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Manufacturing and Construction Workforce: Unveiling the Backbone of Industry Leading towards TechEnriching Humanity

(Instructional Materials in Civil & Construction Technology)

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A B S T R A C T

This research study delves into the profound influence of personnel technology on the efficiency and job satisfaction of the industrial workforce, with a specific focus on the construction sector. The increasing integration of advanced technologies in shaping the modern industrial landscape has led to exploring the often-overlooked realm of personnel technology—how workers' actions and behaviors are influenced. By analyzing various personnel practices, including hiring, training, working conditions, advancement, and retirement, this research seeks to uncover the intricacies of personnel technology and its impact on individuals contributing to the construction industry. This study investigates the influence of industrial technology on manufacturing and construction workforces, focusing on personnel technology, using literature and secondary sources to provide insights. The analysis yields valuable insights for policymakers, employers, and industrial workers, allowing them to make more informed career decisions and promoting a more enriching and satisfied industrial workforce. The author concluded that this course provides knowledge on various construction industry jobs and practices, enabling informed career decisions and understanding of workforce management. It also gained knowledge to guide professional journeys, contribute to industry advancement, and embrace a future leveraging technology for humanity's enrichment and a better world. Lastly, it teaches individuals about fulfilling professional journeys, contributing to industry advancement, and embracing technology for a better world.

A R T I C L E I N F O

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INTRODUCTION

Industrial products have played a profound role in transforming the lives of people across the globe (Inglehart, 2018). Industrial products have become an integral part of our daily existence, from the simple convenience of riding a bicycle to delivering newspapers efficiently to finding shelter and comfort within the confines of a well-built house during a rainstorm. In the realm of education, the impact of industrial products on society is explored through subjects like geography and history (Pepito, 2023). The study of industrial arts delves into how industrial production affects workers' lives and encompasses the creation and utilization of these products.

This learning journey will focus on the personnel within the construction and manufacturing sectors and the omnipresent technology that surrounds them. Understanding the diverse roles of workers in these fields and an overview of other major groups within the labor force provides valuable insight into the vast world of industry and wage-based employment (Carlino & Kerr, 2015). Students must grasp the significance of these professions, as statistics indicate that many will eventually enter the industrial workforce upon completing their education (Dunning et al., 2004).

Throughout this course, we will explore the lives of construction and manufacturing workers, shedding light on their roles, responsibilities, and challenges. We will also gain an understanding of personnel technology, which plays a pivotal role in shaping modern industries. By the end of this journey, you will be equipped with valuable knowledge that will aid you in making informed decisions about potential career paths within the industrial realm. Whether you embrace a future in industry or pursue other avenues, the insights gained here will guide you towards a fulfilling and meaningful professional journey. Let us explore industrial employment and its diverse array of jobs, empowering you to make choices that align with your passion and capabilities.

OBJECTIVES

1. Understanding Industrial Technology: Gain a clear comprehension of industrial technology and its significance in shaping modern society. Recognize the role of industrial technology in providing essential goods and products that enhance our daily lives.

2. Exploring Construction Technology: Explore the field of construction technology as a pivotal part of industrial technology. Understand its role in building structures and projects on-site, meeting the diverse needs of our growing society.

3. Identifying Construction Elements: Identify and categorize the key components of construction technology, including management technology, personnel technology, and production technology. Recognize how these elements work together to ensure successful construction projects.

RESEARCH METHODOLOGY

This research aimed to explore the impact of industrial technology on the manufacturing and construction workforce, with a specific focus on personnel technology and its role in shaping the modern industry. This study merely outlined the purely literature-based approach to explore the impact of industrial technology on the manufacturing and construction workforce, with a specific emphasis on personnel technology. By relying on existing literature and secondary sources, the research sought to synthesize and present comprehensive insights into the significance of industrial technology in shaping modern industries and empowering the workforce. The research adhered to academic standards by properly citing and acknowledging all sources used in the literature review.

RESULT AND DISCUSSION

The course "Manufacturing and Construction Workforce: Unveiling the Backbone of Industry Leading towards TechEnriching Humanity" delves into the significance of industrial technology in shaping modern society and its role in providing essential goods for daily life. It explores construction technology as a pivotal part of industrial technology, emphasizing how it meets the diverse needs of society through on-site projects. The interface of people and technology is explored, focusing on personnel technology's role in influencing worker behavior and promoting workplace safety and efficiency. The course aims to empower students to make informed decisions about potential career paths within the industrial realm by comprehending personnel practices and their impact on the construction workforce. By immersing students in the construction world and exploring diverse personnel strategies, the course equips learners to address real-world challenges and make thoughtful choices for their future industrial careers.

Manufacturing and Construction Workforce: Unveiling the Backbone of Industry

Over 50% of 15-year-olds are in the labor force. The labor force participation rate (LFPR) was 58.7 percent in October 2020 (Bloom et al., 2018). 43.65 million Filipinos (15+) were unemployed or employed in October 2020. Among the regions, Caraga and Northern Mindanao had the highest LFPR, 63.8 percent, while the Zamboanga Peninsula had the lowest LFPR, 55.7 percent. (Table 1 and Figure 1)

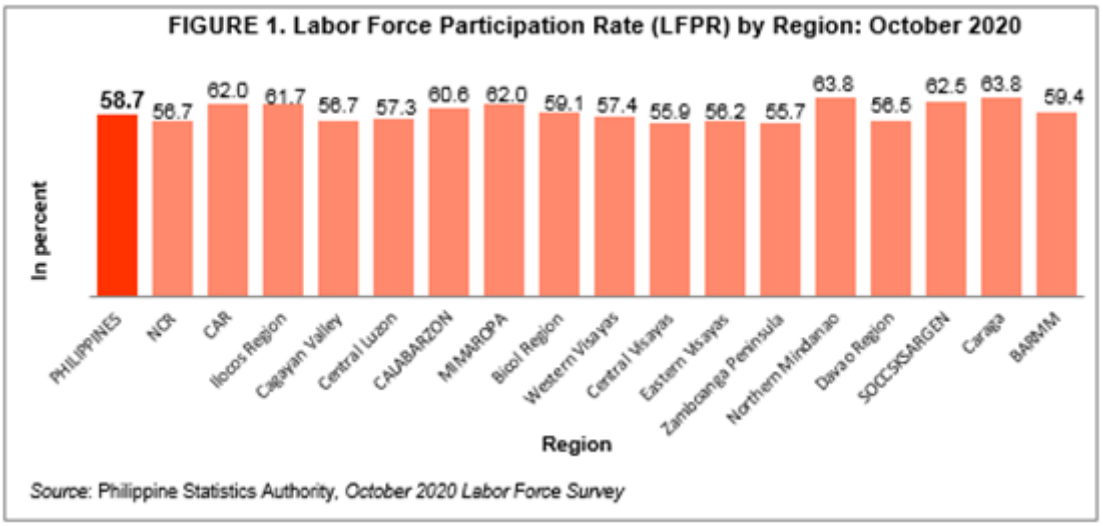

Figure 1. Labor Force Participation Rate by Region: October 2020

The Labor Force Participation Rate (LFPR) is a key economic indicator that measures the proportion of the working-age population (typically individuals aged 16 and above) who are individuals employed or seeking employment (Barabat et al., 2022). It provides insights into the extent to which the working-age population is engaged in the labor market. LFPR is crucial for labor market health and the economy(Bowen & Finegan, 2015).

The LFPR by region in October 2020 collects data from various sources, such as household surveys and employment reports, to determine the number of people who are part of the labor force in specific geographic regions (Besamusca et al., 2015). These regions could be states, cities, or broader geographic areas like metropolitan areas or census divisions.

LFPR calculation divides the labor force by the total working-age population and multiplies it by 100.

1.4. The formula for LFPR is as follows:

LFPR = (Labor Force / Working-Age Population) * 100

The labor force includes employed individuals (those with jobs) and unemployed individuals (those actively seeking employment but have yet to find a job). The working-age population refers to the total number of working-age individuals who are eligible to participate in the labor market.

BLS collects LFPR data through surveys like CPS (Statistics, 2014). Surveys gather data on employment, unemployment, and labor force participation from a representative sample.

The LFPR can vary across regions due to economic conditions, industry composition, demographics, and local labor market dynamics. Some regions may have higher LFPRs because of more substantial job opportunities or industries, while others may have lower LFPRs due to economic challenges or other factors affecting workforce participation (Massey & Parr, 2012).

By analyzing LFPR data by region, policymakers, economists, and researchers can gain insights into the regional labor market trends, identify disparities, and tailor targeted interventions to address employment challenges in specific areas. The LFPR data can help inform decisions related to workforce development, economic planning, and policymaking at both regional and national levels.

1.5. Exploring the Interface of People and Technology

In pursuing creating and manufacturing goods, we find ourselves immersed in a world of cutting-edge technology. However, another technology domain often remains unexplored—personnel technology, which revolves around influencing people's actions and behaviors. This year, you will delve into the technology employed in producing constructed goods and the technologies that impact the workers responsible for making these products. Personnel technology, often called "ways of causing people to do things," holds immense significance in millions of industrial workers (Rifkin, 1996).

The concept of personnel technology is relatively new, and a closer look at something as seemingly simple as the "coffee break" can help shed light on dynamics (Klein, 2001). Some regions may have higher LFPRs because of more vital job opportunities or industries, while others may have lower LFPRs due to economic challenges or other factors affecting workforce participation.

However, from a personnel technology standpoint, it would be examined from various perspectives. While a coffee break may boost productivity even with reduced working time, it might also lead some workers to believe that others are receiving longer breaks, potentially affecting their performance negatively. (Taylor & Bain, 1999). This psychological aspect, where individual beliefs and perceptions influence behavior, mirrors similar challenges faced by workers in various industries.

Figure 2. Human-Computer Interaction

Unlike the precision of technology used in shaping materials, the technology focused on affecting workers is less exact. Each person is unique, and attempting to treat all workers alike raises questions of fairness and individuality (Tyler & Bies, 2015). Despite these challenges, much progress has been made in personnel technology. By studying existing practices and insights, we can better understand personnel issues and practices within the industrial landscape (Kappel, 2001).

Personnel technology promotes worker safety, efficiency, and a sense of fair treatment while assisting individuals in finding jobs that align with their preferences and abilities. It encompasses a variety of practices aimed at efficient hiring, training, working, advancing, and retiring personnel. Throughout this course, you will explore these significant aspects of personnel practices in construction, gaining a comprehensive understanding of how technology can be harnessed to empower and optimize the industrial workforce (Newman et al., 2021).

As we embark on this journey into the intricacies of personnel technology, we will unveil the methods and techniques developed to create a harmonious and productive work environment. By comprehending these practices, you will be equipped to address real-world personnel challenges and contribute to the ongoing advancement of the industry and its workforce. Let us embrace this exploration of personnel technology and its profound impact on the people who drive industrial progress.

1.6. Summary

Immerse yourself in the construction world, and experience professional roles and responsibilities. As you observe how they are hired, trained, worked with, promoted, and eventually retired, you will gain valuable insights into the diverse range of personnel practices used in this industry. Each type of worker may be subject to different approaches, and understanding the rationale behind these practices will be a crucial aspect of your learning.

By delving into the intricacies of personnel practices, you will grasp the mechanics of how they operate and the underlying reasons for their implementation. This deeper comprehension will enable you to make informed judgments about the appropriateness and effectiveness of these practices in different contexts. As you explore various personnel strategies, you will see how they shape the dynamics of the construction workforce, fostering a more holistic understanding of the industry.

This course empowers you to make thoughtful decisions about your future career path. By gaining firsthand knowledge of the different roles within construction and witnessing how personnel practices

impact workers' lives, you will be better equipped to discern the type of work that resonates with your interests, skills, and aspirations. Whether you envision yourself as part of the construction labor force or exploring other professional avenues, this understanding will be invaluable in shaping your path forward.

As we embark on this journey of exploration, we will uncover the inner workings of personnel practices in construction and recognize their profound influence on the individuals who contribute to this vital industry. By the end of this course, you will emerge with a more comprehensive understanding of construction personnel practices, armed with the knowledge to make informed decisions and confidently embrace the future. Let us begin this enlightening exploration, where the world of construction and personnel practices awaits us.

CONCLUSION

In conclusion, this learning journey has provided a comprehensive exploration of the manufacturing and construction workforce, highlighting their pivotal role as the backbone of the industry. We have delved into the significance of industrial technology in shaping modern society and the essential goods it provides to enrich our daily lives. By studying construction technology, we gained insights into how this field meets the diverse needs of our growing society by building on-site structures and projects. Moreover, our understanding of personnel technology has unveiled its profound impact on workers, promoting safety, efficiency, and fair treatment while optimizing the industrial workforce.

Throughout this course, we have recognized the diverse array of jobs and practices within the construction industry, equipping us with valuable knowledge to make informed decisions about potential career paths. By comprehending personnel practices, we have gained more profound insights into the mechanics and rationale behind workforce management, enabling us to address real-world challenges effectively. Whether envisioning a future in industry or exploring other avenues, the knowledge gained here will guide us towards fulfilling and meaningful professional journeys. As we move forward, we are empowered to contribute to industry advancement and embrace a future that leverages technology to enrich humanity and shape a better world.

RECOMMENDATION

Based on the insightful exploration of the manufacturing and construction workforce and their significant role in shaping modern society, I highly recommend this course to all students interested in pursuing careers in industry or related fields. The course's focus on industrial technology provides a clear understanding of how advancements in this domain have revolutionized our lives and enriched our daily experiences. By grasping the importance of construction technology and its role in meeting society's needs, students will gain a comprehensive perspective on the vital contributions of the construction sector. This knowledge will undoubtedly inspire and guide students toward careers that contribute to creating essential goods and structures, fostering a sense of purpose and impact in their professional journeys.

Furthermore, the course's emphasis on personnel technology sheds light on the critical aspect of influencing workers' actions and behaviors to promote safety, efficiency, and fairness within the industrial landscape. The knowledge gained about workforce management, and personnel practices will empower students to tackle real-world challenges in the construction industry, ensuring a harmonious and productive work environment. The author believes that the valuable insights obtained through this course will enable students to make informed decisions about their future career paths, aligning their passions and capabilities with the diverse array of opportunities available within the manufacturing and construction sectors. This course is an essential foundation for the next generation of skilled and responsible industrial professionals by preparing students to embrace technological advancements and contribute to tech-enriching humanity.

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