

## Conference Paper

# Literature in the Principal of Industrial Revolution 4.0

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**Abstract**

Industrial Revolution 4.0 is not only a phenomenon in society, but also has become a social reality. Through the sociology of literature approach, the research reveals the standing of literature in the principle of the Industrial Revolution 4.0. Industry refers to human activities or efforts to change or to cultivate raw materials or semi-finished materials into ready-used products; then the industrial revolution is directed at changing the ways humans produce goods. These big changes have been noted three times, and now people are experiencing the fourth industrial revolution. The industrial revolution of the fourth generation is marked by the emergence of supercomputers, and robots, a picture of the digitalization era. The research is carried out with a qualitative descriptive method as it is in contact with social problems by the relationships among literary writers, texts, and society and these three components both directly and indirectly have been involved in the Industrial Revolution. The research results show that literature is a work of art unlimited by time and space and is not dominated by the Industrial Revolution 4.0, especially those relating to the theme or problem presented. The social problems expressed in literature are cycles; repetitions of events. The role of Industrial Revolution 4.0 on literature is only limited to distributions by means of cyber literature. The principle of Industrial Revolution 4.0: interconnection, transparency in information, technical assistance and decentralization or autonomy in drawing a conclusion have already existed in literature.

**Keywords:** literature, industry, interconnection, transparency, technical assistance, decentralization

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Received: 1 July 2019

Accepted: 18 July 2019

Published: 31 July 2019

Publishing services provided by  
Knowledge E

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Selection and Peer-review under the responsibility of the AICLL 2019 Conference Committee.

## 1. Introduction

From ancient times to the present, human life is tinged with various changes and problems. Each change will certainly produce problems, both on a large scale and on a scale to be overcome in a simple way. Problems are inevitable as long as there is life because life is dynamic. The important thing to think about is how to solve a problem. Problems are a blessing because by the existence of problems human beings will be more mature in thinking and acting, such as the utterances given by William Shakespeare in his play entitled *As You Like It*.

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*Sweet are the uses of adversity, which, like the toad, ugly and venomous, wears yet a precious jewel in its head. (Shakespeare, 2015: Act 2, Scene 1)*

Problems or changes are identical to conflict. Conflict is phenomena of disagreement or difference of beliefs, ideas or even facts among individuals or groups of people or between people with the surroundings. It is said to be identical because in every conflict there are problems and also changes. A conflict seen in a positive perspective will produce benefits. Then the meaning of a problem, change or conflict is dependent on the perspective of analysis used. An old adage says that this world looks red when viewed through a red glass and blue when viewed through a blue glass.

Conflicts produce stories and lessons, not only those related to morality but also intellectuals. Conflict is a process of thought giving a picture of the existence of two things that are mutually contradictory or incompatible. Through conflict various problems are illustrated and conflict also trains respective people to act and think wiser and in a great solidarity.

In his book entitled *The Poetics*, Aristotles states that important elements in a tragedy are Plots, Character, Thought, Diction, Music/Rhythm and Spectacle. (Butcher, 2008) Aristotle puts Plot as the most important element in a tragedy, basically not only in tragedy but all literary works because a storyline gets attention and develops when there is conflict; in short there is no story if there is no conflict because nothing is told.

In a variety of problems or changes alternated throughout the history of human civilization literature keeps existing. That is why literary works are called beyond space and time. Literature goes beyond national boundaries, time barriers, gender difference and even historical grounds. Literature is not bound to *spatio-temporal*, that is without being restricted by time and space. (Manugeran and Hidayati, 2018)

But as a dynamic object of study, literature can be seen from various perspectives. It is said that literature is beyond space and time, then there is another concept stating that literature is adjusted to place and time in, as delivered by Bakhtin and in Vukanovic and Lovorka (2009: 9) that the place and time relations in literature are very important. This illustrates that literature always presents issues that are developing in the community. In the same book Einstein argues that an event will depend on how the relation between what happens and its situation in space-time is mediated.. (Vukanovic and Lovorka, 2009: 9).

Basically various forms of issues presented by literature are related to the relationship between humans and humans, humans with their environment and humans with the universe, meaning that the core of the story delivered is only adjusted to place and

time, producing versions or in other words literature is not limited by space and time. Problems experienced by humans, those discussed and even problems that are in trend are the same problem with different nuances; as well as studies and discussions in literary works; the same theme with different versions, as stated by King Solomon.

*What has been will be again,*

*What has been done will be done again;*

*There is nothing new under the sun. (Moore and Daniel, 2003)*

This expression gives an idea of the cycle of human life on earth; each event is basically a repetition of the previous event; every issue that develops in society is not something new, but something that already exists; different only in dimensions or models.

The changing era and the development and progress of science and technology towards a better era do not guarantee the loss of problems in society. Conversely the higher the level of progress achieved; then the more problems must be faced by humans and because humans are social beings then all the problems faced are social problems; other than that it is said to be social problems because problems that arise even started from an individual can threaten the welfare and peace of the community.

In general, the causing factors of social problems from time to time are:

1. Economic Factors: related to the inability of the community to fulfill their needs, resulting in social inequalities. These economic factors are the main factors in social problems triggering other social problems.
2. Cultural Factors: relating to values and norms in the community. The implementation of values and norms that do not work well results in actions or activities of community members that can disrupt the orderliness of a community.
3. Biological Factors: related to the facilities needed by each member of the community. Inadequate facilities, such as lack or absence of health and education institutions also trigger social problems.
4. Psychological factors: related to the ideology and lifestyle of the community.

The four factors triggering social problems color the theme or storyline of a literary work. That is why it is said that literature is the most appropriate means to express various forms of problems and social changes. Literature has a close relationship with human life. Through literature, the mindset or ideology of a person or group of people

can be evaluated because literary work as a product of culture, presents a value system and then the value system can be the norm because it has a truth; otherwise the mindset or ideology of a person or group of people can also be an inspiration to literary writers, thus there is a symbiotic mutualism relationship, namely a relationship that is mutually beneficial or mutually supportive. Literature will not exist without society because stories in literature are stories about social problems; Likewise, society will not run well if there is no literature, in other words, there is no community group that does not have literature.

Literature is not simply imaginative work, the result of an author's floor plan or design. Literature provides an overview of reality or reality that is found in the community. What is said to be an imaginative element in a literary work is an artistic modification of an author to convey a reality so that the information of reality will look attractive and beautiful. Through this artistic writing style, information becomes something that is of interest to the reader; thus the reader can get five benefits at the same time. The five advantages are in line with the five basic functions of a literary work: recreational functions, as entertainment media; aesthetics, beauty obtained through the stylistic approach; didactic, giving directions; morality, relating to values and norms, something good and something that becomes a rule; and religious functions, providing an overview of human relations with the Creator.

Various aspects of human life can be conveyed by literature and every aspect of life is not an illusion; aspects of social and cultural life is a reality that can be seen and felt with real experience. Paradigm that literature is imaginative basically refers to modification of reality. Modification is the author's attempt to change a less attractive reality to be more attractive, without removing the original form of reality.

Imagination is a creativity that brings someone towards an action, a real world, so that it can be stated that every action is based on imagination. Imagination connects experience with the world so that something new is formed in the form of action. Without imagination, human life cannot go well; even life can stagnate.

*"I'm enough of an artist to draw freely on my imagination, which I think is more important than knowledge. Knowledge is limited. Imagination encircles the world." (Einstein in Lavelle, 2014)*

Human knowledge is limited; but that limited knowledge continues to grow as long as there is imagination. Various innovations based on existing knowledge develops and advances with the support of imagination. So imagination is a priceless gift in the progress of every form of human knowledge, especially in literature.

Literature is an integral part of human life and literature has existed since the existence of human civilization and continues to exist as long as there are humans on earth. For such a long period of time, literature has been confronted with various social phenomena. At present the Industrial Revolution 4.0 is a phenomenon, a trend and a discussion of all levels of society. The Industrial Revolution 4.0 brings people to digital life, meaning that human life is expected to be easier with new discoveries in the field of information and technology.

With regard to the world of literature, if the community previously can only enjoy a literary work after going through the process of publishing manually, nowadays, literary works can be enjoyed through digital media, no longer having to carry literary works in book or other manual forms. Literary works can also be enjoyed at any time and every new literary work will soon be enjoyed by the community in a short time. The distribution process is faster.

## 2. Literature Review

This research is related to the position of literature in the principle of the Industrial Revolution 4.0; therefore it is carried out based on the theory of Sociology of literature because of the interplay between literary work and society. The social context can influence literary authors in building a storyline or a literary work can also influence the mindset or life of a group of people or society at large; then in fact literary work is a media for disclosure of social problems, as stated by Wellek and Werren (1990) that literature is an expression of society. The same thing is conveyed by Swingewood in Wahyudi (2013) that an author has a relationship with the community to be able to further recognize and interpret problems in the community

*It is the task of sociologist of literature to relate the experience of the writer's imaginary characters and situations to the historical climate from which they derive. He has to transform the private equation of theme and stylistic means into social equations (Wahyudi, 2013)*

Sociology of Literature is basically not a new discipline of knowledge. Studies related to literature and society have been around since Plato's time, even Plato is considered the pioneer of the theory of Sociology of Literature with his Mimesis theory. In Greek, mimesis means imitation and in the view of mimetic theory, literature is an imitation of nature or life. Everything that exists in real life is an imitation of the realm of ideas, which is often termed imaginative. The mimetic view asserts that there is nothing new

in this real life, especially human life. Furthermore, the relationship between literature and society was again formulated by Aristotle with his creation theory. For Aristotle, an artist in this case the author of literature is not merely imitating the production of literature, because in the imitation process there is also creativity so that a literary work is created which is a combination of reflection of reality with artistic creativity. (Chen and Xiong, 2014).

At present sociology of literature is in rapid growth and development along with the development and progress of the times. Every aspect of society is an integral part of literary works and literature becomes a media of communication; communicating existing problems or phenomena that will occur in a community; in other words sociology of literature is an objective study giving a picture of a problem rather than giving an idea of what must happen. However, the sociology of literature gives a major contribution to other disciplines in tackling problems in society.

Research on literary works and the involvement of literature in the social structure are the basis of the study of sociology of literature, with a focus on research on the social context of authors relating to social status, ideology, lifestyle, educational background and social culture, social contexts of literature, related to the theme and the purpose and social context of the reader, related to the impact produced by literary works on the community. (Ratna, 2013).

The scope of sociology of literature includes analysis and understanding of literary works as a text; the influence of literature on the organizational structure of society; interdependence of literary works with the community; production of literature; public response or reaction to literature; the dialectical relationship of literature with the community as a bridge of communication; literary works through social aspects; social aspects through literature; the benefits of literary works in the development of society; the role of the author in building the expected community structure; literary works as creative activities and background in literature and society.

Sociology of literature is a scientific and objective study of humans in society, concerning institutions and social processes. Sociology examines social structures and social processes including social changes that study social institutions. religion, economy, politics and so on simultaneously and form a social structure in order to get a picture of the ways in which humans adjust to their environment, social and cultural mechanisms. Literature as well as sociology deals with humans. So sociology of literature is a relevant approach in examining the existence of literature in the era of industrial revolution 4.0

The Industrial Revolution is a social reality and this social reality also enters the realm of literature, later conveyed by the author of literature through his work. Everything that happens in the Industrial Revolution 4.0 along with its negative and positive impacts becomes an inspiration for the author to produce literary works which could later be points of reflection and evaluation as well as entertainment for the community to be wiser in managing life.

Industrial revolution is something that is common along with the advancement of human intellectuals to facilitate all activities in life and to obtain welfare, especially in the financial sector. In order to succeed in industry 4.0, everyone involved in it must understand and apply the four basic principles of industrial 4.0 technology:

1. **Interoperability:** This refers to the ability of machinery and related components to connect and communicate with people through the Internet.
2. **Transparency in Information:** This principle requires that information systems should be able to create virtual copies of the physical world by configuration of digital data into sensor data.
3. **Technical Assistance:** This concerns the ability of the systems to support humans through comprehensive aggregation and visualization of information for better decision-making and quick solutions to problems.
4. **Decentralization of Decisions:** This principle refers to the ability of cyber-enabled systems to independently come up with decisions and carry out their dedicated functions. (Underwood, 2017)

### 3. Research Method

The method used in this study is descriptive qualitative as it is related to phenomena in society; in this case the standing of literature in the Industrial Revolution 4.0. The Industrial Revolution 4.0 is not only a phenomenon that exists in society, but furthermore has become a social reality, where everyone feels involved in the implementation of development of technology. Qualitative descriptive methods are intended to describe the facts which are then followed by the decomposition of data to the stage of explanation and understanding. Data collection techniques are carried out through primary and secondary data sources. Primary data are obtained from the field through observation, interview and recording. Secondary data are obtained from various references which are all related to the position literature in this digital era. The next step in processing

data is through listening techniques, which are to re-examine all the data obtained, and transcription, especially those obtained from the recording. The procedure of data analysis is done by sorting all the data that have been obtained, labeling the data in accordance with the discussion points and arranging all data systematically so that a structured organization is obtained. The summary stages of data analysis are data collection, data reduction, display and conclusion or verification. (Miles, et.al., 2013).

## 4. Analysis and Discussion

Literary works and society have an innovative and inseparable relationship. This innovative relationship provides support for the quality of literary works and also society, a mutually supportive relationship. Literary work is a pioneer of renewal of the reality that occurs in society. Furthermore, the freedom of literature to include aspects of human life makes literary works close to the aspirations of the people. As literary works are related to aspects of human life, they contain aesthetic, ethical, philosophical, logical and scientific aspects. Literary works are also tools of struggle and the functions of literature vary from time to time in various societies. In one era and in certain societies, literature can function as a means of disseminating ideology, in other times and in other societies literature can be considered a safe escape from everyday reality; even literature is able to provide life experiences and noble human values for society, giving vivid pictures of the real world faced by humans.

At present everything in human life has reached an established level of sophistication so that all information can be easily accessed: information about social, economic, political and cultural issues. Life is more practical and lifestyle is also followed by a digital environment. It is undeniable that today's technological advances are developing very rapidly. Technological improvement is very important for human life because technology is a support for human progress through economic improvement, an industry that includes clothing, food, machinery, telecommunications and information.

Basically technology has existed since ancient times because humans through their nature always feel curious and keep exploring to get new things through a continuous learning process and as a result technology develops rapidly and drastically and continues to evolve until now and at this time entered the industrial era 4.0.

Industry 4.0 combines automation technology with cyber technology. This is a trend of data automation and exchange in manufacturing technology. All production processes are supported by the internet network, covering physical-cyber, Internet of Things (IoT), cloud computing and cognitive computing.



Cloud computing is a technology making the internet the center of data and application management; computer users are given access rights (login). The application of cloud computing has now been carried out by a number of leading IT companies in the world such as Google and IBM. (Hurwitz, 2012)

Cognitive computing in general is a simulation of the process of human thought into computerized or computed forms and models. Cognitive computing involves a self-learning system in a system that uses data mining, pattern recognition and processing of programming languages to imitate the workings of the human brain in a system. The ultimate goal of cognitive computing is to create an IT system that is automatically able to solve problems without requiring human assistance. (Nathan R, 2018)

The industrial revolution has gone through three stages, starting from the first industrial revolution beginning around the end of the 18th century to the beginning of the 19th century. The first industrial revolution is characterized by the emergence of machines as a support for an economy focused on agriculture. The agricultural sector has also undergone a change with the availability of agricultural machinery that makes it easy for humans to work and agricultural production also increases. This first industrial revolution becomes the basis of the people's economy. Significant findings in this era are the steam engine with a positive impact on the transportation sector with the development of the railroad line which at the same time encourages economic progress. With practical and efficient transportation, the production and distribution of goods and services can run well.

The second industrial revolution begins in the late 19th century with the development of the steel industry and at the same time the discovery of the telegraph and telephone and the appearance of the automobile and aircraft industries. The scale of the industry begins to move towards large scale with the construction of large factories. In this era new energy sources begin to be developed and used such as electricity, oil and gas producing various synthetic goods.

The third industrial revolution begins a century later, in the early mid-20th century; colored with electronic use, and computers. There has been very significant progress in this era with the existence of high-level automation features, which means that everything related to production can be done quickly such as the use of nuclear as another energy source.

Today humans have entered the industrial revolution 4.0 characterized by a digitalization system, originated from the emergence of the internet, beginning in the early third millennium. All activities are not only limited to the real world but also cyberspace. Human life is increasingly sophisticated and easy; information can be accessed in a

matter of very fast time, in short all activities, especially those related to industry and the economy can be carried out well.

Industry is closely related to the economy and also the prosperity of society. Industry is a benchmark for the establishment of a society, nation or country. The more developed the industry of a country, the more prosperous the economic situation of the people is. In essence, industry is a business, process or activity of processing raw materials, either raw materials or semi-finished materials to become goods with higher economic value and benefit the community. This certainly does not apply to the world of literature because literature is the expression of artistic reality as a manifestation of human life through the medium of language and has a positive effect on human life. Literature is a creative art work and certainly cannot be produced through a digital system or accelerated according to human needs; literature has no economic value but has artistic and high values. A true literary writer does not produce literature to be used as a source of income or not for economic stability. Spiritual satisfaction is the reward of a literary work and along with the development and advancement of technology, the themes in literature in one period and another do not have a significant change because literature is related to human life.

<b>Eighteenth Century</b>	
First Industrial Revolution Progress	Theme of Literature
Machinery	Enlightenment in thinking/ reason
<b>Nineteenth Century</b>	
Second Industrial Revolution Progress	Theme of Literature
Telephone, automobile and plane	Realism and Naturalism
<b>Twentieth Century</b>	
Third Industrial Revolution Progress	Theme of Literature
Electronics and Computer	Tradition breakdown; gender issue; ethnicity; self-consciousness
<b>Twenty-first Century</b>	
Fourth Industrial Revolution Progress	Theme of Literature
Internet and digitalization	political, social and personal issues

The table shows the absence of drastic changes in literary themes; while technology continues to evolve with various innovations. The first industrial revolution is colored by

the appearance of machinery, and in the same century literary themes are dominated by rational thought patterns. Furthermore, the second is marked by the discovery of communication and transportation tools that are very helpful and in the same era literary themes tend towards realism and naturalism. Furthermore electronics and computers become the mainstay of the third industrial revolution and in the same era, literature talk a lot about the issue of rigid traditions, issues of gender and ethnicity. And in this fourth stage, the internet and digitalization system becomes the uniqueness of the industrial revolution 4.0, contemporary literature convey issues of politics, social and human rights issues.

The themes in an era are not limited to that era only; but can appear in every era; this does not mean that political, social and human rights issues cannot be found in the literary theme of the previous era; in other words the literary theme is universal and cannot be limited by time and space. Literature always exists as long as there is human life and as long as there is life, problems always exist and are already the obligation of literary authors to express the problems. Literature always follows the era without being affected by the trend of an era. The industrial revolution 4.0 does not become a barrier or supporter of contemporary literature because literature still exists and will continue to exist whatever the trend exists. As a social critical tool, literature at this time tells the story of the impact of the industrial revolution 4.0, both positive and negative; because in fact the true literary author will never be biased in producing his literary work.

The industrial revolution 4.0 basically goes hand in hand with literature, supporting each other to achieve a goal. To obtain an expected target everything must be well prepared and carried out based on agreed principles so that there is an organizational order. In industry 4.0 there are four principles that must be understood and implemented by the respective parties.

1. **Interoperability:** This terminology refers to a good communication system. related to industry 4.0, communication systems built through the internet network. By good communication, all problems can be solved properly. A sense of tolerance can also be built through good communication. In the world of literature, communication is an integral part of a literary work because in principle, literature is a forum for communication between authors and the public to uncover problems that exist in the surrounding environment. Through literature, a writer, conscious or not, must communicate something to the community. Through communication, sending and receiving messages can be done well. The form of communication in the literary world is indeed done in specific ways, poetic or prosaic, but the point is that there is a message conveyed by the author.

2. **Transparency in Information:** In industry 4.0 all forms of information originating from the real world must be conveyed through the cyber system in a transparent manner, which means there is no data manipulation in the delivery of information. Everything must be delivered according to the circumstances. This is the basis of the success of an industry, to gain the trust of its customers. In other words, industry managers must be honest with consumers. Honesty is the main pillar of supporting success. Coming to literature, a true writer must give priority to aesthetic and ethical values in producing literary work, not influenced by pressure from any party. Transparent information, without bias, is an added value of a literary work, especially in the disclosure of social problems.
3. **Technical Assistance:** This is related to the system's ability to provide solutions to existing problems, especially those related to large-scale industrial products. Through this technical assistance consumers can solve problems faced when using certain products and at the same time can understand the solutions that must be taken. Through a reliable cyber system, the actions that must be taken can be carried out quickly. In literature, there are always conflicts that can sharpen the readers' reason to solve problems, in other words, literature also provides assistance to overcome problems related to human life. A literary work, through its role as a teacher, teaches readers to be wiser in dealing with problems.
4. **Decentralization of Decisions:** This principle refers to the ability of cyber systems that can provide solutions to problems independently, which means that there is anticipation of problems that arise. The same thing is found in literature, which is called self reflection. Literature is the result of human creativity, taste, and intention which can be said to be a reflection of life. Literature has never been separated from life experiences. Literature never departs from mere fiction, what else departing from falsehood; literature always departs from reality, so literature is said to be the shadow of life and ultimately self reflection, where one must be able to make decisions independently.

The four principles in the industry 4.0 actually exist in literature. Literature is a creation, not an imitation. Literary work is a social document, which is first called the path to truth: through literature the reader is often far better than through other writings and can appreciate the essence of human existence with all its problems. Literature provides communication space to fellow members of the community and through didactic functions, literature teaches about truth and honesty and upholds solidarity. Literature also provides an overview of policies in taking action.

## 5. Conclusion

Literature is an invaluable treasure, a gift obtained by humans and a reflection of human life conveyed through language. Literature is not limited by time and space which means that literature still exists in all situations and conditions and becomes a unique medium in disclosing social problems. It is said to be unique because in its task of expressing social reality, there are elements of entertainment and beauty, so it is not merely standard information. Through literature, humans can think and act critically, creatively, and innovatively and have broad insights to gain high fighting power and competitiveness in the face of changing times.

In relation to the industrial revolution 4.0, literature does not experience obstacles or stagnation. The four principles in industry 4.0 used as references for achieving success also exist in literature. Interoperability, Transparency in Information, Technical Assistance, and Decentralization of Decisions are also the main principles that must be understood and implemented by writers to produce highly-valued literary works. Highly-valued literary works can survive throughout the ages because they describe cultural values that are not influenced by changing times. The moral values contained in it are not only related to the problems found in the era of authorship. The author of a true literary work can provide an illustration not only of the past and present but also of the future.

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