Self-determined learning in EFL classroom: a trajectory for the future research

Deni Sapta Nugraha[1, 2]*, Ninuk Lustyantie[2], Uwes Anis Chaeruman[3]
[1]Airport Operation Department, Politeknik Penerbangan Indonesia Curug, Tangerang, Indonesia
[2]Postgraduate Program of the Applied Linguistics, Universitas Negeri Jakarta, Jakarta, Indonesia
[3]Educational Study Program, Faculty of Science Education, Universitas Negeri Jakarta, Jakarta, Indonesia
*Email: deni.sapta@ppicurug.ac.id (corresponding author)

Abstract

The development of technology has rapidly affected the growth complexity of the 21st century's work environment which also influences educational environment. Thus, approaches in teaching and learning such as self-determined learning has been considered relevant to enhance the quality of learning. Researchers and educators have been pursuing to accomodate the praxis of self-determined learning. The purpose of the study was to uncover research trends and try to bridge the gap of future research of self-determined learning (SDL) in the English as a foreign language (EFL) context. Using meta-synthesis, 13 selected articles were examined drawn from a single database from the last five years between 2017 and 2021. The articles were systematically selected through several criteria using the query "Self-determined Learning+AND+EFL" in the Sopus database. They contributed to the growing interest related to research and practice of heutagogy or SDL. Results showed that research areas of SDL had been widely investigated in different levels of students; primary (23%), secondary (23%), and university (54%). In addition, a few research studies were conducted to examine students' language skills and language components (listening and vocabulary) (15%). It implicated that many EFL research area could be investigated from different levels and focus in the future.

Introduction

The development of a massive shift in technology has rapidly affected the growing complexity of the 21st century's work environment, which influences educational field. Sim (2017) says that teachers need to formulate students for new jobs that are not available yet, train students to use technology, and drill them on how to cope with the problem they do not recognize yet. It indicates that teachers have responsibility to help students to become future-ready and prepared for today's work complexity (Gros, 2016). To achieve the goal, students, in this case, need to be equipped with personal capability (Blaschke, 2012; Gros, 2016; Lustyantie, 2015; Tunstall & Neergaard, 2022). The essential one, for example, is the capability to use competency to solve a problem in a familiar or unfamiliar environment (Blaschke & Hase, 2016). Meanwhile, universities are no longer the final learning threshold for students because learning becomes lifelong (Rogan et al., 2020). Therefore, universities are further responsible for building students' capability to meet future challenges.

The learning environment has now shifted into a globalized world and interconnected landscape. In this case, technology is one factor that leads to the shift in the learning environment (Burbules et al., 2020; Gibson, 2001; Price, 2015). The changes in the learning environment create the need for educators and teachers to furnish their students with inclusive education that emphasizes life skills such as communication, cross-cultural collaboration, problem-solving, and critical thinking (Teo, 2019).

Demand for the innovative educational approaches that might be able to scaffold students to become more independent is increasing (Collins & Halverson, 2010; Kalz, 2015; Laal, 2011; Little & Ellison, 2015; Robinson & Aronica, 2015). As a result, approaches in teaching and learning, such as self-

determined learning, have been considered relevant as an alternative to enhance the quality of learning (Agonács & Matos, 2019; Bhoyrub et al., 2010; Blaschke & Hase, 2015, 2016; Canter, 2012; Fearon et al., 2020; Garrels, 2019; Widiaty et al., 2020). The term self-determined learning (SDL) approach serves different teaching and learning practices from the standard approaches. In heutagogy or self-determined learning, teachers play a role as a password for learners to allow them to access their learning expedition (Moore, 2020). After the journey begins, learners need to be able to choose and decide on their subject to learn in order to achieve their academic success (Gillaspy & Vasilica, 2021; Kenyon & Hase, 2013; Nikcevic-Milkovic et al., 2022). Blaschke (2012) further explained that SDL created a process. Students, in this case, are willing to identify their learning needs, regulate their purpose of learning, choose resources, perform problem-solving strategies, and retrospect what they have learned to verify existing knowledge, assumptions, and learning capabilities.

In relation to the implementation of SDL in the classroom within various educational levels, several studies have documented it well. Dincer et al. (2019) examined the antecedent and outcome of classroom engagement of 412 university students. They found that SDL forecasted students' engagement that may impact students' achievement in English courses. Their hypothesis has been further triangulated through interviews, revealing that a positive social atmosphere will favor student engagement in the classroom. The finding showed that self-determined learning could motivate students to engage in the learning process. Wehmeyer et al. (2017) reviewed the influence of fostering self-determined learning in reading and writing for secondary education. Their finding avowed that SDL strategies improve students' writing and reading skills and allow them to become more autonomous. Bhoyrub et al. (2010) convince that the heutagogy approach or SDL could be applied in vocational degrees such as nursing. They state that SDL can help them deal with the difficulties posed in practical learning so that they can bridge the gap between learners and teachers. Raley et al. (2018) studied the implementation of SDL in teaching content area subjects through three stages: setting goals, taking action, and fine-tuning goals. Raley et al. (2021) further compared the impact of SDL in the inclusive classroom among two different groups. They found no significant changes with self-determined learning scores for the initial year, but they found a regular pattern between groups. This insignificant impact was due to insuficient provision needs toward the majority of the students that involved in the study. Shrogen et al. (2018) explored the influence of SDL on students with intellectual disabilities at the secondary level. They believe that SDL can be carried out thoroughly at different levels of education with the support of schools and the government.

A meta-synthesis is done to synthesize qualitative findings on a topic to discern critical ideas, thoughts, or beliefs that offer a different or robust explanation for the phenomenon under review (Siddaway et al., 2019). In this article, qualitative data were specifically reviewed to portray the outcome of future research on SDL. Therefore, it is important to conduct a meta-synthesis on SDL in the English as a foreign language (EFL) context to thread the state of the art and find the gap that might be completed through future research recommendations. Through this study, the focus, method, research design, sample, and language skills of future research can be uncovered assiduously.

Despite the growing interest in SDL, the availability of comprehensive research in journals, specifically those that discuss SDL in the EFL context, is still much too small. Based on the keyword "self-determined learning," 213 articles in either flagship journal or open journal indexed by Scopus were published from 2017 to 2021 in various fields. However, there is a limited exploration of implementing the SDL model implemented in the EFL context. There are only 18 published articles ranging from 2017 to 2021 based on the terms "(self-determined learning+AND+EFL)″ indexed by Scopus. This research is essential to be carried out to provide insights and pave the way for future researchers (Sandelowski & Barroso, 2007). Therefore, the research questions pursued included:

(1) What are the trends in SDL in EFL research?
(2) What are future research recommendations from the existing research literature?

Method

This study used meta-synthesis to outline the heutagogy approach in English language teaching. It is intended to find the accumulated knowledge in a field of interest (Saini & Shlonsky, 2012). Besides, it is also to produce understanding that advises future research about the problem of interest, specifically in applied linguistics (Norris & Ortega, 2007), such as using the heutagogy approach or self-determined learning (SDL) in the English as a foreign language (EFL) context. This meta-synthesis used the following steps: 1) preparing the review question, 2) managing a systematic literature search, 3) screening and selecting appropriate research articles, 4) analyzing and synthesizing qualitative findings, 5) maintaining quality control, and 6) presenting findings (Sandelowski & Barroso, 2007). Accordingly, this study followed those stages to identify the research question and search for, select, appraise, summarize, and combine evidence to

address the research question (Erwin et al., 2011). Besides that, VOSviewer is used to map the research trend (van Eck & Waltman, 2010) on SDL.

Data collection

A systemic search was conducted in the databases of Scopus on June 15, 2021. The database is purposively selected since it provides and contains flagship journals across the globe (Soomai et al., 2016). The retrieval data was cut off on July 2, 2021, to retrieve the most current issue between the last five years. Therefore, it portrayed a large-scale research setting and context, particularly in the SDL model in English language teaching. The queries used in this article encompass; "self-determined learning," "Self-determined learning, EFL." While searching for the research articles as the research sample, the following criteria are concerned; 1) articles published in the last five years between 2017-2021 years to get the most current issue, 2) articles should be original research papers but not limited to proceeding and book chapter-based research so that the practice of SDL is reflected through their reflexive findings, and 3) the articles should focus on the live experience in a classroom or reflexive teaching towards the implementation of heutagogy or self-determined practice in EFL context to draw the gap that EFL researchers can fill, especially in Asia or Indonesian context.

Figure 1 shows the data collection technique flow chart, beginning with setting the criteria of the articles until the determining qualified articles to be synthesized.
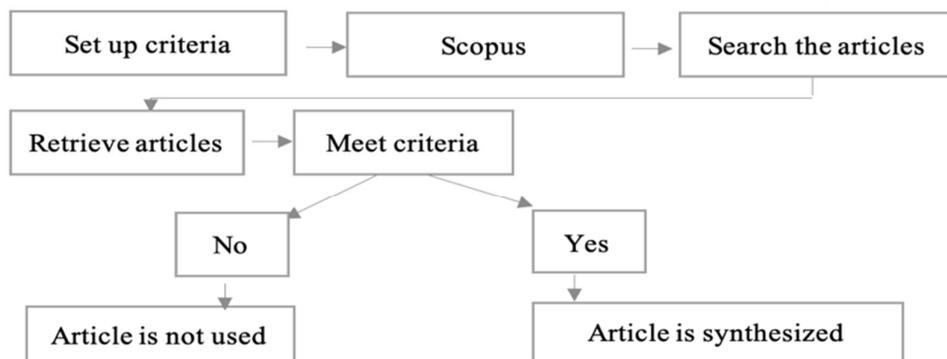

Figure 1. Data collection technique

Data analysis

Firstly, VOSviewer software (Jan van Eck & Waltman, 2020; van Eck & Waltman, 2010) was used to map the research trends of SDL in EFL teaching and learning. The articles were sorted out from Scopus, and then the meta-data was imported

in CSV* extension so the VOSviewer could read the Scopus metadata in its database. Concise explanations were carried out to interpret the diagram. In addition, content analysis was conducted to triangulate the previous finding to compare, contrast and categorize textual analysis (Fraenkel et al., 2012). The selected articles were summarized based on the category and then compared finding to relevant theory. Besides, the findings were deduced through critical thinking and an inductive analysis procedure.

Figure 2 displayed the flow of data analysis starting from reading the articles and then sorting out the data, whether they are in the form of quantitative or qualitative data. Data analysis is conducted toward qualitative data in terms of characteristics of participants, research focus, and future recommendations.
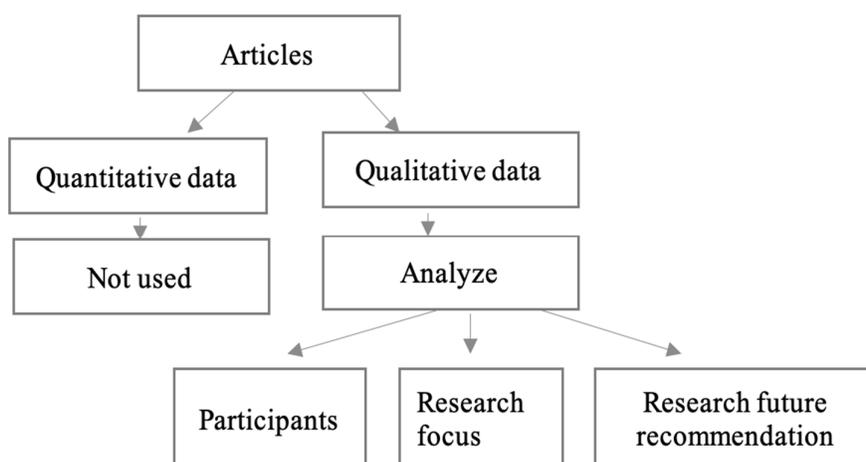

Figure 2. Data analysis technique

Findings

To answer research question 1, the authors include the distribution of the studies by year, the contributor countries, subject area, and research map based on the keyword. Results showed 213 research articles in the Scopus database using "self-determined learning." Surprisingly, it was found that only 18 documents were in the Scopus database, using the search terms "(self-determined learning+AND+EFL)" The selection of the articles were based on the criteria proposed in the data collection technique. Table 1 summarizes the findings.

Table 1. Number of articles in Scopus database

Corpus	Keywords	
	Self-determined learning	Self-determined learning, EFL
Scopus	213 documents	18 documents

Figure 3 reports the trends of Scopus' published research articles focusing on self-determined learning (SDL) indexed during the last five years between 2017 and 2021. Three articles were published in the first years. The number fell to only 2 articles in the second year. However, more articles discussed SDL after that and then remained the same in the last year.
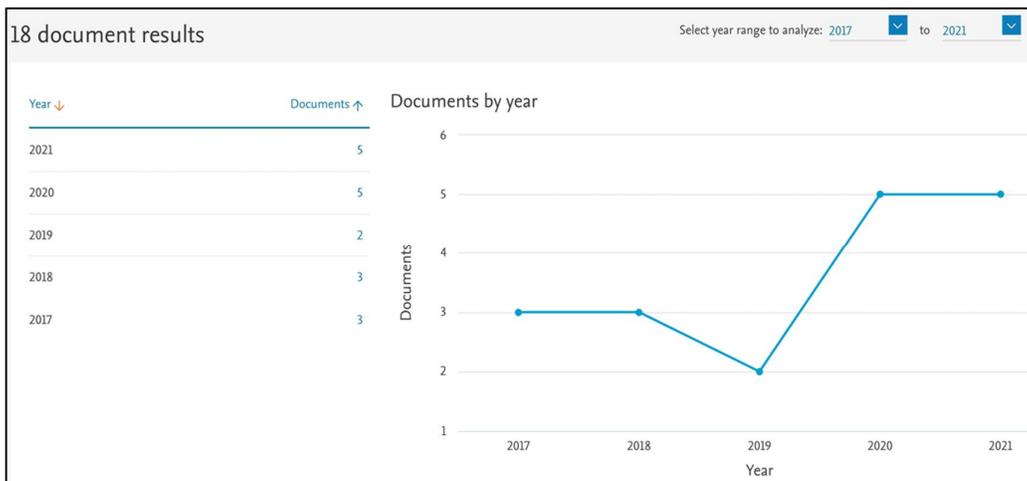
Figure 3. Research trend in self-determined learning in EFL classroom 2017-2021

Figure 4 shows research focusing on the SDL model in the English as a foreign language (EFL) context in 10 countries. Among all, Japan is the highest, followed by the United States. Countries like Canada, Portugal, Saudi Arabia, and Taiwan are in the same category. The lowest research trend was in the other four countries: Australia, China, Germany, and Hongkong.

Figure 4. Research trend on SDL based on country

Figure 5 informs several five subject areas investigated in the EFL setting; social science, arts and humanities, computer science, psychology, and decision science. It is f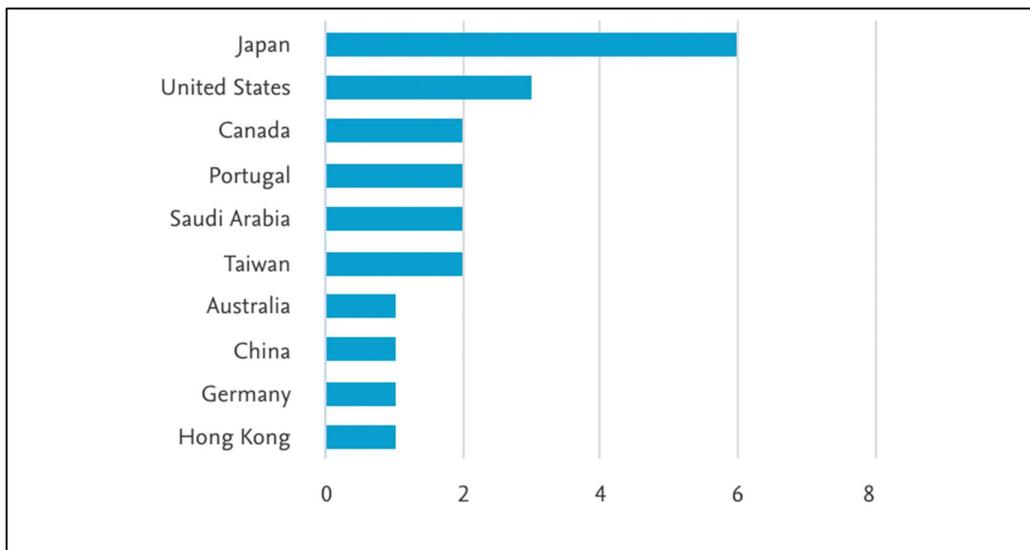ound that SDL has been widely discussed in different subject areas in the same setting of the EFL context. Therefore, it enriches more perspectives of SDL. Based on Figure 5, the subject area that discussed SDL at the utmost was social science. Arts and humanities were the second most extensive portion of the research, followed respectively by computer science, psychology, and decision science.
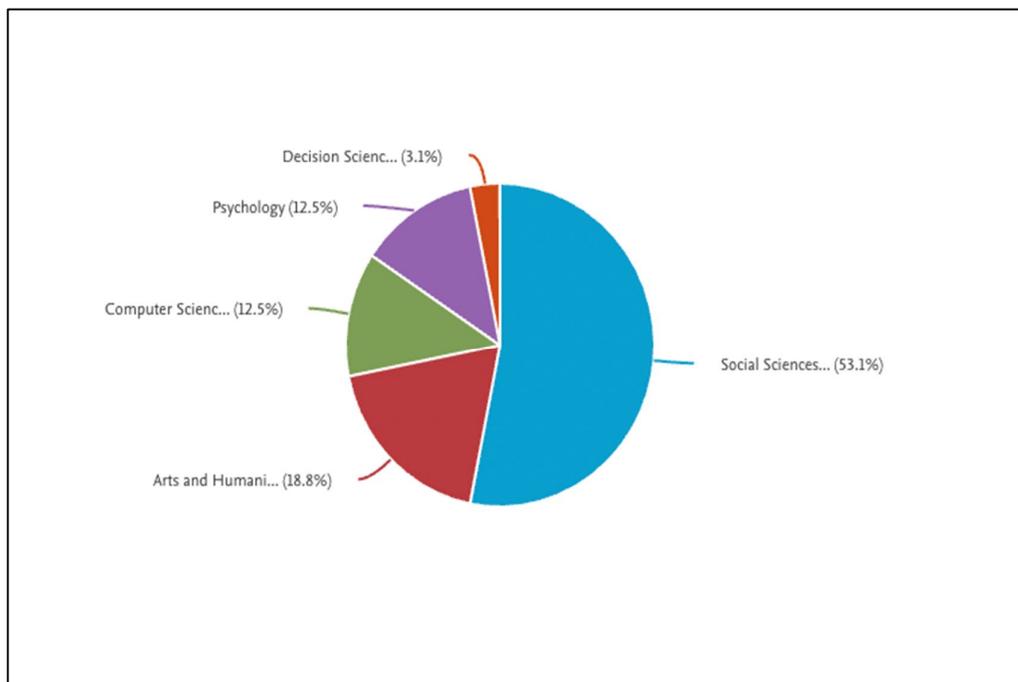
Figure 5. Subject area of the SDL research

There were 7 clusters shown in VOSviewer pertained to 18 selected articles. Firstly, cluster 1 mainly discussed keywords such as formal education, learner autonomy, m-learning or mobile learning, psychological needs, self-regulated learning, self-regulation, systematic review, and thematic review. Secondly, cluster 2 mostly explored keywords dealing with CALL, content-based instruction, EFL, extrinsic motivation, intrinsic motivation, PSR, tablet computer, and two-way immersion. Cluster 3 elaborated keywords active learning, higher education, individual differences, motivation, perception of learning, self-construal, and vocabulary learning. Furthermore, cluster 4 connected the keywords achievement, JTE, L1/L2 comparison, latent profile, nest, secondary school, and self-determined motivation. Meanwhile, keywords such as elementary school, engagement, Japan, longitudinal model, motivational

development, and SDT belonged to cluster 5. Emotion, L2 motivation, language anxiety, logistic regression, mixed-method, and non-parametric tests were identified in cluster 6. Finally, basic psychological needs, classroom social climates, L1 achievement, L2 willingness to communicate, and self-determination theory belong to cluster 7. Figure 6 displays the co-occurrence map of the persistent words.
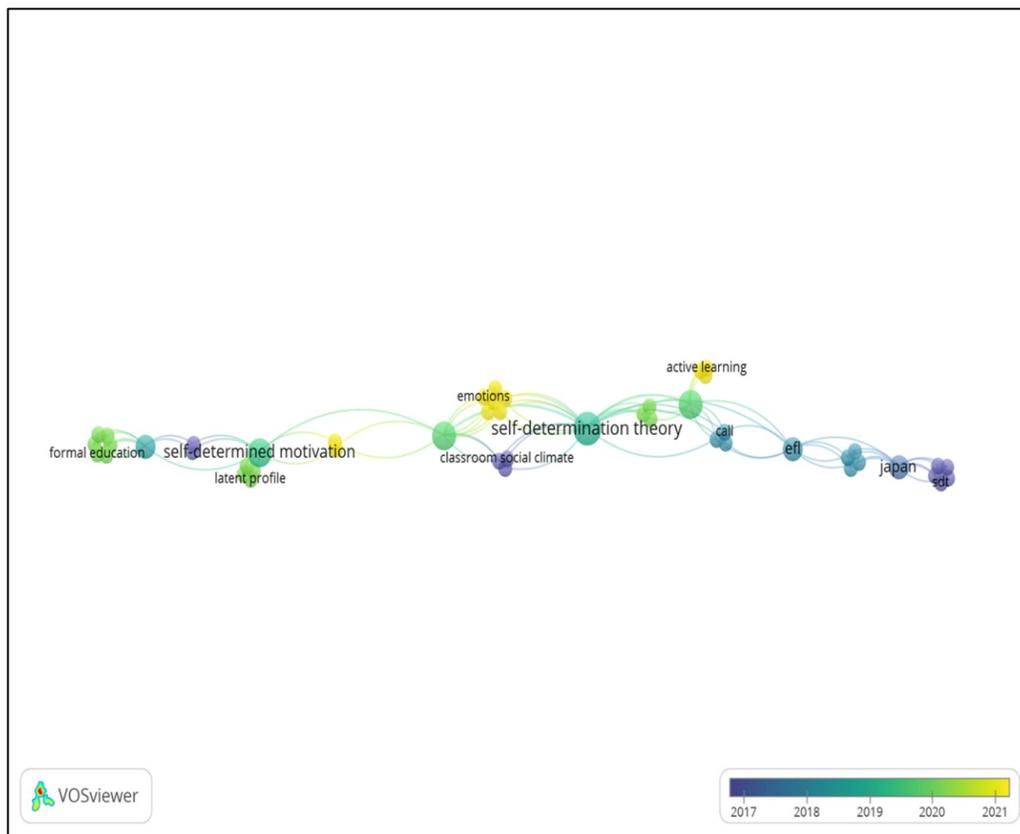
Figure 6. The keywords map in SDL

Based on the map in Figure 6, different colors say different trends. The most recent discussion occurred in clusters 3 and 6. The keywords were discussed recently in 2021. The topic in cluster 3 was directly related to the main topic of motivation but not directly related to two other central topics, such as self-determination theory and EFL. Somehow, the topic in cluster 6 was directly related to basic psychological needs and self-determination theory. As the most discussed topic in cluster 2, EFL was interrelated with each other within its cluster and directly related to the most discussed topic in clusters 3 and 6. The implication is that researchers can take keywords in those clusters if they want to

conduct research studies because the keywords were categorized as the current issue in EFL classroom research.

To answer research question 2, the following subcategories were defined and investigated; participants, research focus, and future research studies recommendations. Based on the search terms "self-determined learning and EFL" it appeared that Scopus indexed 18 research articles. Therefore, 18 articles were retrieved from the database and refined categories into several other relevant categories. The articles can be retrieved in a complete paper form; if they cannot be accessed, they are excluded. Based on manual analysis, from 18 articles, only 14 articles can be retrieved in full version. One article was proceeding with the same as the journal version; the other three were left because the authors could not access the full version. One article discussed out of the EFL context; therefore, it is not included. Thus, 13 articles were then scrutinized. Table 2 summarizes meta-data of the research articles sequenced based on the most cited article.

Table 2. Meta-data of the research articles

No	Focus	Author	Year	Source	Cited by
1	Classroom social climate, self-determination theory, L2 willingness to communicate (WTC), motivation, and L2 achievement.	Joe, H.-K., Hiver, P., Al-Hoorie, A.H.	(2017)	Learning and Individual Differences 53, pp. 133-144	63
2	Intrinsic motivation, students' perception, learning environment.	Oga-Baldwin, W.L.Q., Nakata, Y., Parker, P., Ryan, R.M.	(2017)	Contemporary Educational Psychology 49, pp. 140-150	51
3	Self-determination and language learning.	Noels, K.A., Vargas Lascano, D.I., Saumure, K.	(2019)	Studies in Second Language Acquisition 41(4), pp. 821-851	12
4	Learner autonomy, self-regulated learning, self-determined motivation, EFL	Hu, P., Zhang, J.	(2017)	Asia Pacific Education Review 18(1), pp. 147-157	10
5	Language learning motivation, self-determined motivation, L1/L2 comparison, language achievement.	Oga-Baldwin, W.L.Q., Fryer, L.K.	(2020)	Learning and Individual Differences 79,101852	4

No	Focus	Author	Year	Source	Cited by
6	Self-determined learning, language MOOC learner.	Agonács, N., Matos, J.F., Bartalesi-Graf, D., O'Steen, D.N.	(2020)	Education and Information Technologies 25(2), pp. 1161-1179	4
7	L2 teacher motivation & L2 learner motivation, Q method, self-determined motivation	Jodaei, H., Zareian, G., Amirian, S.M.R., Adel, S.M.R.	(2021)	Current Psychology 40(4), pp. 1696-1710	1
8	Mobile learning & Self-regulated learning	Palalas, A., Wark, N.	(2020)	Australasian Journal of Educational Technology 36(4), pp. 151-172	1
9	Multimodal literacies, computational literacies, lexical learning, EFL	Eisenlauer, V.	(2020)	Journal of Visual Literacy 39(3-4), pp. 149-166	1
10	Motivation, immersion environment, EFL	Tanaka, Y., Kutsuki, A.	(2018)	International Journal of Bilingual Education and Bilingualism 21(6), pp. 729-743	1
11	Self-construal, self-determined learning, vocabulary learning	Tanaka, M.	(2020)	IRAL - International Review of Applied Linguistics in Language Teaching	0
12	Self-determined learning, autonomous learning, learner's attribute, MOOC	Agonács, N., Matos, J.F., Bartalesi-Graf, D., O'Steen, D.N.	(2019)	International Journal of Learning Technology 14(4), pp. 304-330	0

No	Focus	Author	Year	Source	Cited by
13	Self-determined listening, video-annotated, EFL listening comprehension	Chen, C.-M., Chen, I.-C.	(2019)	Interactive Learning Environment 29 (1), pp.83-97	0

Category of research participants

Based on categorizing and coding research articles, three main research participants were elementary, secondary, and university students.

Table 3. Category of research participants *(see Table 2)

Category of participants	Numbers of research	%	Articles number*
Elementary school students	3	23	2, 8, 10
Secondary school students	3	23	1, 5, 13
University students	7	54	3, 4, 6, 7, 9, 11, 12

Table 3 informed that seven research articles were conducted at the university level and three research articles at both elementary and secondary school students from 2017 to 2021 indexed by Scopus. At the higher education level, even though it reached the highest number, research on SDL in the EFL context can still be discussed in different research focus and basic English language skills.

Category of research focus

Based on the data, various research focuses occurred; most research discussed how teachers activate intrinsic motivation or self-regulated learning that may impact the classroom environment and affect important EFL learning outcomes. The author conducted those research such as those mentioned in Table 3 (articles numbers 1, 2, 3, 4, 5, 6, 10, and 11). Some research mapped the patterns of relationship between motivation and several other factors. For example, the relationship of self-determination theory, self-reflection (e.g., 12), the interplay between teachers' motivation and students' motivation (7), need satisfaction, learning motivation and learner autonomy (4), mobile learning, and self-regulated learning (8), multimodal and computational literacy in EFL classroom (9). Those interplay factors were investigated to generate language learning strategies in the EFL setting. Only a few research focuses on the effectiveness of self-determined learning toward English language skills and language components through technology. For example, using a video-annotated listening

review mechanism (self-determined learning activity) to promote EFL listening comprehension (13) and self-construal influence vocabulary learning and its associated motivation (11). Only two researchers researched improving language skills and components (11 and 13). Therefore, there are still more skills, sub-skills, and other language components explored at the university level in the EFL context. Other researchers can also narrow their field of interest based on the future research recommendation suggested by the authors. It was scrutinized in the Future research recommendation section.

Future research recommendation

Several research recommendations from the authors have been put to pave the way for other researchers to continue, replicate, verify, evaluate, and test the model or the proposed strategy to prove the effectiveness of the model. The authors also have given insight into future research dealing with appropriate sample size, context, method of research, and learning strategies that can be used in EFL learning. Table 4 highlighted future research recommendations that may be useful for other researchers.

Table 4. Future research recommendations

Authors' recommendations for future research	Participants	Authors
Using longitudinal modeling methods, other researchers can explore the shared cause-effect between self-determined motivation, achievement, and willingness to communicate.	Secondary school students ($n=381$)	Joe et al. (2017)
Future studies are recommended to use qualitative observations, person-centered analyses, testing motivational development from a person-centered perspective that represents a critical direction for further research.	Elementary school students ($n=515$)	Oga-Baldwin et al. (2017)
Consider trajectories of change take over different time frames, potential exchange between the components of the theory, and also pay much more attention to different degrees of interaction between components at different time points.	University students ($n=162$)	Noels et al. (2019)
A comparative study on developing learner autonomy in different cultures or among learners with different cultural backgrounds could contrast	Teachers ($n=4$), Postgraduate	Hu & Zhang (2017)

the causal effect of cultural factors on learner autonomy.	students *(n=65)*	
Longitudinal work is necessary to confirm profile stability, changes, and methodological comparisons for determining profiles and overlap, looking at the methods used here concerning those proposed by other researchers.	Secondary students (*n= 830*)	Oga-Baldwin & Fryer (2020)
Future studies must examine correlations between completion and retention rates of learners with high self-determined learning skills and learners with lower self-determined learning skills to understand the differences in the two groups, explore the concept of capability, and observe and measure capability levels of MOOC learners.	University students (*n=928*)	Agonacs et al. (2020)
Future studies can use two data sorting procedures to discover level of engagement of each method. Researchers might use Retrodictive Qualitative Molding (RQM) to study second language motivation.	University (*n = 60*)	Jodaei et al. (2021)
If researchers meticulously detailed methodologies provide a more profound understanding and more comprehensive validation of studies.	Primary research peer-reviewed articles. (*n=38*)	Palalas & Wark (2020)
Coding for teachers' education faculty are worth-skills that need to be investigated and need pay much more attention on the study.	University students	Eisenlauer (2020)
Since linguistic competence was not assessed in this research, the author suggests including linguistic assessment, and exploring more language groups' motivation, since the research focused on EFL learners.	Elementary school (*n-112)*	Tanaka & Kutsuki (2018)
Self-construal in various learning contexts would provide new insights into L2 learning and L2 learning motivation.	University students (*n = 155*)	Tanaka (2020)

The study can be replicated with larger samples, including LMOOCs of different languages that may adopt different pedagogies; future studies should also explore the predictive ability of variables considered affecting SDLR, such as age or previous MOOC experience.	Three sample groups, group 1 (*n= 51*), group 2 (*n=504*), Group 3 (*n=585*)	Agonács et al. (2019)
Conduct long-term experimental treatments, evaluate the long-term effect of using the VALRM on learners' listening comprehension and attitudes, and take a larger sample.	Secondary school students Taiwan (*n = 39*)	Chen et al. (2018)

Discussion

Based on the finding, research trends on self-determined learning (SDL) in the English as a foreign language (EFL) context still have many opportunities to be explored in reputable journals. Indonesian researchers, for example, have not recorded this topic; only four Asian countries concerned with the topic in which Japan dominates. Therefore, researchers from other Asian countries, such as Indonesia, can yield this topic. The implementation of SDL also applies in different levels of education, such as primary, secondary, and university levels. In this case, research collaboration becomes essential to carry out the study. Researchers can work together with school teachers or even university educators.

The implementation of SDL is widely used in core content areas such as math, physics, and computer science. Therefore, researchers can inspect how SDL is implemented in different subject areas. Furthermore, research findings have also given the pathway for other researchers to investigate the field of interest portrayed in the category of other research focuses. In addition, the results of the research enlighten how the researcher decides methodology for future studies. They recommend different research design such as qualitative observation (Oga-Baldwin et al., 2017), reciprocal causality (Joe et al., 2017), comparative study (Hu & Zhang, 2017; Jodaei et al., 2021), correlation study (Agonács et al., 2020), long-term experimental treatment (Chen & Chen, 2019), sample size and mitigate extraneous factors (Agonács et al., 2019; Tanaka & Kutsuki, 2018) that may impact the limitation of studies. Besides research design, the period in conducting the study also became their recommendation to be considered in the upcoming study (Noels et al., 2019).

There are many topics related to English language skills that can still be discussed. The finding showed that current research on implementing SDL in English language skills needs more investigations. Only two research articles investigated English language skills and components in terms of vocabulary learning and listening comprehension, as indicated in articles no 11 (Tanaka, 2020) and 13 (Chen & Chen, 2019) (see Table 2).

Tanaka (2020) examined how engineering students learn vocabulary autonomously through self-determination. The researcher found that independent self-construal performed better in self-determined strategy using path analysis. However, she added that self-construal was not a direct predictor of the improvement of one's vocabulary size. Instead, other variables such as intrinsic motivation and identified regulation in self-determined strategy of vocabulary learning became positive predictors of vocabulary size. However, self-construal had a significant impact as a predictor of vocabulary learning motivation. In this case, English teachers can manage their teaching strategy to activate students' independent and autonomous motivation through self-construal to encourage more SDL. Since her study is conducted with participants whose gender is primarily male, future research can further investigate how gender influences L2 learning in SDL. Also, various learning environments might offer a different perspective on L2 learning and L2 motivation.

Research on the implementation of SDL in improving English language skills has been carried out by Chen and Chen (2019). They examined the effect of students who used two distinctive listening review strategies on the listening comprehension section. The study involved two groups; the experimental group used a video-annotated listening review mechanism (VALRM), and the control group used self-determined listening review mechanism (SDLRM) support. The result showed that participants in the experimental group who used VALRM had better-attained listening comprehension than those in the control group considerably. This research advocated that VALRM is an effective support to improve listening comprehension in an autonomous learning environment or self-determined learning. They recommend future studies such as conducting a more extended experimental treatment period. It is intended to generate a more profound and more convincing impact on students' listening performance. Besides, adding more sample sizes and investigating the learning process by recording the classroom is an alternative way to understand the use of VALRM. Therefore, teachers can examine how students work with VALRM which might lead to a necessary modification of the strategy.

Research also showed that context is an essential factor that affects L2 learning outcomes (Joe et al., 2017). This study has integrated the related

theoretical frameworks of the classroom, such as social climate, self-determined theory (SDT), and willingness to communicate in a second language (L2 WTC). Their finding confirmed that a significant predictor of L2 achievement was determined by competence, and other variables such as WTC, intrinsic motivation and identified regulation did not give any impact on L2 achievement. However, they argue that the classroom environment influences important L2 learning outcomes. Furthermore, their study used a causal relationship to determine whether the hypothesized relationship between individual and situational factors for motivation and L2 achievement is reasonable. Thus, experimental research in the future can be carried out to strengthen the findings.

One research article was appraised qualitatively (Palalas & Wark, 2020). The study investigated the correlation between mobile learning and self-regulated learning through a literature critical analysis. Thirty-eight research articles were investigated. Results showed that the relationship between mobile learning and self-regulated learning (SRL) was vibrant and multifaceted. They recommended integrating M-learning and SRL into formal curricula. Directed by well-informed, technologically proficient teachers who provide practical, unremitting support as well as scaffolding to make students become more autonomous. The finding implicated that technology can support teachers to scaffold their students to become more self-determined.

The implications of the research had contributed to the pedagogical praxis and had verified previous studies on implementing SDL in the EFL context. To take for example that SDL can improve language skills, particularly listening comprehension (Chen & Chen, 2019) and language components such as vocabulary (Tanaka, 2020). Here, other English skills, either macro skills or micro-skills of speaking, reading, and writing, have not yet been investigated using SDL. Teachers and researchers have a wide opportunity to explore more in that area. Secondly, SDL can support classroom engagement in which students' involvement (Dincer et al., 2019) in learning is essential to move forward in lifelong learning (Bhoyrub et al., 2010; Kalz, 2015; Robinson & Aronica, 2015). Lastly, the SDL scaffold learning environment becomes more regulated and independent (Blaschke, 2012). This implication can be considered for teachers and researchers to conduct more profound exploration in many topic areas of English language teaching to provide students with more autonomy in 21st-century learning styles.

The finding of the present study can also help teachers and researchers foster ideas concerning the practice of SDL with various strategies and technological support (Agonács et al., 2019, 2020; Eisenlauer, 2020). In addition, the results of this research stipulated that SDL can enhance students' engagement in the

classroom. As students take the responsibility to study core content areas or rehearse their language skills, they have more chance of developing self-regulation. Furthermore, teachers who want to conduct SDL need to know how the strategy is undergone and what should be accounted for before the start of SDL.

Conclusion

The paper outlines a new view of what it might mean to research the future of self-determined learning (SDL) in the English as a foreign language (EFL) context at different levels of education; primary, secondary, and higher education. After analyzing the research trends on SDL in the EFL context, this subject has space to be further explored and, therefore, provides opportunities to research and finally be published in reputable journals. One of the challenges is to conduct the study in the Indonesian context as Indonesian researchers have not been recorded yet. There were only four Asian countries concerned on this topic in which Japan dominated. Researchers, therefore, have a massive chance to carry on research on SDL in the EFL context with a different focus and different research design.

The paper also invites further exploration of SDL in educational praxis. Action research can be an option to investigate how successful the teaching procedure in the classroom is to improve students' English language skills and components or other important focuses. It is important to be conducted since the discussion suggests that the research of SDL in improving basic skills and language components in the EFL context is minimal. An experimental study can also be an appropriate method to measure the effectiveness of the strategy.

Among several valuable points, this paper presents several limitations that can be improved in future studies. Firstly, inadequate exploration of the finding of the articles can be improved in subsequent research; the authors of this paper only focused on the trend and research for future recommendations with the aim to shed light on the other researchers. Secondly, future studies can take more database journals besides using only Scopus. That way, the discussed coverage topic can be portrayed wider than what is discussed in this paper. Thirdly, in analyzing the research articles, other researchers can use more sophisticated tools to help triangulate researchers in synthesizing and mapping the discussion of the research more accurately and in-depth. Therefore, the credibility of the data was presently confirmed.

Acknowledgements

Disclosure statement

ORCID

Deni Sapta Nugraha https://orcid.org/0000-0001-5358-6621
Ninuk Lustyantie https://orcid.org/0000-0002-7528-6846
Uwes Anis Chaeruman https://orcid.org/0000-0002-2576-5777

References

Agonács, N., Filipe Matos, J., Bartalesi-Graf, D., & O'Steen, D. N. (2019). On the path to self-determined learning: a mixed methods study of learners' attributes and strategies to learn in language MOOCs. *International Journal of Learning Technology*, *14*(4), 304–330. https://doi.org/10.1504/IJLT.2019.106553

Agonács, N., & Matos, J. F. (2019). Heutagogy and self-determined learning: a review of the published literature on the application and implementation of the theory. *Open Learning: The Journal of Open, Distance and e-Learning* , *34*(3), 223–240. https://doi.org/10.1080/02680513.2018.1562329

Agonács, N., Matos, J. F., Bartalesi-Graf, D., & O'Steen, D. N. (2020). Are you ready? Self-determined learning readiness of language MOOC learners. *Education and Information Technologies*, *25*(2), 1161–1179. https://doi.org/10.1007/s10639-019-10017-1

Bhoyrub, J., Hurley, J., Neilson, G. R., Ramsay, M., & Smith, M. (2010). Heutagogy: an alternative practice based learning approach. *Nurse Education in Practice*, *10*(6), 322–326. https://doi.org/10.1016/j.nepr.2010.05.001

Blaschke, L. M. (2012). Heutagogy and lifelong learning: a review of heutagogical practice and self-determined learning. *International Review of Research in Open and Distance Learning*, *13*(1), 56–71. https://doi.org/10.19173/irrodl.v13i1.1076

Blaschke, L. M., & Hase, S. (2015). Heutagogy, technology, and lifelong learning for professional and part-time learners. In A. Dailey-Hebert & K. S. Dennis (Eds.), *Transformative perspectives and processes in higher education* (pp. 75–94). Springer.

Blaschke, L. M., & Hase, S. (2016). Heutagogy: a holistic framework for creating twenty-first-century self-determined learners. In B. Gros, Kinshuk, & M. Maina (Eds.), *The future of ubiquitous learning: learning designs for emerging pedagogies* (pp. 25–40). Springer.

Burbules, N. C., Fan, G., & Repp, P. (2020). Five trends of education and technology in a sustainable future. *Geography and Sustainability*, *1*(2), 93–97. https://doi.org/10.1016/j.geosus.2020.05.001

Canţer, M. (2012). E-heutagogy for lifelong e-learning. *Procedia Technology*, *1*, 129–131. https://doi.org/10.1016/j.protcy.2012.02.025

Chen, C.-M., & Chen, I.-C. (2019). The effects of video-annotated listening review mechanism on promoting EFL listening comprehension. *Interactive Learning Environments*, *29*(1), 83–97. https://doi.org/10.1080/10494820.2019.1579232

Collins, A., & Halverson, R. (2010). Technology supports for lifelong learning. In P. Peterson, E. Baker, & B. McGaw (Eds.), *International Encyclopedia of Education* (pp. 184–188). Elsevier. https://doi.org/https://doi.org/10.1016/B978-0-08-044894-7.00737-5

Dincer, A., Yeşilyurt, S., Noels, K. A., & Lascano, D. I. V. (2019). Self-determination and classroom engagement of EFL learners: a mixed-methods study of the self-system model of motivational development. *SAGE Open*, *9*(2), 1–15. https://doi.org/10.1177/2158244019853913

Eisenlauer, V. (2020). The EFL-YouTube remix: empowering multimodal and computational literacies for EFL purposes. *Journal of Visual Literacy*, *39*(3–4), 149–166. https://doi.org/10.1080/1051144X.2020.1826220

Erwin, E. J., Brotherson, M. J., & Summers, J. A. (2011). Understanding qualitative metasynthesis: issues and opportunities in early childhood intervention research. *Journal of Early Intervention*, *33*(3), 186–200. https://doi.org/10.1177/1053815111425493

Fearon, C., van Vuuren, W., McLaughlin, H., & Nachmias, S. (2020). Graduate employability, skills development and the UK's universities business challenge competition: a self-determined learning perspective. *Studies in Higher Education*, *45*(6), 1280–1297. https://doi.org/10.1080/03075079.2019.1576166

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). McGrawHill.

Garrels, V. (2019). Getting good at small talk: student-directed learning of social conversation skills. *European Journal of Special Needs Education*, *34*(3), 393–402. https://doi.org/10.1080/08856257.2018.1458472

Gibson, I. W. (2001). At the intersection of technology and pedagogy: considering styles of learning and teaching. *Journal of Information Technology for Teacher Education*, *10*(1–2), 37–62. https://doi.org/10.1080/14759390100200102

Gillaspy, E., & Vasilica, C. (2021). Developing the digital self-determined learner through heutagogical design. *Higher Education Pedagogies*, *6*(1), 135–155. https://doi.org/10.1080/23752696.2021.1916981

Gros, B. (2016). The dialogue between emerging pedagogies and emerging technologies. In B. Gros, Kinshuk, & M. Maina (Eds.), *The future of ubiquitous learning: learning designs for emerging pedagogies* (pp. 3–24). Springer.

Hu, P., & Zhang, J. (2017). A pathway to learner autonomy: a self-determination theory perspective. *Asia Pacific Education Review*, *18*(1), 147–157. https://doi.org/10.1007/s12564-016-9468-z

Jan van Eck, N., & Waltman, L. (2020). *Manual for VOSviewer version 1.6.15*. Universi.

Jodaei, H., Zareian, G., Amirian, S. M. R., & Adel, S. M. R. (2021). The interplay of teacher motivation and learner motivation: A Q method study. *Current Psychology*, *40*(4), 1696–1710. https://doi.org/10.1007/s12144-018-0091-5

Joe, H.-K., Hiver, P., & Al-Hoorie, A. H. (2017). Classroom social climate, self-determined motivation, willingness to communicate, and achievement: a study of structural relationships in instructed second language settings. *Learning and Individual Differences*, *53*, 133–144. https://doi.org/10.1016/j.lindif.2016.11.005

Kalz, M. (2015). Lifelong learning and Its support with new technologies. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences* (2nd ed., pp. 93–99). Elsevier. https://doi.org/https://doi.org/10.1016/B978-0-08-097086-8.92006-3

Kenyon, C., & Hase, S. (2013). The Fundamentals of Heutagogy. In S. Hase & C. Kenyon (Eds.), *Self-determined learning: heutagogy in action* (pp. 1–7). Bloomsbury.

Laal, M. (2011). Impact of technology on lifelong learning. *Procedia - Social and Behavioral Sciences*, *28*, 439–443. https://doi.org/10.1016/j.sbspro.2011.11.084

Little, T., & Ellison, K. (2015). *Loving learning how progressive education can save America's schools*. W.W. Norton Company Inc.

Lustyantie, N. (2015). Environmental education in the language and literature learning in elementary education. *International Journal of Research Studies in Education*, *4*(3), 57–66. https://doi.org/10.5861/ijrse.2015.991

Moore, R. L. (2020). Developing lifelong learning with heutagogy: contexts, critiques, and challenges. *Distance Education*, *41*(3), 381–401. https://doi.org/10.1080/01587919.2020.1766949

Nikcevic-Milkovic, A., Balenovic, K., & Brala-Mudrovčić, J. (2022). Self-regulated learning and sociodemographic factors in students' L1/L2 writing proficiency. *Journal of Language and Education*, *8*(1), 100–116. https://doi.org/10.17323/JLE.2022.11581

Noels, K. A., Lascano, D. I. V., & Saumure, K. (2019). The development of self-determination across the language course. *Studies in Second Language Acquisition*, *41*(04), 821–851. https://doi.org/10.1017/S0272263118000189

Norris, J. M., & Ortega, L. (2007). The future of research synthesis in applied linguistics: beyond art or science. *TESOL Quarterly*, *41*(4), 805–815. https://doi.org/10.1002/j.1545-7249.2007.tb00105.x

Oga-Baldwin, W. L. Q., & Fryer, L. K. (2020). Profiles of language learning motivation: are new and own languages different? *Learning and Individual Differences*, *79*, 101852. https://doi.org/10.1016/j.lindif.2020.101852

Oga-Baldwin, W. L. Q., Nakata, Y., Parker, P., & Ryan, R. M. (2017). Motivating young language learners: a longitudinal model of self-determined motivation in elementary school foreign language classes. *Contemporary Educational Psychology*, *49*, 140–150. https://doi.org/10.1016/j.cedpsych.2017.01.010

Palalas, A., & Wark, N. (2020). The relationship between mobile learning and self-regulated learning: a systematic review. *Australasian Journal of Educational Technology*, *36*(4), 151–172. https://doi.org/10.14742/AJET.5650

Price, J. K. (2015). Transforming learning for the smart learning environment: lessons learned from the Intel education initiatives. *Smart Learning Environments*, *2*(1), 1–16. https://doi.org/10.1186/s40561-015-0022-y

Raley, S. K., Shogren, K. A., & McDonald, A. (2018). How to implement the self-determined learning model of instruction in inclusive general education classrooms. *TEACHING Exceptional Children*, *51*(1), 62–71. https://doi.org/10.1177/0040059918790236

Raley, S. K., Shogren, K. A., Rifenbark, G. G., Lane, K. L., & Pace, J. R. (2021). The impact of the self-determined learning model of instruction on student self-determination in inclusive, secondary classrooms. *Remedial and Special Education*, *42*(6), 363–373. https://doi.org/10.1177/0741932520984842

Robinson, K., & Aronica, L. (2015). *Creative schools: The grassroots revolution that's transforming education*. Viking.

Rogan, S., Taeymans J, J., Zuber, S., & Zinzen, E. (2020). Planning and implementation of guided self-study in an undergraduate physiotherapy

curriculum in Switzerland—a feasibility study. *Journal of Medical Education and Curricular Development*, *7*, 1–9. https://doi.org/10.1177/2382120520944921

Saini, M., & Shlonsky, A. (2012). *Systematic synthesis of qualitative research*. Oxford University Press.

Sandelowski, M., & Barroso, J. (2007). *Handbook for synthesizing qualitative research*. Springer.

Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review: a best practice guide for conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. *Annual Review of Psychology*, *70*(1), 747–770. https://doi.org/10.1146/annurev-psych-010418-102803

Sims, C. (2017). *Disruptive fixation: school reform and the pitfalls of techno-idealism*. Princeton University Press.

Soomai, S., Wells, P. G., MacDonald, B. H., & Gruzd, A. (2016). Measuring awareness, use, and influence of information: where theory meets practice. In B. H. MacDonald, S. S. Soomai, E. M. de Santo, & P. G. Wells (Eds.), *Science, information, and policy interface for effective coastal and ocean management* (pp. 253–272). Taylor & Francis Group.

Tanaka, M. (2020). The role of self-construal in EFL vocabulary learning. *International Review of Applied Linguistics in Language Teaching*, *12*(7), 1–25. https://doi.org/doi:10.1515/iral-2019.0082

Tanaka, Y., & Kutsuki, A. (2018). Motivation for learning English in the immersion environment of an international school in Japan. *International Journal of Bilingual Education and Bilingualism*, *21*(6), 729–743. https://doi.org/10.1080/13670050.2016.1210566

Teo, P. (2019). Teaching for the 21st century: a case for dialogic pedagogy. *Learning, Culture and Social Interaction*, *21*(2019), 170–178. https://doi.org/10.1016/j.lcsi.2019.03.009

Tunstall, R., & Neergaard, H. (2022). Flashmob: a heutagogical tool for social learning in entrepreneurship education. *Entrepreneurship Education and Pedagogy*, *5*(3), 472–492. https://doi.org/10.1177/25151274211017547

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, *84*(2), 523–538.

Wehmeyer, M. L., Shogren, K. A., Toste, J. R., & Mahal, S. (2017). Self-determined learning to motivate struggling learners in reading and writing. *Intervention in School and Clinic*, *52*(5), 295–303. https://doi.org/10.1177/1053451216676800

Widiaty, I., Ana, Riza, L. S., Abdullah, A. G., & Mubaroq, S. R. (2020). Multiplatform application technology – based heutagogy on learning batik: a curriculum development framework. *Indonesian Journal of Science and Technology*, *5*(1), 45–61. https://doi.org/10.17509/ijost.v5i1.18754