they obtain from the mass media and all the endorsements from corporations are based on the image they display.

As we have mentioned, Shinhwa is growing older and facing an 'ageing challenge'. It is crucial for the band to create a renewed and memorable public image that will skillfully combine the band's traditional values with the current tastes of the pop market. Only when Shinhwa becomes comfortable with a new-found identity can it survive or even expand its success in the competitive idol market. What image should Shinhwa adopt to distinguish itself from other groups at this time?

Shinhwa is the only idol group of the first generation of K-pop that has an almost 17-year-long history and has survived all the ups and downs of stage life. This is a unique accomplishment that no other group can easily recreate. Despite the common knowledge that K-pop idols must be young and energetic, Shinhwa's long pop history and the fairly mature age of the group members could be turned into a marketable positioning strategy that would help to distinguish the group from hundreds of other idols.

The image of talented, sophisticated, and charming men is appropriate for Shinhwa because 'there is something very attractive happening image-wise when men turn a certain age'. This image, a new element in the Korean pop idol industry, can effectively distinguish Shinhwa from other, short-lived, idol groups. Because many loyal fans of Shinhwa are now between the ages of 25 and 30, this image can dovetail with the tastes of these older fans, and it can also attract more fans of similar age.

A more mature image is also appealing to teenage female fans, who form the majority of idol group fans. Judging by the great success of its latest albums, Shinhwa's image problem is being successfully resolved. When the group produced its recent album, it apparently tried to capitalize on the charm of a group with members in their 30s. Shinhwa pioneered the use of the 'voguing dance' style in Korean pop music. This special dance move was first introduced by Madonna in her video 'Vogue' in 1990. Shinhwa's 'voguing dance' was featured in the video for the song 'This Love' from the 2013 album *XI The Classic*. The dance was a big hit, and it successfully promoted Shinhwa to a younger audience. Crowds of teenage girls came to see the live shows, and the video for 'This Love' reached No. 1 on music countdown television, which is viewed mainly by teenagers, on eighth's day of the month in which it debuted. The more sophisticated and mature look – featuring elegant black suits, polished haircuts, and a grown-up casual style – also supported the more sophisticated image of a serious male (not boy) group.

The repositioning strategy of Shinhwa is thus evolving. It represents a natural transition to a new, more mature and sophisticated image that will allow the band to better distinguish itself from its numerous K-pop younger competitors.

### *DIVERSIFYING REVENUE-MAKING OPPORTUNITIES*

K-pop idols make their fortunes in several ways, although fans remain the main source of their income. There are generally three kinds of products that fans eagerly consume, and idols

get paid for. First, digital downloads and CD/DVD recordings produce royalties, including licensing of songs for TV shows, movies and commercials. The second product category consists of live-event tickets, including tickets for pop concerts and tours, fan conventions and festivals, birthday parties, TV appearances and sponsorship events. Third is theme merchandise, such as idol posters, photo albums and T-shirts bearing the group logo, other brand endorsements, and appearances in video advertising. In addition to these revenue streams for idols, there is widespread corporate sponsorship of the entertainment industry.

The first revenue source involves primarily downloads and CD/ DVD sales. Because digital music is relatively cheap in Korea, more and more fans prefer to download music online instead of buying discs. According to the Music Industry Association of Korea, the audio disc market of Korea started shrinking in 2000, while the digital music market continues to increase. Since 2003, sales of digital downloads outperformed disc sales in value (K-Pop, 2014). Therefore, to compete with the digital music market and generate more sales, the price of Shinhwa's discs in Korea should not be high since that also supports growing K-pop music piracy. One can assume that royalties from all the legal types of music distribution will still make idols financially successful.

As for the second category, concert tickets are very expensive. They usually cost \$100-150 per seat in Korea and can increase to \$300 overseas. Most of the money goes to the agency or to specially hired promoters. Tours normally involve expensive logistics, entourage costs and eat deep into tour revenues. Fan clubs charge substantial membership fees and have a better chance to support the commercial success of an idol groups. Clubs continuously spend large sums of money to create special members-only events and provide expensive instant digital communication. Only big corporate endorsement deals present a real money-making opportunity for a band, as in 2006 when Swiss Watch and Coca-Cola sponsored concerts. But meaningful sponsorship is a very delicate and tricky arrangement, directly linked to a group's current popularity ratings.

The third category includes memorabilia and sales management revenue. During Shinhwa's Asian recent concert tour, practically the only available 'official product' was a necklace priced at about \$130. Because of its high price, the necklace did not sell well. Diversifying merchandise offerings by ordering more promotional merchandise should generate more sales than focusing on just a few items.

### *MORE ACTIVELY EXPLORING GLOBAL MARKETS*

Because the Korean pop music market is relatively small and has too many competitors and pirated products, idols cannot obtain sufficient revenue and opportunities for local commercial growth within. As a result, many of them try hard to access foreign markets. Shinhwa is no exception. It started entering other markets by participating in international concerts since 2005. The band also went on tour to many Asian countries, including China, Japan, Singapore, Thailand, and Malaysia. The younger artists went to many more distant places, such as India, the Americas, Europe, the Middle East, Africa, and Oceania.

Performing in concerts is just part of a global idol's success, and Shinhwa needs to take further steps to attract new fans. First, it must find the right target market for initial entry. Japan and China are important neighboring markets with deep cultural similarities, and both are an excellent fit for immediate entry consideration. However, different methods of market access must be employed.

Because Japan is the richest market in Asia, with its famous 'collector culture', CD sales usually achieve impressive volume and generate good revenues there. It may be a smart step for Shinhwa to resume release of Japanese singles or entire Japanese albums, as it did in 2006, to approach this special market in a better way and on a much deeper cultural level. However, this measure might not work well when Shinhwa seeks access to the Chinese market. Because of the widespread sale of counterfeited downloads and pirated downloads and CDs, it is hard for Shinhwa and other Korean idol groups to make a great deal of money by selling discs in China. Instead, participating in TV programs is a good way to build fan interest in the Chinese market.

Our observations suggest that K-pop idols enjoy significant popularity in China, and it seems much easier to participate in the few Chinese TV programs than to chase the many overbooked and overcrowded Japanese shows.

Another revenue opportunity is the export of Korean TV shows within Asia and globally. These shows have become extremely popular throughout the region. Similarly, to Hollywood movies, they sometimes exceed the popularity of any local entertainment programming. The K-pop segment is definitely a part of this growing trend.

In summary, to capitalize on foreign opportunities, it is important for Shinhwa to find more effective ways of strategizing foreign entry methods and further develop market overseas. That could support the constant desire of the Korean entertainment industry to look for additional revenue streams.

### *MORE WAYS TO PROMOTE THE K-POP INDUSTRY WORLDWIDE*

A promotion strategy has two main aspects: retaining existing fans and simultaneously attracting new ones. Because Shinhwa is part of such a competitive idol market, retaining fans' loyalty is the most important way to maintain the group's popularity. Fans' devotion comes from their experiences and frequent interaction with the group. If fans do not get enough exposure and access to Shinhwa, they might switch their support to other competitive idol bands that are popular throughout Asia (Japan, Mongolia, the Philippines, Taiwan, Indonesia, Thailand, and Malaysia) or outside the region (the United States, Canada, Australia, Mexico, Peru, Chile, Saudi Arabia, Brazil, Colombia, the United Kingdom, France, Sweden, Finland, Algeria, and Morocco).

Using social media to interact with fans is a good way for Shinhwa to keep attention focused on the band. Devotees are always interested in their idols' backstage life. If Shinhwa members share some aspects of their daily life on Twitter or Facebook, for example, photos, videos or opinions, they can easily reduce the perceived distance between themselves and their fans. This kind of 'closeness' can effectively help them to retain their followers' interest.

In addition, digital revamping of an official fan club could provide Shinhwa with a more effective mechanism to interact systematically and directly with fans. All fans are willing to join an official fan club, depending on the membership fee. An official organization could also provide personalized services, such as sending Shinhwa's video messages of congratulations to fans on their birthdays and other special occasions. Currently, only the Shinhwa Japan official fan club is well recognized, although 'Shinhwa Changjo' is the longest-running K-pop club in Korea.

For new recruits, media exposure is the most important consideration. According to our survey, 4 of the 10 respondents got to know Shinhwa by watching variety shows on TV. Shinhwa tried hosting its own variety show, called Shinhwa Broadcasting, which provided a great opportunity for band members to demonstrate their sophisticated hosting experience and humor and to interact with more young people. Unfortunately, the show was not successful and has not been aired since for a number of years. All latest albums and singles releases, and also 20th anniversary tour have been sensational for the global K-pop community. YouTube and other social media presence became effective avenues of the K-pop global promotion. As I suggested in my Melbourne presentation (Ostapenko, 2015), the digital presence is a way to be explored more aggressively.

### CONCLUSION

As an idol group of the first generation of K-pop, Shinhwa has reached its career peak and survived profitably for the past 23 years. However, the tough competition within the K-pop industry and the powerful new entrants into the market can place Shinhwa in an adverse position. It seems necessary that Shinhwa needs to make some artistic and managerial changes in order to better survive and grow: keep refreshing the band's image and present a new, mature image to the market to better distinguish itself from the other much younger K-pop groups; vary download and disc prices according to customer needs in different markets; provide more diverse concert ticket prices to attract fans with different spending power; produce a more affordable and wider variety of merchandise for concert-goers; continue to explore the markets in the Asian neighborhood while keep looking for other markets elsewhere; release a Japanese special-edition single or album to establish a constant presence in this important market; wider participate in the popular TV shows in China rather than Japan; apply various methods to maintain and increase popularity with fans via plethora of mobile digital platforms; actively use and be always present in social media to interact with followers; closely manage the Korean fan club while expanding the club internationally; and restart production of Shinhwa's own Korean TV show after learning painful lessons from the past. These measures are suggested to revive the image of the mature idol group to find a proper place within the global K-pop culture.

### REFERENCES

- Benjamin, J. (2013). 'BIGBANG' reflect on their world tour in exclusive Q&A. *Billboard*. November 14, 2014. <http://www.billboard.com/articles/columns/k-town/1549346/bigbang-reflect-on-their-world-tour-in-exclusive-qa>
- Gan, X. (2019). *Soft power of Korean popular culture on consumer behavior in Malaysia*. Thesis, UTAR. April 25, 2021. <http://eprints.utar.edu.my/3479>
- Hoog, B. (2013). *Bizarre "Gangnam Style" K-pop music video blows up worldwide*. November 14, 2014. <http://www.vancouverobserver.com/blogs/thescene/bizarre-gangnam-style-k-pop-music-video-blows-worldwide-21>
- Joo, K. & Oak, J. (2012). K-pop primer. *Billboard – The International Newsweekly of Music*. Video and Home Entertainment.

### REFERENCES (CONT'D)

- Kim, S. (2017). The \$4.7 Billion K-Pop industry chases its 'Michael Jackson' moment. Retrieved March 22, 2019. <http://www.bloomberg.com>
- K-pop: A new force of pop music. (2011). *Korean Culture and Information Service*. November 14, 2014. <http://www.kocis.go.kr/eng/main.do>
- K-pop music: Investing in homegrown talent. (2011). *Music Week*. November 14, 2014. <http://www.musicweek.com/news/read/south-korea-investing-in-homegrown-talent/045427>
- Leung, S. (2012). *Catching the K-Pop wave: Globality in the production, distribution, and consumption of South Korean popular music*. Vassar College, Senior Capstone Projects. Paper 149.
- Members of boy band Shinhwa engage in online dispute. (2021). *Korean Culture and Information Service* May 17, 2021. <http://koreajoongangdaily.joins.com/2021/03/15/entertainment/kpop/shinhwa-kpop/20210315170006529.html>
- Ostapenko, N.V. (2015). The cult of Shinhwa, an original K-Pop band: South Korea's prime cultural export. *Proceedings of the 4th Global Business and Finance Research Conference (2015), Melbourne, Australia*. ISBN: 978-1-922069-76-4. <https://core.ac.uk/download/pdf/51179507.pdf>
- The price of fame in South Korea. (2013). *Toonari Post*. November 14, 2014. <http://www.toonaripost.com/2012/08/entertainment/the-price-of-fame-in-south-korea>
- Super Junior. (2013). Wikipedia. November 14, 2014. [http://en.wikipedia.org/wiki/Super\\_Junior#Awards\\_and\\_nominations\\_received\\_by\\_Super\\_Junior](http://en.wikipedia.org/wiki/Super_Junior#Awards_and_nominations_received_by_Super_Junior)
- 20's Choice. (2013). Mnet.com. November 14, 2014. <http://20choice.interest.me/winner.m>

### ACKNOWLEDGEMENT

*This study was made possible by the great effort put into research by Xuting Zhang, my talented Georgetown University student, as well as my good friends and Korean art experts, Benjamin and Stacey Luft. I would like to thank them for their input and data collection in China and S. Korea.*



# INTERNSHIP PLATFORM FOR GRADUATING COLLEGE STUDENTS: A TECHNOLOGY SOLUTION TO PROTECT STUDENTS' COLLEGE DEGREE INVESTMENT

NAZILA SAFAVI

COLLEGE OF ENGINEERING & INFORMATION SCIENCES

---

Author Note: Nazila Safavi, PhD is a Professor in the College of Engineering & Information Sciences at DeVry University, Long Beach, CA.

---

## ABSTRACT

The number-one reason for students to pursue a degree in higher education and invest in a college degree is to seek employment and job security. According to a 2018 Washington Post article, a survey of teenagers showed that ever since the Great Recession teens are making their college major discipline decisions based on employment possibilities and job security rather than on merely preparing for life (Selingo, 2018). It is important for colleges and universities to protect student investment. This protection can be accomplished by ensuring that graduates' opportunities for further learning and work experience is not jeopardized, given the probability that they will face a variety of hardships after graduation, including finding a suitable job in their field of study. In cases where the job search persists, students may get derailed from the path they established at the time they signed up for the study program of their choice. This disruption can subsequently make their knowledge obsolete (Marx, 2014). Currently, educational technology tools that involve AI, including personalized learning tools and applications as well as voice assistance, are available to learners and contribute significantly to student education experience and learning outcomes (Rainie & Anderson, 2017). In addition

to AI, this learning ecosystem consists of other contributing factors such as adaptive and interactive etextbooks, competency-based education (CBE), virtual reality (VR), integrated development environments (IDEs), virtual lab environments, and collaborative DevOps tools such as GitHub, many of which are utilized throughout the duration of their program discipline, especially during the time they are to demonstrate a level of mastery and complete a capstone project. This paper will examine the benefits of available technologies and their potential role in designing an environment that offers recently graduated students continuous real-life projects in their studied field, that add to their knowledge and skills, as if they are gaining actual job experience in real companies working as interns.

---

*Correspondence regarding this article should be addressed to Dr. Safazi at [nazila.safavi@devry.edu](mailto:nazila.safavi@devry.edu)*

---

Keywords: artificial intelligence (AI), e-learning, adaptive learning, competency-based education, Zybooks, Capsim, Testout, competency-based education (CBE), DevOps. Capstone, open-source projects

### PROTECTING STUDENTS' INVESTMENT THROUGH TECHNOLOGY

According to Gary Marx, the president of the Center for Public Outreach in Vienna, Virginia, and author of *Twenty-One Trends for the 21st Century*, regardless of these preparations, in technology-led industries graduates cannot always stay up to date. As a result, many remain unemployed after graduation (Marx, 2014). Additionally, a 2014 survey study on freshman students at the University of California in Los Angeles (UCLA), led by the Cooperative Institutional Research Program at the Higher Education Research Institute, confirmed that the main reason behind student enrollment in higher education is pursuing secure employment (Marx, 2014).

This paper explores how a variety of tools and technologies, including artificial intelligence, have potential for creating a platform in which college graduates can be involved as interns until their job search is over. In such environments graduates not only gain hands-on work experience by creating solutions to a variety of real-world problems but also acquire personal development and work acumen skills such as leadership, teamwork, and understanding and opting into corporate policies - all necessary skills that employers value and in many cases require, and all of which will improve graduates' competency, confidence, and abilities and thus make them more marketable.

This paper further explores the development of an AI-based solution in the form of a virtual, fictitious business platform with entities such as Research and Development (R&D), Project Management, and so on, where graduates can continuously access this environment and work in collaboration with other graduated peers as pretend employees. The fictitious business can be presented to students in a form of Virtual Reality with a simulated organizational structure that includes managers so to bring the sense and feel of a real company. Projects can be selected from a variety of ways, including open project platforms such as Freelancer Map (<https://www.freelancemap.com>), or may be decided on by a team of graduated students collaboratively or deposited to a project repository environment by any of the professors.

AI, besides its data collection and processing capabilities, can also contribute in many other ways including the ones discussed in this paper such as providing virtual support, aiding with Q&As, and virtual tutoring. In future the system can be expanded to receive private and state sector projects that could potentially bring revenues to the university: funds that can be used for other research and development projects and activities.

Additionally, this paper discusses how AI could alter the way jobs are created in the future, making AI knowledge and skills a critical part of higher education.

### THE ECOSYSTEM

It is worth starting by fostering a change of culture in the members of the educational community and supporting training in new technologies. These technologies include virtual reality (VR) and AI in a variety of forms, including educational robotics and smart tutoring systems, online learning systems, and the integration of a variety of forms of adaptive learning such as use of interactive e-textbooks, and learning analytics that not only contribute to improved decision making for choosing a customized learning path for any individual student but information gathered from processed data analytics also aids decision making in other areas.

For example, some educational institutions have made good progress in implementation of such technologies, including AI. The Green Ivy School in New York has employed some software programs developed by private companies such as Thinkster, Third Space, and Splash Math that have proven to successfully train many of their students (Latin American Herald Tribune, 2021).

Proper integration of AI in the colleges is only one of the necessary elements. Utilization of adaptive learning technologies such as e-textbooks, including Zybooks and Testout, has greatly enhanced students' willingness and desire to learn (McKinney et. al., 2020).

In addition, technologies such as Capsim (2014) can provide platforms through which students gain hands-on project development experiences

and become skillful in understanding business fundamentals. Capsim, founded in 1985, provides custom simulation and real-world experiences to institutions of higher education in 50 countries, including the United States.

Capsim simulation products help institutions provide hands-on and engaging practices that enable students development. DeVry University is among the 1000 academic institutions and corporations integrating Capsim solutions into their curriculum to prepare students for their careers (Chasteen et al., 2018).

Capsim (2014) business simulation involves participants in a forceful race to change a chosen, fictitious, financially challenged company into a successful, money-making business. In the simulation, participants are grouped into competing teams. As part of this game, the competitors must develop a strategy by manipulating a series of parameters affecting their finances, marketing, and production. Their judgment and choices influence the growth of their business. Thus, contestants develop their business acumen and decision-making competency through this highly-interactive simulation experience (Chasteen et al., 2018). These actions will be a good start for the digital transformation of educational institutions.

### **COLLABORATIVE TOOLS FOR PROJECTS**

An important part of the ecology consists of Collaborative environments that uses DevOps, a method that merges software development and Information Technology (IT) functions together and reduces the time it takes to develop software products. This software production time is known as the System Development Life Cycle (SDLC). DevOps methods aim to retain high-quality construction even though the product is created far more rapid than it would in a more traditional SDLC time frames such as the Waterfall model. This rapid development approach is known as the Agile methodology.

Software developers around the world have already adopted DevOps platforms including GitHub, as a vital environment for handling Agile

projects. GitHub has enhanced the way computer software engineers and specialists operate. In this platform, individuals with similar software development goals and interests come together as a community and receive support from each other; expand and share knowledge, including source code; discuss best practices; and exercise individual or team-based development plans and projects that are either retained private or are in form of open-source and are open to the public (Zagalsky et al. 2015).

Many organizations have been utilizing GitHub for quite some time, including, Netflix, Udemy and Reddit, however in the last decade the education industry has also become aware of the opportunity that collaborative tools such as GitHub can provide to the students in the software development field, as well as the technology's potential for enhancing student learning experience ((Zagalsky et al. 2015).

GitHub platform offers a "traceable project repository" (Zagalsky et al. 2015, p.1) with automatic version control handling mechanism that shows by whom, and when a contribution was made to an assigned project *task*. This mechanism not only tracks the contributor's progress, but also makes possible to roll back to a previous revision when necessary. This fault-tolerance feature is very much like keeping a regular backup of files stored on a PC, that offers access to older version of the same files, in case of a computer, network or a system malfunction.

Despite the benefits of DevOps collaboration tools such as GitHub, still many organizations including the education industry are not aware of the potential uses and benefits this technology may bring. GitHub is a collaborative social learning platform.

GitHub presents several distinctive elements that enable the user collaboration it claims. For example, the Pull Request (PR) is a means to initiate a dialogue with other programmers and exchange ideas or provide commentary on each other's projects. The dialogue could be about a public, open-source, or a piece of code used in a project with some alteration

recommendations. Users can also make an exact copy of a program, *clone*, and retain and use all or parts of it in their own local environment. Changes when *committed* will affect the *master branch*, therefore users have the option to either *commit* the modifications instantly into the collective repository environment or utilize PRs to initiate code assessments and continue their evaluation and communication about the suggested changes prior to merging the changes into the main project. Other features include using a *fork*, which produces a duplicate of the main project so that any *committed* adjustments do not impact the main *branch*.

PRs always notify the main project owners about any suggestions made by other users, pertaining to their project.

In GitHub, much like social networks, users can follow their favorite programmers and projects in addition to broadcast any actions to their followers. Moreover, the *explore* function would allow users to discover more projects they might be interested in following.

GitHub's transparent capabilities bring about contemporary ways to code, and user *followers* tend to engage in other platforms beyond GitHub, such as Stack Overflow (Zagalsky et al. 2015).

Research results of a quantitative study found that projects with increased engagement and collaboration were successful and the product outcomes aligned more closely with the original goals of the project (Dabbish et al., 2012).

### INTERACTIVE TEXTBOOKS

Another part of the ecosystem would consist of interactive e-textbooks with adaptive learning capabilities. Zybooks (<https://www.zybooks.com/research>) are a newer kind of textbook with content that is interactive and web based. Zybooks have automatic grading capabilities that eliminate this redundant task for instructors. This may lead to improved classes for students in that teachers can now use this time for other important tasks such exploring and improving teaching modalities. Zybooks was created by Smita Bakshi in 2012. Zybooks' STEM material

for the web minimizes the use of text and focuses on question sets, interactive tools, animations, and embedded homework. The students learn by doing, which is known to be more efficient. Zybooks has developed a platform to deliver and support instructors and students, as well as vowing to do right by them. Zybooks keeps its prices as low as possible in comparison with most hardcover textbooks, and its platform is user-friendly for students (Rainie and Anderson, 2017).

Zybooks has significantly indicated potential growth in student use. Zybooks apply an integration of targeted programming tasks, lectures, and online exercises, in addition to book knowledge, to offer an efficient multi-tiered technique. Additionally, the application of Zybooks is serving one of its main purposes that is retaining an excellent balance between students' engagement through promoting hands-on practices, and reading the concepts through the etextbook. Consequently, it has elevated the students' desire to be continually engaged in learning, boosting their skills and knowledge while improving student confidence. The Zybooks have a wide array of uses, such as in Java, Python, and C++ programming (McKinney et. al., 2020).

According to Liberatore (2017), students seem to enjoy interactive experiences and exploration of certain adaptive learning technologies such as the Zybooks and Testout courseware, as if there is a personal educator alongside 24/7 to motivate and guide them. These effects were confirmed through compiling the course results of several student ends-of-course evaluations. According to Liberatore, excellent courseware providers greatly depend upon lecturers and students' feedbacks to identify areas that need adjustment for the courseware to satisfy the learners' needs (Liberatore, 2017). The feedback information acquired is critical, and a lack of sufficient information regarding flaws makes it hard for providers to discover what alterations are needed. Thus, relying on student feedback such as end-of-course evaluations seems reasonable for confirming the positive role and impact of Zybooks on students.

Presently, Testout courseware providers have made a vital step in enhancing and developing a better, more effective version of their products (Liberatore, 2017). The Testout courseware currently implemented in learning institutions has incorporated the contents of several courses commonly applied in the vast changing technology (McKinney et al., 2020). Some TestOut courses recently introduced include emerging concepts, the Internet of Things (IoT), CompTIA, Bitcoin, programming, networking, and artificial intelligence through interactive engaging and coursework. Such courses increase student motivation to participate in IT learning activities and willingness to understand how the real world operates (Barr & Trytten, 2016).

### **ARTIFICIAL INTELLIGENCE (AI)**

A definition of artificial intelligence is necessary if we are to study the consequences of its present and future development for society in general and more specifically for the labor market. The literature provides a good number of these descriptions, but in general it seems these explanations intend to leave out the step rather than arriving at a closed and understandable definition. Often, definitions are not very specific; for example, Rainie and Anderson (2017), without providing a definition in any specific designated section, affirms that AI is a framework that encompasses different specialties that share a common objective: to provide an artificial system with a certain degree of intelligence.

The technical aspects of AI is not discussed in this paper; however, it is important to acknowledge that AI is based on advances in the field of applied mathematics that have been made possible by the extraordinary improvement of computational data processing capacity (Baldwin, 2019).

AI utilizes subjects such as deep learning, machine learning, and natural language processing (NLP), which allow algorithms to self-learn. According to Sigmoidal (2020), an AI and machine learning consulting firm, machine learning is a form of AI. In machine learning, systems learn from data instead of from explicit programming. Therefore, because algorithms use training data, machine learning creates more accurate models that are based on that training data.

Machine learning is produced through training a machine-learning algorithm using specific dataset. After the training, when the model is given an input, the output will be driven depending on the data that was used to teach the model. For example, virtual personal assistants such as Siri and Alexa. These machines can be instructed to provide certain information or help with tasks such as setting up alarms. Thus, machine learning becomes part of these technologies as they gather and refine information based on previous interactions (Oberoi, 2017).

Deep learning is an AI function that processes data much like the human brain does, thus establishing patterns used in making decisions. Deep learning is especially useful for discovering and understanding patterns, including those developed from unstructured data. Therefore, deep learning systems are designed so computers can be trained to handle inexplicit problems. For example, they are used to navigate driverless cars, where human-like skills and experiences are required to recognize the orientation of roads, traffic signals and symbols, objects, and surroundings including pedestrians and speed limits. Therefore, an enormous amount of real data is needed to improve the efficiency of the algorithms that will leverage the system's decision-making (Grover, 2021).

Natural language processing (NLP) is the linguistics with which AI is concerned. It provides the means to program computers so that these machines can process large amounts of human natural language data. Therefore, it represents the confluence of big data and analytics as they relate to AI (Sigmoidal, 2020). These innovations can bring multiple advantages to educational institutions. AI can address the traditional challenges of teaching within the framework of digital transformations (DT), driven by the Fourth Industrial Revolution, known as Industry 4.0 (Jarrahi, 2018).

Some of the most positive repercussions of artificial intelligence in the world of marketing have been collecting and processing large volumes of data in a methodical and organized way. Companies can analyze the captured data to obtain valuable information to guide various strategies such as sales. Several software solutions have been presented that seek to simplify the process of obtaining information

as well as perform predictive analysis. How algorithms evolve also influences the way data is managed. Machine learning, for example, is a data-driven decision-making and prediction algorithm that is combined with natural language processing. Its implementation provides useful solutions for developing business strategies for increasing employee productivity and client commitment, market competitiveness, and brand growth. Social skills—the only field currently outside the reach of machines—will also be more important in a changing society where, alongside perishable jobs and long working lives, technologies change rapidly.

Studies have revealed that machines will force humans into obsolescence. All neural artificial intelligence systems depend on what is known as the supervised model of learning that shows the effect on the world. Such learning is based on the training information that has been labelled by humans so that network weights can be adjusted when the labels for the data are predicted wrongly (Leetaru, 2016).

Unfortunately, as of this time, in some parts of the world there is little indication that the education and welfare systems of the industrial age are being modernized and made more flexible. In other words, for various reasons such as infrastructure limitations, many institutions worldwide are not ready to embrace the age of automation. AI brings revolutionary changes to industry verticals and has been explored in the education industry as well.

### *ROLE OF AI IN EDUCATION INDUSTRY AND STUDENT LEARNING*

A number of institutions of higher education have already integrated AI with their learning system. AI has impacted the way jobs are generated, requiring Artificial Intelligence expertise and proficiencies essential to education (Thompson, 2014). Thus, universities such as WGU that have integrated AI into their curricula have produced more successful graduates than other institutions (Thompson, 2014).

Some of WGU's integration examples include the partnership of WGU's Center for Applied Learning Science (CALs) with Carnegie Mellon University

(CMU) to develop an AI-based career guidance system aimed at improving the assistance that WGU students receive from career services and advisors. The National Science Foundation (NSF) has provided a grant of \$700,000 to support this project. This project enhances career advising by boosting human effort with AI to research data on former WGU students who completed their degrees. The project is established on the foundation of AI as it applies to human behavior. The data gathered will be used by the CMU researchers to create "intelligent coaching agents" to assist students in accessing and utilizing useful resources such as human career advisors that will guide them to make educated choices that will subsequently increase their career advancement opportunities (Schaffhauser, 2018). The project will be included in additional resources WGU provides to students. The outcome of these inventions can potentially reform how technology is used to provide career counseling and support, not only in colleges and universities but also in the workplace.

The educational field is also being influenced by new technologies and emerging ways of articulating the educational process. Chatbots and online Q&A pages are known to assist prospective students with their preliminary questions; however, they cannot substitute for the inspiration of a person-to-person contact.

It is imperative to understand that AI in education does not replace teachers and advisors with a robot or a machine; rather, it empowers students to use the advanced technologies and tools, thus helping cater to the growing needs of those students and increasing the demand for personalized education.

According to WGU Press Release, Salt Lake City WGU Labs Inc., a partner of WGU, is reportedly employing products and services from InScribe Education. WGU Labs researches the platform's impact on WGU's student registration process, student experience, and success to create a positive experience and a sense of belonging as soon as a student is in the registration stage. Fostering confidence in prospective students is an important part of student enrollment (WGU Press Release, 2020).

The InScribe platform unites the force of communities with AI to assist the new enrollees with questions, provide information, and put them in contact with entities and individuals based on their needs. InScribe attempts to provide not only similar services to prospective and new students but also support throughout students' other learning stages (WGU Press Release, 2020).

During the hiring process, most organizations greatly consider colleges and credentials that are highly valued. Thus, colleges and learning institutions must determine effective ways to integrate AI in their institutions (Thompson, 2014). As is currently projected, the use of AI in the learning institutions can completely alter employment in the future. Organizations may end up preferring employees or interns to possess high levels of AI knowledge and skills (Liberatore, 2017). Colleges must find effective ways to integrate AI in their learning process to ensure that they produce graduates that are in high demand by employers.

Currently, teachers' time is becoming increasingly scarce through the increase in repetitive tasks such as assessment evaluation or student assignment revision. Among the advantages AI can bring to the education industry is reduction of such tasks (Jarrahi, 2018).

AI also aims to stimulate personalized training by giving more relevant course material to each individual student based on their unique needs (Jarrahi, 2018). With the large amount of student data schools gather, analyzing this gathered information in a more efficient way becomes more important for learning about students' abilities and catering to their individual needs. AI-enabled learning can recommend customized study paths to learners or pair them with studygroups where they can learn and share information collectively (Jarrahi, 2018).

AI also supports teachers in various ways. For example, reducing the amount of time spent on redundant activities such as grading allows time to explore and develop more innovative instructional models that serve their students on

an individual basis (Jarrahi, 2018).

Some of the most positive repercussions of artificial intelligence in the world of marketing have been collecting and processing large amount of data in a systematic and organized way. Educational marketing managers can adjust their marketing content based on the behavior profiles of current and potential students. AI can help establish return rates that assist with detecting projections in terms of, for example, a sale at risk of not going through. Therefore, tactical measures can be made to halt such scenario from occurring. The transition from online learning systems to virtual campuses constitutes a great leap in the digital transformation of educational institutions, as students will be able to study wherever and however they want to go beyond the classroom.

With AI, the door is also opening for the creation of smart campuses thanks to the Internet of Things (IoT). The idea is that students can interact with smart objects on their physical campuses to enhance their learning experience (Jarrahi, 2018).

### CONCLUSION

Colleges that allow AI, adaptive learning, and the remaining elements of the new-age learning ecosystem and technology into their infrastructure are much more likely to produce graduates with competent skills than colleges that rarely utilize these tools (Thompson, 2014). Such application and tools are vital for students to achieve their career goals and objectives through increasing their competency levels and chances of being hired (Thompson, 2014). Presently, organizations are seeking to hire graduates with competent skills. Proper integration of these tools improves graduates' competency, confidence, and abilities. Most importantly, the tools can be incorporated to create a job placement platform that helps students after graduation to accumulate job experience in their own fields of study.

This is an efficient use of the period where students are applying for jobs and waiting to hear back from employees, during which they are more likely to lose their motivation or end up permanently in positions that are not related to their field (Barr & Trytten, 2016). Instead, a close to real-life work

experience and internship through the utilization of available technologies, including AI-based systems, that simulates a real-life work environment where students can be given actual projects to work on almost guarantees a future in the graduated student's field of study (Barr & Trytten, 2016).

An AI-based solution in the form of a virtual, fictional business infrastructure with departments including Research and Development (R&D), Project Management, and so on, where recent graduates can continue to work on projects to increase their work experience. The fictitious business is accessible to students through some form of a Virtual Reality environment with simulated organizational hierarchy that includes managers and senior managers. The projects are produced via a variety of means including through use of open project platforms, for example Freelancer Map (<https://www.freelancemap.com>), as well as suggestions of an enthusiastic professor

that deposits projects to a designated repository environment that has been developed as part of the platform. Artificial Intelligence features, besides providing analytics, can also, to begin with, contribute by offering virtual support; aiding with Q&As; and virtual tutoring. In future the AI algorithm, using its analytics capability, can be examined to optimize the platform, and select or produce projects. Imminent expansion of the platform could include contracting private and state sector projects that might convey profits for the university—capital that may be applied to additional studies and productions.

A future paper, by the same author, will explain in more detail the deployment possibilities, scenarios, and how the components of this ecosystem should be considered to produce such platform.

### REFERENCES

- Barr, V., & Trytten, D. (2016). *Using Turing's craft codelab to support CS1 students as they learn to program*. *ACM Inroads*, 7(2), 67–75.
- Bates, A. W. (2019). *Teaching in a digital age: Guidelines for designing teaching and learning* (2nd ed.). *BC Campus Pressbooks*. <https://pressbooks.bccampus.ca/teachinginadigitalagev2/>
- Brin, D. W. (2021). *Employers embrace artificial intelligence for HR*. <https://www.shrm.org/ResourcesAndTools/hr-topics/global-hr/Pages/default.aspx>
- Chasteen, L., Szot, J., & Teach, R. (2018). *Simulations for strategy courses: Difficulty vs. realism, preliminary findings*. <https://journals.tdl.org/absel/index.php/absel/article/view/3138/3077>
- Dabbish, L., Stuart, C., Tsay, J., & Herbsleb, J. (2012, February 11). *Social coding in github: Transparency and collaboration in an open software repository* [Poster Presentation]. *Proceedings of the ACM Annual Conference on Computer Supported Cooperative Work*. CSW'12, ACM, New York, NY. <https://dl.acm.org/doi/10.1145/2141512.2141583>
- Edgcomb, A., Vahid, F., Lysecky, R., & Lysecky, S. (2017, March). *Getting students to earnestly do reading, studying, and homework in an introductory programming class*. In *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education* (pp. 171–176). <https://doi.org/10.1145/3017680.3017732>
- Eagan, K., Stolzenberg, E., Ramirez, J., Aragon, M., Ramirez Suchard, M., Hurtado, S. (2014). *The American freshman: National norms*. Fall 2014. Cooperative Institutional Research Program, UCLA. <https://www.heru.ucla.edu/monographs/TheAmericanFreshman2014.pdf>
- Information Technology. (2020, Mar 31). *What is AI technology and how is it used?* <https://www.wgu.edu/blog/what-ai-technology-how-used2003.html#close>

## REFERENCES (CONT'D)

- Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making. *Business Horizons*, 61(4), 577–586.
- JNH1968. (2018, Dec. 4). WGU and Carnegie Mellon University Partner to Develop AI-Enabled Career Guidance Technology. [https://www.stltoday.com/pr/business/wgu-and-carnegie-mellon-university-partner-to-develop-ai-enabled-career-guidance-technology/article\\_efa903f0-f7e0-11e8-b663-308d99b27af4.html](https://www.stltoday.com/pr/business/wgu-and-carnegie-mellon-university-partner-to-develop-ai-enabled-career-guidance-technology/article_efa903f0-f7e0-11e8-b663-308d99b27af4.html)
- Jordan, C. (2016). *Capstone projects are only as successful as the work that precedes them*. <https://edtrust.org/the-equity-line/capstone-projects-are-only-as-successful-as-the-work-that-precedes-them/>
- Latin American Herald Tribune. (2021, June 05). *The Great Challenge of Artificial Intelligence*. <http://www.laht.com/article.asp?ArticleId=2486984&CategoryId=13936>
- Leetaru, K. (2016, Jun. 14). *Will AI and robots make humans obsolete?* Forbes. <https://www.forbes.com/sites/kalevleetaru/2016/06/14/will-ai-and-robots-make-humans-obsolete/?sh=4897a70835f2>
- Liberatore, M. W. (2017, June 24). *Reading analytics and student performance when using an interactive textbook for a material and energy balances course* [Research Presentation]. Proceedings of the ASEE Annual Conference & Exposition. Columbus, Oh. <https://peer.asee.org/reading-analytics-and-student-performance-when-using-an-interactive-textbook-for-a-material-and-energy-balances-course>
- Marx, G. (2014). *Getting students ready for a fast-changing world*. <https://www.advanc-ed.org/source/getting-students-ready-fast-changing-world/>
- McKinney, D., Edgcomb, A. D., Lysecky, R., & Vahid, F. (2020, June 22) [Research Presentation]. *Improving pass rates by switching from a passive to an active learning textbook in CS0*. In 2020 ASEE Virtual Annual Conference Content Access. Virtual. <https://peer.asee.org/improving-pass-rates-by-switching-from-a-passive-to-an-active-learning-textbook-in-cs0>
- Oberoi, A. (2017). *9 machine learning examples from day-to-day life*. <https://insights.daffodilsw.com/blog/9-machine-learning-examples-from-day-to-day-life>
- Partnership on AI. (2019). *Lauren Baldwin*. <https://www.partnershiponai.org/team/lauren-baldwin>
- Rainie, L. & Anderson, J. (2017). *The future of jobs & jobs training*. <https://www.pewresearch.org/internet/2017/05/03/the-future-of-jobs-and-jobs-training/>
- Rihca, G. 2021. Deep learning – Overview, practical examples, popular algorithms. <https://www.analyticssteps.com/blogs/deep-learning-overview-practical-examples-popular-algorithms>
- Schaffhauser, D. (2018, Dec. 5). Carnegie Mellon and Western Governors building career coaching agents. *Campus Technology*. [https://campustechnology.com/articles/2018/12/05/carnegie-mellon-and-western-governors-building-career-coaching-agents.aspx?s=ct\\_it\\_131218](https://campustechnology.com/articles/2018/12/05/carnegie-mellon-and-western-governors-building-career-coaching-agents.aspx?s=ct_it_131218)
- Selingo, J. (2018, Sep 1). College students say they want a degree for a job. Are they getting what they want? *Washington Post*. <https://www.washingtonpost.com/news/grade-point/wp/2018/09/01/college-students-say-they-want-a-degree-for-a-job-are-they-getting-what-they-want/>

## REFERENCES (CONT'D)

- Sigmoidal. (2020, Jun 24). *Natural language processing vs. deep learning*. <https://sigmoidal.io/natural-language-processing-vs-machine-learning-vs-deep-learning/>
- Taneri, G. U. (2020). *Artificial intelligence & higher education: Towards customized teaching and learning, and skills for an AI world of work* (Research & Occasional Paper Series: CSHE 6.2020). Center for Studies in Higher Education, University of California–Berkeley.
- TestOut. (n.d.) *Learn what you can be*. <http://www.testout.com/courses/training>
- Thompson, D. (2014, August 19) The thing employers look for when hiring recent graduates. *The Atlantic*. <https://www.theatlantic.com/business/archive/2014/08/the-thing-employers-look-for-when-hiring-recent-graduates/378693/>
- Western Governors University. (2020, May 7). WGU labs, InScribe partner to create community among prospective online students. <https://www.wgu.edu/newsroom/press-release/2020/05/wgu-labs-inscribe-partner-to-create-community-among-prospective-online-students.html>
- Zagalsky, A., Feliciano, J., Storey, M., Zhao, Y., & Wang, W. (2015, February 28). The Emergence of GitHub as a Collaborative Platform for Education [Research Presentation]. Proceedings of the 18th ACM Annual Conference on Computer Supported Cooperative Work. CSW'15, ACM. New York, NY. <https://dl.acm.org/doi/10.1145/2675133.2675284>



# INCORPORATING ARDUINO FOR REMOTE HANDS-ON PROJECT-BASED LEARNING

NATALIE WAKSMANSKI

COLLEGE OF ENGINEERING & INFORMATION SCIENCES

---

Author Note: Natalie Waksanski, PhD is a Professor and Faculty Chair in the College of Engineering & Information Sciences, Chicago, IL

---

## ABSTRACT

Incorporating hands-on learning in an online environment is quite challenging as lab equipment may require extensive set-up and additional instrumentation that may not be easily accessible to students. The aim of the physics course project presented in this paper is to harness the Arduino's cost-effective hardware and open-source software, to create simple experiments with everyday household items. It was found that student participation, enthusiasm and motivation was higher than previous versions of the course and confirms that hands-on project-based learning with an engaged team of professors leading weekly live lessons is an effective way for students to develop essential skills and stimulate interest for scientific inquiries.

---

*Correspondence regarding this article should be addressed to Dr. Waksanski at [nwaksanski@devry.edu](mailto:nwaksanski@devry.edu)*

---

Keywords: Arduino, laboratory experimentation, project-based learning, remote learning

### BACKGROUND AND SIGNIFICANCE

The laboratory is an integral part of in the field of Science, Technology, Engineering and Mathematics (STEM) curriculum with the intention to bring the theory into practice. Utilizing hands-on experiments provides valuable problem-solving experiences for students. Despite their potential benefits, these labs require large amounts of space, equipment, and human resources. Dutson et al. described in detail a shift from hands on learning to more theory in engineering education (1997). Due to this shift, many students lacked practical skills upon graduation. Researchers agree that technology needs to be integrated in the educational process, particularly in STEM, as it can enhance students' motivation for the study of science and their understanding of physical phenomena (Maiti et al., 2014; Jamieson & Herdtner, 2015). In this context, the approach to the teaching in the STEM field implies establishing a connection between theory and practice by developing technology-based projects. These types of projects require the presence of modern pieces of equipment enabling students to develop their practical skills and improving their level of understanding of physical phenomena.

Incorporating hands-on learning in an online environment presents quite a challenge as lab equipment may require onsite usage or provide difficulty for students to use at home. When the COVID-19 pandemic closed physical classrooms and the world transitioned to remote learning, a need for hands-on experimentation in an online environment became more imperative. Using previously collected data or computational simulations is a viable alternative but does not replace the learning from hands-on laboratory experiments. The research is mixed related to the effects of simulation-based labs on educational learning outcomes. Some studies found that students assigned to simulations showed worse performance on certain specific aspects of knowledge (Canizares & Faur, 1997; Lindsay & Good, 2005; Roth et al, 1996). While some studies suggest that there is no significant difference in student performance when using simulations (Cummings et. al, 1999; Edward, 1996; Kulik, 2002).

One approach to uphold hands-on learning is to use low-cost hardware and open-source software offered by the Arduino.

Arduino is a family of small inexpensive microcontroller-based computing boards that have been used for improved design of remote hands-on learning (Jamieson & Herdrner, 2015; Bouquet et al. 2017; Cvjetkovic & Uros, 2017; Huang, 2015; Kubinova & Sleg, 2015; Llamas et al, 2018; Oprea, 2018; Petry et al, 2016; Sarik & Kymissis, 2010; Zieris et al, 2015; Cooper et al, 2020). Arduino offers microcontrollers and sensors which students can easily find, purchase, and use at home to build their own experiments. There is also a large community around Arduino allowing students to easily find resources and support to extend physics and scientific curiosity beyond the walls of the classroom.

Scholars have implemented the Arduino into physics laboratory experiments at all levels of learning from K-12 (Kubinova & Sleg, 2015; Zieris et al, 2015) to high school (Huang, 2015; Petry et al, 2016) and university (Bouquet et al. 2017; Cvjetkovic & Uros, 2017; Llamas et al, 2018; Oprea, 2018; Sarik & Kymissis, 2010). Their studies suggest that the experiments generate good results and students benefit from using such hands-on experiments. However, the majority of the laboratory experiments presented by these scholars require extensive set-up and additional instrumentation that may not be easily accessible to students. Although a select few scholars demonstrated the success of the Arduino experiments with student comments (Bouquet et al. 2017; Petry et al, 2016; Sarik & Kymissis, 2010) there lacks a baseline comparison to traditional experiments and an assessment of student grades and mastery of course objectives in these findings.

The aim of the physics course project presented in this work was to create simple experiments which utilize everyday household items that are easily accessible to students. The success of the implementation of the Arduino into the course project was assessed and compared from previous versions of the online physics course offered at DeVry University that utilized traditional PASCO physics laboratory equipment in a remote

setting. The PASCO kits include an interface with various sensors to configure within its compatible software. In this approach data collection is automated and focus is on the analysis of data which can potentially mask key teachable moments for students. These systems are rather cost prohibitive, and students would never use the kit again.

In this previous version of the online physics university-level course, students would also complete midterm and final exams, use an external online learning system integrated with the electronic textbook that automatically grades weekly homework assignments allowing for remediation and mastery learning. Even so, the course homework, laboratory, and exam solutions were easily found online and did not provide true learning opportunities.

At the end of each session, students are encouraged to complete a voluntary and anonymous end of course survey that generates a net promoter score. This score indicates the student’s satisfaction with the course. The net promoter score, student grades, and pass rates are evaluated for the new physics course and compared to the previous. This paper describes the findings and extrapolates on methods that have improved the course. These findings can be expanded into other STEM fields.

**COURSE DESIGN**

The physics course redesign includes the Arduino to conduct laboratory experiments as a course project and replaces the midterm and final exams. The intent of this course project is to generate unique results which cannot be found online. To promote academic integrity students are required to include pictures of their experimental set up and a screenshot of the Serial Monitor displaying their name with the data they generated.

The redesigned physics course is part of a plan of study called the Tech Core where students purchase a kit in their introductory survey engineering and technology course. This kit includes an Arduino starter kit with Arduino Mega 2560 and ESP32 microcontrollers. Having these microcontrollers integrated into the plan of study,

starting with the first introductory course, and continuing throughout the curriculum, enables students to have a larger return on their initial investment and build upon practical hardware building and programming skills.

The physics course is taught in an online format only with a live session offered each week through Cisco WebEx or Microsoft Teams. This lesson is recorded and made available to all students. During the live session all faculty teaching a section of the course attend and contribute to a team-teaching format. Each week the faculty teaching in a given session take turns presenting on the weekly topic and demonstrating the course project throughout the term. The course term is an 8-week session with the respective topics listed in *Table 1*.

**Table 1: Weekly Lesson Topics**

WEEK	TOPIC
1	Units and Linear Motion
2	Force and Momentum
3	Work and Energy
4	Circular Motion, Torque, and Angular Momentum
5	Charge and Electric Field
6	Magnetic Forces, Fields & Induction
7	Waves
8	Course Connections & Completion

The topics in the course are presented in modules within an online learning management system. Students read through these lessons and work through homework assignments in an external tool linked with the electronic textbook. The homework allows for remediation to assist the students in learning the material. Each module also includes multiple threaded discussion topics to further analyze physics phenomena. These topics are then applied to the course project.

The course project follows the topics in each module to give students hands-on practice with physics phenomena. No final exam or midterm

exam is administered in the course as studies have shown that project-based learning allows students to demonstrate their understanding of problems in a real-world application and gives teachers a greater opportunity to assess their students' capabilities (Cooper et al, 2020; Doppelt, 2003; Wurdinger & Qureshi, 2015). This course project is based on the scientific method and is divided into six main parts. Each deliverable builds from the previous resulting in a full scientific experiment. The development process of the project includes critical thinking, hardware setup, programming, and data analysis.

In each module, students are provided with a document outlining all the steps needed to complete the given experiment. In these documents the source code needed to upload in Arduino Integrated Development Environment (IDE) is included. During the live lessons, students are shown how to read and interpret each line of code. This helps to demystify many of the steps in taking measurements and teaches students how they can process raw data. Students are also provided with previously recorded videos demonstrating the experimental set-up, data acquisition and data analysis.

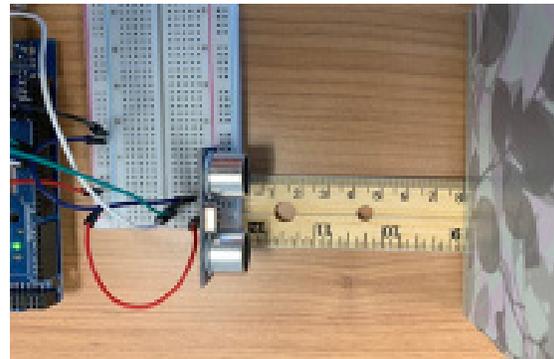
In Module 1, students organize the parts needed to conduct the experiments that will investigate the various fundamental laws of physics covered in the course. The materials list is a vital component of any formal lab report. By preparing the parts lists first, a proper thought process is established which allows for the rest of the experiment to flow smoothly. Students also download and install Excel, Arduino IDE, and ESP32 library within Arduino IDE. The sensors, hardware, and software needed for the course project are listed in *Table 2*. The project inventory is due at the end of Week 2 and allows students two weeks to purchase and receive their kit if they do not have one.

**Table 2: Inventory of Parts**

SENSORS	HARDWARE	SOFTWARE
Ultrasonic Sensor HC-SR04	MEGA 2560	ARDUINO IDE
Rotary Encoder Module KY-040	ESP32	ESP32 LIBRARY
Hall Effect Sensor (within ESP32)	BREADBAORD	EXCEL

In Module 2, students apply what they learned about numbers and units to determine the precision of the ultrasonic sensor. Determining the precision of the data gathering sensor is essential in experiments as sensors often drift over time and give incorrect readings due to circumstances such as temperature, humidity, and component fatigue. In this experiment, students place an object on a ruler (shown in *Figure 1*), the ultrasonic sensor measures the round-trip time between the outburst of ultrasounds and the reception of the echo, and the Serial Monitor in Arduino IDE displays the measures the round-trip time in microseconds. Students do the appropriate conversions to calculate the velocity and compare it to the known speed of sound.

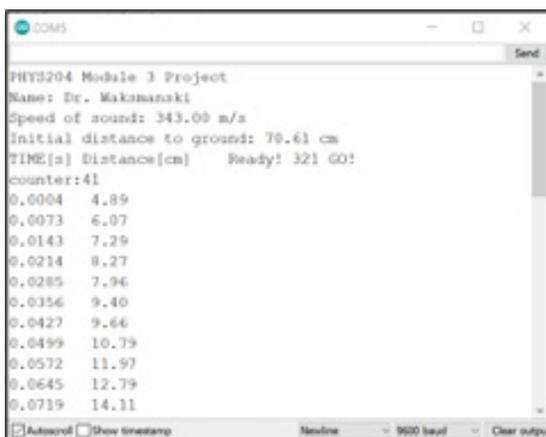
**Figure 1: Experimental set-up for Module 2 project for determining the precision of the ultrasonic sensor**



In Module 3, students apply what they learned about motion as a change of position to find the gravitational acceleration of a free-falling object using the ultrasonic sensor. In this experiment,

students use the same set up as in Module 2 but place the ultrasonic sensor pointing towards the ground. The students place a flat object not susceptible to air resistance under the ultrasonic sensor. Once the object is less than 3.5cm away from the sensor, a message “Ready” will display in the Serial Monitor with a countdown from 3 to 1. When the Serial Monitor displays the message “GO!” students drop the object. The Serial Monitor displays the time increments and corresponding measured distance of the free fall (shown in Fig. 2). Students then paste the data from the Serial Monitor into a preformatted Excel spreadsheet to complete a quadratic curve fitting in the form of  $y = ax^2 + bx + c$  where a, b, and c are constants that are determined automatically by the fitting algorithm. The acceleration due to gravity can be approximated using the coefficient of  $x^2$  as  $g = 2a$ . The students perform the experiment for several trials and to find the average acceleration and compare it to the known acceleration due to gravity.

**Figure 2: Serial monitor screenshot for Module 3 project with time increments and corresponding measured distance**



In Module 4, students use what they have learned about motion to demonstrate the transformation of energy. In this exercise, students use the data they collected from Module 3 and generate graphs in Excel showing the kinetic and gravitational potential energy of the projectile as a function of time. On the same graph they also include the total mechanical energy as a function of time and a best-fit line to access how well energy is

conserved based on the slope of the line. They also compare the experimental final velocity with the theoretical final velocity to validate their experiment.

Up to this point in the project, students have been concentrating on descriptions of simple motions where the details of an object’s shape were considered unimportant, and the trajectories of the motion were straight lines. In Module 5, students apply what they have learned about circular motion to convert radial displacement to linear displacement using the rotary encoder. To measure angular rotation, a rotary encoder is connected to a rotating object. The rotating object could be any household item such as a cork, bottle cap, ball, or knob. The Serial Monitor outputs the number of pulses per revolution. By counting the number of pulses, students can determine the angle the object rotated through and the linear distance it traveled. The converted linear distance is then compared to the known measured distance.

In Module 6, students learn about magnetism and investigate the Hall Effect by using the ESP32 microprocessor to measure the proportional voltage under the effect of a magnetic field. The Hall effect sensor is located behind the metal lid of the ESP32 chip. The measurements from the sensor can increase or become negative depending on the magnet pole facing the sensor. Students plot the data in Excel and identify the points at which the magnet was moving towards the sensor, away from the sensor, and when the magnet was flipped.

After completing the course project, the final deliverable is a professional presentation displaying each step of the project. The presentation follows the scientific method beginning with the motivation for the experiments, followed by the materials list, experimental set up, data collection, data analysis, and conclusions. Students also develop slides to transition and explain each stage of the development process. At the end students add a challenges slide to discuss the obstacles they faced, and a career skills slide to discuss the skills they gained in developing this project. Students

post this final project deliverable, along with all their other projects in their plan of study, on a personal website as a portfolio of their work. Their final project is assessed based on criteria matching the program outcomes.

**RESULTS AND DISCUSSION**

To evaluate whether this updated curriculum has positive effects on knowledge gain and learning motivation, three areas were studied: course satisfaction, final grades, and mastery of course objectives. At the end of each session, students are encouraged to complete a voluntary and anonymous survey that generates a net promoter score. Students rate how likely they are to recommend the course with 0 being not likely at all to 10 being extremely likely. This score indicates the student’s satisfaction with the course.

The end of course surveys are tied closely with faculty evaluations, so this data is more limited than gathering data on final grade distributions. Surveys from five sessions for the previous version and five sessions of the new version of the courses were made available. The mean student satisfaction for the previous version was 7.1 with 50 student responses. The new course has a mean satisfaction of 8.9 based on 168 student responses. *Table 3* quantitatively illustrates the net promote score responses.

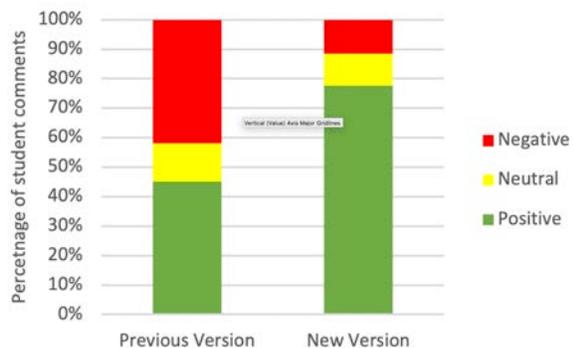
**Table 3: Student Satisfaction Results**

COURSE SCORE	# OF STUDENT RESPONDENTS: NEW VERSION	# OF STUDENT RESPONDENTS: PREVIOUS VERSION
10	91	18
9	25	1
8	25	10
7	10	6
6	4	4
5	10	1
4	2	1
3	0	2
2	0	2
1	1	1
0	0	4

Over half the students who took the new version of the class rated it with a 10, while about a third of the students who took the previous version rated it with a 10. The student satisfaction of the previous version was spread over the various scores but the student satisfaction of those who took the new version of the course is right-skewed (e.g. positive skewness). This indicates a high degree of satisfaction with the course overall. It is also worthwhile to mention that the number of respondents for the same number of sections is indicative that the students who have taken the new version of physics were more motivated to express their thoughts on their experience.

Within the student survey, there is an open-ended question for students to support their course rating. Of those students who responded to the open-ended question, a sentiment analysis of was conducted and the results are plotted in *Figure 3*. These findings further support that the students had a more positive learning experience in the new version of the course compared to the previous version where the positive and negative comments were about the same. These results are noteworthy since student satisfaction can lead to more motivated learners, higher grades, and better persistence.

**Figure 3: Sentiment analysis of student responses to open-ended question in end of course survey to support course rating**



Final grades were compared from the previous version and new version of the course. The number of students who passed and failed are

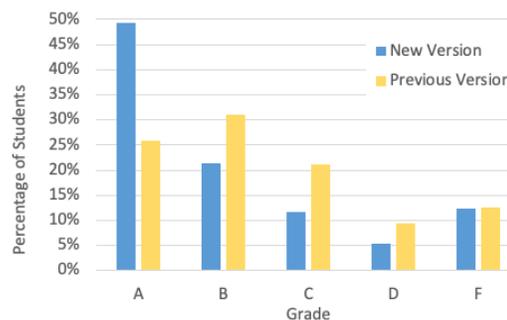
tabulated for both the new version and previous version of the physics course in *Table 4*. Total number of students does not include those that withdrew from the course. The data for the new physics class spans over five sessions with 493 students enrolled into 13 different sections. The data for the previous physics classes spans over eight sessions with 441 students enrolled into 19 different sections. The first obvious observation is that in the new version of physics, professors are assigned to bigger class sizes. Even with a larger class size, they are achieving greater satisfaction compared to the previous version of the course with smaller class sizes.

**Table 4: Student Pass Fail Rates**

	Percent Passed (grades A-D)	Percent Failed
New Version	87.63%	12.37%
Previous Version	87.53%	12.47%

The results of the pass and fail rates are incredibly interesting. They show almost no difference in the passing rate and failing rates. This suggests that the new course design did not sacrifice rigor. It is worth diving deeper into the grading distribution where the differences are more obvious between the new version and previous version of the course. The grade distribution is shown in *Figure 4* where it can be observed that in the new version of the physics course, almost half of the students earn an A and the grades are skewed right (e.g. positive skewness) whereas in the previous version of the course, the grades were spread more over the grading spectrum.

**Figure 4: Grade distribution of new and previous version of university-level online physics course**



The trend for students earning higher grades in the new version of the physics course indicates that the students are performing better and demonstrating higher mastery of learning objectives than in the previous version of the course. To support this statement, we return back to the end of course surveys where students are also asked to rate their ability to demonstrate mastery of course objectives on the scale from 1 to 4 where 1 = Does Not Meet Expectations, 2 = Needs Improvement, 3 = Fully Meets Expectations, and 4 = Exceeds Expectations. *Table 5* summarizes the results which verifies that students felt that they achieved a higher mastery of course objective in the new version of the course compared to the previous version. The standard deviation for the new version of the online physics course is smaller than the previous version indicating that the student ratings were not as spread from the mean value.

**Table 5: Mastery of learning objectives student ratings**

	Mean	Standard Deviation
New Version	3.31	0.66
Previous Version	3.02	0.81

The major difference between the previous version and new version is the Arduino course project and course delivery. In the new version, pre-recorded videos are made available for students to assist in their course project. Also, professors are more engaged with their students offering weekly live lessons and extended support system. In the previous version of physics, professors were not required to host a live lesson. Evolving this physics course into an interactive class with hands-on remote laboratory experimentation was successful, and the improved mastery of course objectives, grade distribution, and course satisfaction illustrates this success.

### CONCLUSIONS

Physics courses are challenging for students to take and instructors to teach. Determining the best method of teaching physics while making the course interesting and engaging for students, especially in the remote learning environment, is difficult to balance. To improve the student experience a physics course at DeVry University was redeveloped using the Arduino for a course project that replaced the midterm and final

exam. Data was analyzed for the new course and compared with the previous version of the physics university-level course. The data consisted of student satisfaction and master of learning objectives from end of course surveys along with final grades. The new version of the course showed that almost half of the students earned an A and over half of the students who took the new version of the class rated it with a 10. In contrast, the previous version a quarter of the students earned an A and about a third of the students rated the class with a 10. Most significantly is that the new course resulted in an improved mastery of course objectives. This indicates that implementing the Arduino into physics education to conduct laboratory exercises with an engaged team of professors leading weekly live lessons improved the student learning experience. The participation, enthusiasm and motivation of students was higher than in previous versions of the course and confirms that hands-on project-based learning is an effective way to develop student's practical skills and stimulate their interest for scientific inquiries.

### REFERENCES

- Bouquet, F., Bobroff, J., Fuchs-Gallezot, M. & Maurines, L. (2017). Project-based physics labs using low-cost open-source hardware. *American Journal of Physics*, 85 (3), 216-222.
- Canizares, C. A., & Faur, Z. T. (1997). Advantages and disadvantages of using various computer tools in electrical engineering courses. *IEEE Transaction on Education*, 40, 166-171.
- Cooper, G., Walker, R., Hill, E. & Waksanski, N. (2020). Incorporating IoT and data analytics in an introductory programming course. *15th International Conference on Computer Science & Education (ICCSE)*, 169-175.
- Cummings, K., Marx, J., Thornton, R., & Kuhl, D. (1999). Evaluating innovation in studio physics. *American Journal of Physics*, 67 (7), S38-S44.
- Cvjetkovic, V. M. & Uros, S. (2017). Arduino based physics and engineering remote laboratory. *International Journal of Online and Biomedical Engineering*, 3(1).
- Doppelt, Y. (2003). Implementation and assessment of project-based learning in a flexible environment. *International Journal of Technology and Design Education*, 13, 255-272.
- Dutson, A., Todd, R.H., Magleby, S.P, & Sorensen, C.D. (1997). A review of literature on teaching engineering design through project-oriented capstone courses. *Journal of Engineering Education*, 86, 27-28.

## REFERENCES (CONT'D)

- Edward, N. S. (1996). Evaluation of computer based laboratory simulation. *Computers and Education*, 26, 123–130.
- Huang, B. (2015). Open-source hardware – microcontrollers and physics education – integrating DIY sensors and data acquisition with Arduino. *2015 ASEE Annual Conference & Exposition, Seattle, Washington*.
- Jamieson, P. & Herdtner, J. (2015). More missing the boat – Arduino, Raspberry Pi, and small prototyping boards and engineering education needs them. *Frontiers in Education Conference*, 1-6.
- Kubinova, S. & Sleg, J. (2015). Physics demonstrations with the Arduino board. *Physics Education*, 50(4), 472-474.
- Llamas, C., Vegas, J. and Gonzalez, M. A. (2018). Open-source sensors system for doing simple physics experiments. *Papers in Physics*, 10.
- Kulik, J.A. (2002). School mathematics and science programs benefit from instructional technology (NSF Report No. 03-301). National Science Foundation.
- Lindsay, E. D., & Good, M. C. (2005). Effects of laboratory access modes upon learning outcomes. *IEEE Transactions on Education*, 48(4), 619–631.
- Oprea, M. (2018). The Integration of the Arduino platform in the physics Lessons. *The International Scientific Conference eLearning and Software for Education; Bucharest*, 2.
- Maiti, A., Maxwell, A.D., Kist, A., & Orwin, L. (2014). Integrating enquiry-based learning pedagogies and remote access laboratory for STEM education. *IEEE Global Engineering Education Conference (EDUCON)*, 706-712.
- Petry, C.A., Pacheco, F. and Lohmann, D. (2016). *Project teaching beyond physics: Integrating Arduino to the laboratory, technologies applied to electronics teaching (TAEE)*. IEEE, 1-6.
- Roth, W. M., Woszczyzna, C., & Smith, G. (1996). Affordances and constraints of computers in science education. *Journal of Research in Science Teaching*, 33, 995–1017
- Sarik, J. & Kymissis, I. (2010). Lab kits using the Arduino prototyping platform. *40th ASEE/IEEE Frontiers in Education Conference*.
- Wurdinger, S. & Qureshi, M. (2015). Enhancing college students' life skills through project based learning. *Innovative Higher Education*, 40, 279–286.
- Zieris, H., Gerstberger, H., & Müller, W. (2015). Using Arduino-based experiments to integrate computer science education and Natural Science. *Proceedings of KEYCIT - Key Competencies in Informatics and ICT*, 381-389.



# INLAND SOULS, THOUGHTFUL SHOALS, AND PARTIAL WHOLES:

## A COMPARATIVE ANALYSIS OF SEVERAL “SEA” POEMS BY EMILY DICKINSON AND ROBINSON JEFFERS

CAROL E. DIETRICH

COLLEGE OF LIBERAL ARTS & SCIENCES

---

Author Note: Carol Dietrich, PhD is a Senior Professor in the College of Liberal Arts & Sciences at DeVry University, Columbus, OH

---

### ABSTRACT

This paper offers a comparative analysis of selected sea poems by two American poets: Emily Dickinson and Robinson Jeffers. The connections between their poems and poetic sensibilities are framed using the concepts of soul, shoal, and whole. The seascapes found in six poems are examined not merely as places of contact in the natural world but as points of dramatic intersection/tension(?) in which human concerns transform and transcend the physical environment.

Albert Gelpi (2003), who published an anthology called *The Wild God of the World: An Anthology of Robinson Jeffers* wrote, “In all the obvious ways, [Emily] Dickinson is as far removed from Jeffers as her Amherst is removed, in time and culture and a continent’s space, from Jeffers’ Carmel coast. Neither is a Calvinist in intellectual adherence. But what she shared with Jeffers...is the persistence of engrained and unquestioned assumptions and responses that constitute the Calvinist imagination beyond adherence to its tenets as a creed” (p. 9). Very few scholars

---

Correspondence regarding this article should be addressed to Dr. Dietrich at [cdietrich@devry.edu](mailto:cdietrich@devry.edu)

---

Keywords: sea, soul, Emily Dickinson, Robinson Jeffers, environment, poems, voice

have linked these two American poets - Jeffers who was born the year after Dickinson died-- or the poems and letters they crafted (Poetry Foundation, 2021). My purpose in this essay is not to examine the theological cornerstone of either writer, but to show that at their poetic bedrock, Emily Dickinson and Robinson Jeffers are not far removed at all. Indeed, they share certain poetic sensitivities, a quest for the secrets of the universe amid the pulse of the ocean, almost prophetic elements, an unabashed enjoyment not only in the sights and sounds of the sea,

but a rare restless spiritual intensity typified by the marine and the imaginative waves that ebb and flow with it. Their ways of interacting with the sea are reflected sometimes obliquely and sometimes directly in their poems. With references to Emily Dickinson and Robinson Jeffers, I want to dwell on small touches that represent their connections to landscape and seascape and the loving transformation of these places as intersecting points in a vast poetic cosmos. I have adopted three concepts--inland souls, thoughtful shoals, and partial wholes--to organize my analysis, and I have selected representative poems to illustrate each.

### INLAND SOULS – GOING OUT

Dickinson's poem "Exultation is the going" juxtaposes well with Jeffers' "Carmel Point." In these two poems, both writers in their uncompromising iconoclastic unconventionality assert a connection between the human's experience of the sea and the land. For Dickinson, the act of leaving the land -and all things domestic "past the Houses" and earthly – "past the Headlands" marks an event that brings tremendous delight, sheer joy. The inland soul experiences "exultation" - rapturous delight, feelings of great happiness and excitement in the voyage "of the first league out from land" (as cited in Franklin, 1998, p. 143).

For Jeffers, such departure - actual and psychic - back to the beautiful place cannot occur until all artifacts of human existence - "the people's works" -are washed away in the tide and what is left is the "image of pristine/unspoiled/pure beauty," which lives in the very grain of the granite. Along the California coast from Carmel down to Big Sur, life was purged of its ephemeral accretions, stated Jeffers in his "Forward" to his 1938 Selected Poetry. The awesome landscape of vast scale and rugged splendor existed in stark contrast to the encroaching suburbia. In "Carmel Point," we read that humans have "defaced" nature with a crop of suburban houses and their horses and cows." Jeffers, who had lived in the town of Carmel for five years, eventually built his own house, Tor House, from the stones, some boulder-size, that he had found and collected along the bay two miles south of Carmel (Karman, 1987, p. 26).

Dickinson, as is widely known, lived most of her life in her family's homestead in Amherst even as she "dwelt in possibility" in her poems (Poetry Foundation 2021). In her view, for those individuals like herself who have been bred on land—among the mountains, the sea is more than the setting for "divine intoxication"; it is the source of such intoxication itself.

For Jeffers, however, the feeling of divine intoxication is a passing fancy—what is needed is a "mindfulness" or "mindlessness"—an uncentering of the mind from the self-- from the existential realization that the "very small part of a very big universe, that was here before [Jeffers] appeared and will continue to exist after he is no more." He writes in "Carmel Point,"

*As for us:  
We must uncenter our minds from  
ourselves;  
We must unhumanize our views a little,  
and become confident  
As the rock and ocean that we  
were made from. (lines 12-15)*

The solid rocks are a tangible reminder of the dialectic between self and object, a shift in emphasis and significance from "man to notman," with the object lasting beyond the raw subjective experience of the physicality of life. The ocean is as alive as the human being.

Both poets raise questions, but their line of questioning is not the same. Dickinson's text asks, "Can the sailor understand" - this incredible natural and supernatural phenomena - i.e., what it's like to have this first league experience into "deep Eternity." Jeffers changes the focus and the agency in querying: "Does it [the place] care?" - Does the environment feel itself being changed, shaped, defaced by mortals who are as the tide themselves, swelling and ebbing? Both poets' inquiries reflect an orientation - the landed soul away from a geographical place and the beautiful land apart from the people it knows. The inland soul for Dickinson exults in the launch. The inland soul for Jeffers, however, remains fixed, granulated - literally as a grain of granite - yet as enduring as the endless ocean. The Jeffers' intoxication occurs

as an act of confidence in the recognition and acknowledgement that humans are as eternal as the rock and ocean from which they were made. Humanity and topography truly share common ground.

Finally, I would add one more observation about these inland souls. Dickinson, in her inimical range, is plumbing the depth - going into "deep Eternity," and in this way, I think, she differs radically from Jeffers, whose primary focus in "Carmel Point" is on the superficial -- the surface features - the unbroken field of flowers, the pasture that holds a few domesticated animals, the cliff's walls, the image of the pristine beauty, until he advises us, the "we", to uncenter and unhumanize our views. This act of unhumanization is not the same thing, however, as "divine intoxication." - or, in Tennyson's terms in "Ulysses," a matter of drinking "Life to the lees" (line 7). Rather it is a separation - dare I say a rupture -- of the soul, a reasonable detachment from its inland status - the "living rock," lonely rock, lovely rock, pure naked rock, a landscape that exceeds human scale and offers great rugged beauty in what is paradoxically inanimate yet alive.

Simply put, Dickinson is focused on the voyage mediated through the sailor's experience, while Jeffers' mediation and meditation are through the "place" in this poem. The poet/speaker and the reader alike remain as voyeurs of the voyage. Dickinson is responding to the question - What does it mean to go to sea? Jeffers, I would argue, is asking, "What does it mean to go to see?" The two poets' visions and psychic journeys are complementary yet mutually and idiosyncratically exclusive.

In fact, one could envision these writers as follows: Dickinson as sailor boarding the boat - on the voyage, and Jeffers, poised on the rocky shore, seeing as far as his eye takes him but no farther than the horizon. Dickinson is headed toward deep Eternity (an abstraction of one dimension - depth); Jeffers is focused on the physical natural environment, the timeliness [timelessness] of the rocks (a concrete solid reality), and the ocean (a liquid manifestation)

and the history these features reveal. In another piece entitled "A Little Scraping," Jeffers wrote, "The mountain sea-coast is real / For it reaches out far into past and future; / It is part of the great and timeless excellence of things" (lines 12-14). Reality, materiality - not eternity--is bound by time, space, and place.

Both poets, however, express a transcendent appreciation for the beauty and variety of natural phenomena that goes beyond the obvious and the trite. Their acute observations and skepticism about the relationship between humans and nature make their status as nature poets unquestionably original and important. The belief that nature is at the core indifferent toward life and the interests of humanity is evident in their texts, and this belief moves them into dangerous yet seductive territory.

### THOUGHTFUL SHOALS

The territory these inland souls approach I have termed "thoughtful shoals." A shoal, by definition, is a natural submerged ridge, bank, or bar that rises from the bed of a body of water close to the surface. A shoal is a hazard to navigation. Grammatically, a shoal also can function as the process of proceeding from a greater to a lesser depth of water.

Dickinson marvelously navigated the shoals in her poems and in her epistles. When she was 20, she wrote to her friend Abiah Wood, "The shore is safer, but I love to buffet the sea-- I can count the bitter wrecks here in these pleasant waters, and hear the murmuring winds, but oh, I love the danger" (as cited in Sewall, 1994, p. 25). Almost 30 years later, in 1879, Dickinson penciled the words "If wrecked upon the Shoal of Thought." This is an intriguing poem on many levels. A vessel, for instance, denotes at least three things: a container for holding something; a person into whom some quality (such as grace) is infused - as in a true vessel of the Lord, and a watercraft bigger than a rowboat. The poem asks, "If wrecked upon the Shoal of Thought,/ How is it with the Sea?," and Jeffers' "Point Joe," I believe, gives an apt response to her inquiry.

The Dickinsonian safe simple shunned vessel exists in the form of Jeffers' Chinaman who

is not sailing for adventure or navigating the dangerous shoal for far-flung fortune or worldly success. No, the Chinaman is quietly, deliberately collecting seaweed and drying it on the sea rocks to sustain himself; this action demonstrates aquaculture at its most basic, Thoreauvian, elemental sense. “How is it with the Sea?” Dickinson wonders. The sea of Jeffers provides sustenance for the man—food and a job to do. The sea does not discriminate, even though people shun--avoid, ignore, reject--that which is plain, natural, and easy to understand—the Whitmanian leaves of ocean’s grass, common seaweed. The sea nourishes the man’s body, and its shore offers a simple life, safe and secure from the dangerous shoal. The sea, however, in its allure could ultimately lead to shipwreck as it had at Point Joe in 1906 (Groundspeak Inc., 2021), especially if the man attempts more than his share of daily sea-bread.

The connecting link is evident too in where the poems end. For Dickinson, it’s “Simplicity” and for Jeffers, it’s “a thousand graceful subtleties.” A life of simplicity is rich, reliable, predictable, self-sustaining. Anyone who chooses a less than simple life, the poem may imply, is in danger of crashing at the shoal. In this way, the fixed mountains and the temporal grass—share a common permanence, and the lowly seaweed assumes equal status with the mountains. [It evokes the equation expressed in Emerson’s “The Fable”—the quarrel between the mountain and the squirrel with both coming out winners in the conversation.] The materiality of the shoal evokes the edges of consciousness, and what that space produces resonates with the great and varied elegance of William Blake’s concept of seeing “a World in a Grain of Sand. And a Heaven in a wildflower” (lines 1-2). The equilibrium is established in the interaction. The balance of nature exists but can also tip at any point.

### **PARTIAL WHOLES: ACCEPTING THE VULNERABILITY**

Simple stones contribute to the grandeur of a mountain, and simple drops contribute to the majesty of the ocean. Likewise Jeffers’ “Natural Music” and Dickinson’s “My River Runs To Me” reveal a symbiotic relationship in which

nothing is beautiful except “in relationship to the whole that it is a part of.” In “Natural Music,” we learn the “old voice” amplifies the sounds of little rivers. Their different throats intone one language. But the poem contends that “if we were strong enough to listen” undividedly and without the storm and rage, we would hear the clean voices of the young and the restless - dreaming of lovers. In “To Robinson Jeffers,” poet Czeslaw Milosz (1988) observed the Scotch-Irish wanderer with “All your life listening to the ocean” and concluded “Till mankind passes/ and the pure and stony earth is pounded by the ocean.”

Jeffers conceives of the sea in anthropomorphic terms. The ocean has an old voice. The little rivers intone one language - monotonously, repetitively, rhythmically. The nations are sick. The cities are angry and hungry. The old voice is ultimately contrasted by the child’s voice and the girl’s breathing, dancing, and dreaming. Desire and terror are contrasted with the dreaming of lovers. The poet believes that if we (the readers) were strong enough to listen, we would hear - the child’s voice and the dancer’s breath. These sounds of artistic expression, however, are overpowered by the older voice and the cumulative babble of one language. It takes real effort to discern the clean voice from the cacophony, the part from the whole, the soloist from the symphony. And that is why the poem ends with the dreaming of the lovers - a whole made of parts in relationship.

This relationship find its apotheosis in Dickinson’s poem, where the river is running toward the sea bearing gifts, hoping for a welcome...My River asks if the sea will welcome me and then awaits its reply. Not hearing anything, My River finally addresses “Oh Sea,” asking for attention, a gracious look, and promises to go and bring back something—Brooks, and then practically begs the sea by the imperative “Take me!”. What is noteworthy is that the sea never replies, perhaps because it does not have to. Knowing how the natural world works, we also know that the sea will always take the river’s waters as its own, so why ask [the question]?

A gracious look is what is needful in prodigal fashion - only it is not the Blue Sea that is running toward the river, but the river running to the Sea. The tension - the intention - the desire is evident. The speaker wants to be part of the whole Blue Sea and not parted from the Blue Sea, and thus offers to "fetch" Brooks for the Sea from spotted nooks [from the remote or sheltered spots, from the secluded or obscure places]. Grace, however, does not require compensation or a favor for a transaction. Acceptance is not a whimsical proposition. "Say," as in "O say can you see," is suggested in that final line: "Say---Sea - Take me!" And in the end, we the readers are taken. The poet has stretched us and fetched us, taken us to the Sea as we are taken by it.

To conclude this analysis of souls, shoals, parts and wholes, I invoke another poet on another coast who wrote about ideas of order: Wallace

Stevens (1936). I co-opt his language. Dickinson and Jeffers sang beyond the genius of the sea. The sea was not a mask. Nor were they. Their soul-filled phrases stirred the grinding water and the gasping wind. And it was they and their sea we heard. For they were the makers of the songs they sang. The ever-hooded, tragic-gestured sea was merely a place where Jeffers built himself a house of stones that cried dark tears, and far across his sea another lover dove into the ocean depths and brought to life her own spasmodic, episodic rhymes. We who listen to their songs experience what is ephemeral and what is long-lasting, revealing the inner life and our origins, changing our perceptions by the words we hear, altering our outlook on what is important.

### REFERENCES

- Blake, W. (1863, reprinted 2021). *Auguries of innocence*. <https://www.poetryfoundation.org/poems/43650/auguries-of-innocence>
- The collected poetry of Robinson Jeffers*. Ed. Tim Hunt. Stanford University Press, Vol.1, 1988; Vol. 2, 1989; Vol. 3, 1991; Vol. 4, 2000; Vol. 5, 2001.
- Eberwein, J. D. & McKenzie, C. (Eds.) (2009). *Reading Emily Dickinson's letters: Critical essays*. University of Massachusetts Press.
- Emily Dickinson Archive*. (2021). <https://www.edickinson.org>
- Emily Dickinson Letters / Selected and edited by Emily Fragos* (2011). Alfred Knopf.
- Franklin, R. W. (Ed.). (1998). *The poems of Emily Dickinson*. The Belknap Press of Harvard University Press.
- Gelpi, A. (Ed.). (2003). *The wild god of the world: An anthology of Robinson Jeffers*. Stanford University Press.
- Groundspeak Inc. (2021). Point Joe shipwrecks - Pebble Beach, California. [https://www.waymarking.com/waymarks/wm605G\\_Point\\_Joe\\_shipwrecks\\_Pebble\\_Beach\\_California](https://www.waymarking.com/waymarks/wm605G_Point_Joe_shipwrecks_Pebble_Beach_California)
- Harvard Library. (2021). *The Emily Dickinson collection*. <https://library.harvard.edu/collections/emily-dickinson-collection>
- Jeffers, R. (1938, 1959). *The selected poetry of Robinson Jeffers*. Random House.
- Jeffers, R. (2010). Natural music. <https://robinsonjeffersassociation.org/2010/08/natural-music/>
- Karman, J. (1987). *Robinson Jeffers, Poet of California*. Chronicle Books.

**REFERENCES (CONT'D)**

- Karman, J. (2015). *Robinson Jeffers: Poet and prophet*. Stanford University Press.
- Milosz, C. (1988). "To Robinson Jeffers." In *The Collected Poems: 1931-1987*. Ecco Press.
- Poetry Foundation. (2021). Robinson Jeffers (1887-1962). <https://www.poetryfoundation.org/poets/robinson-jeffers>
- Poetry Foundation. (2021). Emily Dickinson (1830-1886). <https://www.poetryfoundation.org/poets/emily-dickinson>
- Sewall, R. B. (1994). *The life of Emily Dickinson*. Harvard University Press.
- Stevens, W. (1936). *Ideas of order*. Alfred A. Knopf.
- Tennyson, A. (2021). *Ulysses*. <https://www.poetryfoundation.org/poems/45392/ulysses>



# FROM THE CLASSROOM: A PILOT TO HELP REPEATING STUDENTS: ANALYSIS AND INSIGHTS

JENNIFER HARRIS

COLLEGE OF LIBERAL ARTS & SCIENCES

---

Author Note: Jennifer Harris, PhD is Senior Professor, College of Liberal Arts and Sciences, DeVry University, Arlington VA.

---

## ABSTRACT

Certainly, it is hoped that students pass each course on their first attempt. However, due to a variety of circumstances, some students need to repeat a course. As a group, repeating students often bring to the course special challenges, issues, and even emotions due to their first experience. The focus of this pilot was to specifically address the needs of these students by providing them with additional attention and support from their instructor.

At DeVry, students can take a course a second time without additional paperwork. In rare circumstances, a student can receive a dean's permission to take a course for a third time. Additional attempts beyond that are not allowed. All students taking a course a second or third time are considered repeating students.

In the past, online repeating students were enrolled in a section along with other students taking the course for the first time. In other words, no specific placement was done, and each instructor would have a few repeating students in their section. Individual instructors would hopefully provide additional care to the repeaters in their course section. However, with up to 60 students in one course section,

---

*Correspondence regarding this article should be addressed to Jennifer Harris at [jharris2@devry.edu](mailto:jharris2@devry.edu)*

---

Keywords: repeating students, outcomes

instructors are likely to send one note to their repeating students at the beginning of the term, with limited follow up in future weeks. Other student needs are likely to overwhelm the needs of the repeating students.

## REPEATING STUDENTS PILOT PROGRAM

Rather than having all instructors address the needs of a few repeating students, it was theorized to have a few instructors focus specifically on the needs of repeating students. Placing a significant group of repeating students into one section might allow their needs to be a larger focus of the instructor.

A pilot of this concept ran from the January through May 2021 sessions with MATH221, Statistics for Decision Making. This one-semester, undergraduate introduction to statistics course is taken by business and other majors. Assistant Dean of Teaching and Learning Dr. Tonitta McNeal identified repeating students in a variety of sections before each session began. With the help and support of the scheduling team, these students were moved into a repeater-focused section of MATH221. This process was done several times before the session to place as many repeating students as possible in this focused section. These repeaters could then be a focus of the instructor of that section. I taught the repeater-focused section of MATH221 in each of these three sessions.

**INSTRUCTOR FOCUS**

As the instructor of this repeater-focused section, I was able to send more frequent Inspire For Faculty (IFF) messages and tailor them more specifically to a repeater’s situation. (Inspire For Faculty is a student success platform synced to the course that tracks student engagement and recommends email “nudges” from faculty.) The IFF messages highlighted the importance of passing the course on this attempt and reminded them of the instructor’s availability to help them toward success. Furthermore, each week I would identify a few of these students to call, providing a more personal touch to this same urgent and supportive message.

**STUDENT OUTCOMES**

Based on these three repeater-focused MATH221 sections, this pilot was successful in helping repeating students pass. The pass rates of repeating students were comparable to other MATH221 students I taught during the same session. Given that repeating students had failed before, these results are positive.

**Table 1: Pass Rates and Number of Students**

	Jan 2021	Mar 2021	May 2021	TOTAL
All Students	88.0% (50)	87.0% (46)	88.0% (50)	87.7% (146)
Repeaters	90.0% (10)	85.7% (14)	81.8% (11)	85.7% (35)
Non-Repeaters	87.5% (40)	87.5% (32)	89.7% (39)	88.3% (111)

As Table 1 shows, repeating students achieved an 85.7% pass rate, similar to the 88.3% of non-repeating students over the three sessions. Had one more repeating student passed, the pass rates would have been the same as the non-repeating students.

Further, repeating students seemed to appreciate the written and phone outreaches. Several responded positively and with appreciation.

The reasons students were repeating sometimes came through our communications. Several students experienced very challenging personal situations the first time through the course. These students were the most likely to pass on their subsequent attempt. They knew a previously unexpected situation had occurred but were determined to complete their degree and thus were in the course again. Other students had situations that had not changed but were so motivated to obtain their degree, they wanted to repeat the course. These students were less likely to pass, but several did as they came to the course with clearer expectations of the work. Finally, there were students who did not respond to outreach by email or by phone. In this last group of students, either another event occurred in their repeating session detracting them from completion, or they stopped efforts in the course well before the last assignment.

**MARCH IN-DEPTH ANALYSIS**

To get a better sense of what was driving these repeater students, a more complete analysis was done at the end of the March session. In this analysis within MATH221, 16 repeaters were in the focus section, and 41 repeaters were enrolled in other sections taught by a variety of other faculty. (Two repeaters in the focus section dropped later in the term; Table 1 notes 14 repeaters in this session.) The focus section had 16 repeat students, while the most in any other instructor’s section was eight. In this analysis, the focus section retake students did a bit better with 69% earning a C or better, compared with 63% earning a C or better in the other sections. Based on regression analysis, however, having the focus section instructor was not a significant

factor in whether students passed. Upon further work with these data, it seemed that the most likely predictor of a repeat student's success was how close they were to completing their degree and how active they were in the course.

The difference between the focus section students and those in other sections is fairly small. The overall average score of those in my section was 70.7% compared with 69.3% in the other sections. The focus section had a bit higher distribution with 43.75% earning an A or B, compared with 36.59% in the other sections.

Of the variables provided, the percentage of credit hours completed in their program was the most predictive of their score in MATH221. While important and logical, the percentage of credits completed explained only about 10% of why student scores were different. Based on this outcome, the closer a repeater is to completion of their program, the more likely they are to pass. The instructor to which they are assigned is less likely to push these students to successfully completion.

However, sometimes it is the differences at the margins - one more passing student - that can make a difference in a student's life.

### **INSTRUCTOR PERSPECTIVE**

While the instructor may not be the key element here, instructor experiences can be improved based on my experiences with a repeater-focused section of a course. Here are several ways that I was able to more easily focus on these students by having them in one section:

1. Ability to review the grades of these students more regularly. If these students had been spread out among several sections, it would have been more cumbersome to look through their grades.
2. Ease of notes taken. A student roster highlighting the section with repeat students can be maintained so that instructor notes can be taken throughout the session. Based on the notes and being all in the same section, the repeater-focused instructor can

easily track any common trends, such as who had dropped the course or concerns from specific students.

3. Ease of communication. With a variety of sections of the same course, having the retake students placed into one of those sections was helpful. This meant that IFF messages could be sent to all repeating students through that one section, rather than going through all three. While it seems small, the ease of sending these messages means that the instructor is more likely to send repeaters tailored messages.

### **TO BUILD ON SUCCESS**

To improve this pilot in the future, it would be advantageous to send faculty the phone numbers for the repeat students as early as possible. Phone calls were appreciated by those students contacted. Messages were left if the student did not pick up the phone. A second method beyond emails seems a logical step to reach these students. By speaking with the instructor directly, repeating students seemed to feel more supported and connected to the class.

Second, if repeating students are focused in one section, this section should have fewer overall students. Specifically, if most sections of the course have 60 students, repeater-focused sections should be capped at 40 students. This would allow faculty the time to call, reach out, and consistently track these specific students.



# FROM THE CLASSROOM: ENCOURAGING STUDENT INITIATIVE AND DEVELOPMENT OF SOFT SKILLS: *THREE METHODS AND A BONUS*

JOHN M. KAVOURAS

COLLEGE OF LIBERAL ARTS & SCIENCES

---

Author Note: John Kavouras is Professor of English, College of Liberal Arts and Sciences, DeVry University, Seven Hills, OH.

---

## ABSTRACT

The objective of this paper is to provide three practices that help teach/reinforce soft skills, especially in General Education classes, and encourage students to take more responsibility for their learning. Helping students take responsibility and teaching or reinforcing soft skills gives students something they need for their education and career, and it gives them skills employers want but often do not find.

## THREE METHODS AND A BONUS

It is clear that employers value soft skills in prospective employees—and often do not find them—and that we as a university have a responsibility to help our students learn these skills. Although Marbach-Ad et al. (2019) focused on teaching skills in STEM classes, soft skills are universally valued by employers; “these include writing, oral communication, collaboration, and the ability to solve complex problems” (p. 452).

A single course in communications or leadership or problem-solving is a great start, but we have the ability to do more, to reinforce these skills, in almost every class. I use these methods to help build and reinforce soft skills in General

---

*Correspondence regarding this article should be addressed to John Kavouras at [jkavouras@devry.edu](mailto:jkavouras@devry.edu)*

---

Keywords: soft skills, student initiative, careers

Education (Gen Ed) classes, but they can be applied in any class. These methods help professors teach/reinforce soft skills in their classes and encourage students to take more responsibility for their own learning. Coffman (2003), who offers strategies to help students take responsibility for their learning, tells us, “By teaching responsibility, as well as content, in our classrooms, we can enhance learning, raise the level of our classrooms, and produce more responsible members of society” (p. 2).

## BACKGROUND

My suggestions come from teaching Gen Ed courses that use *Connect* and *MindTap*, online learning platforms from McGraw-Hill and Cengage respectively. A student may learn about

## ENCOURAGING STUDENT INITIATIVE AND DEVELOPMENT OF SOFT SKILLS: THREE METHODS AND A BONUS

---

communication and problem-solving in Critical Thinking class, English classes, and others, but these skills are best learned by hearing the lessons again and again in different classes. Here is a look at what skills employers want and how we can foster them.

The 2006 accreditation standards of the AACSB [Association to Advance Collegiate Schools of Business] say that “programs need to provide learning experiences addressing both general and management-specific learning goals including” among others, communication abilities, analytical skills, and reflective thinking (as cited in Beard & Schwieger, 2008, p. 231).

### PLACING THE BALL IN THE STUDENT’S COURT

When students fall behind, as often happens in the first few weeks, especially in entry level classes, I encouraged them through Inspire for Faculty (IFF). (Inspire For Faculty is a student success platform synced to the course that tracks student engagement and recommends email “nudges” from faculty.) I want to let them know that resources are available, to ask them to contact me about their course grade, and to encourage them. In cases where the student showed interest in getting back on track, I would send a list of the work required to get caught up. This often met with little success, and I did not understand why. I had given the student a step-by-step plan to get caught up. What more could I do?

I shifted my approach to involve the student. Instead of offering an open invitation to contact me, I asked them to contact me *with their plan to get caught up*. Most students came up with a rudimentary plan, which meant they had looked at their grade and missing assignments to determine what needed to be done. This was a small step, but an important one. It helped them take responsibility in the current class, and I hoped it would help in their future classes or projects.

I found they were invested in the plan they created rather than receiving demands from me, and they were more likely to get caught up; they were also more aware of how each assignment

affected their grade. Did every student suddenly become invested in the course? Certainly not. However, taking this step to be responsible for their own success made students more likely to succeed.

I do not have numbers to quantify the success of these methods, but I have positive classroom experiences. These methods offer a way to reinforce valuable skills, particularly communication, problem-solving, and taking responsibility, and add value to our students’ education.

### GET CAUGHT UP TO STAY CAUGHT UP

When students got behind in their work, they were likely to become overwhelmed; or get caught up only to then be behind the next week. If students wanted me to re-open a previous week’s assignments, I was very willing to do that when they took the initiative to ask, especially in the first few weeks of the course. However, it seemed like when they got behind, they stayed behind in their work. We have all had students who are continually one week behind. There is a lot of rigmarole in a *Mindtap* or *Connect* course to change due dates. My new method involved requiring something from the student.

Students were required to complete the current week before a previous week’s assignment would be re-opened. In *Mindtap* or *Connect* courses, weekly lessons are often independent of each other and can be done out of order. In order to have a previous assignment re-opened, the students had to take the initiative to a) complete the current week’s work and b) let me know via email that it was done.

### ASSESSING STUDENTS’ COMMUNICATION

I assess any emails students send me. I look at the construction of the message and the student’s name. Occasionally, a student’s email address gives us no indication of their name, or the email name may send a negative impression to a potential employer, colleague, or professor. We have probably all seen a version of shoppingqueen@provider.com or gamer333@provider.com. In this case, I write back and

## ENCOURAGING STUDENT INITIATIVE AND DEVELOPMENT OF SOFT SKILLS: THREE METHODS AND A BONUS

---

ask the student to identify themselves and, sometimes, to reconsider their email name.

If the email is poorly written, I suggest that in future emails, the student start with a person's name, state their message, and sign their own name at the end. In many cases, I also ask them to be more careful about proofreading before sending future emails. Conversely, when I receive a well written email, I compliment the student on taking the time to do it well.

Students who are complimented very often let me know they appreciate the encouragement. In cases where I suggest improvement, I see it in nearly every case.

### **BONUS: WHAT'S IN A NAME?**

Finally, a small change, but easily done and beneficial to the student. During introductory discussion posts, students will often give their preferred name (e.g. my name is Alaina, but everyone calls me Lanny). Students should be called by the name they are most comfortable with. However, it is hard for everyone to remember that. In my reply, I encourage them: "Lanny, Please sign your emails, assignments, and discussion posts with your preferred name so everyone remembers to use it." It is a gentle reminder that the student is responsible for telling others what she wants to be called. This can help a student feel more comfortable or be more familiar, in which case we all benefit.

In my own discussion posts, I address students by name; most of my students do the same. It is another step in knowing how to conduct oneself in classes and in business.

### **CONCLUSION**

These skills are labeled *cross-disciplinary skills, twenty-first-century skills, or soft skills*. No matter the name, they are important to employability, to employers hiring new graduates. However, recent reports indicate that employers feel that new graduates are deficient in these skills (Marbach-Ad et al., 2019, p. 452). The authors go on to say: "Classroom experiences also influence student values....focusing on key cross-disciplinary skills...[such as] writing and problem-solving (Marbach-Ad et al., 2019, p. 454).

We can help students assume more responsibility for their learning. Professor Marcia Magolda (2002) "believes that instructors are in a unique position to help students learn two important lessons: (a) to be less dependent on external authorities, and (b) to take ownership and responsibility for their own lives" (as cited in Coffman, 2003, p. 2).

Coffman's (2003) words are worth remembering. Our teaching methods can help "...produce responsible citizens and productive members of society" (p. 2).

### **REFERENCES**

- Beard, D., & Schwieger, D. (2008). Integrating soft skills assessment through university, college, and programmatic efforts at an AACSB accredited institution. *Journal of Information Systems Education, 19*(2), 229-240.
- Coffman, S. J. (2003). Ten strategies for getting students to take responsibility for their learning. *College Teaching, 51*(1), 2.
- Marbach-Ad, G., Hunt, C., & Thompson, K. V. (2019). Exploring the values undergraduate students attribute to cross-disciplinary skills needed for the workplace: An analysis of five STEM disciplines. *Journal of Science Education and Technology, 28*(5), 452-469. <https://doi.org/10.1007/s10956-019-09778-8>



# FROM THE CLASSROOM: TEAMWORK MAY REDUCE PLAGIARISM

SHARON POPE

COLLEGE OF BUSINESS & MANAGEMENT

---

Author Note: Sharon Pope, EdD, is a Visiting Professor, College of Business & Management, DeVry University, Ohio.

---

## ABSTRACT

Based on a range of experiences in the classroom, as student and as professor, this paper explores whether teamwork reduces plagiarism. A distinction is made between accidental plagiarism and intentional plagiarism. The suggestion is made that further research concerning the use of teams to reduce plagiarism, and the management of teams by professors is needed.

Back in the mid-90's while taking the final course for my MBA, a team member produced a teacher's manual to "aid" the team in addressing our project. Another member of the team objected to using this aid, stating she wanted to use the material learned in the degree to resolve the concern the project presented. This student also stated that this may be looked at as plagiarism, an expulsion threat. The team decided to complete the project without the aid of the teacher's manual.

If the team had decided to use the manual, would this have been plagiarism? According to the sixth edition of the *Publication Manual of the American Psychological Association* (2009), "Whether paraphrasing, quoting an author

---

*Correspondence regarding this article should be addressed to Sharon Pope at [spope@devry.edu](mailto:spope@devry.edu)*

---

Keywords: : teamwork, plagiarism, managing integrity

directly, or describing an idea that influenced your work, you must credit the source" (p. 170). Without citing the manual's source, this would have been plagiarism. If it had been an individual assignment, the team member could have used the manual because the risk was his own. But this was a team assignment, and any decision or risk impacted everyone on the team.

Ascertaining why students plagiarize is an essential portion of prevention. Insley (2011) stated that preventing plagiarism by inspiring and motivating the student is the preferred approach. Several studies state that the main reasons student plagiarize are the following: 1) students are overworked with the demands of the classroom inclusive of their job and family

## TEAMWORK MAY REDUCE PLAGIARISM

---

life (Bluestein, 2018; Klein, 2011; Winrow, 2015); 2) students are not aware of what constitutes plagiarism (Bluestein, 2018; Espinoza & Nájero, 2015; Insley, 2011; Klein, 2011; Winrow, 2015); and 3) students procrastinate (Bluestein, 2018; Insley, 2011; Winrow, 2015).

With these reasons in mind, I thought back to the incident that occurred in graduate school. What was the determining factor that made the team complete the project without the aid of the teacher's manual? The work was divided so each of the members had only a portion to complete. Slackers or procrastinators were encouraged by the team members to complete the work by the deadline. Perhaps it was the one member of the grad team who rejected the teacher's manual and spoke up why this was unethical. Did this verbal exposure make it uncomfortable for the rest of the team? I decided to conduct a simple study to find out more about teams versus individual assignments in reducing plagiarism.

In September through December 2019, I was team leader to six economic classes. Some professors put the students in teams, and some had individuals complete the assignments. In the 122 team assignments, 0.8% plagiarized, and in the 270 individual assignments, 7.0% plagiarized. Of those students who plagiarized, 3 ended up failing the course and 2 were withdrawn. These numbers led to my further investigation if plagiarism was reduced by putting students in teams.

In my marketing classes in 2020, a few students insisted on completing the assignment individually. Knowing that the assignment would be overwhelming for one student to complete, I reduced the tasks for these students. Nevertheless, some students still had a high similarity rating from TurnItIn.com, meaning they had not done the customized assignment but copied a group report. After discussing plagiarism with these students, they redid the assignment. On the other hand, two of the marketing team leaders contacted me stating that one member of their team had a high similarity rating from TurnItIn.com, and the team leaders requested that I extend the assignment

due date until this high similarity was corrected by the student.

One esteemed colleague surmised that the team seemed to "police" anti-plagiarism. Biswas (2014) explained that students in teams take pride in the ownership of their portion of the paper and are motivated to present it to the group. Another study showed that students working in teams knew it was their job to contribute to the team's efforts, and the benefits of teamwork were evidenced by positive synergy (Frykedal & Samuelson, 2016).

In managing integrity, Cady et al. (2019) believed that when a team is more like a group, it encourages self-motivation and resistance to disappointing the others in the team. If students feel they lack theoretical knowledge (Frykedal & Samuelson 2016) or English as a Second Language (ESL) students feel they lack language tools, an intimate group may assist these students through synergy (Bromley, 2015).

According to a recent study, students in teams need guidance and confidence building from the professor (Cady et al., 2019). Often, if a team lacks the input or communication with the professor, the team struggles, according to Frykedal and Samuelson (2016). Appropriate professor involvement improves teams and creates more of a community atmosphere, as described by DeWalt and Mayberry (2019) and Morgan et al. (2019).

Further research should be done on teams and plagiarism to discover if teams do prevent plagiarism and why. If creating teams reduces plagiarism, finding ways to guide professors on managing and organizing teams should be the next step. Accidental or intentional plagiarism is here to stay, and as professors, we must find ways to prohibit cheating and ways to encourage critical thinking.

### REFERENCES

- American Psychological Association. (2009). *Publication manual of the American Psychological Association (6th ed.)*. American Psychological Association.
- Biswas, A. E. (2014). Lessons in citizenship: Using collaboration in the classroom to build community, foster academic integrity, and model civic responsibility. *Journal on Excellence in College Teaching, 25(1)*, 9-25.
- Bluestein, S. A. (2018). Preventing plagiarism (and other forms of cheating): Advice from students and faculty. *New Directions for Community College, 183*, 7-14. doi:10.1002/cc.20312
- Bromley, P. (2015). Praxis to practice: Academic integrity equals professional integrity. *Australian Nursing & Midwifery Journal, 23(3)*, 33.
- Cady, S. H., Brodke, M., & Parker, N. (2019). When a team is more like a group: Improving individual motivation by managing integrity through team action processes. *Public Integrity, 21(1)*, 86-103. doi:10.1080/10999922.2017.1419052
- DeWalt, L., & Mayberry, T. (2019). Our journey to improve coaching. *Educational Leadership, 77(3)*, 56-61.
- Espinoza, L. A., & Nájera, J. M. (2015). How to correct teaching methods that favour plagiarism: Recommendations from teachers and students in a Spanish language distance education university. *Assessment & Evaluation in Higher Education, 40(8)*, 1070-1078. doi:org/10.1080/02602983.2014.966053
- Frykedal, K. F., & Samuelson, M. (2016). "What's in it for me?" A study on student's accommodation or resistance during group work. *Scandinavian Journal of Educational Research, 60(5)*, 500-514. doi:10.1080/00313831.2015.1024735
- Insley, R. (2011). Managing plagiarism: A preventive approach. *Business Communication Quarterly 74(3)*, 183-187. doi:1177/1080569911404058
- Klein, D. (2011). Why learners choose plagiarism: A review of the literature. *Interdisciplinary Journal of E-Learning and Learning Objects, 7*, 97-110.
- Morgan, D. N., Bates, C. C., Aker, L. D., Dawson, J., Doswell, B. D., Lancaster, P., Puig, E. A., & Williams, J. L. (2019). Coaching and professional learning: Looking for inspiration. *Reading Teacher, 73(3)*, 385-389. doi:10.1002/trtr.1859
- Winrow, A. R. (2015). Academic integrity and the heterogenous student body. *Global Education Journal, 2015(2)*, 77-91.



# MORAL MATTERS

Dooley, M. (2015.) *Moral Matters: A Philosophy of Homecoming*. London and New York: Bloomsbury Academic. ISBN 978-1472526151. 232 pp. Kindle: \$31.50

JOHN L. MURPHY

COLLEGE OF LIBERAL ARTS & SCIENCES

---

Reviewer Note: John L. Murphy, PhD. Senior Professor, Humanities at DeVry University Long Beach, CA.

---

As foreign affairs correspondent for the *Sunday Independent* and a columnist for the *Irish Daily Mail*, this Dublin-based professor-critic addressed a wider readership with little knowledge of, or patience for, exhortations of his colleagues in philosophy, with sinecures as tenured radicals. Mark Dooley wants them, and us, to heed his learned alerts. He knows this cabal who occupy our universities, mass media, bureaucracies, schools of education, and countless classrooms. Once a post-modernist, he has distanced himself from them, better able to admit their genuine successes and decry their many failures to sustain those hungering for truth, rather than peddled rootless, unfettered, secular, and progressive fruits, cultivated as if instant gratification.

I doubt if the apt pun Professor Dooley applies to our human condition in the “age of normal nihilism” is attributable to him; I used it decades ago in teaching the DeVry capstone course *Technology, Culture, and Society*. But his definition of *Cyberia* merits its elegant introduction. “It is a no man’s land devoid of the public-private distinction, a spectral sphere where no one can hide, a domain where no one ever sleeps.” With neither past nor future, the “perpetual now” of cyber-time satisfies our

every desire, without delay. (Amazon's Jeff Bezos coins this as “customer ecstasy,” a “one-click” delivery of dreams overnight.) His lament about our detachment as we charge our devices, our disconnect as we link, will be novel to nobody now.

Therefore, the message within *Moral Matters* circulates back to what the Greek word *nostalgia* encapsulates (in part, for Dooley elides the *algia*=pain equation) as the “homecoming” we long for: “to opt for belonging over exile, for attachment over estrangement, for love over loss.” Information abounds as functional data; but learning requires processing as well as quantifying. That's why I, as a humanist, cling to my niche at this institution. Fiber-optics, wi-fi, AI, 5G and GPS may short-circuit our hard-wiring. Mark Dooley, as wired as us into this solid-state schematic, hears its constant, dissonant static.

His chapters progress through the modern inheritance of the Enlightenment and liberalism. Educational maverick R.D. Laing shares subversive space with social rebel Jean-Jacques Rousseau. Aristotelian “practical wisdom” trains one in how to “thrive in a world of competing interests.” G.W.F. Hegel looms large with his master-slave model. Mark Dooley finds this “underscores the illusion of self-mastery,” and

imposes upon our “one-click” mind the discipline of self-fulfillment. A nod at least to the dharmateaching of the Buddha would have graced here.

Dr. Dooley maneuvers alongside Edmund Burke and Roger Scruton. They promoted a wiser alternative to our “you can have it all” affirmations. Faith, genuinely fostered “family values,” and stability of domesticity and marital commitment provide stronger foundation than sexual license.

Against our “culture of amnesia,” that Burkean ideal would be recognized by few blowhards aligning themselves today as right wing. For Burke knew the origins of these right and left labels, from seating rows in the post-revolutionary French National Assembly. He narrated presciently in 1790 the practical and ideological dangers of libertines posing as reformers, rabble-rousers justifying what many today egg on as “social unrest” or soft-pedal as “activism.”

Burke critiqued the damage done when rioters and insurrectionists devastate the legacy of tradition and deny the caution of experience. A timely reminder. Burke advised humble respect paid to our forebears as if the departed too had a vote, a say in contemporary political choices and cultural creations. As his fellow Irishman phrases it: “Whereas liberals affirm absence, loss, difference and otherness, conservatives consider it a duty to resist the ‘catastrophe of memory,’ by affirming the presence of the dead in all they have left behind.” After all, Burke’s disciple Dr. Dooley asks us: “those whom leftists habitually label as fascists, so that if our status quo itself remains corrupt or Who goes to the isolation of the grave hoping they shall not be recollected?”

He continues, directing a reader’s gaze towards Plato’s cave, Cyberia’s phantasms, and pragmatism’s naivete. What progress can be achieved if (as Richard Rorty, William James, and John Dewey presaged) the contingent, novel, and fantastic redirect us from a surer, careful, conservative approach which adapts change by working within the “existing order”? One may counter that contemporary populists and

traditionalists rally compromised, what is to be done?

In reply, the remainder of *Moral Matters* gathers cautionary tales: those “tyrannies and theocracies of the Middle East” suppress cultural and religious “difference” far more than Western democracies. Mark Dooley retorts that “self-enclosing nationalisms” corrode Iraq and Syria more than regimes in Europe or America. One wonders what Dooley opines about Brexit or Trump, both voted in after this book’s publication. The European Union so idolized by neo-liberals and mainstream journalism represents, as Dooley warns, its own capitalist hegemony. It flattens both local and community heritage, and, beholden to globalism, imposes quotas which bankrupt small farmers. (As a 2019 French account, see Michel Houellebecq’s novel *Serotonin*.)

Mark Dooley even-handedly balances Scruton’s anti-corporate and pro-environmental positions, distinguishing them from garden-variety pundits tilting rightward. “Roots are difficult to put down, but easy to sever.” As for the turn of *Moral Matters*, it faces west; an audience abroad may ask how China, India, Russia, or Africa tip or even the scale of destruction he weighs from a verdant dwelling, his vantage point on the gridlocked, open-border, greedy, boom-bust capital of Ireland.

In sum, this small study will appeal to those dwindling few who prefer Mozart to Miley Cyrus, in Mark Dooley’s estimation. Like his mid-life inspirational role model Sir Roger, this convinced follower advises a turn away from this screen to nourish our own vegetable plot, and away from these gadgets to enjoy one’s family. Simple solutions, even if like us, that Professor likely keeps tapping away in this inevitable format for the identical medium where I type this for you to read.

---

*Correspondence regarding this book review should be addressed to Dr. Murphy at [jmurphy2@devry.edu](mailto:jmurphy2@devry.edu)*

---



# ADULT EDUCATION AND RACE

Rocco, T. S., Smith, M. C., Mizzi, R. C., Merriweather, L. R., & Hawley, J. D. (Eds.). (2020). *The handbook for adult and continuing education*. Stylus Publishing LLC

JACQUELINE B. SALDANA

ASSISTANT DEAN OF TEACHING AND LEARNING

---

Reviewer Note: Jacqueline B. Saldana, PhD. Assistant Dean of Teaching and Learning at DeVry University

---

The *Handbook of Adult and Continuing Education* is a collaboration of approximately 90 scholars, researchers, practitioners, administrators, and activists in adult and continuing education from different institutions in Canada and the United States. Tonette S. Rocco, M. Cecil Smith, Robert C. Mizzi, Lisa R. Merriweather, and Joshua D. Hawley are the editors of this handbook that illustrates 90 years of adult education theory from its foundations to contemporary issues such as culture, race, gender, sexuality, and social privilege. Although handbooks on higher education had been published since the 1930s, this is the first attempt to illustrate these contemporary issues through the lens of today's social and political climate. The handbook would be of interest to adult education practitioners, learners, scholars, and policymakers who are trying to use this knowledge to shape the future of adult education.

The *Handbook of Adult and Continuing Education* is divided into five sections. The first section is Foundations, a segment with six chapters that contain “the developments, core debates, perspectives, and key principles of adult education” (p. 4). This section highlights the historical underpinnings of the field, and especially the concept of lifelong learners.

The second section of the handbook is *Understanding Adult Learning*, with five chapters that deconstruct how adult learners “consume” knowledge through motivation, development, access participation, and support systems (i.e., mentoring). Adult learning is presented as full of complex dynamics involving many stakeholders (e.g., faculty, students, and clients) on diverse relationships informed by psychological, emotional, and physical factors. *Teaching Practices and Administrative Leadership* is the third section of the handbook and informs the development, design, and administration of adult education programs, teaching practices, and planning and assessment. These seven chapters offer renewed perspectives on program planning, constructive evaluation, digital technologies for teaching and learning, public pedagogy, and new teaching platforms. The core theme of this section is that teaching happens in connection with factors such as education administration, social awareness, and new technologies.

The fourth section is *Formal and Informal Learning Contexts*, the more robust segment with 17 chapters on how traditional and novel adult education manifest across a wide variety of teaching areas that include literacy, GED,

prison education, military education, workplace learning, union education, religious and spiritual education, continuing education, and higher education. The main idea through these chapters is that adult literacy can shape the personal and professional wellbeing of learners through effective program administration. Adult learners present with specific vulnerabilities and needs and the customization of learning spaces in these different contexts will allow for meaningful adult education that can become a lifelong learning experience. The last section of the handbook is *Contemporary Issues*, a segment with 11 chapters that present inquiry lines about the current social and political climate in both formal and informal settings and their effect on adult and continuing education. Topics about social activism, LGBT issues, intergenerational identities, whiteness, social privilege, and migrant education are included in this section. Core themes of this last segment of the handbook are that “everything is connected” (p. 6) and the existence of unconscious biases would have an effect on recurring tensions, conflicts, challenges, and the future priorities within adult education institutions.

Scholars Lorenzo Bowman and Jeremy Bohonos authored in this section the chapter *Adult Education and Race: A Critical Race Theory Analysis*, a historical and theoretical perspective of race within the field of adult education. The chapter’s discussions use the perspective of the Critical Race Theory (CRT), a theoretical framework that examines the influences of societal structures, cultural assumptions, and psychological factors. According to Bowman and Bohonos (p. 409), CRT embraces the permanence of racism, counter-storytelling, whiteness as property, interest convergence, the critique of liberalism, and differential racialization. A big takeaway of this chapter is the evident treatment of racism in adult education as binary (Black/White) when the racial experience in North America is broader with many racial groups experiencing similar marginalization. The authors emphasize that adult education organizations can accomplish racial social justice and cultural inclusiveness when they pay attention to the gatekeepers or

representative voices of these underrepresented groups. Like many other scholars, Bowman and Bohonos agree that more can be done to impact inclusiveness, including faculty hiring and listening to the many voices that conform in the academic landscape of today’s adult education.

The *Handbook of Adult and Continuing Education* is a relevant compendium of historical and theoretical perspectives that incorporates program effectiveness and current social issues for policymaking. Each section of the handbook tries to sustain an interdisciplinary perspective across subject matter disciplines and historical contexts. Although the handbook accomplishes to include multicultural theoretical perspectives, cultural diversity is a complex construct with deep ramifications for both policymakers and educational institutions. The compilation also reports the education philosophies of different cultures, but the theoretical work is written mostly from the Western educational paradigms. This compilation represents an opportunity for adult education professionals from diverse fields to both reflect on the evolution of the field and to plan proactive responses to a culture that is changing. The handbook also represents the tensions between the two adult education stances of pragmatism and evidence-based practice versus the principles of social justice and equity. The editors stress the role of adult education in expanding knowledge, training, and literacy instruction during the times in which still the continued devaluation of black lives and minorities plus the Covid-19 pandemic have created unprecedented times of economic and social disruption. Adult and continuing education are presented as the mechanism to help nations to overcome these challenges and to design programs to deliver the skills that adult learners need to navigate the workplace challenges of today.

---

*Correspondence regarding this book review should be addressed to Dr. Saldana: [jsaldana@devry.edu](mailto:jsaldana@devry.edu)*

---



# ILLUSTRIOUS FOUNDING FATHERS

Larson, E.J. (2020) *Franklin and Washington: The Founding Partnership*. HarperCollins Publishers, 2020. ISBN: 978-0-06-288015-4, Hardcover, 335 pages, USA \$29.99

SHAWN SCHUMACHER  
COLLEGE OF LIBERAL ARTS & SCIENCES

---

Reviewer Note: Shawn Schumacher, PhD. Senior Professor English and Humanities at DeVry University, Addison, IL.

---

While in Philadelphia last summer, helping my son move into his new apartment as he began graduate school, we viewed the city alight with both peaceful and violent protests - inspirational rallies and dreadful rioting - in the wake of the George Floyd murder on March 25, 2020 in Minneapolis. The demonstrations throughout Philadelphia called for justice for Floyd and were caused by police brutality, institutional racism against African Americans, and economic, racial, and social inequality. These modern-day problems of injustice and tumultuous times in Philadelphia and throughout America - albeit with different issues—mirror the turbulent age of the American colonies' fight for freedom against Great Britain in the late 18th century. More specifically, the legacy of systemic racism, which carries on in our nation currently, is deeply rooted in the infancy of the United States and perpetuated by two of our most revered and celebrated Founding Fathers.

In his joint biography, *Franklin and Washington: The Founding Partnership*, Pulitzer Prize-winning author Edward J. Larson vividly details the lives of Ben Franklin and George Washington, their leadership collaborations before, during, and after the Revolutionary War, their historic working partnership, and most notably within the book, their views on slavery and human bondage related to the issues in present-day America.

As history has well documented, and Larson explains clearly and thoroughly, America's Founding Fathers risked their lives and their fortunes on delivering freedom and liberty to the American colonies from England throughout the 1700s, and once independence was established, were steadfast in their commitment to its preservation as a young, thriving nation. Benjamin Franklin and George Washington were two Founding Fathers, as Larson justifies throughout his book, who forged a strong working partnership and joined together in three great endeavors during this time: The creation of a unified state militia to fight for independence, the funding of monetary and military sources through France for the American cause, and the combined service during the Constitutional Convention in 1787, which aided the new nation into becoming a robust national union rather than a simple confederation of states. As Larson depicts through historical documents and letters in the early chapters of his text, both Franklin and Washington brought differing strengths and characteristics to their positions as leaders and as men who needed to collaborate brilliantly, along with other remarkable patriots including John Adams, Thomas Jefferson, and James Madison, in order to light the passion for freedom within the citizenship as well as within the distressed Continental Army during the darkest days of the Revolution.

Although both Franklin and Washington were determined, tireless leaders and held a shared vision of a united and independent nation based on a strong centralized Federal government, Larson lucidly illuminates the striking differences between these two extraordinary men in his intimate leadership study. Franklin, who was 26 years the senior to Washington, held an amiable, intelligent persona of humble origins and was viewed by the general public as America's "approachable uncle". Franklin's brilliance as a celebrated scientist, a hard-working and respected printer and publisher, and a writer whose caustic, satirical style, allowed Franklin to be viewed as industrious and enlightened, yet unassuming. On the other hand, Washington was the revered general—a dutiful and honorable leader of men through every stage of his adult life - who served and fought with the British during the French and Indian War and courageously accepted the role of Commander in Chief of the Continental Army to fight against Great Britain to earn America's quest for liberty during the War for Independence. Washington, who was the beneficiary of inherited and married wealth, irradiated a sense of aristocracy and aloofness, and as Larson well points out "seemed to be made of marble and standing on a pedestal".

In the final section of his book, Larson addresses one fundamental difference between Franklin and Washington relating to a significant problem for many in today's America—the issue of slavery and human bondage. In an engaging fashion, Larson confronts the issue with staunch candor, as he relays the historical background of slave ownership and the philosophical aspects of human bondage by Franklin and Washington. Larson shares that Franklin owned household slaves as a young man in living in Philadelphia, but throughout his middle age years, he saw the error of his ways, became a supporter of black education, and wrote several essays on criticizing the effects of slavery on American society. By 1787, Franklin had freed all his house slaves and eventually became president of Pennsylvania's abolition society.

In vast contrast, as Larson compellingly relates, Washington enslaved more than 300 people at

his Mount Vernon plantation and clothed and housed his slaves poorly. In addition, Washington was known for his ruthless treatment of his slaves by having them whipped regularly and for relentlessly pursuing them when any tried to escape the estate. In Larson's view, Washington was "on the wrong side of history when it came to slavery", and at the end of his political career and nearing the end of his life, Washington began to acknowledge the unethical and immoral scope of slavery, yet the differing necessity of slavery was primarily based on regional and economic differences between the states that relied on merchant and shop-keeping, compared to those which relied on agriculture. Washington's eventual understanding of human bondage allowed him to write in his will that, upon his death, all his slaves would be freed - a long overdue act by an iconic leader whose sole mission was to achieve liberty for the citizens of America.

Edward J. Larson's *Franklin and Washington: The Founding Partnership* is a noteworthy study in similarities and differences among these two illustrious Founding Fathers. Although Franklin was the abolitionist freethinker, scientist, and writer from the seat of American Independence in Philadelphia and Washington was the distinguished leader, general, and President who held slaves from the rural south, both were vital as the framers of American independence and as the two indispensable partners attempting to form a more perfect union at the dawning of a nation.

---

*Correspondence regarding this book review should be addressed to Dr Schumacher at [sschumacher@devry.edu](mailto:sschumacher@devry.edu)*

---



# GENERATION Z GOES TO COLLEGE

Seemiller, C. & Grace, M. (2016). *Generation Z goes to college*. Jossey-Bass. 286 pages, ISBN:13-9781119143451. \$29.95.

RICHARD L. SMITH

COLLEGE OF BUSINESS AND MANAGEMENT

---

Reviewer Note: Richard L. Smith, ScD. Professor of Management at Keller Graduate School of Management, DeVry University, Arlington, VA.

---

In Dr. Bob Pletka's book, *Educating the Net Generation*, he explains, "Because the Net Generation has been shaped by an environment that is information and communication rich, team-based, achievement oriented, visually based, and instantly responsive, they often recoil from isolated, lecture-based, information dated, responsive-deficient silos of learning comprised of outdated technologies from the mid-20th century" (p.13). This observation describes the new and incoming generation of college students known as Generation Z (also known as the iGeneration, Post-Millennials, the Net Generation, and The Anxious Generation). With four very different generations in the college classrooms today, the faculty challenges to provide relevant and appropriate teaching styles have multiplied. Much has been written about Generations X and Y (Millennials), but the newest entrants have unique characteristics that require even broader teaching strategies to be effective and create the optimum learning environment. So, as Butch Cassidy famously said to the Sundance Kid, "Who are those guys?" (Butch Cassidy and the Sundance Kid).

## WHO (AND WHAT) ARE THE GENERATION Z STUDENTS IN MY CLASSROOM?

Since I am a Boomer – and an early Boomer at that – even with three decades of experience, I still struggle with the vast changes in the

characteristics, preferences, behaviors, and expectations of my multi-generational students. I certainly understand Generation X; they are my children. I enjoy Millennials; they are my grandchildren. But Generation Z is often an enigma. Fortunately, Seemiller and Grace (2016) have provided a "roadmap" to both who Generation Z is, but more importantly, their specific characteristics in the college environment.

To begin to accommodate the iGens, Seemiller and Grace (two academics and authors from different generations) have created a readable, practical, and entertaining tome that first answers Butch Cassidy's question by presenting the new college entrants as a very distinct body, both in terms of preferences and behaviors, but also the unique cognitive processes and technology skills they bring to the classroom. To accomplish this, the authors surveyed over 1100 students from 15 partner institutions with an instrument examining generational characteristics, learning styles, environment preferences, communication, relationships, social media use, leadership styles, social issues and engagement, and their spiritual/political world view. All the definitive results are clearly explained in the analysis. Seemiller, C. & Grace, M. (2016) recommend some strategies that should be particularly effective for Generation Z learners. First, they suggest that while

the content is voluminous, the real learning strategies are associated with the learning process and how they comprehend the materials.

### SO, WHAT'S NEXT?

Every educator recognizes, that beyond the quantitative data associated with any learning experience, there are qualitative factors that differentiate professors. It is the adaptation of the quantitative information that permits professors to “create and adjust policies, practices, curriculum, programs, environments and cultures to best educate, relate to and work with Generation Z” (Seemiller, C. & Grace, M. , p.191) and will find most effective in teaching the Generation Z students.

So, “the rest of the story” for educators could be a careful analysis of the Full Range Leadership Model. One Transformational Leadership concept that offers a potential framework for leadership in the classroom is the several applications of Adaptive Leadership providing differentiated instruction. Two prior articles, *Broadening the View of Differentiated Instruction* (Parsons, S.A., Dodman, S.L., & Burrowbridge, S.C., 2013) and *Problem-Based and Project-Based Learning: Promoting Differentiated Instruction* (Galvin, M. E. & Coronado, J.M., 2014) may well be the opportunities to provide the best education.

The most significant “take-aways” from the book are not necessarily just the better understanding of a new generation of learners in the classroom. Instead, the process of effectively engaging with Generation Z offers new paradigms for professors to create the developmental strategies for building student capacity in the newest iteration of the student body population.

Thus, for professors, logical approaches and experiential activities are preferred (p. 175). The text also suggests that while Generation Z members are intrapersonal learners, they also appreciate group processes and dynamics. Thus, a blended approach to teaching best satisfies both criteria (p. 179). Finally, since the Generation Zs are so adept at using technology,

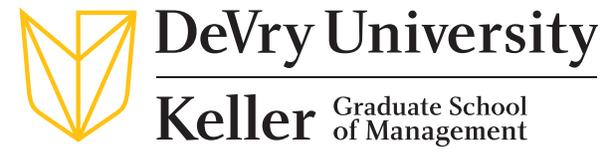
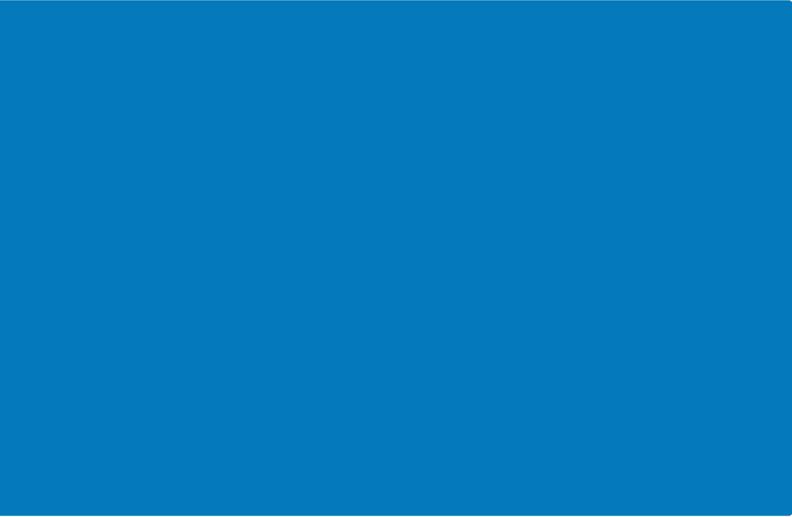
the curriculum should embrace multiple technology applications integrated with a flexible curriculum and time constraints (p.185).

To be effective in the classroom, professors must be adaptable to the personalities, learning preferences, and technology demands of a spectrum of learners. We currently have significant experience with adapting to Generations X and Y, but Generation Z provides new and distinct challenges. Larry Rosen (2010), an early-adopter of identifying Generation Z methodologies, explained in *Rewired: Understanding the I Generation and How They Learn* with the initial acknowledgement over a decade ago there is a Generation Z, “Now that we have seen how young people consume an enormous variety of media, and do it more hours a day than any generation before them, it is important to understand how they use it so educators can begin thinking about alternative ways to stimulate their students”(Seemiller, C. & Grace, M. , p. 19).

While the text recommends a focus on intentional leader competency development, as well as enhanced and creative technology applications, it does not provide all the next “pieces of the puzzle” – the definitive strategies for professors as Generation Z Goes to College.

**REFERENCES**

- Butch Cassidy and the Sundance Kid Quotes.* (n.d.). Quotes.net. June 16, 2021, [https://www.quotes.net/movies/butch\\_cassidy\\_and\\_the\\_sundance\\_kid\\_quotes\\_1681](https://www.quotes.net/movies/butch_cassidy_and_the_sundance_kid_quotes_1681)
- Galvin, M. E. & Coronado, J.M. (2014). Problem-based and project-based learning: Promoting differentiated instruction. *National Teacher Education Journal*, 7(4),39-42.
- Parsons, S.A., Dodman, S.L., & Burrowbridge, S.C. (2013). Broadening the view of differentiated instruction. *Phi Delta Kappan*, 95 (1), 38-42.
- Pletka, B. (2007). *Educating the net generation: How to engage students in the 21st century*. Santa Monica Press, LLC, 2nd ed.
- Rosen. L. D. (2010). *Rewired: Understanding the iGeneration and the way they learn*. Palgrave Macmillan/St. Martin's Press.
- Seemiller, C. & Grace, M. (2016). *Generation Z goes to college*. Jossey-Bass.



**DeVry University**

**Keller** Graduate School  
of Management

**DeVry University**  
**1200 E. Diehl Rd**  
**Naperville, IL 60563**  
**877.388.3374**

[devry.edu](http://devry.edu)

For comprehensive consumer information, visit [devry.edu/studentconsumerinfo](http://devry.edu/studentconsumerinfo)

In New York State, DeVry University operates as DeVry College of New York.

©2021 DeVry Educational Development Corp. All rights reserved. 10/21 50