

Analysis of English Teachers' Professional Competence in 21st Century Learning

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Abstract. As the world changing rapidly, new model of learning in 21st century emerge and should be mastered by teachers. However, in the implementation, English teachers are still lack of knowledge and competence regarding to 21st learning whereas teachers is the agent of change to improve their professionalism continuously in facing the alteration. This research was conducted to formulate the indicators of English teachers' professional competence in 21st century and analyze the teachers' effort in contributing 21st century English learning. This research used the framework from *Permendiknas No 16 Tahun 2007*, and articles journals to formulate the teachers' professionalism indicators. Also, the framework of Assessment and Teaching of Twenty- First Century Skills project (ATC21S) and UNESCO ICT-competences framework (2018) was employed to organize the indicators of 21st century English learning. It analyzed 60 English teachers by using questionnaire and interview. However, only 10 teachers were interviewed to complete the data. Consequently, mixed method research was used in *Exploratory research design*. The findings illustrated 66 indicators of English teachers professionalism and 80 indicators for 21st century learning that covers ways of thinking, ways of working and tools for working that can be used as self- assessment for English teachers. From the result, some efforts can be implemented by English teachers to improve their professional competence such as reading books, journal articles, and research findings, conducting research, participating in workshop, participating in MGMP's activity, continuing education, expanding knowledge through digital media and the school's quality. However, the result showed that the highest percentage. English teachers attend workshops/seminars in increasing professionalism by 15%. Then, 13% of English teachers understand the results of research on 21st century skills and some teachers use the internet to increase professionalism by 12%. 2% of English teachers conduct research on 21st century skills. Thus, it indicated that the indicators can be used as the teacher' self-assesment in 21st century learning and some ways can be adapted by teachers.

Keywords: English Teacher; Teachers' Professional Competence; 21st Century Learning

1 Introduction

In this current era, the development of technology (1), (2) and new workforce demand refers to approaches in integrating 21st-century skills (3). In the educational field, the integration of 21st century skills are needed to tackle complex global challenges (4). People in a globalized environment are required to have certain abilities known as 21st-century skills. Those skills are regarded as necessary abilities for dealing with the current era's issues. As stated by (3) the growing global economy, rising labor capacities, and rapid technological progress are critical in 21st-century skills. Furthermore, students need those skills to ensure that they are properly prepared for the global workplace and global economy (5). In short, the understanding of 21st century skill is significant for teachers and students in facing the current challenges. In line with that idea, integrating 21st century skill in curricula, teaching, and learning activities and assessments are a must (3). It is as a part of a new curriculum to transform the new structure of teaching and learning in the school in 21st century (3). Then, the use of information and communication technology (ICT) and some skills has been widespread, and it has revolutionized the way individuals solve problems and work with data and information (6). However, the evidence revealed that the ability of Indonesian children to think is still deemed low. Based on the results of the PISA survey, Indonesian students are not well-trained to respond contextual questions that require intellectual activity, argumentation and and creativity to complete through PISA' questions. PISA characteristics questions consider to Higher Order Thinking Skill (HOTS) level (5). Furthermore, critical thinking and creative thinking skills are still poor among Indonesian students. According to (7) Indonesian students have poor critical thinking skills because educational institutions have not implemented 21st-century education, which needs students to construct, analyze, evaluate, and infer knowledge as well as solve issues (7). Then, based on the Martin Prosperity Institute's 2010 Global Creativity Index, Indonesia was placed in 81st position out of 82 countries. It also supported by a national education study conducted in Indonesia, the formal education system in Indonesia is still lacks possibilities in developing creativity. Besides, some previous studies illustrated that the integration of ICT-competences in curriculum were employed as tools and media to support teaching and learning. Knowledge Acquisition was the most dominated in curriculum and was less intended for Knowledge Deepening (KD) and Knowledge Creation (KC) (8). However, in 21st century skill, not only the advanced development in using ICT-competences but also the needs of thinking skills such as critical thinking, problem-solving, decision making, creativity, innovation, etc. This phenomenon indicates how low Indonesia's level of thinking skill. As a result, the majority of Indonesian students lack critical thinking, creative thinking, and problem-solving skills. The problems occurred because some of the educational institutions have not implemented 21st-century education.

In implementing 21st century education, teachers play the main role in determining the outcomes of 21st century learning (9). Teachers in 21st century must develop 21st century students with soft skills, content mastery of 21st century skills as well as technology integration. The importance of teacher development programs cannot be overstated and important for maximizing student potential and improving educational quality. In brief, teachers have the important role in preparing 21st century learning. Based on (10), it is a must by the teachers to develop and improve their professional competence. Regarding to the new challenges in 21st century, teachers also have a duties as the agent of changing. In transformational era or modern era 21st century learning, *“teachers play an important role as the agent of a changing. With 1.5 million people, teachers can help the young generations to face that transformation process”*(10). The most important way to promote 21st century

learning in schools is constructing systems which assist teacher in continuing professional learning, updating knowledge of 21st century skills and improvement of teaching practice. The systems that effectively assist teacher development include administrator support for professional learning, collaborative, job-embedded feedback cycles so on.

The strong reason in conducting this research, first, certain frameworks advised integrating 21st-century skills into the curriculum, teaching and learning, and assessment (7). Moreover, as stated by (3) the new labour need refers to specific approaches of incorporating 21st-century skills into curriculum development. The incorporation of 21st century skills into the curriculum have been discussed and elaborated (7), (3). Those researchers suggested in integrating 21st century skills as the additional skills integrated into the existing school curriculum as a new subject or new content, as a part of a new curriculum to transform the new structure of teaching and learning in the school and as cross-curricular competencies to support the subject or curriculum in the school. Second, in incorporating 21st century skills into the curriculum, teachers' competence is the core point to organize in 21st century teaching and learning process. Third, based on the Indonesian Government Constitution (*Undang-Undang*) No. 14/ 2005 concerning Teachers and Lecturers (11), teachers are categorized as professional educators who have to qualify the profession. In brief, the researchers describe the urgency of the analysis of teachers' professional competence and 21st century skills needed by English teachers. As reviewed by researchers above, teachers have important role in conducting 21st century learning in school. Previous studies stated that every school must have its teachers. Teacher is the parts of the learning classroom to manage and organize the teaching and learning process for students in the classroom as well as the facilitator for all students in fostering their knowledge, skills and relation in school community. Figure 1 represents the roles of Teacher in 21st century skills and learning.

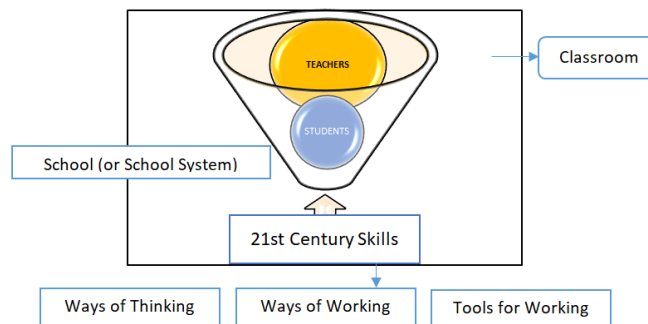


Fig. 1. The Roles of Teacher in 21st Century Skills and Learning

Source: Peter Senge, 2012 and Assessment and Teaching of Twenty-First Century Skills project (ATC21S)

Figure 1 illustrated that teachers act the important role in implementing 21st century skill in learning classroom. Good teachers are lifelong learners continuously in improving their competence, knowledge and skill to face the future challenges in education (12). Professional competence means teachers responsible to their profession or jobs. Teachers are also responsible to be an agent of changing in facing the new challenges in educational system to be professional (4). In brief, teachers professional competences as one of the teacher competences that should be mastered. In identifying Teacher professional competence in 21st century skills, the frameworks by Assessment and Teaching of Twenty-First Century Skills

project [ATC21S) (13), UNESCO Institute for Information Technologies in Education and the UNESCO ICT Competency Framework for Teachers (2018) (14) (15), Regulation No. 14 2005 on Teachers and Lecturers and *Permendiknas No 16 2007* are analyzed. Figure 2, represent the interconnection between teacher professional competence and 21st century skills.

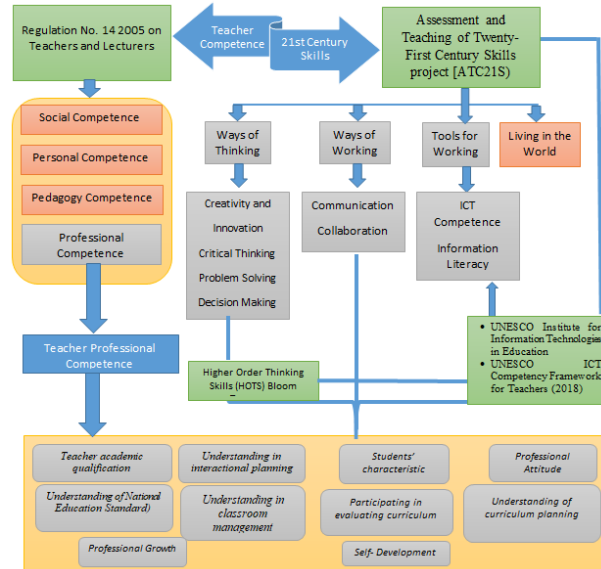


Fig. 2. The Interconnection between Teacher Professional Competence and 21st Century Skills

Those figure above illustrated that there are four teacher competences. The fourth competences have their own qualification and competences that should be mastered by teachers. Professional competence is defined as the competence that encourage to teachers in mastering their subject taught in depth. Besides, in integrating 21st century skills, are needed to be incorporated in teacher's professional competences. Therefore, this study focused on analysing teacher' professional competence and 21st century learning. In brief, this research intended to analyze teacher professional competence and 21st century skill needed by English teacher as teachers' self-assessment. Therefore, the research questions for this study were formulated as follow:

- a) What are the indicators of Teacher Professional Competence and the indicators of 21st century skills that are needed for English teachers?
- b) How are the teachers' ways to improve their professional competence in 21st century skills?

2 Methodology

2.1 Research Design

This study employed Mixed Method Research. It was used to collect and analyze data both qualitative and quantitative approaches. By conducting mixed method research, the integration qualitative and quantitative was taken place to provide the detailed and comprehensive in

answering the research questions briefly. Exploratory research design using qualitative research data as the main data and quantitative research data as supporting data. The figure below illustrated the details of research design for the current study

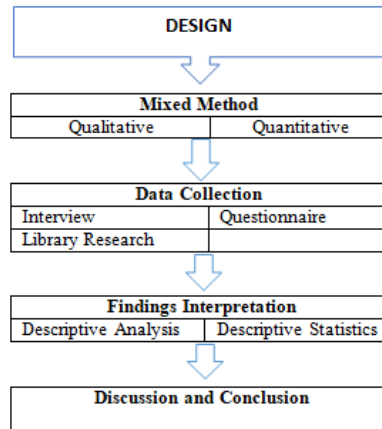


Fig. 3. The Research Design

2.2 Research Context and Data Source

In qualitative data, library research was used to formulate the framework of teacher professional competence and 21st century skills. The results of the literature study will be used in formulating indicators for the two variables to prepare interview questions and questionnaire items. Library research was employed to answer the first research questions and in-depth interviews was used to answer second research questions. Meanwhile, quantitative research data was obtained by using a questionnaire to answer and support the second research question. The data sources of this research were 60 Senior High School English Teachers. There were only 10 English teachers that were interviewed from 60 English Teachers. Then, all English teachers completed the questionnaire items. The data of the research were the indicators of teacher professional in 21st century framework and the statements (words, phrases, sentences) indicated to teachers' ways in improving their professionalism in 21st century.

2.3 Data Collection

In collecting the qualitative data, library research was used in making a framework and indicators of teacher professional in 21st century framework. Interview was employed to get the detailed information about teachers' ways in improving their professionalism in 21st century skills. Meanwhile, in collecting quantitative data, questionnaire was investigated to answer the second research question. Table 3.1 showed the data collection of the research.

Tabel 1. Data Collection

Data Collection Technique	
RQ 1	<i>Library Research.</i>
RQ 2	<i>Interview and Questionnaire</i>

From the table above, it illustrated that the research instruments employed were library research, interview and questionnaire. In answering the first research question, it used library research to formulate the indicators of teacher professional competences in 21st century skills. Then, 20 list interviews were asked to the respondent, the table below illustrated the 20 list interviews. The interviews about teachers' personal information regarding teaching experience, teachers' knowledge about teacher competences, teachers' knowledge about their professional competence, teachers' knowledge about 21st century skills. After organizing the interview list, the list of questionnaire were formulated. Closed-ended questionnaire was designed to get the answer for the second research questions. There were 44 list of questionnaires and they were divided into three sections.

- a) Section 1: Teachers' Identity
- b) Section 2: Analysis of Professional Teacher Competence in 21st Century Skills.
- c) Section 3: Teachers' Ways in Improving the Professional Competence in 21st Century Skills

2.4 Data Analysis

In data analysis procedures, this research employed qualitative and quantitative data analysis. Descriptive analysis was used qualitatively by using library research and interview. Then, descriptive statistics was used quantitatively to measure the result of questionnaire. This study employed a systematic data analysis technique (3). Teacher professional competence and 21st century skills indicators were formulated. There were two steps of analysis namely analyzing the teacher professional competences and analyzing 21st century skills for English teachers. Four steps of analysis conducted in this research: 1). Analyze the framework of teacher professional competence, 2). Analyze the framework of 21st century skills, 3). Formulate the indicators of teachers' professional competence and 21st century skills, 4). Verify and evaluate the findings by the expert judgment. Then, in analyzing the data quantitatively, descriptive statistics was used by using SPSS; validity test and Reliability Test.

3 Results and Discussion

3.1 Results

Results in this research: the indicators of Teacher Professional competence and 21st century skills that are needed by English teacher, Teachers' efforts to improve their professionalism in 21st century skills. The findings was described in this chapter after formulation and analysis of the data descriptively. The first findings of the research were the indicators of teacher professional competence and the indicators of 21st century skills. It was formulated to answer the first research questions. Then, the results of indicators as follows;

3.2 Indicators of Teacher Professional Competence

The result of library research in formulating indicators of teacher professional competence found 9 categories to investigate teacher professionalism. This indicators were analyzed and formulated based on the framework stated in *Permendiknas No 16 Tahun 2007*, Regulation No. 14 2005 on Teachers and Lecturers, the research findings from some previous research as follows (Umiyanti Jabri, 2017, p. 65), (Huang & Tsai, 2004), (Pahrudin, Trisno Martono,

Wiedy Martini, 2016), (Kiyemet Selvi, 2010), (Bunyamin, 2016). The results of analysis found 66 indicators of teacher professional competences as follows:

Table 2. The Indicators of Teacher Professional Competence

Indicators	Sub-Indicators	Sources
Teachers Academic Qualification	1 Acquire a minimum educational academic qualification of diploma (D-IV) or bachelor (S1) degree.	Permendiknas No 16 Tahun 2007
	2 Acquire educational academic qualifications related to the subjects taught from the qualified study program.	Permendiknas No 16 Tahun 2007
	3 Master the subject matter broadly and deep.	
	4 Participate the development of science and technology information that supports the profession through scholarly activities	Umiyanti Jabri, 2017, p. 65.
	5 Develop their professional competence through reflective act.	Umiyanti Jabri, 2017, p. 65.
	6 Master the material, structure, concept, and scientific thinking to support their teaching and learning process.	Umiyanti Jabri, 2017, p. 65.
	7 Conduct scientific research (action research)	Umiyanti Jabri, 2017, p. 65.
	8 Develop various models of Learning	Umiyanti Jabri, 2017, p. 65.
	9 Organize the textbooks / modules	Umiyanti Jabri, 2017, p. 65.
	10 Join the educational qualifications training	Umiyanti Jabri, 2017, p. 65.
Teacher Understanding of Curriculum Planning	11 Identify the understanding about the ideas and framework of school curriculum.	(Huang & Tsai, 2004)
	12 Interpret the concept of school-based curriculum system.	(Huang & Tsai, 2004)
	13 Organize the curriculum planning based on social cultural values, subject matter and students' interest	(Huang & Tsai, 2004).
	14 Classify the standard competency and basic competencies of the subject taught	(Huang & Tsai, 2004)
	15 Classify the materials, the structure and the concept of the subject taught.	(Huang & Tsai, 2004)
	16 Decide a series of selection, organization, arrangement, and planning of curriculum objectives, contents, methods, activities and evaluations in learning.	(Huang & Tsai, 2004)
	17 Participate actively in the development of school curriculum	(Huang & Tsai, 2004)
	18 Design the instructional topics and activities	(Huang & Tsai, 2004)
19 Evaluate curriculum and instruction, before the beginning of new semester.	(Huang & Tsai, 2004)	
Teacher Understanding of Interactional Planning	20 Master the material, structure, concept and framework of the subject taught.	Permendiknas No 16 Tahun 2007

Indicators	Sub-Indicators	Sources
Teacher Understanding of Classroom Management	21 Interpret the core competency of the subject taught	Permendiknas No 16 Tahun 2007
	22 Classify basic competency of the subject taught.	Permendiknas No 16 Tahun 2007
	23 Identify the goals of the subject taught.	Permendiknas No 16 Tahun 2007
	24 Select the learning materials related to the level of students' development.	Permendiknas No 16 Tahun 2007
	25 Manage the subject taught creatively based on the level of students' development.	Permendiknas No 16 Tahun 2007
	26 Organize suitable instructional plan.	(Huang & Tsai, 2004)
	27 Draft suitable learning assessment	(Huang & Tsai, 2004)
	28 Organize a good grip on relevant regulations of learning assessment	(Huang & Tsai, 2004)
	29 Screen out appropriate assessment criteria for different subject area and developmental stages of students	(Huang & Tsai, 2004)
	30 Adopt effective instruments of assessment	(Huang & Tsai, 2004)
	31 Acquire the knowledge about language features in English (such as linguistics, socio-linguistic, passage, strategies)	Permendiknas No 16 Tahun 2007
	32 Create a good learning environment	(Huang & Tsai, 2004)
	33 Create good climate of class interaction.	(Huang & Tsai, 2004)
	34 Manage a good classroom	(Huang & Tsai, 2004)
	35 Create a safe environment conducive to learning	(Huang & Tsai, 2004)
	36 Establish classroom regulations conducive to learning	(Huang & Tsai, 2004)
	37 Manage personal time effectively	(Huang & Tsai, 2004)
	38 Employ teaching resources effectively	(Huang & Tsai, 2004)
	39 Set up the reward and punishment in the classroom appropriately	(Huang & Tsai, 2004)
	40 Manage teaching profile effectively	(Huang & Tsai, 2004)
Teacher Participation in Evaluating the Curriculum	41 Evaluate the process of classroom management by using reflective act	(Huang & Tsai, 2004)
	42 Identify the basic knowledge of curriculum evaluation	(Huang & Tsai, 2004)
	43 Get involve in the selection and evaluation of textbooks	(Huang & Tsai, 2004)
	44 Get involve in the planning and implementation of curriculum evaluation	(Huang & Tsai, 2004)
	45 Apply results of curriculum evaluations to improve curriculum quality	(Huang & Tsai, 2004)

Indicators	Sub-Indicators	Sources		
Teachers' Understanding of Students' Characteristics	46	Conduct self-evaluation of teaching.	(Huang & Tsai, 2004)	
	47	Possess basic knowledge of interactional evaluation	(Huang & Tsai, 2004)	
	48	Get involve in the planning and implementation of interactional evaluation	(Huang & Tsai, 2004)	
	49	Apply results of interactional evaluations to improve teaching quality	(Huang & Tsai, 2004)	
	50	Understand the students' characteristics	Permendiknas No 16 Tahun 2007	
	51	Analyze students' need to achieve the learning goals	Permendiknas No 16 Tahun 2007	
	52	Analyze students' potential in learning activity	Umiyanti Jabri, 2017, p. 65.	
	53	Analyze students' initial behavior and facilitate counseling for students	Umiyanti Jabri, 2017, p. 65.	
	Self- Development	54	Maintain mature and stable emotional state	Permendiknas No 16 Tahun 2007
		55	Improve their self-professionalism continuously by reflective act	Permendiknas No 16 Tahun 2007
56		Reflect on self and accepting self	Permendiknas No 16 Tahun 2007	
57		Evaluate the reflective act process to improve self-development	Permendiknas No 16 Tahun 2007	
58		Conduct research for improving self-development regarding to the subject matter or the knowledge of teaching activities	Permendiknas No 16 Tahun 2007	
59		Adapt the current changes and development for improving the professionalism	Permendiknas No 16 Tahun 2007	
60		Being willing to collaborate with others	(Huang & Tsai, 2004)	
Professional Growth		61	Pursuing professional growth	(Huang & Tsai, 2004)
	62	Sharing professional knowledge with colleagues	(Huang & Tsai, 2004)	
	63	Responding to educational changes	(Huang & Tsai, 2004)	
Professional Attitudes	64	Being willing to devote time and energy	(Huang & Tsai, 2004)	
	65	Adhering to professional ethics in education	(Huang & Tsai, 2004)	
	66	Ethical and moral aspects are important characteristics of educational profession	(Huang & Tsai, 2004)	

3.3 Indicators of 21st Century Learning

After identifying the indicators of teacher professional competence, the indicators of 21st century skills were formulated. The framework from Assessment and Teaching of Twenty-First Century Skills project [ATC21S), UNESCO Institute for Information Technologies in Education and the UNESCO ICT Competency Framework for Teachers (2018) were analyzed to find the components of 21st century skills. As stated in figure 2 that the framework of 21st

century skill described on following table:

Table 3. 21st Century Skills

21st Century Skills			
Ways of Thinking	Ways of Working	Tools for Working	Living in the World
Creativity and Innovation	Communication	Information Literacy	Local and Global Citizenship
Critical thinking	Collaboration and Teamwork	Research of sources, evidence, biases	Life and Career
Problem Solving		ICT literacy	Personal and Social Responsibility
Decision Making			Cultural Awareness And Competence

The indicators of 21st century skills were formulated from those framework stated on table above. The result showed 80 indicators of 21st century skills that are divided from Creativity and Innovation, Critical Thinking, Problem-Solving, Decision Making, Communication, Collaboration and Teamwork, Information Literacy and ICT Literacy.

Table 4. The Indicators of 21st Century Skills

Category	Indicator	Source
Creativity and Innovation	1 Employ idea generating techniques such as brainstorming to develop several original design ideas.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	2 Determine the best design idea from a collection of ideas.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	3 Use ingenuity and imagination, going outside typical approaches generate design solutions.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	4 Create new, unique, and surprising ideas that add my personal touch to the final design idea.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	5 Stay from typical designs or used common materials or ideas in new ways that are clever or unimagined	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	6 Try new approaches to get things done, innovation, and invention.	(Suresh Chiruguru, 2020)
	7 Elaborate, refine, analyze, and evaluate original ideas to improve and maximize creative efforts.	(Suresh Chiruguru, 2020)
	8 Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur.	(Suresh Chiruguru, 2020)
	9 View failure as an opportunity to learn; understand that creativity and innovation are part of a long-term, cyclical process of small successes and frequent mistakes.	(Suresh Chiruguru, 2020)
	10 Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work.	(Suresh Chiruguru, 2020)

Critical Thinking	11	Asks questions; looks for reasons, explanations, and meaning; seeks new information to broaden understanding in doing the task.	(Critical Thinking Indicators- CTis, 2016)
	12	Carefully considers meaning of data and interpersonal interactions, asks for feedback; corrects own thinking, alert to potential errors by self and others, finds ways to avoid future mistakes in doing the task .	(Critical Thinking Indicators- CTis, 2016)
	13	Expresses deep understanding about.... (Ex; Reading Task, Concept of Pedagogical skill, Understanding the discourse) in doing the task.	(Critical Thinking Indicators- CTis, 2016)
	14	Identify, analyze, and evaluate arguments and truth claims	(Gregory, William, Henry, Wallace, 2010)
	15	Identify reasons, evaluate reasons, and give reasons	(Gregory, William, Henry, Wallace, 2010)
	16	Comprehend person's argument or the concept clearly and evaluate or claim the argument	(Gregory, William, Henry, Wallace, 2010)
	17	Understand the arguments and issues discussed in your college textbooks and classes	(Gregory, William, Henry, Wallace, 2010)
	18	Develop your own arguments on particular topics or issues	(Gregory, William, Henry, Wallace, 2010)
	19	Draw inferences and produce arguments	(Alec Fisher, 2001)
	20	Draws reasonable conclusions (if this is so, then it follows that because...); uses intuition as a guide; acts on intuition only with knowledge of risks involved.	(Critical Thinking Indicators- CTis, 2016)
Problem Solving	21	Understand the problem; devise a plan or strategy; implement the plan; and reflect on the outcome	(Machdel, Marita, 2019)
	22	Understand the nature of the problem first	(Machdel, Marita, 2019)
	23	Understand how problems are defined and characterized	(Machdel, Marita, 2019)
	24	Promote new experience within students by finding solutions and solving problems (Language Skill, Grammar, KT).	(Lismayani, Parno, Mahanal, 2017)
	25	Explore a subject deeply and bring their knowledge to bear on complex, everyday questions, issues, and problems. (Language Skill, Grammar, KT)	(UNESCO,2011)
	26	Find a connection between experience (schema) that he or she already own with the problem he or she faces, and is able to do something to solve the problem (Language Skill, Grammar, KT).	(Foshay, Rob & Kirkley, Jamie, 2003)55

	27	Investigate aims at finding new alternative solutions for a problem (Language Skill, Grammar, KT)	(Lismayani, Parno, Mahanal, 2017)
	28	Identify and discuss how students learn and demonstrate complex cognitive skills (Language Skill, Grammar, KT)	(UNESCO,2011)
	29	Discuss the characteristics of complex cognitive thought processes and how students acquire and demonstrate these (Language Skill, Grammar, KT)	(UNESCO,2011)
	30	build on the discussion of their own cognitive skills to externalize and overtly demonstrate the use of these skills to solve problems in their subject area (Language Skill, Grammar, KT)	(UNESCO,2011)
Decision Making	31	Collect information and develop alternative choices that can be taken (Language Skill, Grammar, KT)	(Budi Astuti, Rizqi Lestari, Caraka Putera, 2019)
	32	Set systematic goals, describe problems, analyze and interpret questions, be responsive, and be creative in addressing an issue (Language Skill, Grammar, KT)	(Budi Astuti, Rizqi Lestari, Caraka Putera, 2019)
	33	Estimate the advantages and risk of a decision, see the impact of decisions that will be applied, and make decisions based on several available alternatives (Language Skill, Grammar, KT).	(Budi Astuti, Rizqi Lestari, Caraka Putera, 2019)
	34	Plan decisions implementation and commit to decisions that have been taken (Language Skill, Grammar, KT).	(Budi Astuti, Rizqi Lestari, Caraka Putera, 2019)
	35	Review the results of decisions that have been taken, evaluate the effects of implementing the resolution and be able to plan choices in the future (Language Skill, Grammar, KT).	(Budi Astuti, Rizqi Lestari, Caraka Putera, 2019)
	36	Analyze the situation. Once you recognize that there is a difference between “what is” and “what could be,” study the situation carefully to determine exactly what is causing the difference (Language Skill, Grammar, KT).	(Doris “Katey” Walker, 1987)
	37	Consider the goal or goals you want to reach. The goals you choose are influenced by the values you have— what you believe is important (Language Skill, Grammar, KT)	(Doris “Katey” Walker, 1987)
	38	Look for as many alternatives as possible to solve your problem—not just the obvious or habitual ones. Creative thinking, reading and talking to other people may uncover more possibilities	(Doris “Katey” Walker, 1987)

		(Language Skill, Grammar, KT)	
	39	Consider the consequences. One of the key elements of the decision-making process is looking ahead to see “what might happen if I do this!” Sometimes it is possible to gather information to help you predict (Language Skill, Grammar, KT)	(Doris “Katey” Walker, 1987)
	40	Identify the best solution among a number of alternative options (Language Skill, Grammar, KT).	(Paul Brest, Linda Hamilton, 2010)
Communication	41	Present information and supporting evidence collected clearly, concisely, and logically so an audience can follow my line of reasoning.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	42	Address alternative or opposing perspectives or design solutions clearly and completely.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	43	Organize time well during a presentation including an interesting introduction and compelling conclusion, with no elements too long or too short.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	44	Use visual aids such as presentation slides, demonstrations, and other media to present findings, reasoning, and evidence to support the final design solution	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	45	Answer audience questions clearly and completely.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	46	Listen effectively to decipher meaning, including knowledge, values, attitudes, and intentions.	(Suresh Chiruguru, 2020)
	47	Use communication for a range of purposes (e.g. to inform, instruct, motivate, and persuade)	(Suresh Chiruguru, 2020)
	48	Articulate thoughts and ideas effectively using oral, written, and nonverbal communication skills in a variety of forms and contexts.	(Suresh Chiruguru, 2020)
	49	Use multiple media and technologies and know how to assess impact and their effectiveness a priority.	(Suresh Chiruguru, 2020)
	50	Analyze in term of which information sources are accurate? Which ones are not? How can they be used or leveraged effectively?	(Suresh Chiruguru, 2020)
Collaboration and Teamwork	51	Remain informed of the design project and collect important information to support the ideas of the design team.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	52	Help the team solve the problems and manage team conflicts.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)

Information Literacy	53	Acknowledge and respects team member's perspectives.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	54	Establish team norms to make agreements on how the team works together.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	55	Set a team schedule and track progress toward goals and deadlines.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	56	Involve all team members in the final project.	(Tod, R. Kelley, J. Geoff Knowles, Jung Han, Euisuk Sung, 2019)
	57	Demonstrate ability to work effectively and respectfully with diverse teams.	(Suresh Chiruguru, 2020)
	58	Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal.	(Suresh Chiruguru, 2020)
	59	Assume shared responsibility for collaborative work, and value the individual contributions made by each team member.	(Suresh Chiruguru, 2020)
	60	Generate more knowledge, making collaboration a key ingredient to student success in today's global society.	(Suresh Chiruguru, 2020)
	61	Recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information.	(Sandra Melody Campbell, 2008)
	62	Use a computer, connect to the internet, access a variety of kinds of information, distinguish between levels of quality and validity of information, comprehend the content of the information so that they can apply it and are aware of the rules around the use of information.	(Sandra Melody Campbell, 2008)
	63	Focus on teaching people how to utilize the information they can readily and regularly access,	(Sandra Melody Campbell, 2008)
	64	Identify the fact that information is needed, their awareness of what kinds of information are needed and whether or not that information is likely to exist.	(Sandra Melody Campbell, 2008)
	65	Teach people how to decode the electronic packaging of information so that they can evaluate the authenticity and authority of the information they find.	(Sandra Melody Campbell, 2008)
	66	Understand why an image is presented in a particular way and the impact of the visual presentation on the viewer will become a critical piece of information literacy	(Sandra Melody Campbell, 2008)

ICT Competence	67	Develop sensitivity to cultural variations in what is considered to be appropriate use of information	(Sandra Melody Campbell, 2008)
	68	Evaluate the value and relevance of large amounts of information they may find on the internet	(Nazlin Bhimani, 2011)
	68	Know when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner	(Nazlin Bhimani, 2011)
	70	Use a computer effectively in order to search for content	(Nazlin Bhimani, 2011)
	71	Recognize how a browser works and how to find materials needed.	(1)
	72	Use the search engines in computer devices in facilitating teaching and learning activities.	(1)
	73	Select the appropriate Internet and the World Wide Web used.	(1)
	74	Use the appropriate URL for accessing a website.	(1)
	75	Search for potential teaching material needed on the internet.	(1)
	76	Use presentation software and digital resources during classroom activities	(1)
	77	Incorporate appropriate ICT activities into lesson plans so as to support students' acquisition of school subject matter knowledge.	(1)
	78	Design units of study and classroom activities that integrate a range of ICT tools and devices in promoting the skills of reasoning, planning, reflective learning, knowledge building and communication of students	(1)
	79	Design online materials and activities that engage students in collaborative problem-solving, research or creating art.	(1)
	80	Use presentation software and digital resources during classroom activities	(1)

3.4 Teachers' Ways in Improving Professional Competence

The result of interview from 10 English teachers illustrated that there are some ways in improving teacher professional competences. However, the discussion about 21st century skill is still lack provided in Indonesia. Government decided four national teacher competence that should be mastered by teachers. In the reality, teachers should improve and master the competences by themselves. Some ways in improving professional competence based on the result of interview as follows: (a) Continuing the education, (b) Participating seminar or training, (c) Participating MGMP' activity, (d) Updating knowledge by reading book, (e) Reading the research article regarding to 21st century skills, (f) Improving the quality in

selecting the applicant teachers, (g) The role of schools' leader in developing and facilitating teachers' professional competence. Those pointers above were stated by the respondents. The detailed information as follows:

Table 5. Interviews' Result

No	Teachers' ways in Improving Professional Competence	Responden 1	Responden 2	Responden 3	Responden 4	Responden 5	Responden 6	Responden 7	Responden 8	Responden 9	Responden 10
1.	Continuing education	√	√	√	-	-	√	-	-	√	√
2.	Participating workshop/ seminar	√	√	√	√	√	√	√	√	√	√
3.	Participating MGMP' Activities	√	√	√	√	√	√	√	√	√	√
4.	Updating knowledge by reading books	√	√	√	√	√	√	√	√	√	√
5.	Reading journal article regarding to 21st century skills	√	√	-	-	-	-	√	-	√	√
6.	Improving the quality in selecting the applicant teachers	-	√	-	-	-	√	√	-	√	√
7.	The role of schools' leader in developing and facilitating teachers' professional competence	√	√	-	-	-	√	√	√	-	-

From the table above, it illustrated that professional competences can be improved by some ways. Ten respondents stated that participating workshop/ seminar, participating MGMP' activities and updating knowledge by reading book are the most dominant ways implemented by teachers. Surprisingly, there were 7 teachers stated that the improvement of education quality for applicant English teacher and the leaders' role in developing teachers' professionalism contribute as the ways to improve teacher professionalism. The respondents described that good leadership built by headmaster or stakeholders to improve education quality promote teachers' professionalism because they learn continuously to achieve the standards or goals determined by schools or institution. Besides, there were 6 teachers argued that continuing education support teachers to be professional and there were 5 students argued that reading research articles regarding 21st century encourage teacher's professionalism. The result of interview related to the items of ways in improving teacher professional competence were formulated in organizing the questionnaire list. There were 54 questionnaire items distributed to the 60 respondents. The questionnaire was divided into 3 sections; section 1- teachers' personal information, section 2- Analysis of Professional Teacher Competence in 21st Century Skills, section 3- Teachers' Ways in Improving the Professional Competence in 21st Century Skills. There were 9 items for section 1 and 20 for section 2 as well as 25 for section 3. Before, distributing the questionnaire validity and reliability test for the 20 items were conducted for questionnaire section 2-3. The result showed as follows:

Table 6. The Result of Validity Test

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
Pearson	1	.405	.295	.276	.695	.442	.361	.285	.489	.286	.580	.366	.517	0.405	.254	.458	.656	.533	.350	.636
Correlations																				
Sig. (2-tailed)	.000	.001	.000	.005	.000	.000	.005	.388	.000	.144	.000	.004	.000	.000	.125	.724	.000	.000	.006	.000
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

In measuring the validity test, r-table with the significance 5% was employed to investigate that the items of questionnaires were valid or not. Based on the r-table with the respondents 60 teachers in significant 5%, it showed the score was 0.254. It means the score of Pearson Correlation should more than 0.254 because the r-calculation > r-table that means valid. The result from the questionnaire illustrated that the entire items questionnaire were valid. The 20 items questionnaire were tested by using SPSS 25. Furthermore, reliability test was conducted to investigate that the items are reliable. In investigating reliability test, it used Cronbach Alpha through SPSS 25. The result showed as follows:

Table 7. The Result of Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.958	45

From the table above, it illustrated that the questionnaire was reliable. According to Sujarweni Wiratna (2015: 192), if the alpha value is greater than 0.60, the statement is reliable; and the score from the result of SPSS analysis Cronbach's Alpha was 0.958. After the validity and reliability test, the normality test was carried out. Normality test using SPSS One-Sample Kolmogorov-Smirnov Test. Table 4.9 is the result of the normality test. The data is normally distributed if the sig KS value > 0.05. Based on the results in the table below, the data is normally distributed because the sig KS is 0.015, which is greater than 0.05.

Table 8. The Result of Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Nilai
N		60
Normal Parameters ^{a,b}	Mean	81.18
	Std. Deviation	8.005
Most Extreme Differences	Absolute	.129
	Positive	.109
	Negative	-.129
Test Statistic		.129
Asymp. Sig. (2-tailed)		.015 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

The questionnaire were distributed to 60 respondents by using Google Form. The findings from questionnaire were employed to answer the second research questions. In the result of the percentage in questionnaire as follows:

a) What are the criteria for 21st century teachers?

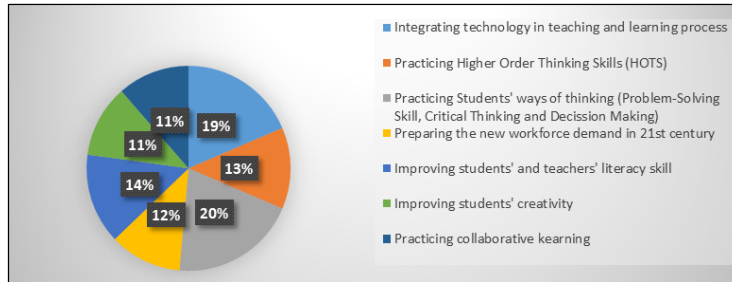


Fig. 3. The Criteria of 21st Century Skills

Figure above was distributed in the questionnaire to describe the teachers' ways in improving their professional competence in 21st century skills. The result showed that the highest percentage 20% English teachers engage students to practice students' ways of thinking in the learning classroom and 19% English teachers integrate technology in teaching and learning process. Surprisingly, there were lack of students' creativity and lack of collaborative learning. The result showed that 11% in improving students' creativity and participating in collaborative learning.

b) What are the teachers' ways in improving their professionalism as an English Teacher?

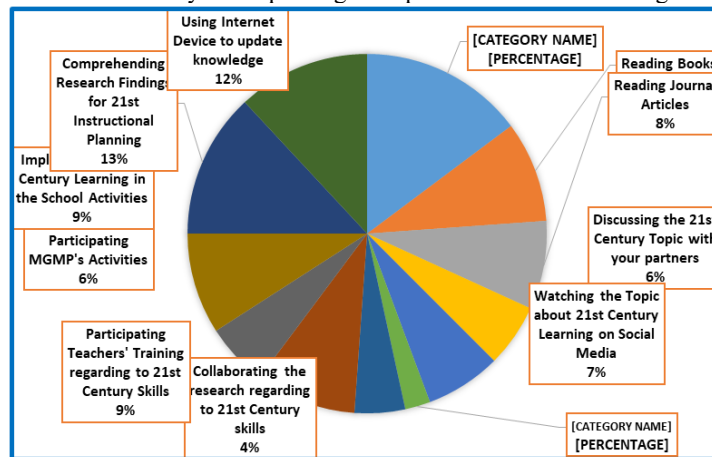


Fig. 4. The Teachers ways in Improving their Professionalism in 21st Century Skills

The result in figure 2 illustrated that most English teachers participate in the workshop/ seminar to improve their professional competence by 15 %. Then, there were 12% most English teachers use internet device to update knowledge and comprehend the research findings for 21st instructional planning by 13%. Surprisingly, there were 2% English teachers conduct the research regarding to 21st century skill. From the percentage above, it was still in the small number English teachers improve their professional competence. However, this ways can be adapted by English teachers to improve their professional competences.

3.5 Discussion

The research findings indicated that formulating the indicators of teacher professional competence and 21st century skills can be employed as the self-assessment for English teachers in improving their professional competence in 21st century skills. As stated in the figure 1 that teachers are the parts of the learning classroom to manage and organize the teaching and learning process for students in the classroom as well as the facilitator for all students in fostering their knowledge, skills and relation in school community. Moreover, some frameworks advocate for incorporating 21st-century skills into curriculum, teaching and learning, and evaluation (7), (16). According to (3), the new labor need refers to specific approaches of incorporating 21st-century skills into curriculum development. Teachers act the important role in investigating 21st century learning. In brief, updating the knowledge about 21st century skills in learning are needed by the current English teachers. This research confirmed the previous research conducted by (Handayani, Nastiti, 2017) that teachers are demanded to be ready and be responsive in facing the educational challenges in 21st century. Teachers should grasp the education development and changes by emerging the drastic technological revolution and the complex ways of thinking (19). It also confirmed by the previous research by (4) that the current students ways thinking should refer to Higher Order Thinking skills (HOTS) in which it is the 21st century skills for teachers (20). In short, the teachers should adapt this changes by engaging with some information dealing with 21st century education.

In improving the professional competence in 21st century learning, self-assessment can be conducted as the process of continuous reflection, self-monitoring, and self-judgment to measure and review the strengths and weakness and helps to discover area which need improvement. It involves an individual's learning from his experiences. In investigating, self-assessment, it needs indicators as the instrument. This research findings confirmed the previous research by (Lubna, Quddus, 2019) that self-assessment support teachers to control their progress and as one of the most influential tools for the measurement of teachers' quality. This research findings investigated the indicators of teachers' professional competence and 21st century skills to measure and control the teachers' progress in improving their professionalism in the current 21st century learning. As stated in the figure 1 and 2 that there are the indicators of teachers' professional competences that should be gave attention such as Teachers Academic' Qualification, Teacher Understanding of Curriculum Planning, Teacher Understanding of Instructional Planning, Teacher Understanding of Classroom Management, Teacher Participation in Evaluating the Curriculum, Teacher Understanding of Students' Characteristics, Self- Development, Professional Growth, Professional Attitudes (17), (18). Those of indicator should be incorporated by 21st century indicator to help teachers improve their professionalism in 21st century learning

Furthermore, this is in complete agreement from the research findings in interviews stated by the first respondents that *".....absolutely yes. I found mmmm....my students have higher order thinking skills, they ask many questions regarding to our quiz, topic or hot issues in this present situation.."*. From the statements above, it can be inferred that most teachers have realized that in this current era ways of thinking is important. Then, another respondents stated that, *" You know, we can get many information through the usage of technology such as Instagram, Twitter, Facebook, dan...kalau students punya higher order thinking skills, they can criticize the information so tidak mentah mentah informasi yang akan mereka terima"* It can be inferred that students' ways thinking that are stated in 21st century skill become the core skill that should be practices. Then, teachers have the responsibility to help students. The

result of interviews become the real situation that are faced by teachers. Then, the research finding of interview and questionnaire illustrated that there were some ways in improving teachers professional competence such as Continuing the education, Participating seminar or training, Participating MGMP' activity, Updating knowledge by reading book, Reading the research article regarding to 21st century skills, Improving the quality in selecting the applicant teachers, The role of schools' leader in developing and facilitating teachers' professional competence. Those ways have been confirmed by (21) and *Permendiknas No 16 Tahun 2007*.

4 Conclusion

The research findings illustrate that improving professional competence in the 21st century can be built by formulating self-assessment of English teachers. Indicators can be used as a tool to measure self-assessment for English teachers. The results of the research findings can be concluded, first, there are 66 indicators of professionalism of English teachers, 80 indicators of 21st century learning, and descriptors of Professional Competence of teachers in the 21st century which include Ways of Thinking, Ways for Working, and Tools for Working which can be used as Self- Assessment for English teachers. Second, from the results of interviews, there are several efforts that English teachers can make to improve their professional competence such as reading books, reading journal articles, reading research results, conducting research, attending workshops or seminars, participating in MGMP activities, continuing education, expanding knowledge through digital media and school quality. Third, based on the results of filling out the questionnaire, it shows that more English teachers attend workshops/seminars in increasing professionalism as much as 15%. Then, there are 13% of English teachers who understand the results of research on 21st century skills and some teachers use the internet to increase professionalism as much as 12%. There are 2% of English teachers doing research on 21st century skills. Thus, it shows that the indicators of professional competence of English teachers in the 21st century can be used as a self-assessment for English teachers and several efforts can be made by English teachers in increasing their professionalism.

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