Portrait of Teacher Competence and Implementation Challenges of Achieving Sustainable Development Goals (SDGs): A Comparative Study between Indonesia and Vietnam

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ABSTRACT

Teachers need to update their competency profiles to face the challenges of implementing sustainable development goals (SDGs). Teaching strategies need to change and so do the competencies that teachers need to develop to face the implementation of achieving sustainable development goals. Teacher competency improvement training programs in Indonesia and Vietnam are paradigmatic examples of efforts to produce quality education, taking into account these needs. Teacher competencies can serve multiple purposes at various levels in the education system. This systematic literature review study was organized using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Guidelines for reporting the event evaluated by teacher competence in the challenges of implementing the achievement of sustainable development goals (SDGs), This review study sought and analyzed descriptive data (case reports and cross-sectional studies) on teacher competence and SDGs. All data must be in the form of Sinta and Scopus indexed research results, 30 Data searches were conducted from November 2022 on SEForA, Publish or Perish, ERIC, and ScienceDirect search engines and websites, using relevant keywords teacher competencies, SDGs, education, Indonesia, and Vietnam using English. Findings Teacher competencies in the SDGs state that competencies are inherent and integrated to teachers, teachers are important to have pedagogical competence and professional competence as the main qualification requirements for carrying out tasks or work in educating students.

Keywords: *Teacher Competence, Achieving Sustainable Development Goals*

INTRODUCTION

The development of science and technology brings rapid and significant changes in various aspects of life (NGOC et al., 2021) These changes resulted in a global action plan agreed by world leaders in the Sustainable Development Goals (SDGs) program at the United Nations in New York in September 2015 (Helfaya & Bui, 2022), to end poverty, reduce inequality and protect the environment. The SDGs contain 17 Goals and 169 Targets, the focus target of this study is quality education

which is expected to be achieved by 2030. Therefore, it is crucial to ensure all teachers have the necessary skills and abilities to keep up with these developments and take advantage of the opportunities they offer. This can be done through continuous education and training. If a country cannot adapt to current developments it can cause very serious problems (Molokova, 2020).

The agreement of world leaders in the Sustainable Development Goals work to respond to massive technological developments has both positive and negative impacts, there are at least five negative impacts if a country cannot adapt to the development of the world and science, First, the decline in the quality of education: Countries that cannot keep up with the development of science and technology will be left behind in terms of innovation and development. Second, economic decline: Countries that cannot keep up with the development of the world and science will lag behind in terms of productivity and efficiency, which may lead to economic decline. Third, social instability: jobs will be taken over by technology and replaced by new relevant jobs, this may lead to social instability and unemployment. Fourth, Isolated from global development: Countries that cannot adapt to the development of the world and science are bound to be isolated from global development and have difficulties in communicating and cooperating with other countries. Fifth, Declining quality of life: Countries that are unable to adapt to global development and science will have difficulty in improving the quality of life of their people due to lack of access to up-to-date health and education services (Picin, 2018).

At the beginning of the development of science and technology in Indonesia, the country was quite limited in terms of access and development of science and technology. There are at least five factors that influence this condition, First, weak infrastructure: At that time, the infrastructure in Indonesia was very weak and inadequate to support the development of science and technology (Marlena, N., Dwijayanti, R., & Patrikha, F. D. 2022). Second, Lack of human resources: At that time, the number of highly educated and capable workers was very limited in Indonesia (Debrah et al., 2000) *Third*, Lack of government support: At the beginning of the development of science and technology, government support for the development of science and technology was very limited (Akbar et al., 2012). *Fourth*, Lack of investment: At that time, investment in science and technology in Indonesia was very limited, hindering the development of science and technology. Fifth, Lack of access to technology: At the time, access to new and updated technology was very limited in Indonesia. However, there were also efforts made by some parties to improve the state of science and technology in Indonesia, such as the development of higher education institutions, libraries and laboratories (Matthias Arnold & Javorcik, 2009).

It is also experienced by the country of Vietnam, Vietnam has experienced several periods of decline in the historical record (Fisher, 2005), Five factors led to the setback, *First*, Conflict and fighting: Vietnam has experienced years of fighting and conflict, both with other countries and domestically, which affected the country's overall development, including the development of science and technology. *Second*, Colonialism: Vietnam was also a colonial territory, which led to setbacks in various fields, including the economy and science. *Third*, Poverty and social inequality: The high level of poverty and social inequality in Vietnam is also a factor influencing the country's decline in the historical record. *Fourth*, Lack of government support: The Vietnamese government at some periods in history did not provide enough support for the development of science and technology, which could lead to the country's decline. *Fifth*, Lack of investment: Vietnam has also experienced conditions where investment

in science and technology was very limited, hindering the development of science and technology. While Vietnam today has experienced significant development in many fields, including science and technology, it has historically experienced periods of decline. However, with continuous efforts in recent decades, Vietnam has successfully improved its science and technology conditions, paving the way to become an advanced developing country through the education revolution (Dinh-Thai et al., 2020).

The education revolution was matched by a mainstream transformation of the education system, teaching and learning in schools (Konopko, Joanna, 2015). Research at the Massachusetts Institute of Technology shows that students' brain activity when listening to teacher lectures in class has a low response and is more responsive when sleeping (Kosasih et al., 2022). In addition, the mixed findings regarding the impact of technology use on student learning outcomes point to the need to rethink the way teachers use technology to support learning (Ali, A. (2022; Nur, J., et al., 2023; Anggaira, A. S., & Sari, Y. A. 2023). This underscores the need for new pedagogies that use technology to meet the implementation challenges of achieving sustainable development goals, foster peer learning across education systems globally, and catalyze the development of indispensable cross-border competencies-problem solving, collaboration, and creativity. Such pedagogies should rely on learning partnerships between students and teachers capitalize on their intrinsic motivations, and integrate knowledge, pedagogies, and technologies that can transform education systems and the role of governments (Caena & Redecker, 2019).

The government disburses 20% of the education budget from the Indonesian State Budget (APBN), the same thing is disbursed by the State Budget or Budget by the Vietnamese Government (AN/AP) of 20% (Baum, 2020), However, the output of the same budget support is not comparable to what is expected. Based on data submitted by the Minister of Finance Sri Mulyani said that Indonesia is still far behind in the field of education from Vietnam. Vietnam ranked 8th among 79 countries and territories tested in math, reading, and science tests. data; PISA 2018, JICA 2017, UNESCO 2018 In the report Global Education Monitoring (GEM) (Asadullah et al., 2020). According to UNICEF 2021 In the State of the World's Children 2021 report released by UNICEF, Indonesia ranks 63rd out of 191 countries in terms of education quality (Adipat & Chotikapanich, 2022). The report highlights the challenges faced by teachers in Indonesia. This study analyzes how the portrait of teacher competence on the implementation of SDGs in Indonesia and Vietnam and how it contributes.

RQ1 = What are the Pedagogical and Professional competencies of teachers in Indonesia and Vietnam?

RQ2 = How does it contribute to the SDGs?

METHOD

This systematic literature review was prepared using the Preferred Reporting Item for Systematic Reviews and Meta-Analyses (PRISMA). Guidelines for reporting the event evaluated by teacher competence, implementation of achieving sustainable development goals (SDGs).
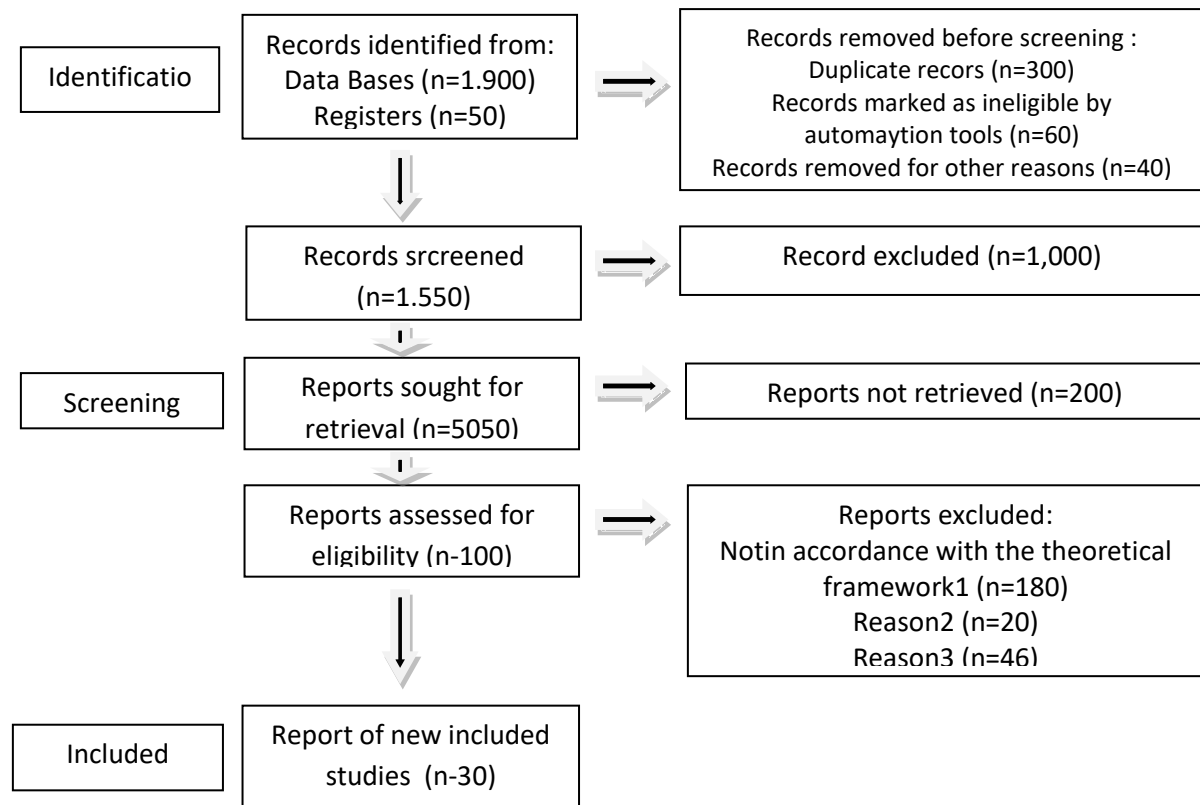
Eligibility criteria

This review study seeks and analyzes descriptive data (case reports and cross-sectional studies) on teacher competencies and SDGs. All data must be in the form of Sinta and Scopus indexed research results..

30 Data searches were conducted from November 2022 on SEforRA, Publish or Perish, ERIC, Web of Science, and ScienceDirect search engines and websites, using relevant keywords teacher competence, SDGs, education, Indonesia, and Vietnam using English.

Data extraction

The data that has been selected, studied so as to produce data on the portrait of Teacher competence in Indonesia and Vietnam.

Diagram 1. Article Selection Flow

Identificatio	Records identified from: Data Bases (n=1.900) Registers (n=50)	→	Records removed before screening : Duplicate recors (n=300) Records marked as ineligible by automaytion tools (n=60) Records removed for other reasons (n=40)
	Records srcreened (n=1.550)	→	Record excluded (n=1,000)
Screening	Reports sought for retrieval (n=5050)	→	Reports not retrieved (n=200)
	Reports assessed for eligibility (n-100)	→	Reports excluded: Notin accordance with the theoretical framework1 (n=180) Reason2 (n=20) Reason3 (n=46)
Included	Report of new included studies (n-30)		

The criteria before searching for articles referred to the research focus on teacher competence and SDGs. All relevant data were collected and filtered, one article found in more than one database was removed. Full articles were studied and irrelevant articles were removed. Five search engines yielded (900 study articles in Indonesia and 1000 study papers in Vietnam+50 articles by manual search). There were 300 duplicate titles, 60 missing data, and 40 incomplete papers (remaining 1550 papers). Because there was irrelevance of the title, 1000 articles were deleted (remaining 5050 papers), and 300 papers were discarded because the retrieved remaining 250 papers. After discussion with the second author, it turned out that the remaining relevant data were 14 articles on the grounds that the articles did not fit the research framework.

RESULT

Table 1. Teacher Competency Study in Indonesia

Author, Year	Theoretical Framewor	Measurement(s)	Main Outcomes by Competence
(Gunara & Sutanto, 2021)	Cross-cultural competence	Semi-structured and recorded interviews with individuals (virtually via email and WhatsApp) were conducted in July and August 2020	sensitivity to the cultural diversity of prospective music teachers needs to be increased to broaden awareness of one's own and other cultures; and improving intercultural competence requires both theoretical and practical courses related to Indonesian identity and global culture.
(Moeis, 2022a)	Madrasah education competencies have lower performance than general education	The data used in this study is the Indonesia Family Life Survey (IFLS). IFLS is a survey socio-economic data collected in 5 waves (1993, 1997, 2000, 2007, And 2014) by RAND Corporation	if parents are Madrasah graduates, they tend to send their children to Madrasah. Madrasahs tend to appeal to poorer households, as also found by World Bank (2010) & M. Niaz Asadullah et al, (2015). The probability of madrasah Aliyah graduates being employed is much lower than that of general education graduates. Madrasah graduates have lower wages than general education graduates.
(Inovasi et al., 2022)	through cooperation with local government	Evaluation of results learning is done using standardized tests that are provided nationally and conducted through CBT.	Improving teacher competence based on collaboration between universities and local governments is very good. The application of learning innovations is very appropriate because it is effective facilitate teachers to improve their competencies and obtain professional certificates.
(Widodo & Gustari, 2022)	Professional Competence	Data analysis was conducted using structural equation modeling (SEM), complemented by CMB, correlational, and descriptive analysis. To determine the significance of direct correlation	This study found that EI, AQ, and OCB have a significant relationship with teachers' professional competence. Teachers' professional competencies, including teacher performance, work productivity, and work effectiveness, are very important for school organizations. In addition, it can have implications for the quality of school graduates, the quality of education and the human resources of a nation.

		path coefficients, Student's T- tests were used, while Sobel (Z) tests were used for indirect correlation path coefficients (Abu-Bader and Jones 2021). The CMB, descriptive, and correlational analyses were conducted with SPSS version 22, while the SEM analysis was conducted with LisRel 8.80.	
(2021) (Munandar & Newton, 2021)	Intercultural competence	Data was analyzed qualitatively using thematic framework analysis	Teachers' competence in the study of culture is strongly influenced by the congruence between their personal religious and cultural backgrounds on the one hand, and the policies of the Indonesian State in the areas of education, language, religion and patriotism on the other. These policies cannot be seen as neutral, and without an ideological agenda. Rather, they reflect and construct sociocultural, political, economic and religious ideologies.
(Zamroni, 2017)	Cross-cultural competence	Quantitative and qualitative data were collected simultaneously in one stage. Quantitative data was used to reveal students' cross-cultural competence in Indonesia and New Zealand, while qualitative data was used to identify how	The results of this study show that the cross-cultural competence of high school students in both countries is almost the same in most factors. The only difference is in terms of understanding of one's own culture and the culture of others, which may be due to the traditionally higher exposure to social and cultural diversity that Indonesian students have experienced in contrast to the more recent New Zealand experience. In conclusion, although multicultural education practices in the two

		schools use several strategies to implement the principles of multicultural education.	countries are different, they are oriented towards the same goal of providing an equal and non-discriminatory education for all students.
(Situmorang et al., 2018)	Professional competence	Teacher performance for the pre-test and post-test was collected using standardized multiple-choice questions via an online Computer-based Test (CBT), All questions were multiple-choice options, ranging from low to positive opinions ranging from 1 to 10.	The study found that teachers' competencies improved significantly through the program. Participants improved their mastery in subjects, teaching strategies and school-based action research. The results showed that of the 3,633 teachers who attended the training program, only 711 (19.6%) passed the final teacher professional certification exam, while 2,805 (77.2%) completed the program but did not pass the required competencies. Another 117 teachers (3.2%) did not complete the program. After attending the training and obtaining a certificate, successful teachers will become role models both in their teaching and learning activities in the classroom and in their active involvement in improving school services.
(Millah et al., 2022)	AKMI, Assessment, Literacy.	This research was a pilot study to reveal the teacher's response to the Ministry of Religious Affairs' policy regarding AKMI. The method used is an exploratory case study. The selection of this method aims to explore the phenomenon as a point of interest of the researcher.	This research has succeeded in describing the initial knowledge, misconceptions, and readiness of madrasa teachers in facing the implementation of AKMI. The majority of madrasa teachers have received information about the implementation of AKMI in madrasas, although there are still misconceptions about it. Massive socialization in various forums, as well as planned and sustainable programs, are needed.
(Patilima, 2022)	Sekolah Penggerak,	This research is a library study	Sekolah Penggerak program leads to improving the quality of

Education	(library research). The data analysis used is critical. Critical analysis is the interpretation of the text and addressing the meaning behind an event scientifically. Then the data source used in this research is secondary data. Where secondary data is data collected through journals, books, prosidin and others.	education in Indonesia, where the driving school is a program that focuses on developing holistic student learning outcomes by realizing the Pancasila Student Profile which includes cognitive (literacy and numeracy) and non-cognitive (character) competencies that begin with superior human resources (principals and teachers). Principals and teachers from the driving schools carry out mentoring to other education units.

Seven studies in Indonesia indexed by Scopus and sinta have discussed the dimensions of teacher competence, as well as other factors that influence teacher competence in Indonesia. specifically the results of the above research include 5 findings, *First*, Subject Knowledge: Competent teachers have a good understanding of the subjects they teach and can provide explanations that are easily understood by students. *Second*, Teaching Skills: Competent teachers have the skills to plan, organize, and implement effective and varied lessons. They are also able to evaluate student progress and provide constructive feedback. *Third*, Interaction Skills: Competent teachers have good social and communication skills, so they can interact well with students, colleagues and parents. *Fourth*, Professional Development: Competent teachers continue to develop themselves and improve their skills and knowledge through training, seminars and other learning experiences. *Fifth*, Use of Technology: Competent teachers can utilize technology to facilitate learning and improve efficiency in classroom management (Kosasih et al., 2022).

Table 2. Teacher Competency Study in Vietnam

Author, Year	Theoretical Framewor	Measurement(s)	Main Outcomes by Competence
(Linh & Kasule, 2022)	Relevance of education policy and adequate education budget	A 5-point Likert scale with one being the lowest point on the scale and five the highest (1=not applicable; 2=not at all; 3=not much; 4=much;	This research confirms that professional learning communities are an effective professional development strategy capable of improving teacher competencies in countries such as Vietnam and Uganda. one of the key competencies needed in the 21st century for

		5=very much).	teachers to thrive and not just struggle to survive in the world. 21st century for teachers to thrive and not just struggle to survive in the workplace. the workplace.
(Nelly & City, 2021)	Global competence and pedagogy from a global perspective	The analytical study used 25 years of review experience.	This research emphasizes the need to put education in a global perspective in teacher education for social science teachers, and teachers in general, teachers must be prepared for globalization and have global competencies (Apple, 2011; Cushner, 2014; Zeichner, 2010). Merryfield (2010)
(Nguyen et al., 2021)	Recontextualizing Education	For the analysis, four main categories were developed deductively, based on the theories of Bernstein and linked to constructiit principles.	The research findings show that (1) an explicit hierarchy frames the interaction between teachers and students; (2) the selection of knowledge and skills is governed by the classification and framing of the curriculum and strong textbooks; (3) teachers follow the order of knowledge in the textbooks; (4) teachers' evaluation of students is based on examining how well students reproduce the content of the textbooks.
(Nguyen, 2019)	Recontextualizing Education	For the analysis, four main categories were developed deductively, based on the theories of Bernstein and linked to constructivist principles.	earch findings sho (1) an explicit hierarchy frames the interaction between teachers and students; (2) the selection of knowledge and skills is governed by the classification and framing of the curriculum and strong textbooks; (3) teachers follow the order of knowledge in the textbooks; (4) teachers' evaluation of students is based on examining how well students reproduce the content of the textbooks.
(Tran et al., 2020)	Education	Data were analyzed following qualitative content principles (Mayring2014) with the support	(1) ESD means that students have competencies, such as problem solving and cooperation in addition to behaving appropriately towards sustainability based on their competencies.

		of the following tools QCAmap software. To be more specific, inductive categories	(2) Applying modern and appropriate teaching methods to contribute to student competency development
(Helfaya & Bui, 2022)	Competency structure that be Developed by prospective teachers	Data analysis: (1) Accessibility of ICT tools in the teaching activities of prospective mathematics teachers and mathematics lecturers. (2) The level of ICT integration in developing the competencies of prospective mathematics teachers. (3) The level of use of mathematics websites by prospective mathematics teachers and mathematics lecturers.	Results show that the availability of ICT integration technology in prospective teacher training is still limited. In addition, ICT integration in mathematics teachers' teaching activities is less effective because their ICT skill levels are very different. Pre- service mathematics teachers lack the ability to use ICT equipment, and good accessibility to learning systems, due to their limited learning management system (LMS).
(Hoang et al., 2020)	By using the Stabback framework, existing literature and national regulations, and also	There is no "one-size-fits-all" curriculum assessment formula, as each country, or even each state/city/school shows distinctive features in their teaching and	Values each child and believes that each child is equally important. Consists of high-quality, relevant and appropriate "content" and contribute to the development of competencies

based on the interviews we conducted with the principal, teachers, and administrators.	learning programs.

According to research (NGOC et al., 2021), teachers in Vietnam face challenges in meeting the competency standards required to deliver quality education. Although the Vietnamese government has taken steps to improve teacher education through policies, training and financial support, there are some issues that need to be addressed. Some of these issues include a mismatch between curriculum and training, a lack of resources and support from schools and the government, and a lack of understanding of the importance of continuous professional development. Nonetheless, some research shows that there has been an improvement in teacher competence in Vietnam. In a study conducted by (Agirreazkuenaga, 2019), it was found that teachers in Vietnam increasingly have skills in planning and implementing innovative and effective learning. They are also increasingly able to use technology to enhance learning. Research also shows that teacher training in Vietnam has played an important role in improving teacher competencies, especially in terms of using technology in learning.

However, there is still room to improve teacher competencies in Vietnam. A study (Caena & Redecker, 2019). Overall, while there has been some progress in developing teacher competencies in Viet Nam, there are still some challenges and room for improvement. Therefore, the government and educational institutions in Vietnam need to continue working together to improve the quality of education and ensure teachers have the necessary competencies to deliver quality education within the SDGs program.

DISCUSSION
Teacher Competencies and the Challenges of Sustainable Development

Based on the data above, competence is inherent and integrated to teachers, it is important for teachers to have the ability or qualifications to carry out their duties or work in educating students. According to Western thinkers, competence is a combination of knowledge, skills, and attitudes needed to achieve the desired goals. David McClelland, a psychologist from the United States, suggested that competence includes three aspects, namely *knowledge, skills,* and *attitude.* (McClelland, 1973), (Testolin et al., 2020) Meanwhile, according to Muslim thinkers, competence is defined as the ability a person has to carry out certain tasks well, in accordance with applicable rules and based on religious teachings. Ali ibn Abi Talib, one of the caliphs of the Muslims, stated that "Competence is the key to success in carrying out a job or task as a teacher" (Dayan & Daskan, 2022)".

Pedagogical competence and professional competence are inseparable. Pedagogical competence relates to the teacher's ability to design, implement and evaluate learning to achieve the desired educational goals. Meanwhile, professional competence relates to the teacher's ability to understand subject matter, manage classes, communicate with students and parents, and supporting science with a perspective approach; multidisciplinary (Alfarizi & Yuniarty, 2022).

A multidisciplinary approach has been taken in Indonesia. "Literature review on climate change and strategic issues of Indonesia's SDGs in a multidisciplinary perspective", this literature reviews climate change in the midst of Indonesia's development based on SDGs in a multidisciplinary perspective. The results of this study show that the scientific perspectives and interests of Agribusiness, Higher Education, Public Health and Socio-Culture are factors that are considered in implementing SDGs programs, especially climate change, including adaptation and mitigation. It is very difficult to accommodate the sustainable development of SDGs using a monodisciplinary approach. The role of multidisciplinary perspectives in this research is very influential in the adaptation and mitigation of climate change phenomena in the process of implementing SDGs sustainable development (Arifah et al., 2022).

The unity between teacher competence and student quality can be analyzed based on *First*, According to the journal "*Professional pedagogical formation of the competence of the teacher-manager* (Lavasani & Khandan, 2011)" by Magzumova Nazira, says pedagogical and professional competencies have an important role in improving the quality of education. In this context, teachers who have good pedagogical competence can design and implement effective and efficient learning, so that students can achieve learning objectives better. On the other hand, teachers who have good professional competence can understand and master the subject matter, so they can provide quality teaching to students.

Second, according to the journal "*Principles of Realization of Physical Therapy for Students Modern Views of Neuropedagogy and Neuropsychology*' Academic Achievement" by Valentyna, pedagogical and professional competencies also affect student academic achievement. Teachers who have good pedagogical competence can provide appropriate, interesting, and meaningful learning for students, so as to increase student motivation and interest in learning. Meanwhile, teachers who have good professional competence can provide appropriate explanations and guidance, so that students can understand the subject matter better (Bilyk et al., 2022).

Third, in order to improve pedagogical and professional competencies, teachers need to continue to develop themselves through training, research and experience. Therefore, the government, schools and communities need to provide adequate support and facilities for teachers in developing their competencies. Overall, pedagogic and professional competencies are very important for teachers in carrying out their duties and responsibilities as educators. These competencies affect the quality of education and students' academic achievement, so they need to be continuously developed by teachers through training, research and experience. In "*Regard to the Connection between Pedagogical Schools and High Schools in Teacher Training and Retraining in Vietnam*" by, Truong Thi Bich concluded pedagogical schools should be responsible for teachers, especially young teachers to continuously provide them with professional training courses to update modern scientific information, to make up for the shortcomings and difficulties they encounter in the first years of the teaching profession. This can only be done by linking pedagogical schools with secondary

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schools based on a legal framework with specialized partnerships (BICH & KHUONG, 2023). With the process of assurance and maintenance in teacher training, along with the construction of quality training programs, effective training content, methods, and engagement with secondary schools; it will train a generation of teachers who are good in expertise, courageous, dynamic in pedagogy, perfect in personality, meeting the requirements of education reform in general and general education in particular in the challenges of quality sustainable education development.

Sustainable development goals (SDGs) are a set of global goals set by the United Nations to ensure human and environmental well-being in a sustainable manner (Unga, 2020). The sustainable development goals include 17 diverse goals, such as eradicating poverty, improving education, eliminating gender discrimination, and protecting the environment. The SDGs were set with the aim of addressing global challenges such as poverty, injustice, and environmental degradation (Arum & Pratiwi, 2020).

The goal related to Education is included in point 4.c. Goal 4.c of the Sustainable Development Goals (SDGs) is to increase the supply of qualified teachers by 2030 (Puertas-Aguilar et al., 2021), including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing states. This is essential to ensure that all children around the world have equal access to quality education (Kioupi & Voulvoulis, 2019). Meanwhile, the indicator derived from goal 4c is contained in indicator 4.c.1. This indicator measures the proportion of teachers with the required minimum qualifications by education level. This is important to ensure that teachers have the necessary competencies to teach and help improve the quality of education.

Teachers have an important role to play in achieving the sustainable development goals (SDGs) as they are one of the policy and education stakeholders for children and communities. Teachers can help integrate sustainable development values and principles into the curriculum and teaching and learning process. Teachers can also help raise community awareness and understanding of the sustainable development goals (SDGs) and their role in realizing them (Agirreazkuenaga, 2019).

Comparison of Challenges in Implementing SDGs between Indonesia and Vietnam

The role of parents is still an interesting phenomenon in Indonesia in determining the choice of educational institutions, and career choices for students. if parents are Madrasah graduates, they tend to send their children to Madrasah. Madrasahs tend to appeal to poorer households, as the World Bank also found (Moeis, 2022b). in Vietnam also experienced the same thing, the patriarchal culture that is still strong in Vietnam in determining children's career choices, In a patriarchal culture, parents are considered as people who are more experienced and know better what is best for their children (Hung & Yen, 2020). this has an impact on children's limited career choices and skills (Wang et al., 2023). However, in 1996, with the idea of Prof. Dr.-Ing. Bacharuddin Jusuf Habibie, the Agency for the Assessment and Application of Technology (BPPT) established Magnet School, Madrasah Aliyah Negeri Insan Cendekia Serpong. The madrassa, which was originally known as slum and poor, has been transformed into a madrassa that is considered for its achievements, currently students have many career choices and competencies and are ready to welcome the challenges of implementing the achievement of sustainable development goals (SDGs) (Suyadi et al., 2022).

Potrait of improving teacher competence in Vietnam. Linh and Kasule in his research confirmed that professional learning communities are an effective

professional development strategy that can improve teacher competence in countries such as Vietnam and Uganda. (Linh & Kasule, 2022). one of the key competencies needed in the 21st century so that teachers can thrive and not just struggle to survive in the workplace. This means that teachers need to improve their competence in technology, multimedia, and collaboration skills, so that they can cope with global challenges and have the capacity to adapt to the challenges of sustainable development (Puertas-Aguilar et al., 2021), (Dinh-Thai et al., 2020). Regarding collaboration skills, massive training has been carried out in Indonesia, for example in the teacher competency improvement program based on collaboration between universities and local governments. The application of innovation by way of collaborative learning is very appropriate because it effectively facilitates teachers to improve competence and obtain teacher professional certificates (Marisana et al., 2023), (Khofifah, Bella; Syaifudin, 2023).

Generic skills really determine a teacher's ability to improve the quality of learning, so that teachers can collaborate with other fellow teachers. As Widodo's research findings explain emotional intelligence (EI), adversity intelligence (AQ), and organizational citizenship behavior (OCB). has a significant relationship with teacher professional competence. Teacher professional competence, including teacher performance, work productivity and work effectiveness, is very important for school organizations. Apart from that, it can have implications for the quality of school graduates, the quality of education and the human resources of a nation. This is in line with the human resource development of Golden Indonesia 2045 (Widodo & Gustari, 2022), (Rego et al., 2022). It is emphasized in Vietnam that education for sustainable development (ESD) means students have competencies, such as problem solving and cooperation, in addition to behaving appropriately towards sustainability based on their competencies. Then the teacher applies modern and appropriate teaching methods to contribute to the development of student competence (Nguyen, 2019).

In the context of learning that leads to modernization and technology, Vietnam still has an important task in providing information and communication technology (ICT) training for teachers. Based on Tran's research findings, results show that the availability of ICT integration technology in the training of prospective teachers is still limited. In addition, ICT integration in mathematics teachers' teaching activities is less effective because their ICT skill levels are very different. Pre-service mathematics teachers lacked the ability to use ICT equipment, and good accessibility to learning systems, due to their limited learning management system (LMS). (Tran et al., 2020), (Garzón-Artacho et al., 2021). In contrast, in Indonesia, teacher training is carried out in the context of educational transformation, for example in the Movers School program organized by the Ministry of Education and Culture and the AKMI program organized by the Ministry of Religious Affairs, but in this study, there is no mention of research results on technology, information and communication competencies as in research in Vietnam (Millah et al., 2022), (Patilima, 2022). Based on the results of the analysis, it is stated that it is important for teachers to improve competence, this has implications for the challenges of sustainable development (SDGS).

CONCLUSION

In a fast-changing world, teachers who have a variety of competencies are an absolute necessity. Thus, teacher competency improvement training can be better developed and used in improving the quality of teachers' mastery of learning

technology. With the ability of learning technology, teachers will be able to present differentiated and meaningful learning in the face of various learning needs of mudir. Unfortunately, teachers in Vietnam do not master ICT, so far training has been carried out but does not target ICT competencies. Whereas ICT competence is clearly needed by teachers in welcoming the challenges of sustainable development, while in Indonesia training has been carried out to improve teacher competence, but there are no research findings that explain the improvement of ICT competence. Therefore, as a recommendation of this paper, it is necessary to conduct further research on teacher competence in the context of mastering ICT that is relevant to the needs of the age of disruption. This can be realized through many aspects, from the assessment of the results of the training of driving schools and AKMI, strategies, to the implications for students, which takes emphasis on the ability of teachers to provide differentiated learning. Furthermore, to measure what competency needs are relevant for teachers, a valid and reliable assessment model is needed. Improving teacher competencies by increasing transversal compete training.

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AUTHOR CONTRIBUTION STATEMENT

We did not find problems such as conflicts of interest in the implementation of this study. The author had participated in the research and approved the final version of the manuscript.

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