

The Role of Family and Society in the Industrial Revolution 4.0

Vu Hai Nam, Phan Thi Thuy Hoa

Ho Chi Minh City University of Transport, Ho Chi Minh City, Vietnam

Abstract— *The fourth Industrial Revolution has spread around the world today as it is due to the fact that the speed of development and the impact of technological breakthroughs have had unprecedented strong effects. Inventions and scientific advancements are present in all fields, such as artificial intelligence, Robotics, all-in-one internet (IoT), self-driving cars, biotechnology, Na-no technology, 3D printing technology, materials science, quantum computers, etc. impact almost every industry at a speed so fast that it is said that the Fourth Industrial Revolution is developing at a rapid pace degree of exponential. The Fourth Industrial Revolution plays an important role in creating products and services that allow us to live a better life. Conversely, this revolution could also lead to even greater inequality as new technologies replace labor-intensive jobs. This is considered the greatest challenge brought by this revolution. In addition, another challenge is how to create jobs that require more skills for humans when automation technologies have replaced labor in many daily jobs.*

Keywords— *Educational quality, industry 4.0, education, development.*

I. INTRODUCTION

One of the requirements to prepare for the Fourth Industrial Revolution is to improve human capital in order to meet the requirements of constantly changing knowledge and skills in the new working environment. This sets out for education and training the great mission of preparing human resources to meet the country's development requirements. The problem that many countries are aware of and poses is the transition from a heavy education about equipping learners with knowledge and skills to an education that develops capacity, promotes innovation and creativity for learners, meeting the requirements set for citizens in the era of the Fourth Industrial Revolution. With the flow of new learning models and the development of science and technology, traditional educational methods will certainly face many challenges One of the highlights is the differentiation for each learner object. Each student has different learning needs and abilities. Technological advances allow educators to design separate learning pathways that are tailored to each specific case. Educational software has been put into use, adapting to each student's ability and allowing students to study at a pace that suits their needs. In many countries, these adaptive learning software have quickly replaced part or all of the role of textbooks in the classroom.

Besides, access to information is easier than ever leading to a question that educators need to answer is determining the core knowledge that learners need to be equipped in the future. While past educational models focused on providing learners

with the knowledge and skills necessary to help them become highly skilled professionals, educators today are more interested in more than teaching students how to self-study. Education teaches students to learn to think, to assess situations, complex problems in life, thereby forming the capacity to solve problems. Technology development has a great influence on the role of the teacher in the classroom. Technology-assisted school management systems can provide data systems that help teachers monitor the progress of each classroom, thereby providing immediate feedback on the challenges students face. are encountered. But technology, no matter how modern or important, does not replace the role of a teacher or turn a teacher into a robot. Therefore, how to leverage and master technology, so that this tool supports and creates the freedom and creativity in education is a challenge for every teacher and educational institution. These changes are a reminder of how educational models can work in the future: computers act as personal support tools in the classroom with a variety of learning pathways. ; teachers and parents are better equipped to understand the student's learning process; The class is divided into small groups of students with appropriate qualifications and skills to work together. With the revolution of 4.0 things connected to the internet, information has exploded, so the process of transmitting knowledge and experience between people and people also needs to be changed accordingly. The advent and development of smart devices enables people to enjoy the benefits of the Internet era to help knowledge acquisition more quickly and shorten the distance[1]. At that time, what is the role of the teacher in the process of transferring knowledge and experiences? In Industry 4.0, it comes to workers with the habit of discipline and liberal thinking. So, what should education - training activities do to meet that requirement? From the perspective of modern education: Educational activities include 4 elements: family education, school education, social education and individual self-education. Here, the instructor needs to help students see the impact of the industry 4.0 on each of those factors to see the role of each element in educational activities [2]. The fourth industrial revolution, also known as the digital revolution, has taken place since the beginning of the 21st century. The characteristic of this industrial revolution is the increasing popularity of artificial intelligence and automated machines. chemistry, bringing a combination of virtual systems and reality. This revolution has a strong impact on many fields and many aspects of social life, in which a special human resource of high quality is indispensable; but human resources are the

direct object of education - training. With the revolution of 4.0 things connected to the internet, information has exploded, so the process of transmitting knowledge and experience between people and people also needs to be changed accordingly. The advent and development of smart devices enables people to enjoy the benefits of the Internet era to help knowledge acquisition more quickly and shorten the distance. At that time, what is the role of the teacher in the process of transferring knowledge and experiences? In Industry 4.0, it comes to workers with the habit of discipline and liberal thinking. So, what should education - training activities do to meet that requirement? From the perspective of modern education: Educational activities include 4 elements: family education, school education, social education and individual self-education. Here, the instructor needs to help students see the impact of the CMCN4.0 on each of those factors to see the role of each element in educational activities. What do parents need to do for their children so that future generations will be able to catch the wave of this revolution? Every family needs to prepare their children to be born with the spirit of self-reliance and self-reliance so that they can practice discipline habits from a young age, and parents also need to create an environment to encourage children to develop. their thinking in the direction of letting children become independent in action and in thinking, eliminating the protective thinking that leads to pampering, doing things, thinking of changing children ... so that when they join this revolution, it will be easier [3]. In the new era, education towards the perfection of each individual. Therefore, the teacher is the one who leads, directs and passes on to the next generation all that they can so they can develop more and more completely. On the other hand, the educational process takes place not only in the home or school but also in social education. Those are the insights from social reality that bring to learners. It is possible through many forms such as: through experiences, reality ... to provide learners with the most authentic knowledge. That is the way of direct education by family education, school education is also for each person to step into real life in society [4].

In particular, the role of individual education in particular is focused, considered as a direct determinant. Accordingly, the learner must be the one who personally access knowledge under the guidance and guidance of parents and teachers because of the era of information explosion and everything connected to the internet that the knowledge that the teacher imparts to him, learning is limited and that knowledge will quickly become obsolete, so what learners need to learn is the way to access knowledge and filter information; On the other hand, learners also have to cultivate the necessary skills by themselves to adapt to the needs of society [5]. The fourth industrial revolution taking place since the 2000s is called the digital revolution. Today we are at the beginning of the Fourth Industrial Revolution. It is characterized by the increasingly popular and mobile Internet, by artificial intelligence ... In 2013, the term "Industry 4.0" began to emerge to become an important part of the fourth industrial revolution[6]. In the new wave of industrialization, the education system must focus on developing learners' qualities and competencies through orienting the most appropriate paths for different

groups of students to help them. Promote the potential of each individual. This should be applied at all levels of education and training levels. In particular, for universities, the success of a university is not simply about the percentage of graduates, the ability of students to find jobs or the position on the international rankings, but also is the sustainable and long-term development of students, their willingness to take risks, their innovation and creativity capabilities. To do so, we need to affirm the importance of an education system that supports lifelong learning. The entire education system must recognize the diversity of strengths and talents of young people. Only a passion-based learning process can help build a new generation of bravery, with the ability to self-guide and consistently pursue goals.

II. EDUCATIONAL QUALITY

Education needs to simulate and prepare learners to get into real life as much as possible when technology makes it easy to access knowledge so that knowledge no longer means "insurance". for the learner's future as before (5). One of the appropriate approaches is to enhance science, technology, engineering and math education (STEM education) in schools. Accordingly, students will be equipped with the knowledge attached to their practical applications; to experience exploring and discovering technology associated with the knowledge learned in the educational program; are encouraged to create science and technology in order to improve the development of new technologies. This is an interdisciplinary approach to equip learners with the knowledge and skills that learners can apply to solve problems in life. Currently, there is a tendency to promote the concept of "high-quality international university", basically building a good university is a "need" condition, but a "sufficient" condition is that we must have the students themselves. Good seeds, good factors. It is clear that for a long time, Vietnamese education has only been concerned with training the number of output students, ignoring the important issue of how the young generation really contributes to the development of the country.

A series of Vietnamese engineers and bachelors graduated but tried to ask how many people reached the technical level of engineers? How many users are? How many people work in the profession they have studied, it is a great waste. Even today students are only concerned about achieving this TOEFL and TOEIC, but the Vietnamese language is not used correctly[9]. Why is there such a paradox? At present, we do not have a practical statistical branch for policy research. Building an international university is only a "need" but not "enough" condition. In the world, people are interested in good workers, high technical experts. The country is in the period of industrialization - modernization, but students do not want to study technology, only focus on the imbalance in industries that are easily accepted by the society, how to develop industry, how to show now. modernize the country? If Vietnam wants to develop its science and technology, it must provide scientific and technical training on a large scale. The fourth industrial revolution has had a strong impact in many fields, with the emergence of artificial intelligence robots that have brought many applications in society. Robots are capable

of working, remembering, learning immeasurably, while that ability in older people gets weaker. Advantages of working 24/24, without paying salary, paying taxes, insurance ... of robots are also threatening our abundant manual labor force. The world launch of the 4th industrial revolution is a very valuable opportunity that Vietnam has had during the past 30 years to quickly capture and take advantage of advanced scientific and technological achievements to accelerate the process of industrialization and modernization of the country

and narrowing the development gap. However, as digitalization and automation are increasingly common in life, when automated machines replace people in all sectors of the economy, workers will inevitably be forced to adapt quickly. that change would otherwise be eliminated leading to unemployment. This is also a challenge in training human resources to suit the needs of life, which requires a change in the way of education and training[7].

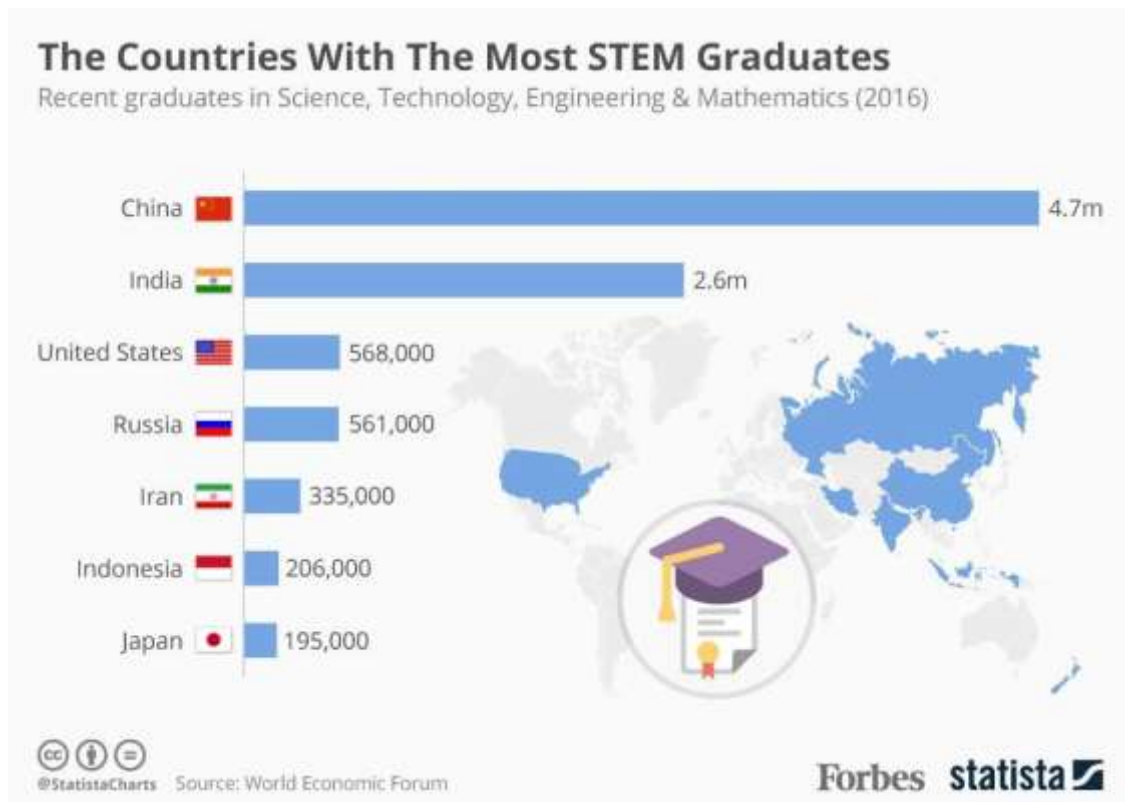


Fig. 1. Countries with the most STEM graduation

The Resolution of the 12th Party Congress affirmed: “Continuing to strongly and synchronously renovate the basic elements of education and training in the direction of attaching importance to the development of learners' qualities and capabilities. Innovating educational programs and contents towards streamlining, modern, practical, suitable for ages, qualifications and industries. Diversify content, learning materials, meet the requirements of all levels, educational programs, training and lifelong learning needs of everyone ”. The Resolution of the 12th Congress of the Party showed that the Party's position in the field of education - training is gradually meeting the requirements of this revolution. Industry 4.0 requires a 4.0 education. However, it is not easy to change education to suitable with the industrial era 4.0[8].

Education in Vietnam can be considered as sick without treatment, scrambling to memorize books according to books to get high scores but books are not standard, every year the exam is cheating, wrong test, children they are left on the street wandering, drugs in school, citizenship is very poor. The more you say, the more you are at risk, but you do not see the

society really afraid because for many years, you have not seen the solution, only heard the promise of reform. Education Vietnam wants to develop must have proper surgery. The disease is diagnosed but does not undergo surgery, how to treat it? In fact, the authorities have realized all the educational disease in the country. In the workshops, almost every issue has been analyzed, pointing out what is right and wrong but the strange thing is that it is not summarized to put into practice[10]. The state of "speaking" but not "doing" is the most difficult disease in most economic, cultural and social fields, not only in Vietnam's education sector.

III. SOLUTIONS

Coordinating in educating students about political, ethical and lifestyle qualities to educate them about patriotism, communist ideals, beliefs about the leadership of the Party and political guts; educating the awareness of observing undertakings, lines and policies of the Party and laws of the State; educate attitudes to actively participate in political and social activities, distinguish and evaluate political and social

events, identify and criticize political plots and tricks of hostile forces. . Educating kindness, tolerance, generosity, appreciating the moral values of the nation, determining one's responsibilities and obligations, the proper conduct and manner of citizens; educating ethical standards in social relationships, criticizing behaviors inconsistent with ethical standards; ethical behavior education, professional ethics, industrial manners. Educating awareness, behavior and habits of a civilized and progressive way of life in accordance with the national identity of Vietnam; educating the individual's responsibility to the community and community, supporting and encouraging the manifestations of a civilized and progressive lifestyle, in accordance with the national identity, criticizing the manifestations of the lost lifestyle, selfish. Coordinate to well implement the Prime Minister's Decision No. 1501 of August 28, 2015, approving the Project "Strengthening revolutionary and ethical ideal education and cultural lifestyles for young people and teenagers." and children in the period 2015-2020 ". Coordination in education builds capacity for students including knowledge, skills and experience. The knowledge and skills that create capacity for students are mainly provided by the school. However, it is also necessary for the coordination of family and society that the building of competencies, especially practical competencies for students, is more convenient and solid. Coordinate in legal education for students to help them have the right attitude and action in exercising the rights and obligations of citizens, how to prevent crime and avoid social evils; raise the awareness and good observance of law provisions, formulate personality, proper attitude and actions, showing citizen's responsibility. Legal education needs to be carried out in many different forms and methods, in close cooperation with schools, families and society; incorporate mainstream education and extracurricular activities. Legal education requires not only school teachers but also the participation of law enforcement, law protection, mass media, mass organizations, etc

Coordinate in life skills education to help students have positive attitudes and behaviors, be able to see problems, solve situations in a positive way, adapt to each specific situation; have a sense of autonomy, have positive ways of thinking, attitudes and behaviors; forming a healthy, ethical and cultural lifestyle, effective communication with all subjects. Life skills are the bridge to help people turn knowledge into positive, healthy attitudes and behaviors. Life skills education is not only done in schools, through formal subjects, though very important, but also must be done in combination with other ways such as: In the combination of schools and families and society; with many diverse and diverse experience activities such as: cultural activities, arts, social activities, extracurricular activities, sightseeing activities, picnics; through union activities, the team has proved effective in recent years such as the program "Learning to be useful people", the program "A day to live - Live with faith", the program "A day to live - live". know how to save, "Program" Overcoming fear ", the program" Semester military ".

Coordinating in student management, creating the best conditions for them to study and train; coordinate in building a healthy cultural environment for students to forge virtues,

train, fight against the bad and the malicious from invading from outside. Associate the construction of a cultural environment with the emulation movements "All people unite to build a cultural life", "Friendly schools, active students", "Cultural families". The school should coordinate with mass organizations, teams, representative boards of parents to organize cultural activities, arts, physical education, sports, exchanges, collective activities ... for students to have many conditions to meet and play together after class, create a friendly and healthy environment; proactively propose to local authorities to manage cultural service activities, shops around the school[15], prevent harmful cultural products and social evils from entering the school, prevent violence school force. Creating a healthy cultural environment for students can be organized through activities in cooperation with the Youth Union, Teams such as: School-Dance Festival, My Love, Games Show When I am 18, Games show Learning but having fun-learning, Young Computer Contest at all levels, Creative-science-technology competition, activities to celebrate the founding of the Youth Union, major holidays ... create a healthy and rewarding educational environment, helping students avoid evil.

Coordination in education socialization is to implement the motto: The whole society takes care of education and training. In order to implement this requirement, it is necessary to enhance the role of mass organizations, study promotion associations, former teachers 'associations, parents' representative boards in the implementation of education universalization, reducing the learning rate dropouts, repetition, mobilize dropouts back to class to improve the quality and effectiveness of education; mobilizing resources for investment in material foundations for development of education and training; mobilize scholarships, literature, and school supplies to support poor, disadvantaged, commend and honor students who achieve high academic and training achievements. Managing the organization of teaching and other educational activities according to the objectives and educational programs in order to train and form students with life skills, practical skills, practical competencies. Enhancing management, counseling and education solutions for students such as: Deploying psychological counseling for students in schools in order to advise and promptly solve problems and contradictions of students. born in life; improve the responsibilities of teachers, especially the homeroom teachers in grasping students' psychological developments, detecting conflicts in students to promptly advise, share, and coordinate to resolve conflicts, radically reducing school violence; closely coordinate with families in the management and education, especially for isolated, obedient students and students with special family circumstances.

Enhancing the role and responsibility of the Union, Team and Association in educating students' ideals, ethics, lifestyles, ambitions and dreams. Building schools to ensure security, order, green, clean and beautiful landscapes; educating students about environmental protection awareness. Strictly complying with regulations on fire and explosion safety, injury, natural disaster, traffic safety, food hygiene and safety. Collaborate with local authorities and mass organizations in

universalizing education, mobilizing children to go to school, limiting repetition, dropping out of school, and actively working with the authorities and families to create favorable conditions for children to enjoy. The right to study in accordance with the law. Coordinate with other departments, agencies, functional agencies and mass organizations in the area to popularize and educate law, traffic order and safety, cultural lifestyle, crime prevention and disaster prevention. injury, education on adolescent reproductive health, food hygiene and safety, environment for students; create conditions for students to participate in local movements, cultural activities, physical training, sports, recreation and entertainment. Periodically report to the party committees and local governments on the results of the unit's educational task, based on which recommendations, proposals, enlist the leadership, direction of the party committee and the main local rights. Coordinate with the student representative board to mobilize social resources to support the school in accordance with the current law. The school should establish and maintain close and regular relationships between the school, teachers, especially head teachers, and parents of students through face-to-face meetings, phone calls, and communication books. systematically or electronically, student parents' meetings to promptly inform families of the learning situation, training and matters related to students who need family coordination. Some localities have models of coordination with families, such as: Organizing traditional educational activities, patriotism in protecting sovereignty of islands and islands for students with parental involvement students (Hanoi); organize activities "Parents come to school to listen to their children" (Ho Chi Minh City). Families regularly take initiative in catching up on the learning and training situation of their children, and at the same time provide information about their children's learning situation, psychological and emotional progress to the school, through teachers, especially homeroom teachers through various channels such as: through parent-student conferences, by phone, contact book, face-to-face meetings, other occasions with the school at the request of the teacher schools ... Families need to create the most favorable conditions for their children to participate in community activities. Families in residential areas share experiences in educating their children through village relationships, club activities, parent meetings, friendships. The local authorities, mass organizations, and social organizations need to regularly grasp the situation of dropouts, repetition, and disadvantaged students in the area to timely assist in preventing students from leaving school. Studying and mobilizing quitting pupils to return to class, forming scholarship funds to support poor pupils in difficulty and commending good students. Between schools and local police, there should be a coordinated regulation in maintaining security and order inside and outside the school, preventing social evils from entering the school, preventing school violence.

Party committees and authorities are interested in receiving, directing and supporting the cause of education and training according to the Party's guidelines, the State's policies and laws; create favorable conditions for educational activities and educational development; propagandize to all strata of the

province actively participate in education socialization. The authorities at all levels propagandize the Party's guidelines and the State's laws, raise people's awareness and sense of responsibility in observing the law, implementing a cultural lifestyle, preventing acts and acts. violating laws, violating moral standards and violence taking place in society; strengthening the management and education of young people in the area, especially those who drop out of school and have no stable jobs to entice students to violate ethics and law; well manage cultural products and cultural services such as entertainment venues, internet services, cultural products, checking and clearing shops around schools and dormitories if any. complex expression of security and order; create conditions for facilities and equipment for students to have fun, entertain, and exercise physically and sport effectively. Unions and social organizations mobilize people to participate in building cultural lifestyles in the community, creating a healthy and safe environment, preventing adverse impacts on the educational environment. ; coordinate with schools in raising the quality of education, limiting repetition and drop-out of pupils; mobilizing resources for educational development; be ready to respond when the school has requests, suggestions about support and assistance in teaching and educating students; proactively build study promotion and talent scholarship funds, young talent funds to support disadvantaged students, and promptly encourage students to achieve academic and training achievements. In the modern world, even in countries implementing market mechanisms in the field of education, the state still plays a particularly important role in macro adjustment through many measures, including the policies, specific support mechanisms, provision of credits, scientific research funding, and tuition fee determination. Not only support, the state also directly provides people with basic education services. The goal of supporting or directly ensuring the provision of state educational services is to ensure access to basic learning opportunities for all. Depending on the socio-economic conditions of each country, the government waives tuition fees or charges a low fee for primary, lower secondary and upper secondary schools. State support not only does not weaken the dynamics of the education market, but also results in the specific performance of educational service providers in society. State support in many countries is not distinguished by ownership (public or private educational institutions), but is based on the specific roles, goals and performance of educational institutions.

IV. CONCLUSION

Education is a process organized consciously, with the aim of provoking or transforming the awareness, competence, affection and attitude of teachers and learners in a positive way. It means contributing to perfecting learners' personalities by external conscious consciousness, contributing to meeting the needs of human existence and development in contemporary society. Education involves teaching and learning, and sometimes it also has a deeper but less tangible meaning such as the process of transmitting, disseminating knowledge, imparting correct inference, imparting knowledge.

Education is the foundation for propagating and disseminating culture from generation to generation. Education is a means to awaken and realize the potential abilities and abilities of each individual, awakening each person's intellect. It uses educational methods, a method of studying the relationship between teaching and learning to lead to mental training, and mastering aspects such as language, psychology, emotions, psychiatry, behavior in society. Teaching is a particularly important and necessary form of education for intellectual development and perfecting student's personality. The teaching process in particular and the educational process in general always include systematically related elements: educational objectives, educational content, educational methods, educational facilities, forms organization and evaluation. Each individual's education begins at birth and continues throughout life. (Some believe that education even begins before birth, whereby some parents play music, or read it to unborn children in the hope that it will affect the development of child later). For some people the process of fighting for life, winning for life's success provides more knowledge than the transmission of knowledge in schools. Individuals in the family have a great influence on educational performance, often more influential than they realize, although family teaching may not be formal, only very educational usually, common, normal.

REFERENCES

- [1] A. A. Galushkin, A. G. Nazarov, E. N. Sabyna, and T. V. Skryl, "The Institutional Model of Formation and Development of Industry 4.0 in the Conditions of Knowledge Economy's Formation," in *Industry 4.0: Industrial Revolution of the 21st Century*, Springer, 2019, pp. 219–226.
- [2] S. D. Göker, "Reflective models in teacher supervision introduced by education 4.0: the teacher in the mirror," 2017.
- [3] A. M. Harkins, "Leapfrog principles and practices: Core components of education 3.0 and 4.0," *Futur. Res. Q.*, vol. 24, no. 1, pp. 19–31, 2008.
- [4] S. Junaid, P. C. Gorman, and L. J. Leslie, "Deliberate Practice Makes Perfect! Developing Logbook Keeping as a Professional Skill through CDIO," *Time Chang.*, p. 80, 2018.
- [5] H. Karre, M. Hammer, M. Kleindienst, and C. Ramsauer, "Transition towards an Industry 4.0 State of the LeanLab at Graz University of Technology," *Procedia Manuf.*, vol. 9, pp. 206–213, 2017.
- [6] M. Elbestawi, D. Centea, I. Singh, and T. Wanyama, "SEPT Learning Factory for Industry 4.0 Education and Applied Research," *Procedia Manuf.*, vol. 23, pp. 249–254, 2018.
- [7] S. C. Onar, A. Ustundag, Ç. Kadaifci, and B. Oztaysi, "The Changing Role of Engineering Education in Industry 4.0 Era," in *Industry 4.0: Managing The Digital Transformation*, Springer, 2018, pp. 137–151.
- [8] K. Fettig, T. Gacic, A. Koskal, A. Kuhn, and F. Stuber, "Impact of Industry 4.0 on Organizational Structures," in *2018 IEEE International Conference on Engineering, Technology and Innovation, ICE/ITMC 2018 - Proceedings*, 2018.
- [9] M. R. Cabrita, V. Cruz-Machado, and S. Duarte, "Enhancing the Benefits of Industry 4.0 from Intellectual Capital: A Theoretical Approach," in *International Conference on Management Science and Engineering Management*, 2018, pp. 1581–1591.
- [10] M. A. K. Bahrin, M. F. Othman, N. H. N. Azli, and M. F. Talib, "Industry 4.0: A review on industrial automation and robotic," *Jurnal Teknologi*. 2016.