FRAMEWORK FOR ASSESSING 21ST CENTURY SKILLS IN EFL PROJECT-BASED LEARNING

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ABSTRACT

Twenty-first-century skills are abilities and attributes that can be taught or learned in order to enhance ways of thinking, learning, working, and living in the world. They include: 1) learning and innovation skills; 2) information, media, and technology skills; and 3) life and career skills. Learning and innovation skills have four sub-skills (creativity and innovation, critical thinking and problem solving, communication, and collaboration), while information, media, and technology skills consist of three literacies (information literacy, media literacy, and ICT (Information, Communications, and Technology) literacy). Meanwhile, life and career skills comprise five subskills: flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, and leadership and responsibility. This research develops a framework for assessing 21st century skills in EFL Project-Based Learning (PjBL) by reviewing journal articles, books, and other references. The framework contains several indicators and questions to make reflections. The interdisciplinary framework is beneficial for teaching English in higher education specifically to students with multiple background of studies because it consists of clear descriptors.

Keywords: 21st century skills, EFL, higher education, PjBL

Introduction

The phrase "21st century skills" refers to a wide range of abilities, competencies, work habits, and personal qualities that employers, educators, and others use to help people succeed in the modern workplace. The term "21st century skills" is often used interchangeably with a number of other related terms such as "applied skills", "cross-curricular skills", "interdisciplinary skills", "soft skills", "life skills", "interpersonal skills", "workforce skills", and "non cognitive skills" (Silva, 2008). They are becoming more and more popular in the discourse on international education. Around the world, an increasing number of nations work to make sure that their educational programs give kids and teenagers these kinds of skills in addition to cognitive subjects like reading and math. The 21st century skills have the concept of beneficial for school and career (Chen, 2021).

Binkley (2012) defines twenty-first-century skills as abilities and attributes that can be taught or learned in order to enhance ways of thinking, learning, working and living in the world. The skills include creativity and innovation, critical thinking/problem solving/decision making, learning to learn/metacognition, communication, collaboration (teamwork), information literacy, ICT literacy, citizenship (local and global), life and career skills, and personal and social responsibility (including cultural awareness and competence). These skills improve outcomes related to lifelong learning, employment and entrepreneurship, personal empowerment and active citizenship.

Foundational work in 21st century skills was conducted by initiatives like the Skills for a Changing World research of the

Brookings Institution, the Partnership for 21st Century Learning (P21), the Learning Metrics Task Force (LMTF), and the Assessment and Teaching of 21st Century Skills (ATC21S). Furthermore, initiatives like the Collaborative for Academic, Social, and Emotional Learning (CASEL) and UNICEF's Life Skills and Citizenship Education (LSCE) initiative in the Middle East and North Africa have worked to advance a systems approach to 21CS, which, as will be noted later, would be a natural area of focus for any future support by GPE in this realm.

Looking specifically at the realm of learning assessment, a deep dive on this issue, using the same 15 DCPs in Africa and Asia that were analyzed for the stocktake, aimed to understand what assessment tools, if any, these countries use at the classroom and national levels that directly or indirectly target 21CS. This analysis reveals that while none of the sampled tools are specifically designed to measure 21CS, there are promising opportunities to capture these skills through these tools. This nonetheless requires more work to understand the nature and development of 21CS, to support their effective integration in curricula and to better equip teachers to teach and assess them.

Research on how to measure 21st century skills in classrooms is still limited (Evanset al., 2020). Consequently, educators often do not have the information they need on each 21st Century skill for instructional purposes, let alone how to assess or provide feedback to students and parents on students' level of sophistication related to these competencies.

One of indicator in the 21st century skills is a project, exactly about how to manage and accomplish a project. Several research have connected 21st century skills to project-based learning (Artamaet al., 2023). They found: 1) the main characteristic of this model is the project itself which is guided by a real problem or question; 2) in general, the syntax of project-based learning can be categorized into three, that is, planning, implementing, and evaluating; 3) the advantages of this model meet the 21st century skills; 4) the disadvantages of this model mainly deal with time allotment, students' characteristics, and school facilitation. In conclusion, project-based learning is an effective model to promote 21st century skills.

Another study corelating 21st century skills and PjBL was conducted by Ravitz and English (2012). They revealed that PjBL enabled teachers to report their teaching and assessment on 21st century skills. Some variables. Permata, Nanda, & Cory (2022) apply Project-Based Learning to enrich Students' 21st Century Skills. They concluded that class projects provided opportunities for students to enrich their non-technical skills, such as flexibility, media literacy, leadership, and collaboration.

Some studies tried to connect between PjBL, 21st century skills, and English improvement. Rahardi et al. (2023) prove the role of Project-Based Learning in developing English language skills and 21st Century Skills in terms of students' voices in Academic Writing Course. They stated that PjBL can improve student motivation, time management, teaching-learning process, and students' teamwork. Unlike the previous researchers, Puspitasari (2020) enhanced the students' 21st century learning skills comprising creativity, critical thinking, collaboration, and communication through PjBL of writing an essay. PjBL in EFL context to support 21st century skills have been studied by Mali (2016) and Wongdaeng and Hajihama (2018).

Building 21st century skills require support system such as learning environments, professional development, curriculum and instructions, as well as standard ad assessment (P21, 2007). 21st century skills must be embedded in the

teaching-learning system (GPE, 2020). Mastery of key subjects and 21st century themes is essential to student success. Key subjects include English, reading or language arts, world languages, arts, mathematics, economics, science, geography, history, government and civics. This research developed a framework for enhancing 21st century skills through PjBL in learning English as a Foreign Language (EFL).

Methodology
This descriptive research employed literature studies by reviewing some journal articles and books related to 21st century skills and PjBL. In this research, engineering students in a private university in Indonesia had an instruction to develop an online English magazine as their assignment in PjBL (project-based learning). This research developed frameworks for assessing 21st century skills of Engineering students taking English 1 course through project-based learning. They were instructed to develop an online English magazine in groups, not individual project. The frameworks are equipped with guided questions to make easy investigation on 21st century skills.

Finding and Discussion
The definition from Partnership for 21st Century Skills is used as the main definition in studying and developing the skills scale, and are comprised of 3 main factors i.e., 1) Learning and Innovation Skills, 2) Literacy Skills, and 3) Life and Career Skills (Partnership for 21st Century Skills, 2008, 2009). Although diversed frameworks have been available for assessing 21st century skills, this study applies the concept of P21 (2009).
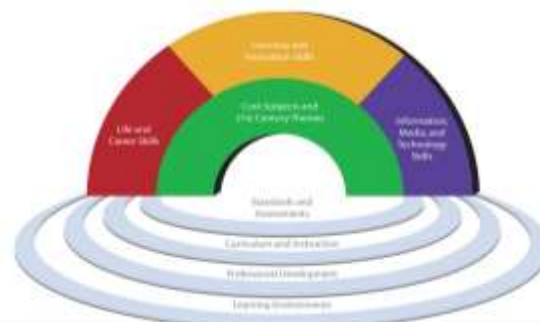

Figure 1. The 21st century student outcomes & support systems.

1. Learning and innovation skills
Learning skills' is a very broad term used to describe the various skills needed to acquire new skills and knowledge, particularly in a formal learning setting, such as school or university (Higginset al., 2007). In higher education and educational leadership, the idea of learning capabilities rather than skills has also gained some acceptance. Learning skills therefore include an effective as well as a cognitive dimension.

Table 1. Learning & innovation skills

No	Skills and subskills	Indicator	PjBL
1	**Learning & innovation skills**		
a	Creativity and Innovation	.Think creatively .Work creatively .Implement innovations	What kinds of problems do you find in handling the project of online English magazine? Why do you choose the topic? How do you develop the news? What kind of innovation do you make in the project?

b	Critical Thinking and Problem Solving	1. Reason effectively 2. Use systems thinking 3. Make judgments and decisions 4. Solve problems	Do you use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation? How do you analyze parts of a whole interact with each other to produce overall outcomes in complex systems? How do you effectively analyze and evaluate evidence, arguments, claims and beliefs? How do you analyze and evaluate major alternative points of view How do you synthesize and make connections between information and arguments? How do you interpret information and draw conclusions? How do you reflect critically on learning experiences and processes?
				How do you solve different kinds of non-familiar problems in both conventional and innovative ways? How do you identify and ask significant questions that clarify various points of view and lead to better solutions?
c	Communication	Communicate clearly	How do you articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts? How do you listen effectively to decipher meaning, including knowledge, values, attitudes and intentions? How do you use communication for a range of purposes (e.g. to inform,

			instruct, motivate and persuade)? How do you use multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact? How do you communicate effectively in diverse environments (including multi-lingual)? How do you analyze the situation of your team? How do you evaluate messages, deciding whether they are correct, complete, reliable, authoritative, and up-to-date? How do you listen actively by carefully paying attention, taking notes, asking questions, and otherwise engaging in the ideas being communicated?	How do you speak using spoken words, tone of voice, body language, gestures, facial expressions, and visual aids in order to convey ideas? Do you take turn effectively switching from receiving ideas to providing ideas, back and forth?
d	Collaboration	Collaborate with others	How do you demonstrate ability to work effectively and respectfully with diverse teams? How do you compromise with others? How do you share responsibility for collaborative work, and value the individual contributions made by each team member?

2. **Literacy Skills (Information, media, and technology skills)**
   The focus of literacy skills (IMT) is on students' ability to recognize information sources, publications, and the technology that supports it. Finding reliable sources and factual information is highly valued in order to distinguish it from the false information that permeates the Internet.

These are sometimes referred to as IMT skills, and they are all focused on various aspects of digital literacy and comprehension.

Table. 2 Literacy Skills

N o	Skills and subskill s	Indicato r	PjBL
2	**Literacy skills**		
	Informa tion Literacy	Access and evaluate informati on Use and manage informati on	Tell me about the content of your news! What kinds of sources do you use to develop news? Why do you use only one source/m ore than one source? What kinds of obstacles do you encounter in finding sources? What should we consider in using informati on sources?
		. Create media products	values can you share from your news to readers? What kinds of media creation tools do you use in developin g news? Why should you publish your news? What are the strengths and weakness es of issuu.co m?
	Technol ogy Literacy	Apply technolog y effectivel y	What do you know about theses online tools: paraphras er, grammar checker, plagiaris m checker, & text quality rater?
	Media Literacy	. Analyze media	What kinds of

			Mention some online tools to paraphrase, translate, and check plagiarism, grammar, and text quality?

It might be more challenging to evaluate 21st century skills than factual knowledge. Multiple choice or gap-filling tasks are ineffective for measuring skills like critical thinking, cooperation, or collaboration. Ouboumerrad (2016) states that project assessment can be used to assess 21st century skills of students. This assessment measures the learner's ability in "real life" tasks and situations.

3. Life and Career Skills

The work and living settings of today demand considerably more than just topic understanding and critical thinking abilities. Students must give careful consideration to acquiring the necessary life and career skills in order to successfully traverse the complicated life and work contexts of the globally competitive digital age. Life skills (FLIPS) take a look at intangible elements of a student's everyday life. These intangibles focus on both personal and professional qualities.

Table 3 Life and career skills

No	Skills and subskills	Indicator	PjBL
3	**Life and career skills**		
a	Flexibility and Adaptability	Adapt to change	. How do you adapt your schedule and the due time of English project? . What do you do when you get feedback from your teammates? . How can you keep balance from diverse views? . How can you manage your team?
		Be flexible	
b	Initiative and Self-Direction	Manage goals and time Work independently Be self-directed learners	. How do you set goals and time in accomplishing the project? . How do you monitor the progress of your project?

			. Do you meet the due time? . Do you demonstrate initiative in completing this project? . Do you demonstrate commitment with your team? . Do you do self-reflection in this project?
c	Social and Cross-Cultural Skills	Interact effectively with others Work effectively in diverse teams	. What kinds of interactions do you make with your teammates? . Do you respond to different ideas/values?
d	Productivity and	. Manage projects	. How do you

	Accountability	. Produce results	prioritize and manage the project? . Do you share obstacles and competing pressure with your teammates? . Do you work positively and ethically? . Do you participate actively, be reliable and punctual? . Are you accountable for the results?
e	Leadership and Responsibility	Guide and lead others Be responsible to others	. Do you act with larger community? . How do you leverage

			strengths of others to accomplish a common goal? Do you inspire others? Do you demonstrate integrity and ethical behavior? Do you use interpersonal

			skills to guide others?

Assessing 21st century skills need frameworks because some skills are tangible, but the rest are intangible. The frameworks are supported by guided questions, but the assessment can also be done through checklist to ease researchers to get data effectively and efficiently.

Conclusion

Using EFL PjBL for assessing 21st century skills require a framework, depending on the skills to be assessed, indicator to be describe, and questions to investigate specific sub indicators. Individual project will be different from group project in terms of the 21st century skills. The frameworks for assessing 21st century skills must be formulated first by the teacher so that their soft skills can be taught and assess precisely.

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