TEACHNOMETRY IN DIGITAL NATIVENESS: ENHANCING TECHNOLOGY AS INVISIBLE MEDIA

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Abstract

In the recent thinking of integrating technology into our educational systems, the quote from Prensky “Today’s students are no longer the people our educational system was designed to teach” (Prensky, 2001), could bring a new horizon when we are, as a teacher, designing the lesson plan and methods. The role of technology in the 20th century’s in education is undoubtedly brings a major impact on the paradigm of how the teaching activity should or should not be done in accordance to the newest culture, and to implement the newest technology into our teaching activities should be the most critical question to put in mind at present. It is accurately phrased that the role of books and teachers cannot be replaced by technology, but the one who refused to implement the technology will be replaced by the one who adapt. The previous method of teaching is already obsolete and inadequate to be used as the mind-set of the recent educational culture and the people involved inside it is evolving terrifically, therefore, opening our mind to the previously unthinkable way of thinking could be the key to evolve our education.

Keyterms: Digital nativeness, technology and media

BACKGROUND

People born in the late 1980’s blended with technology not as a part of the learning system, but rather as a part of their digital nativeness considered as a more advanced generation that surpassed their manual ancestors. In this matter, is it appropriate for the old generation to presume their method in bridging both generations? The answer to the question could be vary according to different perspectives. The older generation born before the time of the digital technology taught by the method that is the best suited for their era is presumed to have different need at the time in which the method will or will not survive the future era.

During the uproar on the present seems-to-be-inconsistent curriculum or it’s highly debated competences, the fundamental purposes of the education to accommodate the younger generations’ needs as well as the future must be remembered and enhanced. The present day students and the environment has changed in a radical speed that our students today are no longer the people our educational system was designed to teach (Prensky, 2001). Therefore, different perspectives must be taken in dealing with the progressive and dynamics systems of the society for example by using more efficient use of technology in its invisible manner.
The terms ‘invisible’ in the implementation of technology means that the technology is blended naturally and no longer something unfamiliar. It is similar to constantly breathing the oxygen during the exercise to enhance the results while we are partly unconscious in the breathing process. Invisible could also means to implement the technology as a natural part of the teaching and learning methods to increase the learning outcome as the society is also evolving its use of the technology in daily life, dynamically.

The dynamicity of the society also has tremendous impact on the use of the already established technology beyond its intended purposes. It is no longer a shock to use social media in the teaching and learning processes as well as to use it as a means of researches or comprehending that quoting from a professor’s tweet is considered a valid reference. The use of social media such as Facebook and Twitter in teaching, lecturing, or a means of research instruments has evolved the technology intended use.

In anecdotal explanation over the dynamicity of the world, it is quoted from the conversation between Alice and the Queen in the *Through The Looking Glass* (Carroll, 1871 in (Geert, 2008, hal. 179)) “Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!” Happened in a fantasy novel, the conversation does represents the way the world, including the language teaching and learning methods, is dynamically changed. The application of the newest technology in our teaching activities is an obligatory and no longer something special and making our methods ‘stands off’ from others, it is the invention of the new way of blending the technology with the thinking that does the evolution.

The tremendous amount of task, limited resources and the unevenly thought knowledge in different part of the world could be the reason of why some researches in language teaching and learning in the past era were not possible to be conducted if not in only a limited area of research. After the 1980’s digitally evolving era, the research on language teaching and learning is also gradually evolving into more complex area and believed to be resulted in the modern day’s education. The role of technology in enhancing the systems of education is no longer something special and already become an invisible methods that generally used automatically in every activities related with the system.

This journal is divided into two main parts of the explanation, the first part is
explaining the reason behind the implementation of the technology in the language teaching and learning while the second part is giving the evidence of how the digital nativeness in using the technology in the process of language teaching and learning can be conducted in effective manners by giving the example in the methods of assessment.

**FIRST PART: TEACHNOLOGY IN TEACHING AND LEARNING ACTIVITIES**

Technology has evolves as far as it greatly affects the methods of teaching via its efficient gadgets such as LCD projector to replace the old OHP and to not forget the role of its combination with laptop or computer to cast the role of whiteboard into more referential use of writing. While the media is conveniently used and evolve the way of teaching, teaching activity does not stop in the in-class processes and media. Teaching processes as we know it, is a complex activity ranged from the pre-, whilst, and post- stages and even beyond.

The reasons of implementing the technology in the teaching and learning activities can be defined in accordance with the fact that technology offers new ways for practising language and assessing performance (Dudeney & Hockly, 2007, hal. 8). Most, if not every, elements of the language teaching and learning could be improved by implementing the supporting technology. To present an example, the planning stages and the assessing stages of a language teaching and learning can be supported by technology as follows:

The planning stage of needs analysis is a complex process involving many perspectives and no longer a personal analysis with interview and questionnaire. Technology has expanded the limitation of the data collection method for the need analysis into a more global scope in more distinguished features of the curriculum. In Indonesia, a course like ‘English for Working in Latin Chemical Laboratory’ seems to be a funny name for a course, but by the implementation of the right application in the need analysis, such course can increase the efficiency of the working communication affecting the outcome of the whole institutions. Heading into the globalisation, the importance of such kind of courses must be put into the planning of education strategies. One of the way in advancing the planning strategies could be done by using some websites to spread our questionnaire, Skype with the professors or education practitioners is no longer an impossible concept to predict and prepare such courses by collecting the data and
feedback from the countries which already established the courses.

The evaluation and assessment processes are the most interesting part of the whole activity as in Indonesia, digitally assessing the products of the process of teaching and learning is rarely conducted in digital manners. As one of the examples, the process of evaluating the growth of the vocabulary complexity of language students is giving an example of how complicated the processes involved to understand the evolution of the language within each individual. The methods of the assessment itself require a thorough and detailed efforts as some of the elements need a deep analysis that must be done in certain manners. While the complexity of the task requires a person with the adequate knowledge in vocabulary as well as some skills in language research to conduct a valid assessment, a slight difference in the knowledge and external factors could affect the whole findings of the analysis. In this case, using tools which possessing the requirements can help the evaluation of the students or handling the test in more efficient way.

SECOND PART: DIGITALLY ASSESSING THE GROWTH OF STUDENTS: THE EVIDENCE OF THE IMPORTANCE OF USING TECHNOLOGY AS INVISIBLE MEDIA

For the language teaching and learning activities in the modern era, it is not uncommon to collect student’s work via electronic mail as it is helpful to maintain the deadline of the event and the distance between the students and the teachers. Combining the digitally conducted assignment and the method of collection, it saved both teachers and students time in dealing with the task.

As an example, most problems for Indonesian teachers is the large amount of students packed in one class while the teacher is required to maintain the quality of the teaching and learning activities. In classes with large amount of students, it is also a sub-problem to individually assess the quality of the submitted assignment as it is time-spending and exhausting. The said problems could be the key points to evolve the older ways of assessing work into a more efficient and practical method. While depending on numerical values to determine a student’s result of learning (such as in summative test) can be a misleading description, there are some ways of using numerical values in a more fairer elements such as the growth of vocabulary, or the frequency of the used vocabulary. Determining the growth of the students in manual method is a challenging area as there is a need for specific skills and knowledge as the requirements of
conducting such analysis. In competing with the increasing needs of the analysis, some digital tools that can hinder the problem and make more efficient processes are created and published. To give an example, in analysing the individual growth of a skill-teaching class consisting of few students, a manually conducted analysis per individual could be a qualitatively decent for finding a special aspects of assessment that we are looking for, but the efforts to complete such analysis always become a challenge for the teachers themselves mostly in an institution with great number of students.

The idea of using digitally assessing methods provides a new way of encounter both the quality of the analysis in parallel to the quantity of the task required for the analysis. There are two main reasons behind the idea of using the digitally assessing method in relation to the quality of the assessment:

- The first reason is the assessing quality of the analysis is, in fact, declining in parallel with the number of the tasks and efforts required for the analysis. While this matter is distinguished case-by-case, it is a general concept that trivia matters such as fatigue, boredom from repeated tasks, and the complexity of the analysis could have significant contribution to the quality of analysis. The solution of this problem is by using language analysis tools as the apparatus is designed to analyse a repeated complex analysis based on its formulaic purposes.

- The second reason is the accuracy of using the tools in digital method is maintained for every individual analysis. As the analysis is assisted by formulaic tools, the data interpretation will always be conducted in the same manners. It must be noted that in language analysis, different interpretation based on different background of knowledge in analysing the same data creates a different result. The same data being analysed by different researchers could also resulted in different findings. The problem seems to be lied on the differences of the depth of the knowledge in each person and the experience as a language researcher that could create misinterpretation from different perspectives. By using internationally recognised language tools, a general finding of the same data can be found even the analysis is conducted by different person from different background of language knowledge.

It must be noted that the role of teachers is irreplaceable by the tools as the
tools plays the role not more than as an assistant and an instrument of the analysis. It is not a question of how valid the result of the tools that become the concern of the method but merely the manner of how to use the tools in its proper way. The reason behind the statement is that the tools such as P_Lex or D_Tools are widely used and has been tested thoroughly to contest their validity. The reason to call the tools as valid tools is based on how the tools operated in accordance with the validity issue such as the content. Hughes in Fulcher stated to put adequate concern on discovering the nature of the test whether the method (or formula, in this case of tools) is accurately measuring the parameters it intended to measure (Fulcher, 2007, hal. 4).

Understanding the dynamics of language development in individual perspective is a complex process that involving a detailed and thorough efforts as aforementioned in the previous paragraphs. Research such as “The Emergence of Complexity, Fluency, and Accuracy in the Oral and Written Production of Five Chinese Learners of English” (Larsen-Freeman, 2006) provides the evidence of the importance of using the technology in the language assessment as the tools plays the role of the main instrument alongside with the researcher herself. Such analysis is indeed doable by a researcher in a manual method but the precise and accurate analysis conducted by the tools is proven to be more valid as the tools is not inherited the trivia manners of a person as previously explained.

The research mainly talking about how the emergence of complexity, fluency, and accuracy can be seen, not as the unfolding of some prearranged plan, but rather as the system adapting to a changing context, in which the language resources of each individual are uniquely transformed through use by using some analysis that implements technology such as language tools to measure the measurement beyond the capability of a single person. The research analyses the emergence of language elements from each individual perspective, and one of the analysis is looking at the dynamicity of the vocabulary complexity and rarity through a complex formulation.

While the formulation itself is doable by a single researcher, the complex and repeated analysis would take some amount of time to finish and risk the validity of the analysis itself without the help of certain technology based on the above two reasons of using the digitally assessing methods. Such complex analysis required a highly reliable technology that is able to conduct a repeated analysis while
putting the quality of the analysis in the same manners per each analysis.

As an example, in the figure 1 below is the data description taken from one of the analysis in the Larsen-Freeman’s journal article “The Emergence of Complexity, Fluency, and Accuracy” describing the individual growth in vocabulary complexity over four-month period with five participants. Each mark is determining one analysis of the vocabulary complexity and each of them must be done in the same complex manners over the time. This analysis on the dynamicity of language complexity is will taking some times in the process if being done in manual method, but were made possible in a short amount of time by using specific language assessing tools. The study on the dynamicity of the language could provide many data as a source of creating the most recent and effective language teaching and learning methods.

To give an example of how the tools is used as an invisible media in the research, the single point analysis in the figure 1 can be described with the figure 2 below.

![Figure 2. The Analysis of Vocabulary Rarity by Using P_Lex as Digitally Assessed Language Process.](image)

Each point of the analysis in the figure one takes more than two hours per analysis in manual manners in contrast with the ten minutes spent for the analysis by using the tools in the figure 2. A single researcher’s time consuming of consulting dictionaries, taking a short break, and cognitive processes for an analysis of less than 500 words per single point of analysis per participant could not be a solution for a dynamic system analysis in Indonesia with a large number of students involved in a class.

As Indonesia, and some other part of the world, is having an issue with the numerous number of student in a class, this could be resulted in lowering the quality of the learning outcome. The amount of time spent to analyse a single
point in the analysis of figure 1 in accordance to the large numbers of students in Indonesia in contrast with the small amount of time spent by using language tools could be the best evidence of how the technology should be invisible media in each teaching and learning activity in enhancing the quality of the language teaching and learning process.

CONCLUSION

Enhancing technology as invisible media in the language teaching and learning is proven to have many advantages. As the challenge on the teaching and learning activities seems to be harder in the future, the modern technology is established to counterbalance those challenges in assisting the complex and time-consuming methods. The implementation of latest technology is not limited to its formulaic function as the usage of technology is only limited to the creativity of its user. Many valid researches are implementing the technology such as tools beyond its purpose in establishing a more sufficient method.

It could be put in mind that one of the roles of the present day researcher or teacher is to establish a more sophisticated way in using the already established technology

As previously said that the role of teacher in the teaching and learning activities is irreplaceable by any means of technology, the person refused to implement the assistance from those technologies is bound to be replaced by those who do. This matter is no longer inter-personal cause and effect, but for those who refused or failed to implement the recent technology is surely affecting the quality of the learning outcome.

REFERENCES


