Self-Regulation Learning and Self-Awareness in The Classroom

Mikhael Klemens Kedang✉1, Setya Yuwana2, Hendratno3 , Suhartono4

1,2,3,3 Postgraduate, UNESA, Surabaya, Jawa Timur
✉ pausmichael00@gmail.com

Abstract. The purpose of the study is determined research trends related to self-regulation learning and self-awareness in the classroom. This finding carried out in October 2022 by conducting Pop from the Scopus data bases using Bibliometric VoSviewer analysis in RIS format which resulted in Network Visualization, Overlay Visualization and Density Visualization. Based on the results of the analysis, it is necessary to increase student competence in various aspects, including research using a mix method, the relationship between self-regulation learning and self-awareness reviewed in a social-humanities manner, and can be applied to every level of education.

Keywords: Self-regulation learning, self-awareness

INTRODUCTION

Self-Regulation Learning (SRL) and Self-awareness (SA) are two concepts that are definitively different psychologically in learning. Self-regulation learning was developed by Bandura (1986), while self-awareness, Duval & Wickland (1972). SRL in learning as the level of student activity involving metacognition, motivation and behavior in the learning process (Zimmerman & Martinez-Pons, 2001) and SA as a personal ability to know and understand what are the strengths, weaknesses, values, and motivation and their impact on others (Goleman, 1996). SRL from social learning theory represents the individual as a result of the causal structure of personal interdependence (person), behavior (behavior), and environment (environmental) and SA has two dimensions, namely subjective and objective awareness. So to mediate the two concepts, a relevant learning approach is needed to support classical learning activities.

As for previous research relating to self-regulation learning and self-awareness as a basis for reference to learning approaches. Research by Choa & Chob (2017) which aims to develop a scale to test student self-regulation in three types of online learning interactions. The scale used is a questionnaire and a survey. A total of 799 students participated in the online learning, with 400 participants randomized to exploratory factor analysis and the remaining 399 students to confirmatory. The hypothesis used is self-regulation interaction between students and content, students and students and students and teachers. The research found convergent validity in understanding self-regulation in online learning settings. With regard to self-awareness, Scarino (2013) relates to alternative assessments of language assessment literacy based on teacher knowledge and teacher self-awareness. This alternative assessment is influenced by sociocultural learning theory in language education to broaden the knowledge base of what is known, how to learn and develop it. In language assessment literacy, the goals are dual, namely changing teacher assessment practices and developing teacher understanding of teacher assessment and self. It relates to the knowledge base and complex processes of language teacher education. Meanwhile, this awareness relates to how teachers explore and evaluate their own preconceptions from their assessment and learning practices with students.

Based on the description above, the researcher conducted a literature study that focused on self-regulation learning and self-awareness in the classroom. Bibliometric analysis is a literature study used to find profiles of self-awareness regulation and self-awareness in the classroom with the following objectives:
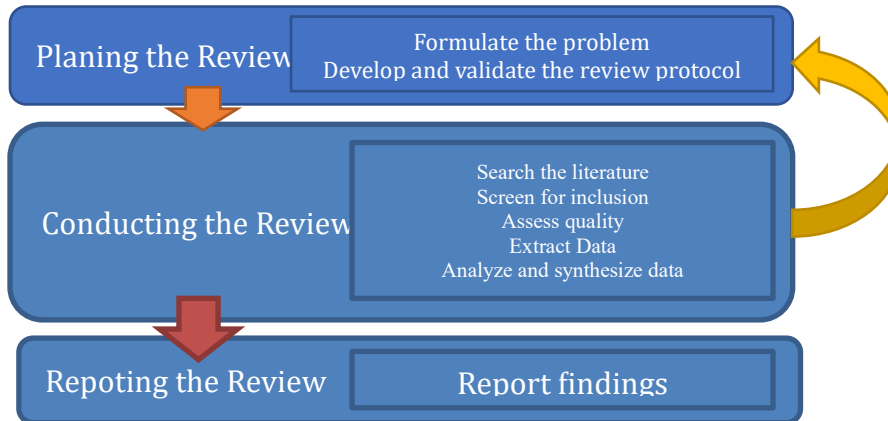
a. Knowing the main reference sources for self-awareness regulation and self-awareness in the classroom.
b. Identify the visualization of research trends in self-awareness regulation and self-awareness in the classroom.
c. Studying self-awareness regulation and self-awareness research in the classroom.

Make a conceptual review of self-awareness regulation and self-awareness in the classroom.

METHOD
Types of research
The method used in this research is a literature review with a bibliometric approach, namely planning the review, conducting the review and reporting the review (Xiao & Watson, 2019).

```
Planing the Review | Formulate the problem
                     Develop and validate the review protocol

Conducting the Review | Search the literature
                         Screen for inclusion
                         Assess quality
                         Extract Data
                         Analyze and synthesize data

Repoting the Review | Report findings
```

Data analysis and data collection
A literature review was conducted in October 2022 using the keywords "self-regulation learning and self-awareness". PoP software with Scopus and Google Scholar databases. The software is used to collect data in a simple way, namely from 1986-2022 for self-regulation learning and self-awareness in 1972-2022. From these keywords, a total of 2,149 articles were obtained.

Data was extracted by taking the main keywords self-regulation learning and self-awareness with the highest number of citations 3,382,561 in 1990 which are supported by up-to-date articles. The quality assessment is used by the Mendeley desktop application to find out relevant keywords. After extraction and quality assessment, bibliometric analysis was continued in RIS format using VoSviewer with a map based on text. The results of the bibliometric analysis are in the form of network visualization, overlay visualization, and density visualization which will be displayed in Figure 1. This analysis can bring out novelties and research trends (Francis at al., 2021).

The next process is to analyze articles to obtain data on findings or research recommendations as well as create a theoretical framework for self-regulation learning and self-awareness based on several main reference sources.

RESULTS AND DISCUSSION
1) The results of the bibliometric analysis of self-regulation of learning and self-awareness in the classroom

Table 1. The main reference source for self-regulation learning and self-awareness in the classroom

Cities	Authors	Title	Year	Publisher
417	Peter Shea & Temi Bidjerano	Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments	2010	Computers & Education

Cities	Authors	Title	Year	Publisher
54	Kimberly Bender, Nalini Negi & Dawnovise N. Fowler	Exploring the relationship between self-awareness and student commitment and understand of culturally responsive social work practice	2010	Journal of Ethnic & Cultural Diversity in Social Work
307	Chih-Hsuan Wang, David M. Shannon, and Margaret E. Ross	Students' characteristics, self-regulation learning, technology self-efficacy, and course outcomes in online learning	2013	Distance Education
49	Alex L. Pieterse, Minsun Lee, Arthur Ritmeester & Noah M. Collins	Towards a model of self-awareness development for counseling and psychotherapy training	2013	Counselling Psychology Querterly

Table 2. Recent research on self-regulation learning and self-awareness in the classroom

Cities	Authors	Title	Year	Publisher
4	Hadi Pranoto, Nurul Atieka, Shiadi Darmo Wihardjo, Agus Wibowo, Siti Nurlaila and Sudarmaji	Group guidance services with self-regulation technique to improve student learning motivation in Junior High School (JHS)	2016	Educational Research and Reviews
100	Dastyni Loksa, Amy J Ko, Will Jernigan, Alannah Oleson, Christopher J Mendez & Margaret M. Burnett	Programming, problem solving, and self-awareness: Effects of explicit guidance	2016	Learning Programming
5	Jesse Eickholt, Vikas Jogiparthi, Patrick Seeling, Quintrese Hinton, and Matthew Johnson	Supporting Project-Based Learning through Economical and Flexible Learning Spaces	2019	Education Sciences
30	Anna Ciaunica & Laura Crucianelli	Minimal self-awareness from within-a development perspective	2019	Forthcoming in Journal of Consciuousness Studies
0	Seyed M. Ismail, D. R. Rahul, Indrajit Patra, and Ehsan Rezvani	Formative vs. summative assessment: impacts on academic motivation, attitude toward learning, test anxiety, and self-regulation skill	2022	Language Testing in Asia

Cities	Authors	Title	Year	Publisher
1	Yana Yao, Ping Wang, Yujun Jiang, Qiang Li & Yingji Li	Innovative online learning strategies for the successful construction of student self-awareness during the COVID—19 pandemic: Merging TAM with TPB	2022	Journal of Innovation & Knowledge

Table 1 and table 2 above are the results of content relevance analysis related to self-regulation learning and self-awareness sourced from Scopus and Google Scholar which were analyzed using CSV converted to Ms. Excel.

2)   Visualization of the trend of self-regulation learning and self-awareness in the classroom
      Articles from PoP are presented in table 3 which contains the number of Scopus and Google Scholar indexed articles that were bibliometrically analyzed using the VoSviewer program.

Table 3. Recap article search results via Pop

Search terms	Source	Papers	Cities
Self-regulation learning (Scopus)	1986-2022	200	88444
Self-awareness (Scopus)	1972-2022	200	190143
Self-regulation learning (Google Scholar)	1986-2022	999	3382561
Self-awareness (Google Scholar)	1972-2022	750	209119

There were 2,149 articles analyzed with a minimum of 10 words that frequently appear in the title and abstract. 842 words out of 9432 words were analyzed using bibliometric analysis and continued with manual analysis by removing inappropriate words. The results of the bibliometric analysis are network visualization, overlay visualization and density visualization. Here are the results of the analysis.
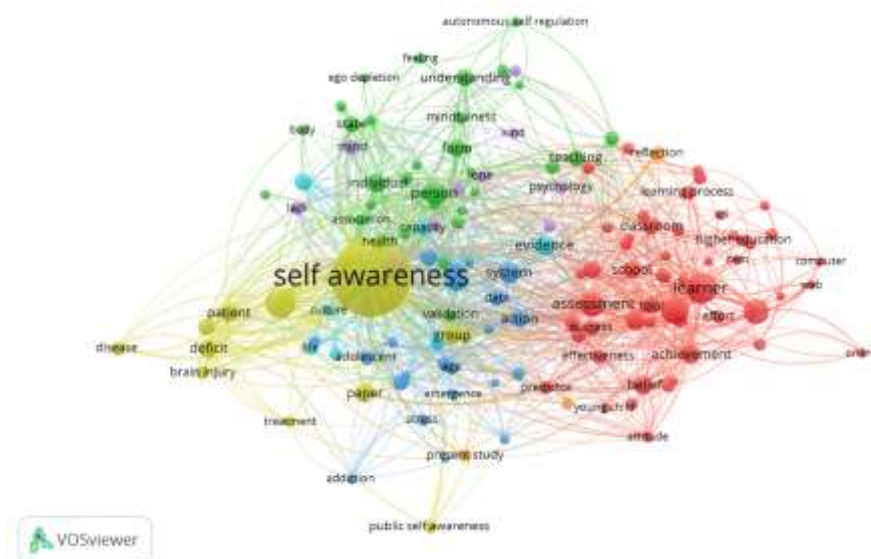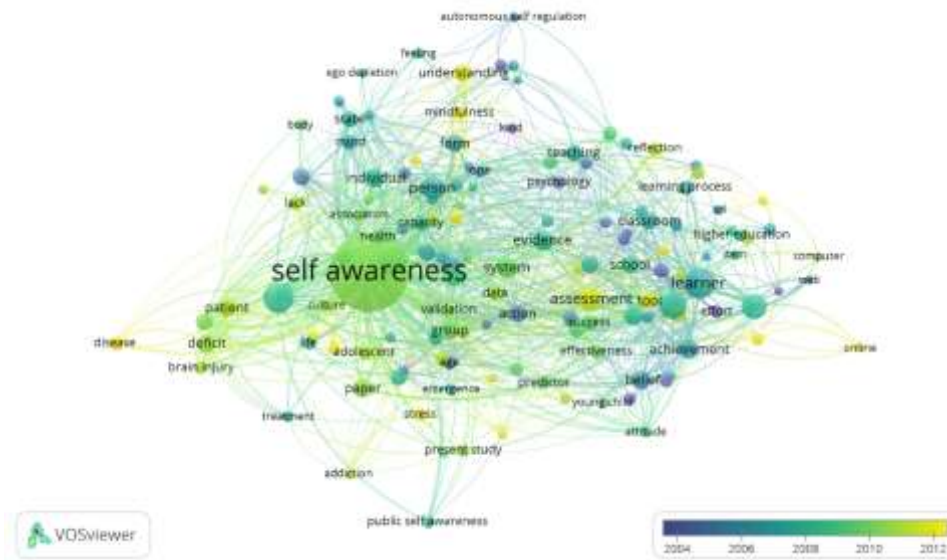

Figure 1. Network Visualization

Figure 2. Overlay Visualization

Figure 3. Density Visualization

3) Research on self-regulation learning and self-awareness in the classroom

Table 4. Research on self-regulation learning and self-awareness in the classroom

Authors	Title	Findings	Recommendation
Ringoot, A. at al., 2019	Parenting, young children's behavioral self-regulation and the quality of their peer relationships	Parenting from an early age is carried out by parents in a disciplined manner which ultimately limits self-regulation and the quality of relationships between peers	Complementary role in parenting, apart from parents is the school which can be known from students' self-regulation and self-awareness, especially elementary school students by using formative assessment and summative

Authors	Title	Findings	Recommendation
			assessment in the online or online learning process
Ciaunica, A., at al., 2019	Minimal self-awareness from within-a development perspective	Self-awareness in this study is reviewed from qualitative research (case study) as self-representation at a pre-reflective level which is also related to the environment	In future research, how will self-awareness and self-regulation be measured quantitatively and qualitatively (mixed method) with summative and formative assessments to determine the language skills of basic education students in online or online learning
Ismail, M. S. at al., 2022	Formative vs. summative assessment: impacts on academic motivation, attitude toward learning, test anxiety, and self-regulation skill	Formative assessment and summative assessment are assessments of the process and learning outcomes that affect psychological variables in measuring language skills	Formative and summative assessments can be seen from various psychological variables, namely self-regulation and self-awareness in language skills
Yao, Y. at al., 2022	Innovative online learning strategies for the successful construction of student self-awareness during the COVID—19 pandemic: Merging TAM with TPB	Online learning as learning during the Covid 19 pandemic is innovative and can construct self-awareness in the online learning process	Post-pandemic online learning also needs to be implemented with formative and summative assessments of self-awareness and self-regulation of basic education students in Indonesia

Conclusion Table 4 above represents several concepts that can be used as further research, including (1) formative and sumative assessment (2) online or online learning, (3) mixed method research (4) self-regulation learning and self-awareness skills elementary school students speak.

4)   A conceptual review of self-regulation learning and self-awareness in the classroom
Self-regulation learning (SRL) includes various components in it, namely the existence of goals, monitoring and adjustment in active learning by constructing knowledge and increasing active learning abilities (Hooshyar et al., 2020). Zhu et al., (2020) found that high achieving students have set goals, strategies in learning activities, supervise themselves and manage learning rhythms well. There are three phases of SA defined by Zimmerman (2002), namely the foresight, performance and reflection phases. So Littlejohn et al. (2016) say that naturally SA is a conscious process that influences personal behavior from motivation related to self-esteem.

Whereas Self-awareness (SA) is not limited by space and time so it needs to be developed (Morin, 2011; Lyke, 2009). The concept of SA emphasizes concern for the self in terms of recognizing, evaluating and enhancing self-knowledge (Hamilton, 1951). AS is also understood as

a mental state and interactions between personal and environmental. SA will be useful if it is considered in all educational practices.

It should be understood that each student is different personally (Brown et al., 2007). The differences in natural resources personally in the class are a challenge in learning. How SA students understand the material or content. It aims to achieve learning objectives.

The bibliometric literature study above found a research idea as a recommendation for further research, namely a formative and summative assessment based on self-awareness and self-regulation in the language skills of elementary students.

CONCLUSION

1. The keywords self-regulation learning and self-awareness were analyzed using bibliometric analysis to obtain network visualization, overlay visualization and density visualization.
2. Various terms found as recommended research approaches, including self-awareness, assessment, classroom, autonomous self-regulation, autonomous self-regulation, age, and others.
3. The recommendations for further research are (1) formative and summative assessments, (2) mix method approach, (3) self-regulation learning and self-awareness, (4) classroom.
4. Indicators of self-regulation learning (planning, monitoring and evaluation) and self-awareness, namely being aware of the processes and results of thinking in developing plans when understanding problems (thinking about how to understand information, thinking about how to identify, thinking about ways to be used in solving problems and linking existing information, think about the structured arrangement of sentences, think about the way of completion procedures, think about how to evaluate the procedures that have been obtained).

REFERENCES

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory. Englewood Cliffs*. New Jersey: Prentice-Hall Inc.

Bender, Kimberley, Negi, Nalini & Fowler, Dawnovise N. (2010). Exploring the relationship between self-swareness and student commitment and understanding of culturally sesponsive social work practice. *Journal of Ethnic & Cultural Diversity in Social Work,* Work, Vol. 19, No. 1.

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. Psychological Inquiry, 18(4), 211–237.

Ciaunica, Anna & Crucianelli, Laura. (2019). Minimal self-awareness from within-a developmental perspective. Research Gate, https://www.researchgate.net/publication/331412123

Duval, S., & Wicklund, R. A. (1972). *A Theory of Objective Self-Awareness*. Amerika Serikat: Academic Press.

Goleman, Daniel. (1996). *Emotional Intelligence Why It Can Matter More Than IQ*. New York: Bantam Books.

Hamilton, G. (1951). Theory and practice of social case work. New York, NY: Columbia University Press.

Hooshyar, D., Pedaste, M., Saks, K., Leijen, Ä., Bardone, E., & Wang, M. (2020). Open learner models in supporting self-regulated learning in higher education: A systematic literature review. Computers & Education, 154, 103878. https://doi.org/10.1016/j.compedu.2020.103878.

Ismail, Seyed M., Rahul, D. R., Patra, Indrajit & Rezvani, Ehsan. (2022). Formative vs. summative assessment: impacts on academic motivation, attitude toward learning, test anxiety, and self-regulation skill. *Language Testing in Asia*, (2022) 12:40 https://doi.org/10.1186/s40468-022-00191-4

Littlejohn, A., Hood, N., Milligan, C., & Mustain, P. (2016). Learning in MOOCs: Motivations and self-regulated learning in MOOCs. The Internet and Higher Education, 29, 40–48. https://doi.org/10.1016/j. iheduc.2015.12.003.

Lyke, J. A. (2009). Insight, but not self-reflection, is related to subjective well-being. Personality and Individual Differences, 46(1), 66–70.

Morin, A. (2011). Self-awareness part 1: Definition, measures, effects, functions, and antecedents. Social & Personality Psychology Compass, 5(10), 807–823.

Pieterse, Alex L., Lee, Minsun, Ritmeester & Collins, Noah, M. (2013). Towards a model of self-awareness development for counselling and psychotherapy training. *Counselling Psychology Quarterly*, Vol. 26, No. 2, 190–207, http://dx.doi.org/10.1080/09515070.2013.793451.

Pranoto, Hadi, Atieka, Nurul, Wihardjo, Sihadi Darmo, Wobowo, Agus, Nurlaila, Siti & Sudarmaji. (2016). Group guidance services with self-regulation technique to improve student learning motivation in Junior High School (JHS). *Educational Research and Reviews*, vol. 11(24), pp. 2146-2154, 23.

Ringoot, Ank P., Jansen, Pauline W., Kok Rianne, van Ijzendoorn, Marius H., Verlinden, Marina, Verhulst, Frank C., KraneburgpMariam Berkemans & Tiemeier, Henning. (2019). Parenting, young children's behavioral self-regulation and the quality of their peer relationships. *Social Development*, 715–732.

Loksa, Dastyni, Ko, Ami J., Jernigan, Will, Olsen, Alannah & Mendez, Christopher J. (2016). Programming, problem solving, and self-awareness: Effects of explicit guidance. *Learning Programming*, DOI: http://dx.doi.org/10.1145/2858036.2858252.

Shea, Peter & Bidjerano, Temi. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments. *Computers & Education*, doi:10.1016/j.compedu.2010.07.017.

Wang, Chih-Hsuan, Shannon, David M. & Ross, Margaret E. (2013). Students' characteristics, self-regulated learning, technology self-efficacy, and course outcomes in online learning. *Distance Education*, Vol. 34, No. 3, 302–323, http://dx.doi.org/10.1080/01587919.2013.835779.

Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, 39(1), 93–112.

Yao, Yuna, Wang, Ping, Jiang Yujun, Li, Qiang & Li, Yingji. (2022). Innovative online learning strategies for the successful construction of student self-awareness during the COVID-19 pandemic: Merging TAM with TPB. *Journal of Innovation & Knowledge*, 7 (2022) 100252.

Zimmerman, Barry J dan Martinez-Pons, Manuel. (2001). Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology*. No. 1. Vol. 82. Hal. 51-59.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. Theory into Practice, 41(2), 64–70.

Zhu, Y., Zhang, J. H., Au, W., & Yates, G. (2020). University students' online learning attitudes and continuous intention to undertake online courses: A self-regulated learning perspective. Educational Technology Research and Development, 68(3), 1485–1519. https://doi.org/10.1007/s11423-020-09753-w