# Quality Teachers of the 21st Century: An Overview of Theories and Practice

**Charanjit Kaur Swaran Singh[a], Eng Tek Ong[b], Tunku Mohani Tunku Mohtar[c], Tarsame Singh Masa Singh[d] & Nor Azmi Mostafa[e]**
[a,c,e]Department of English Language & Literature, [b]Faculty of Languages and Communication, Universiti Pendidikan Sultan Idris, Faculty of Human Development, Universiti Pendidikan Sultan Idris, Malaysia, [d]English Language Unit, Language Department & Institute of Teacher Education, Tuanku Bainun Campus, Malaysia,  Email: [a]charanjit@fbk.upsi.edu.my, [b]ong.engtek@fpm.upsi.edu.my [c]mohaniazmi@yahoo.com, [d]tarsamessp@gmail.com & [e]nor.azmi@fbk.upsi.edu.my

The advent of the twenty-first century has brought in its wake changes in the role of the teacher worldwide. Accustomed to being the knowledge provider, leader and educator, the teacher now has to adjust his or her role to meet the demands of twenty-first century learning. This paper aims to provide an overview of future quality teachers, effective learning, learning skills and learning theories and how these elements govern the 21st century teachers' practices to make the lesson interesting and interactive. Twenty-first century learning is characterised by higher order thinking, meaningful inquiry-based learning, collaborative teamwork, effective communication, creativity and innovation, and digital literacy. Therefore, this paper suggests that teachers be equipped in the 21st century teaching and learning skills and learning theories required to produce students with first class cognitive capabilities to face the challenges of real-world education.

**Key words:** *Teaching Strategies, 21st Century, Teaching and Learning.*

## Introduction

The fourth industrial revolution (Industrial Revolution 4.0) has brought in its wake a lot of changes in many fields, and education is one of them. Changes in education are inevitable as adaptation to new situations needs to be made. The content of education and the processes of teaching and learning at all levels have to be aligned with the demands of the century. The twentieth century demands numerous skills, areas of knowledge, and personal and social values be achieved for a sustainable future.  As changes keep on occurring, the future is unpredictable. Nevertheless, preparation to deal with the future and to improve the present is crucial.

Preparation to equip the twenty-first century generation with knowledge, skills and values for lifelong learning is, hence, imperative. The onus of accomplishing this task irrevocably falls on educators. Educators, particularly at higher institutions of learning, face the task of executing appropriate measures to achieve the relevant objectives. Teacher educators, in particular, need to come to terms with the daunting task of freeing the old mindset and developing the new one termed "Education 4.0".

**Future Quality Teachers**

Quality teachers produce quality teaching. Quality teaching is essential in view of the demand for meaningful and relevant teaching. Students in particular want to ensure that quality education equips them with the knowledge, skills, and values required for gainful employment and for lifelong professionalism. This study aspires to produce quality teachers who will be equipped with knowledge, skills and values that are appropriate for pedagogical purposes in the future. The 'future' suggests a new era in the pedagogical arena, which exposes a new outlook and new elements to be injected into the education system. This new era is indicated by a few obvious practices in the teaching and learning context, which are compared to the existing or traditional context. Pedagogical practices of the twentieth century are predicted to be overtaken by those of the twenty-first century. Zeichner (2012) outlines some features of twentieth century education against the possible features of education in the twenty-first century. Motivated by the changes portrayed by Zeichner, this study will explore and examine the elements which will be used to construct the relevant framework.

**Table 1:** Difference between 20th Century Education and 21st Century Education (2013).

| 20th Century Education | 21st Century Education |
|---|---|
| Classrooms presentations and materials are typically developed in advance outside of class with teachers as primary developers. | Classrooms presentations and materials are typically developed dynamically both inside and outside of class with students as codevelopers or as primary developers. |
| Classroom activity often focusses on the teacher as presenter and the students as audience. | Classroom activity often focusses on students as participants and agents and the teacher as guide or mentor. |
| Classroom activity emphasises expositions displaying, organising, summarising, and explaining information. | Classroom activity emphasises discovery and application: finding, assessing, synthesising, and utilising information. |
| The classroom is the primary site of access to course content, and access is often "linear" – students cannot typically return to previous class presentations. | Access to course content is augmented by electronic sources and media, and access is often recursive or "on-demand", allowing students to return to context when and as often as they like. |

| | |
|---|---|
| Students and teachers have access to one another primarily in the classroom. | In addition to classroom access, students and teachers have access to one another via virtual means: online discussions, email, chat, social networking, etc. |
| Discrete disciplinary boundaries are often established and preserved. | Interdisciplinary connections are encouraged and disciplinary boundaries are seen as porous or even arbitrary. |

*(Retrieved from: https://drzreflects.blogspot.com/2013/04/what-is-difference-between-20th-and.html)*

In this study the concept of 'quality teacher' is considered synonymous to 'effective teacher'. A survey on educator effectiveness was conducted by McKnight et al. (2016) in 23 countries on qualities of an effective teacher. Participants of the survey comprised of teachers, students, parents, administrators, and government officials. Data was obtained from the United States, United Kingdom, Africa, Middle-Eastern countries, Europe, Japan and Singapore. Among other qualities, five qualities emerged as those which were commonly agreed upon by these countries as being important. The survey report reveals the qualities of teacher effectiveness as follows:

1. Ability to develop trusting, productive relationships
2. Patient, caring, kind personality
3. Professionalism
4. Subject matter knowledge
5. Knowledge of learners

These qualities are arranged in order of priority. According to McKnight et al. (2016) there is no one formula for teaching effectiveness as it depends on the context. Knowledge of learners has been identified as one of the qualities of an effective teacher. How a learner learns affects the teacher's pedagogical approaches. Effective teaching in return effectuates effective learning. Therefore, effectiveness of learning, to a certain extent, determines the effectiveness of teaching (Singh et al., 2020).

**Effective Learning**

The term 'effective' is relative. It depends on 'for when' and 'for what'. It is only meaningful in terms of the context and goals. Contemporary goals encompass increased engagement and self-direction, wider range of strategies, more reflective approach to learning, more developed vision of the future as a learner, more opportunity for learning with others, more positive attitude towards learning and other positive values. The contexts involve learning inside the

classroom and learning outside the school. It is thus justified to use the term 'effective learning' as that which involves processes of:

- making connections about what has been learned in different contexts
- reflecting about one's own learning and learning strategies
- exploring how the learning contexts have played a part in making the learning effective
- setting further goals
- engaging with others in learning

(Watkins, Carnell, Lodge, Wagner, and Whalley, 2000)

Hence quality teaching enables learners to acquire new information and use it to create new knowledge. Quality teaching stimulates learners to reflect and participate actively in the learning process. Active learners work collaboratively with others to improve performance (Singh et al., 2017). In order to understand more about the learners' actions and reactions in the learning process, various theories of learning are referred to. Before the theories of learning are dealt with in detail, it might behove us to examine the skills which are given priority in this project. These skills are among the skills that have been identified as twenty-first century skills. The focus on these skills is to ensure that these theories will have commonalities that engender effective learning and teaching.

**Learning Skills**

There are several definitions and interpretations of twenty-first century skills. However, for the purpose of this study, the definition that expounds the concepts relevant to this study will be used. The definition is in line with the guiding principles of this study and covers the knowledge, skills, and values which are inherent in the undertaking. These concepts are given priority as they are deemed to promote and enhance the quality of teaching and learning. The relevant concepts have been culled from a number of research-based sources. A study by the Hanover Research team (2011) examined six different frameworks of twenty-first century skills. The sources of these frameworks were:

| |
|---|
| ❖ Partnership for 21st Century Skills |
| ❖ Tony Wagner's Global Achievement Gap Seven Survival Skills |
| ❖ enGauge |
| ❖ Iowa Essential Concepts and Skills – 21st Century Skills |
| ❖ Connecticut Department of Education's 21st Century Skills |
| ❖ Assessment and Teaching of 21st Century Skills (ATC21S) |

The Hanover Research team looked into the key components of these frameworks for 21st century skills to identify the similarities and differences between them. The researchers examined the most and least popular skill types. The skills were categorised by frequency of use. The results revealed that out of 27 themes identified from the six sources, only four were common across all the six sources. They were:

➢ Collaboration and teamwork
➢ Creativity, imagination
➢ Critical thinking
➢ Problem solving

Communication skills were identified by five of the six sources. However, in the light of Education 4.0, 'technology literacy' is also included in this study. This skill was identified in four of the six sources examined by the Hanover Research team.

The twenty-first century skills encompassed in this study are as shown in the diagram below.

**Diagram 1.** Twenty-first Century Skills

These skills are illuminated in the theories that are dealt with in this study. For further enlightenment, a comprehensive description of each category of skills for operational purposes in this study is warranted.

## Collaboration and Teamwork

Collaboration refers to working together in a team to achieve a goal. Here, talent, expertise and smart work interact. The complexity of modern organisations necessitates the use of collaboration to solve problems (Hashim et al., 2019; Alaa, et al., 2019). Clients, customers and suppliers are scattered globally and contacts need to be made to complete projects, products, or programmes.

Collaboration can take place in the classroom where individuals work together in groups. Students and teachers need to work together to share ideas and to give and accept feedback in order to achieve success. Collaboration can be enhanced using information and communication technology – this strategy is advantageous as the world becomes more interconnected. Collaboration is important for career and success in lifelong learning. The ability to work effectively with others is critically important. In order to foster critical thinking, problem solving and creativity, students as well as teachers need to work in collaborative environments. Collaboration among teachers will enable them to share lesson planning ideas and improve their teaching practices and professionalism. As a result, they will be able to improve their students' performance and attitudes.

## Problem Solving

The twenty-first century requires new skills to be acquired. Employers recognise problem solving as an essential skill when hiring graduates. In school, learners need relevant skills to solve challenging problems. In order to solve a problem, learners need to initially identify the problem and then analyse it to examine whether or not it can be solved. After that, they need to look at various possibilities to solve it. Eventually, they need to select the most effective and efficient way of overcoming it (Hashim et al., 2019).

This skill requires learners to solve complex issues using multiple resources (Sukadaria et al., 2020). The ability to exploit multiple resources is necessary in today's highly competitive environment. Solving current issues necessitates research as well as the selection, evaluation, organisation, and weighing of alternatives and interpretation of information. Learners need to cull information from multiple domains to find solutions to complex issues. To be effective in solving problems, learners need to possess higher order cognitive competencies and be self-reliant.

**Communication Skills**

Oral and written communication skills are of paramount importance in the academic, governmental as well as industrial sectors. Oral communication skills are needed to exchange information, to persuade, convince or to explain. Students may be comfortable at casual oral communication with their peers, however doing it in professional or technical settings may prove otherwise. Students thus need to be prepared to face challenges in the workplace in the near future. These challenges may not be predictable. Students need to rely on their communication skills to express their thoughts and opinions clearly and efficiently to deal with these challenges. Motivating others through speech is greatly valued in the workplace and society in general.

Written communication skills in work situations include writing of memos, emails, and reports. Students need to be able to apply the writing skills they learn in the classroom in their work situations. Hence, they should be able to see the connection between what they learn formally and what is practised in the real world.

Communication skills can be developed effectively through collaboration. Interpersonal communication or social communication skills are essential in interacting with others. Social and intercultural skills are required in order to be to be effective in communicating.

**Critical Thinking**

Critical thinking is fundamental to twenty-first century learning (Redecker et al., 2011).

There are a number of definitions of critical thinking. According to the partnership for 21st century skills, among other skills critical thinking involves:

- Reasoning effectively using various types of reasoning as appropriate to the situation
- Analysing how parts of a whole interact with each other to produce overall outcomes.
- Making judgments and decisions by analysing and evaluating evidence, arguments, claims and beliefs
- Solving different kinds of problems using conventional and innovative ways.

Critical thinking also draws on other skills such as communication and information literacy. Critical thinking and digital literacy skills are important not only for students to locate quality resources in formal education, but also in informal education. Outside formal education, individuals need to evaluate evidence and make responsible decisions (Pillay, Singh & Yunus, 2020; Abdullah et al., 2019).

**Creativity and Imagination**

Creativity is a thinking process that is concerned with producing ideas that are original and useful in solving problems (Hashim et. al., 2019). Creativity is important in ensuring that we keep abreast with changes and challenges in this century. According to Robinson (2015), creativity is about fresh thinking and may involve deep factual knowledge and high levels of practical skill. It also involves critical thinking as we need to make judgments about some things. It is a dynamic process involving refining, testing and focussing on what we are doing and also making connections across disciplines. Robinson claims that creativity is putting your imagination to work. It stems out of imagination.

Creativity in the classroom is very important as it benefits the teacher as well as the students. A creative teacher makes the lesson interesting and interactive. The teacher is able to make the students more innovative and imaginative by encouraging them to think out of the box and learn new things. A creative teacher is able to transform the way students learn and how they will be able to apply it in real life. A creative teacher can also improve the students' emotional as well as social skills.

Creativity among students should be developed as it will allow them to express themselves without any inhibition. It will endow them with a feeling of accomplishment as well as pride. Creativity will stimulate imaginative thinking among students when the teacher challenges them with open-ended questions. Creativity can also improve the students' problem-solving skills by enabling them to use alternative approaches to solve problems. Hence, they will be able to make better decisions. Students can be kept engaged in their tasks for longer periods of time and hence can be more productive. Creativity can also make students better communicators when they work collaboratively. Such an environment will help them reduce their anxiety and stress. It will, on the other hand, boost their confidence in expressing themselves.

**Technology Literacy**

Technological literacy in the twenty-first century incorporates digital literacy. Digital literacy is not only about technical skills but also about the issues, norms, and mental disposition surrounding technologies used for a particular purpose. Technological advancement in the world today compels educational institutions to implement activities promoting digital literacy Yunus, Thambirajah, Said & Singh, (2019). Students and teachers will be able to use information and communication technology as information resources or as media for communication. The above are the skills that are deemed crucial in enhancing teaching and learning in the present situation. They will be examined in the light of learning theories which support the pedagogical practices implemented at tertiary level.

**Learning Theories**

This study introduces theories that underlie the teaching and learning approaches that are advocated to engender quality in teaching and learning. These theories explain the current understanding of learning that shapes the existing educational practices. The emphasis on twenty-first century skills is taken into consideration in discussing these theories in the light of the teaching and learning strategies. Learning theories are important as they are the source for formulating teaching theories. There are several differing theories and approaches to learning. A comprehensive understanding of the principles and practice of a theoretical approach allows for the selection of pedagogical methods that can enhance the efficiency and effectiveness of learning. Hence it is imperative that appropriate theories are used in line with the teaching and learning goals. Davidoff, Dixon-Woods, Leviton, and Michie (2015) opine that "the need for more effective use of formal theory in improvements is increasingly pressing, because personal intuition is often biased, distorted and limited in scope and the application of formal theory enables the maximum exploitation of learning and accumulation of knowledge, and promotes the transfer of learning from one project, one context, one challenge to the next". This study looks into elements within these theories that support the teaching and learning strategies deemed effective across all disciplines. The effectiveness of the teaching and learning strategies are reflected in the guiding principles developed. The guiding principles are influenced by a variety of theories. The effectiveness of the teaching and learning strategies are attested to by research studies investigated. These are available later in the article under previous studies conducted.

**Figure 1.** Theories, Guiding Principles and Teaching and Learning Strategies
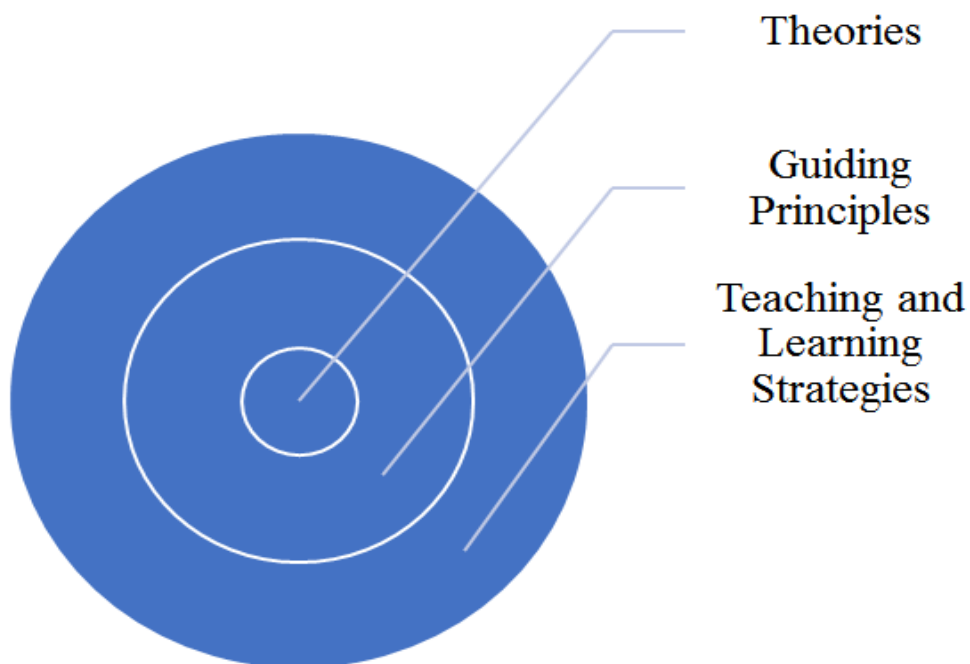
Learning theories have been developed based on perceptions and beliefs regarding how humans learn. Theories – particularly behaviourism, cognitivism and constructivism – have provided the main influences in learning for a number of decades. Their contributions to education have been significant, and effects of their influence are still prevalent. However, in conforming to twenty-first century educational standards, other learning theories need to be examined to support the type of learning that is advocated. Learning in the twenty-first century involves the learner in a more active and rigorous way. New models and theories emerge alongside some traditional ones. Among the strong traditional theories that are relevant in this study are cognitivism, constructivism, reflectivism, and connectivism, as there are elements in these theories that support the teaching and learning principles.

## Cognitivism

The cognitive learning theory is credited to Jean Piaget. Cognitivism is based on the thinking process underlying a behaviour. This theory postulates that humans process the information they receive, rather than merely responding to stimuli. Cognitive information processing is used when the learner is actively involved in finding ways to understand and process information that he or she receives and relate it to what is already known and stored in the memory. In the classroom this theory is applied when the learner engages in activities such as discussion and problem solving. Problem-based tasks are given to students with the teacher assuming a facilitative role. The teacher coaches students to ask questions to gather information and analyse them to draw conclusions. Students are encouraged to think critically. The activities are generally student-centred and are accomplished through active discovery learning (Singh et al., 2020).

## Constructivism

Vygotsky (1978), a proponent of this theory, claims that social interaction and social context are essential for cognitive development. Constructivism is based on the belief that learners work to create, interpret, and reorganise knowledge. Learners participate actively to reconcile the information they receive in the classroom with their existing knowledge, within the cultural and social contexts in which the ideas occur. Learners interact with people who are more knowledgeable than they are to increase their knowledge. These people include the teacher and the more knowledgeable students. Classroom activities which are normally organised in groups foster active learning. Students work cooperatively to effectuate meaningful learning. The activities require learners to obtain knowledge through processes namely of inquiry, interpretation and creation. Gordon (2009) believes that knowledge is derived from integrating thinking and doing, and from reflecting on what was done. Gordon (2009) maintains that learning, mental development and knowledge are embedded in a particular social and cultural context, when learners work with peers under teacher supervision.

## Reflectivism

Reflectivism is not totally different from constructivism. In fact, it is also embedded in constructivism, and it extends constructivism a bit further. Reflection refers to a process in which past experience is recalled and all information regarding the situation is considered and evaluated in order to arrive at a decision. Reflection involves critical thinking about past or current experience in the classroom. It involves questions regarding what was good or bad, what worked or did not work, what motivated students and the like that affects teaching and learning. Constructivism deals more with learning, while reflectivism is more about teaching. Through inquiry, reflectivism brings about flexibility in teaching by helping the teacher examine the successes and failures in facilitating the learner's knowledge construction.

## Connectivism

The cognitive, constructive, and reflective theories deal with processes within the individual that promote learning. These theories do not deal with learning that occurs outside the individual, that is, learning that is affected by technology. Technology has performed many operations previously performed by the learner, such as information storage and retrieval. The processes handled by the former learning theories are now supported by technology. Globalisation has widened the scope of knowledge. Learners are now faced with a wide spectrum of knowledge. With the rapid increase in knowledge, learners need to assess the worthiness of what is learned. The ability to synthesise and recognise connections in differing fields of knowledge is important. Learners need to form connections between sources of information and create useful information patterns in order to learn. According to Siemens (2005), "our ability to learn what we need for tomorrow is more important than what we know today" (p. 8). When knowledge is needed but the learner does not know what to obtain, the ability to exploit various sources is a vital skill. The learner not only uses internal networks (the mind) but also external networks (e.g. the Internet) to obtain information. An increase in the ability to communicate and collaborate has occurred with the emergence of new information and communication technologies. Learners are involved in active learning, looking for information and collaborating through networking.

## Integration of Theories

The 21$^{st}$ century advocates the importance of deep meaning rather than surface meaning. Teachers have a crucial role to play in facilitating a teaching and learning programme that progresses from surface learning to deep learning. Surface learning involves recalling of information while deep learning requires learners to relate or extend ideas, to form judgments and think critically. Hence deep learning enables the learners to construct knowledge by adding new information to existing knowledge. Deep learning is further enhanced through technology.

The use of Information and Communication technology (ICT) is imperative in acquiring 21$^{st}$ century skills.
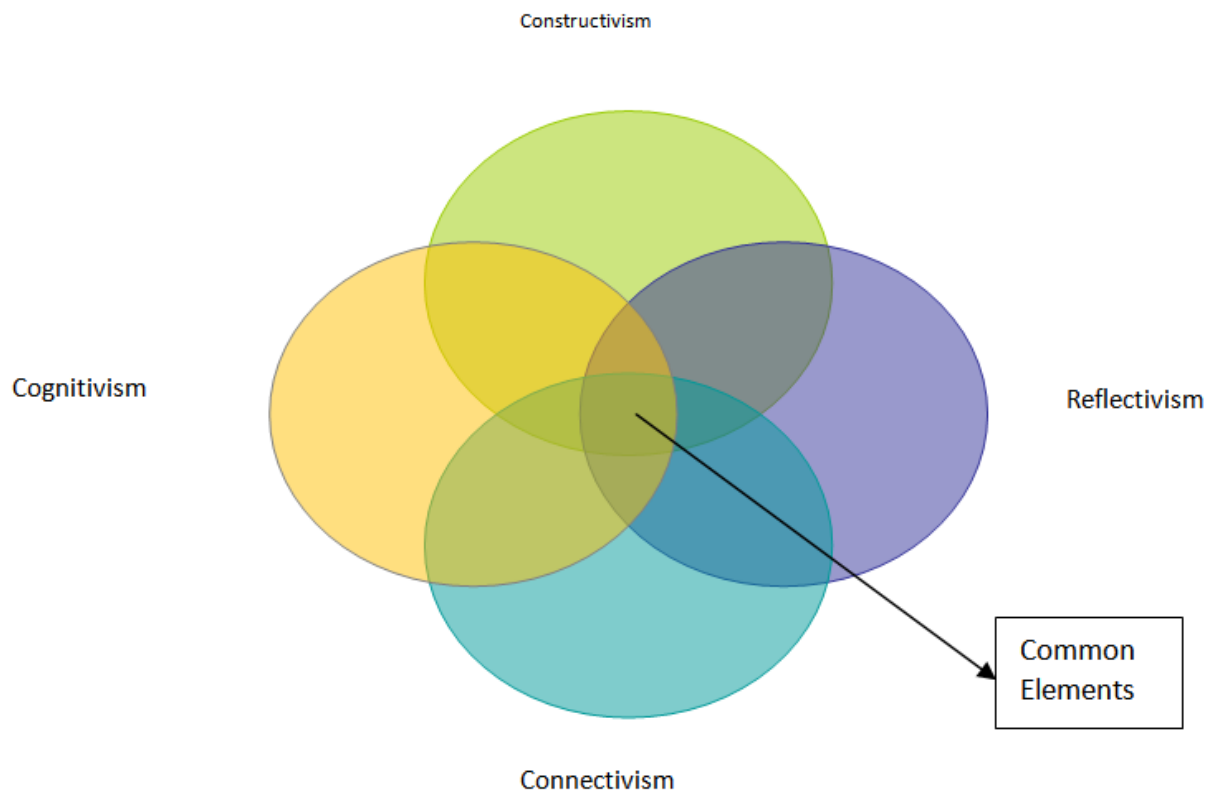


**Conclusion**

The theories presented in this section offer teachers choices in their instructional strategies. They can subscribe to one theory strictly or combine elements from various theories. The choice of the latter would definitely enhance their teaching. All the theories discussed in this section have common elements such as collaboration, problem solving and critical thinking. The use of these theories will enable teachers to develop better instructional strategies to engender deep learning by the students. Teachers thus need to develop deep understanding of the concepts underlying these theories to foster deep and active learning.

# REFERENCES

Abdullah, M. S. H. B., Peng, F. A., Shuhaily, M. M., Arifin, E., & Singh, C. K. S. (2019). Connectivity between work Ethics and Life Skills During Internship in Bridging the Satisfaction Gap among Diploma Students. Journal of Engineering Science and Technology, 67-73.

Alaa, M., Albakri, I. S. M., Singh, C. K. S., Hammed, H., Zaidan, A. A., Zaidan, A. A., Albahri, O. S., Alsalem, M. A., Salih, M. M., Almahdi, E. M., Baqer, M. J., Jalood, N. S., Nidhal, S., Shareef, A. H., & Jasim, A, N. (2019). Assessment and Ranking Framework for the English Skills of Pre-Service Teachers Based on Fuzzy Delphi and TOPSIS Methods. IEEE Access, vol. 7, pp. 126201-126223, 2019, doi: 10.1109/ACCESS.2019.2936898.

Difference between 20th Century Education and 21st Century Education (2013). Retrieved from:https://drzreflects.blogspot.com/2013/04/what-is-difference-between-20th-and.html

Davidoff, F.; Dixon-Woods, M.; Leviton, L. & Michie, S. (2015). Demystifying theory and its use in improvement. Retrieved from http://qualitysafety.bmj.com/content/early/2015/01/23/bmjqs-2014-003627.full on 1.9.16.

Gordon, M. (2009). Toward a pragmatic discourse of constructivism: Reflections on lessons from practice. Educational Studies, 45(1), pp. 39-58.

Hashim, H, U., Yunus, M. M., Hashim, H., Norman, H., & Singh, C. K. S. (2019). "VLOG": An Innovation in Collaborative ESL Learning. International Journal of Innovation, Creativity and Change, 7(10), 261-276.

Hanover Research Team. (2011). Bringing 21st Century Skill Development to the Forefront of K-12 Education. Retrieved from: https://www.hanoverresearch.com/insights-blog/bringing-21st-century-skill-development

McKnight, K., Graybeal, J., Yarbro, J., & Graybeal, L. (2016). Global survey of educator effectiveness. Retrived on 8.2.18 from https://www.pearson.com/content/dam/one-dot-com/one-dot-com/global/Files/efficacy-and-research/schools/global-Survey/reports/RINVN9283_GlobalSurvey_092016.pdf

Pillay, L. A. M., Singh, C. K. S., & Yunus, M. M. (2020). Hots for Teaching and Learning in a Teacher Education University. International Journal of Psychosocial Rehabilitation, 23(4), 347-363.

Robinson, K. (2015). Creativity is in Everything, Especially Teaching. Retrieved from: https://www.kqed.org/mindshift/40217/sir-ken-robinson-creativity-is-in-everything-especially-teaching

Redecker, C., Ala-Mutka, K., Leis, M. Leendertse, M., Punie, Y., Gijsbere, G., Kirschner, P., Stoyanov, S., & Hoogveid, B. (2011). The Future of learning: Preparing for change. Luxembourg, Publications Office of the European Union. http://ftp.jrc.es/EURdoc/JRC66836.pdf accessed 2 February 2018.

Siemens, G. (2005). Connectivism: A learning theory for the digital age. Retrieved on 14.2.18 from   http://www.elearnspace.org/Articles/connectivism.htm

Singh, C. K. S., Othman Lebar, Napisah Kepol, Rafiah Abdul Rahman, & Kurotol Aini Muhammad Mukhtar. (2017). An Observation Of Classroom Assessment Practices Among Lecturers In Selected Malaysian Higher Learning Institutions. Malaysian Journal of Learning and Instruction, 14(1), 23-61.

Singh, C. K. S., Singh, T. S. S., Ja'afar, H., Tek, O. E., Kaur, H., Moastafa, N. A., & Yunus, M. (2020). Teaching Strategies to Develop Higher Order Thinking Skills in English Literature. *International Journal of Innovation, Creativity and Change*, 11(80), 211-231.

Sukadaria, Prihonob, E. W., Singh, C. S. S., Syahruzahd, J. K., & Wue, M. (2020). The Implementation of Character Education through Local Wisdom Based Learning. *International Journal of Innovation, Creativity and Change*, 11(4), 389-403.

Vygotsky, L. (1978). Mind in society. London: Harvard University Press.

Watkins, C., Carnell, E., Lodge, C., Wagner, P.  & Whalley, C. (2000). *Learning about learning*. London: Routledge /Falmer.

Yunus, M. D., Thambirajah, V., Said, N. E. M., & Singh, C. K. S. (2019).  Teaching Writing in the 21st Century: An Overview of Theories and Practices. *International Journal of Innovation, Creativity and Change,* 7(12), 54-74.

Zeichner, K. (2012). Two Visions of Teaching and Teacher Education for the Twenty-First Century. Social Policy, Education and Curriculum Research Unit. North Dartmouth: Centre for Policy Analyses /UMass Dartmouth. Retrieved from http://www.umassd.edu/seppce/centers/cfpa/