

EDITORS

Ashadi, Joko Priyana,
Basikin, Anita Triastuti,
Nur Hidayanto Pancoro Setyo Putro

Teacher Education and Professional Development in Industry 4.0



CRC Press
Taylor & Francis Group



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Table of contents

Preface	xi
Acknowledgements	xiii
Organizing committee	xv
<i>Plenary speakers' papers</i>	
Teacher education and professional development in Industry 4.0: The case for building a strong assessment literacy <i>D. Alonzo</i>	3
Understanding digital literacy through an examination of trust and ignorance online <i>I. Bhatt</i>	11
Desired skills and competencies of the future workforce and what they mean for teacher education today <i>Z. Tomaš</i>	19
<i>Education and teacher skills in Industry 4.0 & education for industrially disadvantaged societies</i>	
5Cs: Stages for fostering students' critical thinking skills in Industry 4.0 education <i>W. Prayogo</i>	27
Can Indonesian educational leaders respond to rapid contextual changes in a digital age? A narrative of issues and challenges <i>M.J. Arquisola</i>	34
What does it take to be 4.0 EFL learners? <i>M.N. Aisyiyah, L. Ikawati & M.A. Hakim</i>	43
Knowledge transfer at the border region in the era of Industrial Revolution 4.0 <i>P. Vasantan & H. Anggraeni</i>	51
Creativity and literacy development in the Islamic elementary school <i>V. Ardhyantama & T.T. Sari</i>	60
Ethnomathematics learning with Sundanese culture for elementary school students <i>S. Supriadi</i>	66
The effects of smartphones on social skills in Industry 4.0 <i>F. Muzzamil, R. Syafrida & H. Permana</i>	72
Analysis of non-academic skills of <i>Pancasila</i> and civic education teachers in the era of Industrial Revolution 4.0 <i>F. Fadilah, I. Moeis & J. Indrawardi</i>	76
Improving teachers' entrepreneurship skills in the Industry 4.0 through online business workshops <i>S. Nurhayati</i>	81

Integrated learning of reading and writing in Industry 4.0 <i>Y.D. Rahmawati & Basikin</i>	87
Teaching strategies to promote 21 st century skills using technology <i>R.P.D. Ambarsiwi & J. Priyana</i>	92
The effectiveness of sociopreneur learning model in instilling entrepreneurial character in the 4.0 industrial era <i>D. Masithoh & B.S.P Nugraha</i>	99
Using a visual dictionary to teach English to hearing impaired students <i>M. Khusniyati & J. Priyana</i>	104
Promoting extrovert learners' problem-solving skills in ELT classrooms <i>M.F. Ahna & Basikin</i>	108
Teaching self-care skills to students with severe multiple disabilities <i>Y. Y. Nasri & I. Ishartiwi</i>	115
The role of financial technology in developing financial literacy of younger generation in the border area <i>B.G. Dimmera & P.R. Widya</i>	121
Undergraduate students' perception of edu-techno empowerment in classrooms <i>D. Murwantono, N. Nuridin & M. Mubarok</i>	127
Perception and expectation of university students as generation z: A qualitative study about learning scenario <i>H. Helaluddin, S. Syawal, N. Nurmadiyah & Z. Zulfah</i>	134
Participation in building human resources: Independent strategies for facing a demographic expansion in a remote island <i>M. Hidayaturrehman & H. Husamah</i>	141
 <i>Teacher education and professional development to promote teacher competencies for Industry 4.0 education</i>	
Chemical literacy profile of chemistry preservice teachers in teachers college <i>D. Sitingjak, K. Sinaga & F. Purba</i>	153
The sports coaching model based on youth as rural sports activists <i>B. Siswanto, K.S. Soegiyanto, S. Sugiharto & S. Sulaiman</i>	159
Strengthening teacher competency in the 4th Industrial Revolution <i>P.F. Prihandari & H. Usman</i>	165
The implementation of continuous professional development to improve the quality of education <i>N. Nurkolis, S. Edy & Y. Yuliejantiningasih</i>	171
Realistic mathematics worksheet for elementary school teachers: A training for learning <i>R. Purwasih, F.D.T. Santana & U. Aripin</i>	178
Implementation of multiliteracies approach in mathematics teaching to support professional teachers in the industrial age 4.0 <i>E. Wulandari, M. Saufi, H. Khotimah, R. Azka, B. Zaman & A.G. Berutu</i>	183
Cultural approaches to citizenship education in early childhood: Teachers' experiences <i>T. Istianti, S.I. Hamid, M.H. Ismail, I. Amalia & F. Abdillah</i>	190

Future of teachers' education: Expert validity instruments of the E-Learning Classroom Environment and Transformation (ECET) <i>W. Rahayu & E. Sulaeman</i>	195
Disposition aspect of the educational field experience practices of student teacher candidates <i>N. Nandi, S. Sapriya & E. Mulyasari</i>	203
<i>Curriculum and learning materials, teaching-learning process, and assessment to promote Industry 4.0 skills</i>	
Evaluating English language learning materials to strengthen learners' competencies in the Industrial Revolution 4.0, 21st century, and Society 5.0 <i>Sukarno</i>	213
Curriculum implementation model in decentralization context <i>A. Ghufron</i>	221
Developing ESP learning materials for vocational high school students to promote vocational skills for Industry 4.0 <i>M. Yanti & A. Triastuti</i>	225
Curricular effectiveness of five-day school week program: An overview <i>A.R. Prastowo & S. Raharja</i>	231
The values of nationalism and life skills in the era of Industry 4.0 embedded in academic writing textbooks in Muhammadiyah universities in Central Java, Indonesia <i>T. Subekti, A. Andayani, K. Saddhono & B. Setiawan</i>	235
Designing tasks to promote language and Industry 4.0 skills <i>J. Priyana</i>	242
Enhancing EFL students' reading comprehension through a metacognitive strategy in Education 4.0 <i>N. Fauzia & N.H.P.S. Putro</i>	249
Classroom practices for promoting students' English learning motivation in Industrial Revolution 4.0 <i>A.R. Wangi & Ashadi</i>	255
Communicative language teaching and its application in developing slow learners' 21st century skills <i>E.M. Shinta & A. Triastuti</i>	261
Initiating and maintaining foreign language learners' motivation in Education 4.0 era <i>E.M. Pupah & Ashadi</i>	267
Project-based learning practices in the 21 st century to improve EFL learners' autonomy <i>A.R. Islami & A. Triastuti</i>	273
Students' perception of Higher-Order Thinking Skills (HOTS) learning in West Nusa Tenggara <i>S. Urbayatun, S. Suyatno, I. Maryani, C.P. Bhakti & M.A.N. Ghiffari</i>	278
Tools for alternative assessments in English language teaching in Industry 4.0 <i>R.A. Pratama & Ashadi</i>	284
Peer assessment to enhance students' speaking skills <i>K. Vabiola & N.H.P.S. Putro</i>	291

Assessment of learning outcomes based on Google Forms to reduce paper use <i>R. Santoso & M. Marzuki</i>	296
 <i>Technology and media in Industry 4.0 education</i>	
Enhancing the students' learning by implementing social interdependence theory and cooperative learning in Education 4.0 <i>A. Hananingsih & J. Priyana</i>	305
Engaging EFL learners in listening course with MGLab NETLUX <i>A.D. Nugroho, N.S. Putri, D. Septiani, L.R. Listyani, J.C.S. Karjono, T. Lestari, A.S. Hidayatullah & E. Ermawati</i>	312
Investigating the implementation of e-learning in Indonesia through UT online mobile application <i>A. Larasati & N.H.P.S. Putro</i>	319
Using the Memrise mobile application to assist foreign language learning <i>A.I. Reknasari & N.H.P.S. Putro</i>	324
The role of educational technology in preparing learning activities for elementary teachers <i>A.L. Emilda & A. Muhtadi</i>	329
Fostering students' self-regulated learning through a flipped classroom in the 4.0 educational industry <i>A. Padmajati & Ashadi</i>	337
Exploring teachers' opinions of the use of "Google classroom" to assist learning <i>A.H. Yuslima & L.D. Prasajo</i>	344
Using Memrise to promote students' listening and speaking abilities <i>N. Widyaningrum & N.H.P.S. Putro</i>	350
How can teachers use social media to teach speaking skills? A literature review <i>R. Rezky & N.H.P.S. Putro</i>	354
Improving students' writing and critical thinking skills through creative writing by using Wattpad <i>R. Rismayani & Basikin</i>	360
ICT-based teaching resources for education: Implementation of TPACK in ELT in Indonesia <i>A. Rahmi & Ashadi</i>	366
Effectiveness of Android-based and computer-based learning media to enhance children's cooking skills <i>Y. Yulianti, M. Sukardjo, N. Riska, A. Kandriasari & P. Wibowo</i>	372
The use of online dictionaries in teaching collocations <i>Y. Umwari & A. Triastuti</i>	380
Developing autonomous learning and Industry 4.0 skills for non-native learners through a self-access learning center <i>Z.E. Sari & Ashadi</i>	388
The use of the <i>Hello English</i> application to improve junior high school students' vocabulary and grammar mastery <i>Z. Zakiyah & Basikin</i>	395

Teaching and learning writing using mobile phone in 4.0 era <i>D. Zulaiha & J. Priyana</i>	404
Teaching English through social media to promote students' 21st century skills <i>L. Stevani & N.H.P.S. Putro</i>	409
A tablet application design to teach sexuality to children with autism <i>A.N. Chamidah & S. Sukinah</i>	415
Author index	421



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Preface

The fourth International Conference on Teacher Education and Professional Development (INCoTEPD) was held in Yogyakarta, Indonesia on 13–14 November 2019. The event is an annual agenda organized by the Institute of Educational Development and Quality Assurance of Yogyakarta State University. Responding to the current development in the teaching business, the fourth conference explored “Teacher Education and Professional Development in Industry 4.0”. The conference gained significant responses from students, teachers, lecturers, researchers, and practitioners of different expertise in Indonesia and beyond.

The committee invited Prof. Dr. Ismunandar, Director General of Learning and Student Affairs Ministry of Research, Technology and Higher Education and Dr. Supriano, Director General of Teachers and Education Personnel Ministry of Education and Culture of the Republic of Indonesia as the keynote speakers. The committee also invited Dennis Alonzo, Ph.D, University of New South Wales Australia, Assoc. Prof. Zuzana Tomas, Eastern Michigan University, United States of America, and Dr. Ibrar Bhatt, School of Social Sciences, Education and Social Work, Queen’s University Belfast, UK as invited speakers. While keynote speakers discussed the current trends in learning and teacher education and professional development in response to Industrial Revolution 4.0, invited speakers and participants presented their papers on topics which can be categorized into 4 subthemes, namely Education and Teacher Skills in Industry 4.0, & Education for Industrially Disadvantaged Societies; Teacher Education and Professional Development to Promote Teacher Competencies for Industry 4.0 Education; Curriculum and Learning Materials, Teaching-Learning Process, & Assessment to Promote Industry 4.0 Skills; and Technology and Media in Industry 4.0 Education.

The committee received 154 submissions of papers that were selected by the academic board into 125 eligible papers for presentation at the conference. After two eventful days of conference and further revision by the presenters, the full papers were then reviewed for the second time and the board decided that 63 of the revised papers covering the four sub themes qualified for publication in the conference proceeding that is published by CRC Press. The editors are really pleased with the processes and would like to congratulate all presenters and authors whose papers are published in this volume.

Ashadi, Universitas Negeri Yogyakarta, Indonesia
Joko Priyana, Universitas Negeri Yogyakarta, Indonesia
Basikin, Universitas Negeri Yogyakarta, Indonesia
Anita Triastuti, Universitas Negeri Yogyakarta, Indonesia
Nur Hidayanto PSP, Universitas Negeri Yogyakarta, Indonesia



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Acknowledgements

Jamilah
Suharso
Erna Adriyani
Lusi Nurhayati
B. Yuniar Dianti
Ella Wulandari
Atien Nur Chamidah
Ikhwan Zein
Mohammad Adam Jerusalem
Soni Nopembri
Heri Retnawati
Saefur Rochmat
Satoto E. Nayono
Caly Setiawan
Titis Dewi Cakrawati
Yuliana Istiyani
Kurnia Wulandari
Isdiana Zulidha
Rasman
Reni Nastiti
Ihtiara Fitriyaningsih
Amrih Bekti Utami
Anis Firdatul Rochma
Rahma Fitriana
Anisa Nurul Ilmi
Febi Puspitasari
Astri Ollivia Kuncahya
Rizky Ismail Jamaludin
Binar Winantaka
Zayin Adib Muhammad
Erna Muktiarini
At Yogyakarta State University, Yogyakarta, Indonesia



Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

Organizing committee

PATRON

Sutrisna Wibawa

CHAIR

Ashadi

Joko Priyana

COMMITTEE

Lantip Diat Prasajo

Fahmi Dwi Prasetyo

Wilatun

Anita Triastuti

Nunik Sugesti

Dani Hendra Kristiawan

Sri Andayani

Rifqi Nur Setyawan

Budi Sulistiya

Istiyani Nuryati

Agus Riyanto

Sunar

Undergraduate students' perception of edu-techno empowerment in classrooms

D. Murwantono, N. Nuridin & M. Mubarok

Universitas Islam Sultan Agung, Semarang, Jawa Tengah, Indonesia

ABSTRACT: Industrial Revolution 4.0 is a real phenomenon in modern higher education system in Indonesia. This challenges lecturers to integrate the use of technology in their teaching strategies. This paper presents the perceptions of undergraduate students toward Edu-Techno empowerment in teaching-learning process. Participants were undergraduate students of English Department in an Indonesian private university. This phenomenological qualitative research used interdisciplinary approach: education, psychology, and media. Semi-structured interviews were administered to obtain information on the specific theme of Fun-easy Learning Group as a part of the Edu-Techno application. By using Event Structure Analysis, seven-teen students supported the use of Edu-techno empowerment in the class. Both male and female students showed 85% enthusiasm for the use of modern technology. The results showed that undergraduate students had positive attitudes toward the Edu-techno application for enhancing their knowledge. In the future, Edu-techno empowerment should be applied using different styles of education approaches.

1 INTRODUCTION

Students' perceptions of Edu-Techno have an important role in teaching and learning activities. Education in the Industrial Revolution 4.0 era demands lecturers and stakeholders to develop effective teaching methods by adapting the e-learning approaches. Smart-phones and tablet computers are popular gadgets used in the digital revolution era that can be utilized as a teaching and learning media that attracts students' interest. Modern technology used in teaching engages students with digital technology during the learning and assessment activities in the classroom. This also promotes modern technology literacy.

The use of Edu-Techno combined with the Fun-Easy Learning Group is a kind of technology education. In this research, undergraduate students expressed their positive attitudes toward the e-learning program in the class. The use of technology in education is relevant to other disciplines and it can trigger the diversity of research.

Some experts argue about the use of digital technology and social media in education. The development of technology has certainly brought remarkable changes to how learners accomplish their learning (Li 2015). Social media is a broad term referring to blogs, micro-blogs, forums, dialogues, images, sounds, videos, networks, social web profiles and other social networks (Brandon & Tilley 2009). Other researchers investigated prospective teachers' use of social media and web technologies (Peck et al. 2002, Rakhmanina et al. 2017, Ünsal 2018, Valetsianos & Moe 2017). They did not only highlight the advantages of using social media, mainly blogs and videos but also introduced Education Technology in Higher Education.

In Higher Education, the communication between lecturers and students enhances students' comprehension. The theory of Introduction to Human Communication states that effective communication is done by giving meaning, constructing an idea, and creating responsible interaction with the contextual world. Such communication helps students become more thoughtful, confident, and become ethical communicators (Beauchamp & Baran 2019). Perception refers to the process of how people obtain experiences and what they obtain through sensory receptors (Maulidah 2017). In short, it is the process of thinking or feeling.

Furthermore, the information that has been managed by people, can be either rejected or accepted by sensory receptors. The perception is related to the experience of how people do activities or see certain objects around. In the first process, people feel the awareness of what they do. Second, they face the reality. Third, interaction with what other people do in daily activities occurs. Finally, they see their own experiences

and communication is built. Thus, the objects or events captured by the senses are stored in the forms of reflections. Hence, perception is the result of the process of people interpreting certain things based on their own experiences and stimulus that produce information. Moreover, perception can be affected by two factors namely internal and external factors. The internal factors include experience, belief, background, personality, attitude, and self-acceptance. Meanwhile, external factors consist of measurement, repetition, movement, familiarity, and new experience.

If the reception is correlated with the use of Edu-Techno, it represents efforts to develop and use technology to improve the effectiveness of teaching and learning activities. The use of technology in the teaching-learning process is assumed to have positive effects. The use of this strategy is the solution to solve various problems in the field of education. The term empowerment is defined as the effort to give power or authority to or to authorize (Tschohl 2010). The suffix ‘-ment’ can be defined as a result or product and the act or fact. It denotes the result or process of empowering by entrusting a person or people to do something. In short, the definition of empowerment refers to an authorized license.

The empowerment of technology should adjust to the cultural background and current learning development. Hence, it is necessary to decide on how to integrate those aspects in a good system that combines techniques and activities for the specific social context in which technologies are developed and used (Kaplan & Haenline 2010). Technology itself is a part of a cultural artifact. It is the whole of systems that the human produce and use. Empowerment also proposes a life-cycle or a series of stages by which technology becomes integrated within a society (Rodriguez-Gomes & Ibarra-Saiz 2015). The undergraduate students could also participate in the assessment based on their own experiences in using technology media. The significance of participation in the assessment process has been underlined in a number of studies (Griffin & Care 2015, Perrota & Whitelock 2017, Yao & Hill 2016).

The objective of this research was to investigate the education technology empowerment in classroom teaching of undergraduate students in a private university, Indonesia. Moreover, some students had learning problems related to the use of social media, including Edu-Techno. This research was done to propose possible solutions addressing students’ difficulties in using social media and Edu-Techno empowerment for learning purposes. This research also proposes some suggestions for future researchers to investigate the technology empowerment in education.

A preliminary research study was done by conducting direct observation in the classes in which social media was used for listening to music, social activities, reading blog posts, commenting the others’ profiles, peeking at someone else’s status, and participating in various social events. The university expected the students to grow as creative individuals who think outside the box through this empowerment. Several research questions were formulated as follows. (1). What are the environmental characteristics of undergraduate students regarding the use of digital technology in education? (2). How are the undergraduate students’ behaviors towards the use of social media in the class? (3). How are the undergraduate students’ attitudes in dealing with the use of the edu-techo in the class? (4). How are their perceptions toward the use of Edu-Techno in the class?

2 RESEARCH METHOD

This study was done in the form of phenomenological qualitative research in which data were collected through semi-structured interviews. It is an approach to qualitative research that focuses on the commonality of experiences obtained by members of a particular group and comprehension of a certain phenomenon based on their experience perspectives (Husserl 1980). The fundamental goal of the approach is to arrive at a description of the nature of the particular phenomenon (Creswell 2013).

The participants were 20 out of 32 students who attended the Cross-Cultural Understanding class of the Faculty of Language and Communication Science. There were 13 females and 7 males in the class who were purposively selected based on the research objectives. It may also entail studying the whole population of some limited group or a small number of people participating in the study (Gor 2017). The instruments of this

phenomenological qualitative research were used, followed by direct observations and semi-structured interviews. These interviews focused on the specific theme of learners' behaviors and perceptions toward Edu-Techno empowerment and were administered in a conversational style. These interviews were a strategy to investigate learners' motivation behind their choices and behavior toward the Industrial Revolution 4.0 (Raworth 2012).

A WhatsApp Easy-Learning was created, followed with direct observation. The observation was conducted for six months based on the following procedures. Undergraduate students were observed directly in the Cross-Cultural Understanding class. After 13 meetings, they underwent the semi-structured interviews which 10 questions were designed to find out more about their behavior, meaning, attitudes, and expectations about the empowerment of Edu-Techno through the Easy-Learning Group of WhatsApp. Each interview lasted for 7-10 minutes per student.

The data collection was done in two methods; library method and field method. There were three collaborative steps namely, data collection, data organization, and data analysis. Two types of data—the primary data and the secondary data were obtained—which were collected by tracking the timeline of the events regarding Edu-techno empowerment in the class. The primary data were obtained from observation and interviews. Meanwhile, secondary data were collected from some books, journals, articles, essays, websites and other theoretical writings concerning the topic of analysis. See Figure 1.

After organizing the data of research, data analysis was the final step out of the three collaborative steps of qualitative research. There are several qualitative analysis techniques available for the analysis of the history of a social process. This research discussed a relatively unknown technique, "Event Structure Analysis" that is used to analyze history as a sequence of events, and apply it to the analysis of a case study of planned social change (Stevenson et al. 2003). The theory of Mimetic (Barthes 1986) was also used to get a deeper understanding of the meaning of some symbols dealing with the process of accumulating the primary data both direct observation and interviews.

The analysis of the Interpretative Phenomenological Analysis began with compiling a set of descriptive comments on the interview transcripts. The main purpose of the descriptive comments is to describe the content of data. Furthermore, there are three keys to making descriptive comments such as descriptions, explanations, and emotional responses. The comment functions were arranged within Microsoft Word to make these descriptive comments. (Cooper et al. 2012).

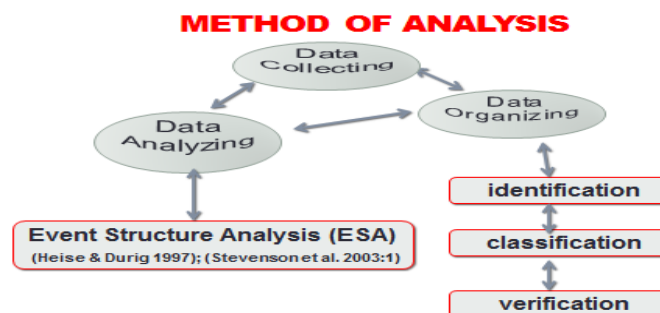


Figure 1. Three collaborative steps in qualitative research (Merriam 2002).

3 RESULTS AND DISCUSSION

The results showed students' perception of their experiences and knowledge dealing with related to the empowerment of Edu-Techno. The finding is the results of the Interpretative Phenomenological Analysis process and the reflection on the focus of phenomenology – the real experience and meaning of a particular phenomenon. Research results were categorized into four: environmental characteristics, undergraduate

students' behaviors, undergraduate students' attitudes towards the Edu-techno, and undergraduates' perceptions in Edu-techno empowerment. The semi-structured interviews covered 10 questions for all categories (See Figure 2). The focus of phenomenology was on the common elements of a phenomenon, rather than on the individual and when presenting excerpts from the interview transcripts. The participants' names were not included but they were the only abbreviation, such as FS1 (the female student 1), MS2 (the male student 2), and so forth.

3.1 Category 1: The environmental characteristics in the I.R. point 4.0

When they were asked about the environmental characteristics of living among the millennial group in Industrial Revolution point 4.0, only a small number of students answered that it was necessary to keep good traditions for the future. However, the researchers also found that nearly all participants were interested in using modern technology in education.

“I definitely welcome the new era of modern technology” (FS 3)

“The transformation the society from modern to modern high technology triggered us to be literate in technology” (MS 1)

“We were very happy to communicate with our classmates or lecturers, mainly by using social media” (FS 10)

“Cheer up! Just follow it or we would be alienated from the relationship” (FS 7)

It indicated that learning Edu-Techno through Easy-Learning Group of WhatsApp includes experiencing a variety of feelings, both negative and positive. Some students appeared to feel confused when exposed to a new digital revolution both in the form of Edu-Techno and Easy-Learning Group of WhatsApp. Fortunately, most students were excited about a new teaching method that integrates the use of technology. Technology has great influences on the pattern of teaching. Furthermore, the use of social media among undergraduate students has become a way of life and personal activities are made public (Edge 2017). Social media does not take much of students' attention away from their schoolwork. It can facilitate them to communicate with other students in a more meaningful way (Davis 2018).



Figure 2. Semi-structured interviews in phenomenological qualitative research

Category 2. The undergraduate students' behaviors toward Easy-Learning Group as Edu-Techno in WhatsApp

The use of technology in teaching is in a great demand nowadays. In fact, its existence is undeniably true. Social media for students as a dominant means of learning, developing strengths and preferences in how they create and share knowledge. The use of technology in the group of Easy-Learning Group as Edu-Techno in WhatsApp gives the rapid information that reaches social media's users whether it is for status updates, information sharing, and up to date announcements. In this semi-structured interview, the undergraduate students expressed their experiences in using Easy-Learning Group as follows:

"The Easy-Learning Group" actually helped us as the member of this group. Moreover, It contains much information dealing with our learning in the university" (FS 2)

"Social media made us be more effective and efficient in time" (FS 13)

"Some files such as teaching materials, e-books, assignments, and any information relating to English teaching in WhatsApp group, were easily gotten" (FS 8)

Most undergraduate students felt optimistic by using Easy-Learning Group as Edu-Techno in WhatsApp. Their attitudes toward the application were positive. They were not reluctant again to join the course in the class. This study suggest that the Easy-Learning Group as Edu-Techno in WhatsApp was experienced and understood as any kind process of building connection. The undergraduate students were more active in discussion with their colleagues. It means that if they utilized modern technology wisely, they would get a good avenue for collaborative learning for students (Chen, Kaewkitipong, & Ractham, 2016). The use of social media in the classroom was not meant to be definitive, but it was comprehensive. It covered everything from teaching material and method of teaching (Poore, 2015).

Category 3. The undergraduate students' attitudes in using modern technology in the class.

By using Easy-Learning Group as Edu-Techno in WhatsApp, the students were required to always know the latest information. They could download quickly and freely the materials related to the subject in the class.

"Easy-Learning Group required active learning. It is a process that we could not learn unless you actually did it. Once we did it, we kind of felt we had a better understanding of how Easy-Learning Group as Edu-Techno in WhatsApp was used" (FS 6)

"It is a good idea for improving our learning. It also triggered us to be critical thinking and had positive impacts for our own style of learning." (MS 5)

"Modern technology in teaching influenced my mind to be critical thinking and it had positive impacts for my own style learning" (FS 4)

"I found that all I really wanted was to learn social media and to get experiences in using the tool of application as much technology expert as possible. That was it. So I declared a double major" (MS 9).

"I came to the class to learn and discuss with my peers" (FS 15)

The undergraduate students in this study apparently found not only that learning Edu-Techno through Easy-Learning Group was emotional, but also it required active learning. All participants noted that learning Edu-Techno required experiential learning. They also expressed the fact that learning Edu_Techno by using WhatsApp group required the learners to take initiative in the learning process (Eynon & Grant, 2017)

Category 4: Perception and suggestion for the empowerment of easy learning group

The undergraduate students perceived that several activities should be added to Fun-Easily Learning Group on WhatsApp. Three undergraduate students suggested that the group should be well-controlled in terms of learning materials and the discussion. Furthermore, another suggestion relates to the necessity to make the group more meaningful by having routine discussions and followed by summaries. "By doing the

empowerment Edu-Techno, I was able to grow from that in terms of my intellectual knowledge and conducting actual technology application” (FS 17)

“It opened a lot of doors; I thought about things much” (FS 20)

“It was time to change our mindset, turning around to the new era of digital technology” (MS 11)

“In the millennial era, literate technology was better than illiterate ones” (FS 19)

“The assessment was greatly needed to know on how we understood the running of the program” (MS 16)

The participants found what they learned in the platform related well to their prior activities and experiences which is one of the characteristics of phenomenological research. They supported the use of this learning platform and believed that this platform should be maintained and developed for future learning strategies for having great effectiveness and efficiency. They also could assess by themselves based on their own experiences in using technology (Scott et al. 1997).

4 CONCLUSION

The results of the research indicated that students made their learning experience more meaningful using the Edu-Techno with Fun-Easy Learning Group on WhatsApp as they could relate their learning to their prior knowledge and experience. Also, these research results suggested that they tend to make sense of their experience by relating what they were learning with prior education in social media and their personal experiences. Such experiences helped them to interpret and make meaning of their learning experience. In this case, students’ perception was affected by their unforgettable experience, the spirit for the new era, and their educational background. Moreover, concerning the Industrial Revolution 4.0, the use of technology must be utilized most effectively. Edu-Techno empowerment is one of the apt solutions to enhance the engagement and efficiency of learning processes. In this context, the Fun-Easy Learning Group through WhatsApp is one of technology which can be empowered as an educational platform or called as Edu-Techno. The empowerment of Edu-Techno obtained participants’ enthusiasm and positive attitude in learning. Several suggestions were proposed for lecturers who expect to use Edu-Techno in their teaching models. Lecturers are recommended to use other technology apps in the teaching-learning process that match their students’ cultural backgrounds.

REFERENCES

- Barthes, R. 1986. *The rustle of language*. Berkely & Los Angeles: University of California Press.
- Beauchamp, S. R., & Baran, S. J. 2019. *Introduction to Human Communication: Perception, Meaning, and Identity*. USA: Oxford University Press.
- Brandon, E., & Tilley, S. 2009. *Online Marketing Inside Out*. Australia: SitePoint Pty, Ltd.
- Chen, C. C., Kaewkitipong, L., & Ractham. 2016. Using social media to enrich information systems field trip experience students’: satisfaction and continuance intentions. *Computers in Human Behavior*, 63, 256–263.
- Cooper, R., Fleisher, A., & Cotton, F. A. 2012. Building connections: an interpretative phenomenological analysis of qualitative research students’ learning experiences. *The Qualitative Report*, (April 23).

- Creswell, J. W. 2013. *Qualitative inquiry & research design: choosing among the five approaches*. Thousand Oaks, CA: SAGE Publications, Inc.
- Davis, L. 2018. The impact of social media in education: student engagement tactics. Retrieved from <https://www.schoolology.com/blog/impact-social-media-education-student-engagement-tactics>
- Edge, W. 2017. Nursing professionalism: impact of social media use among nursing students. *Journal of Healthcare Communications*, 2(3), 1–3.
- Eynon, R., & Grant, L. 2017. Digital Divides and Social Justice in Technology-Enhanced Learning. *Technology Enhanced Learning: Research Themes*. <https://doi.org/10.1007/978-3-319-02600-8>.
- Gor, D. L. 2017. An overview of sampling techniques in statistics. Munich: GRIN Verlag. Griffin, P., & Care, E. 2015. The assessment and teaching of 21st-century skills: method and approach. *Assessment and Teaching of 21st Century Skills*. https://doi.org/10.1007/978-94-017-9395-7_1.
- Husserl, E. 1980. *Phenomenology and the foundations of the science*. (Marly Biemel and Husserliana V, Ed.). The Hague, The Netherlands: Martinus Nijhoff Publishers.
- Kaplan, A.M. and Haenline, M. 2010. "Users of the world, unite! the challenges and opportunities of social media. *Business Horizon*, 53(1), 59–68.
- Li, K. C. 2015. Technology in education. technology-mediated proactive learning. (J. Lam, K. K. Ng, S. K. S. Cheung, T. L. Wong, K. C. Li, & F. L. Wang, (eds.), *Second International Conference ICTE (Vol. 559)*. Berlin, Heidelberg: Springer Berlin Heidelberg. <https://doi.org/10.1007/978-3-662-48978-9>
- Maulidah, I. 2017. Vlog: The mean to improve students' speaking. In *Proceedings of the International Conference on English Language Teaching (ICONELT)*. August 24–25, Surabaya, UIN: Atlantic Press.
- Merriam, S. B. 2002. *Qualitative research in practice: examples for discussion and analysis*. San Francisco: Jossey-Bass Company.
- Peck, Craig, Cuban, L. and H. K. 2002. Techno-promoter dreams, student realities. *Phi Delta Kappan*, 83(6), 472–480.
- Perrota, C., & Whitelock, D. 2017. *Assessment for learning*. In *Technology-enhanced learning*. Switzerland: Springer International Publishing.
- Poore, M. 2015. *Using social media in the classroom: a best practice guide*. India: Replika Press Ltd.
- Rakhmanina, Lisa and Kusumaningrum, D. 2017. The Effectiveness of video blogging in teaching speaking viewed from students' learning motivation. In *Proceedings of the Fifth International Seminar on English Language and Teaching (ISELT-5)*. Sumatra: Universitas Negeri Padang.
- Raworth, K. and C. S. et. al. 2012. *Conducting semi-structured interviews*. UK: Oxfam GB.
- Rodriguez-Gomes, G. & M. S. I.-S. 2015. *Assessment as learning and empowerment: towards sustainable learning in higher education*. Springer Carm Heidelberg, New York.
- Scott, S., Scott, D. E., & Webber. 1997. *The Enabling Power of Assessment 2 Series Editor: Claire Wyatt-Smith Assessment in Education (Vol. 2)*. Retrieved from <https://link-springer-com.esc-web.lib.cbs.dk:8443/content/pdf/10.1007%2F978-3-319-23398-7.pdf>
- Stevenson, W., Zinzow, H., & Sridharan, S. 2003. Using event structure analysis to understand planned social change. *International Journal of Qualitative Methods*, 2(2).
- Tschohl, J. 2010. *Empowerment: a way of life*. Minnesota, USA: Best Seller Publishing. Ünsal, H. 2018. The use of social media by prospective teachers and their practice aims of web technologies in Turkey. *Universal Journal of Educational Research* 6.10, 2258–2265. <https://doi.org/10.13189/ ujer.2018.061024>.
- Valetsianos, G., & Moe, R. 2017. The rise of educational technology as a socio-cultural and ideological phenomenon. In *EDUCAUSERview Monday 10*.
- Yao, W., & Hill, M. F. 2016. Learning to teach with assessment: A student teaching experience in China. *Frontiers of Education in China (Vol. 11)*. <https://doi.org/10.1007/bf03397130>