

## CONNECTING FORMATIVE ASSESSMENT AND INSTRUCTION BASED ON LEARNING OUTCOMES FOR BLENDED LEARNING MODEL IN HIGHER EDUCATION

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**Abstract.** A key theme in contemporary higher education is how assessment can be constructed so as to maximize opportunities for growth and meaningful student learning. As each educational system measures learning through multiple and diverse assessments, including formative assessment. In addition, blended learning (B-learning) is developing rapidly in academic. It is one of the ‘hot’ trends of education. This paper shows the evidence to convince audiences that with learner – oriented approach, focusing on learning outcomes, there is a close and flexible connection between formative assessment and instruction in B – learning model.

**Keywords:** Formative assessment, instruction, learning outcomes, blended learning, higher education.

### 1. Introduction

Advances in the digital technology have a tremendous impact on teaching pedagogies in higher education and students learning. Besides, emerging educational practices and growing demand from education researchers and learners appear to be driving a shift toward the learner and context-centered teaching approach. Higher education is transitioning delivery from a predominantly teacher-centered mode to a non-traditional learner-oriented one. The paper presents the effectiveness of some modern terms that showing in education trend and their relationship. They are formative assessment, instruction, learning outcomes, B – learning model.

#### *Learner – oriented approach*

A learner - oriented teaching approach is well known in higher education but has not been fully addressed within counselor education. Teachers who adopt this method value a collaborative approach to teaching and learning, one that honors students’ wisdom and contributions. Teachers create a learning environment encouraging students to actively engage in and take ownership of their learning experiences, an environment that inspires students to think deeply about how they might apply what they are learning to their future practice. It may be particularly challenging for counselor educators to incorporate learner-centered teaching strategies into didactic courses that are traditionally heavy in content versus smaller experiential courses such as practice and internships. Hence, forward ‘learner – oriented approach’ principle, teacher, student, curriculum, instruction, assessment method, ... and many other related elements need to be shifted to match this orientation.

#### *Current assessment trends in higher education*

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According to The United Nations Educational, Scientific and Cultural Organization website, assessment is defined as the act of judging the amount of learning that took place as a result of learning and teaching. ‘Assessment’ now is shifting for learning and oriented to learner, too. It provides essential information that helps teachers know their students’ strengths and weaknesses more precisely, enabling them to plan for and respond to students’ differences and needs more accurately [1, p. 49]. Information gained from assessment is thus essential not only to inform teachers of which students in the class are ready to move on to new lesson; it also identifies students who require further input, re-teaching or additional support from the teacher in order to achieve the learning objectives.

Assessment for learning here implies significant and meaningful use of formative assessment, while using summative assessment sparingly but rigorously. Formative assessment has specific purposes since it: “Forms and informs [student work], and it is primarily concerned with giving feedback that is aimed at prompting improvement in student work. It is often continuous and usually involves plenty of words. Summative assessment is concerned with summing up and making evaluative judgments, is often end-point and involves numbers and grades rather than words” [2, p. 23, 3, p. 44].

A significant trend in current assessment is to rebalance the amount of summative and formative assessment, so, as to ensuring that the feedback reaches students promptly and at a time when they can learn from the experience to inform future tasks and is developmental. Summative assessment takes place at the end of a unit or project and gives students and teachers information about the skills and knowledge that students have acquired. Formative assessment provides learners with feedback about how students are doing throughout the learning process and occur across the course [4, p. 70]. Similar to its meaning, “formative” need to be a regular and continued process to collect data as feedback – also call “feedforward” to let both teacher and student adjust and self – adjust. However, if we do not analyze for purposes of explanation and interpretation, formative assessment will be lack of its potentiality and responsibility.

*Digital technology contributes to the development of new teaching practices and a new assessment culture*

Information and communications technology (ICT) can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum. ICT tools not only use to communicate, create, disseminate, store, and manage information but also has become integral to the teaching-learning interaction, through such approaches as replacing chalkboards with interactive digital whiteboards, using students’ own smartphones or other devices for learning during class time, and the ‘flipped classroom’ model where students watch lectures at home on the computer and use classroom time for more interactive exercises. When teachers are digitally literate and trained to use ICT, these approaches can lead to higher order thinking skills, provide creative and individualized options for students to express their understandings, and leave students better prepared to deal with ongoing technological change in society and the workplace [5, p. 189].

Using ICT in assessment help us saving time and workload substantially [6, p. 108]. There are many online feedback systems integrated into a student’s online learning space which have been shown to improve student’s engagement and performance. Interactive computer-marked assignments and conventional tutor-marked assignments have been proved to help students keep up to date in their studies. These response systems allow tracking of individual responses, displaying polling results, confirming student’s understanding of key points, and gathering data for reporting and analysis.

#### *Research objectives*

The research provides an overview of relationship in learning outcomes, formative assessment and instruction in higher education based on published papers. We also have some recommendations to implement in Blended learning model coordinate with components above.

#### *Research questions*

This paper aims to answer the following questions:

- What are elements will be shifted cause learner – oriented approaching point?
- What is relationship between learning outcomes, formative assessment and instruction?
- What does Blended learning clarify?
- How to bring curriculum, formative assessment, instruction together in Blended learning model?

## **2. Content**

### **2.1. Literature Review**

Jones DL in the 2008 paper [7, p. 17] indicated that there is a tightly connection between curriculum, instruction and assessment in teaching and learning process or cycle advance. The effective educator realizes the benefits of assessments in identifying whether the curriculum and instruction have guided the student to the level of knowledge that is expected and utilizes them to identify whether the student is prepared for the next step in the educational process [8, p. 386].

Assessment, in another paper, shows that it is a core element in teaching and learning cycle [9, p. 79]. Since, assessment has never been absent in any process that related to education. Moreover, its effectiveness and results are deemed as a ‘compass’ to make a ‘right way’ to action.

#### *Goals, objectives and learning outcomes*

Curriculum of each subjects or a course must be found out at least three of the following components: Goals, objectives and learning outcomes. They are the best direction to layout and fully fill in other contents that related to that subject. These three terms often accompany one another but what do they mean and how do they differ? Goals are the largest category usually relating to the larger aims such as critical thinking, transfer of content or creativity. Objectives within these goals are viewed as a map of the actions. Instructors will need to “unwrapping” goals such a specific instruction that covered case studies analyzed and discussed. If objectives are what instructor puts into the course and plans for achieving the goals, the learning outcomes are what learners actually produce. They explain what students will be able to do because of the instruction analysis or discussion. Instructors assess student learning through these outcomes. Therefore, learning outcomes must be measurable and observable in short goals indicate the general aims of a course project or activity. Objectives layout the plan for how these goals will be met or what the instructor will be provided. The learning outcomes exhibit what the learner actually will be done as a result of the activity. Objectives are what is intended while learning outcomes are what is actually achieve. Finally, learning outcomes are power standards, as criteria to become a measurement that identify how well instruction is. Formative assessment let become a useful tool for checking and making instructional design in regularly lesson [10, p. 93].

#### *Formative assessment*

Formative assessment concept is complex although the basic idea seems simple, i.e. the main purpose of formative assessment is to contribute to student learning through the provision of information about performance [11, p. 477] or to provide feedback and correctives at each stage in their teaching-learning process. This is a systematic process to continuously gather evidence about learning. The data are used to identify a student’s current level of learning and provide lessons to help the student reach the desired learning goal. In formative assessment, students actively interact with their instructors by sharing learning goals, understanding their learning progress and what steps they need to take and how to take them.

The benefits of practicing formative assessment have been associated with improved academic achievement [1, p. 49, 12, p. 213] with feedbacks being the key point in formative assessment. Student’s achievement will ultimately increase when continuous feedback is being provided in the

formative assessment process. In contrast to summative assessment that mainly provides feedback after a course's final test, which a student feels it being less meaningful due to the late feedback timing. Students expect an earlier feedback to be mindful of the learning outcomes in order to act on the information. Teachers 'transmit' feedback messages to students about what is right and wrong in their academic work, the strengths and weaknesses of their work, and students use this information to make subsequent improvements. When students are given the opportunity to compare their achievements with course learning outcomes, and follow up to understand what their mistakes were, they are able to control their own learning which leads to successful outcomes. This is a process known to help students self-regulate their own learning [13, p. 199].

Formative feedback is not only beneficial to students but also to teachers. Teachers use formative assessment as a tool to tailor their teaching methods to specific learning needs which increasingly diversifies the current student population. Consequently, when each student's gaps are resolved by formative feedback from teachers, student's motivation and effort will increase. Students will feel less anxious as their learning progress are not just focused on grading. They become more confident and competent learners, motivated to learn, increasingly persistent to do tasks and to regulate their own effort and actions when they tackle new learning challenges [14, p. 165].

In a traditional classroom setting, collecting and providing feedback regularly are a huge workload for teachers. They might use formative assessment techniques such as questioning students or quizzes and are limited as to how many students are assessed or the difficulties in analyzing the students during class, especially large size classes in Vietnam. Therefore, applying technology and using ICT-based environment in teaching and learning is essential to keep up with the global trend in higher education.

#### *Instruction*

Instruction does effective planning for instruction increases teachers potential success in meeting their course outcomes and objectives and helps to ensure continuing accreditation and strong instructor evaluations. Lesson instruction requires a substantial investment of time and energy, without a doubt. Nevertheless, skillful instructors in higher education can benefit from planning their teaching activities beyond the general weekly level, determining the specific activities that will occur in each class period. According to Cobb [8, p. 386], the effective teacher realizes the benefits of assessments in identifying whether instruction have guided the student to the level of knowledge that is expected and utilizes them to identify whether the student is prepared for the next step in the educational process. If the assessment demonstrates that a student lacks understanding, the teacher adjusts instruction accordingly [7, p. 17].

#### *Linked formative assessment and instruction*

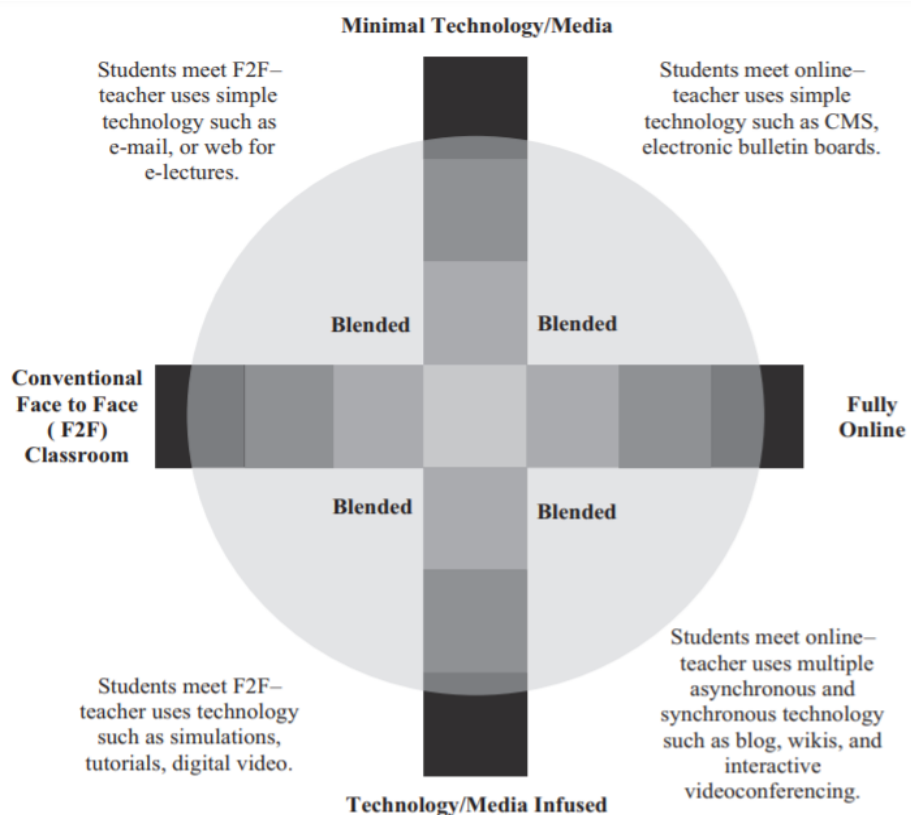
The overarching purpose of formative assessment is to give teachers the information they need to provide quality instruction. Embedded and on-going assessment provide a way for students to show and discover what they know in different ways. With formative assessment integrated throughout a unit of instruction, teachers learn more about their students' needs and can adjust instruction to improve student achievement. Miller in [15, p. 181] concluded that "When formative assessment is integrated with instruction, it informs teachers about what activities and assignments will be most useful, what level of teaching is most appropriate, and how summative assessments provide diagnostic information".

In another work, the true purpose of formative assessment must be, first and foremost, to inform instructional decision making. Otherwise the assessment results are not being used to their maximum potential – improving student achievement through differentiated instruction. This dual purpose of assessment is well expressed in the following statement: "Formative assessment must be seen as an instructional tool for use while learning is occurring and as an accountability tool to determine if learning has occurred" [4, p. 70].

The integrated approach to formative assessment and instruction, combined with a detailed theory of action, are important ingredients of success. Bennett [4, p. 70] 's approach should be considered a model showing how instruction and formative assessment can be integrated. In any situation, instruction always shows in as details about what, when, where, how the teaching and learning process goes on as possible. This is a prescribed and non-interactive knowledge transference practice that has the teacher at the central of the enterprise and instates a fixed, a priori outcome as the goal. The practice is closely managed with prepared lessons and established modes of communication. Thus, it follows that if the student fails to learn, then it is the instructional technique that must be flawed, not the student. An effective application of instruction is to analyze the student's entry capability, establish optimal knowledge delivery methods, and correct any problems of delivery as they are identified.

Moreover, Cobb [8, p. 386] said that assessments were a critical part of teaching and learning. Cobb also stated that curriculum (what is taught), instruction (how curriculum is taught), and assessment (how learning is measured) must be integrated and reciprocal. To make a difference in student learning, teachers should use formative assessments that are meaningful and are able to guide instruction. Ongoing collaboration must take place regarding student work, instructional methods, and specific uses of curriculum. At this time, these formative assessments are crucial in the development of effective curriculum and instruction.

#### *Blended learning*



**Figure 1. Broad Conceptualization of Blended Learning**

Today's learning environments are much more dynamic. A variety of studies have shown that blended learning methods, combining traditional teaching in the classroom with online learning tools, are more effective than a simple face to face lesson in the classroom [6, p. 108]. Blended learning is a mixture of online and face-to-face learning. In the literature, blended learning is also

known as ‘hybrid learning’ or the ‘flipped classroom’ [16, p. 251]. This research also found that blended learning courses improved attendance at face-to-face classes, in self-report measures of student satisfaction, and in examination performance.

As [17, p. 7], [18, p. 136] showed, B – learning types can be classified based on the Figure 1.

Because of the mixture of online and face-to-face learning, two axes of the figure represent the level of online and face to face and divided into 4 areas. Clockwise, in the first quadrant, the combination of that two forms is the most simple: teaching and learning is still mostly happen in the classroom; teachers and learners use basic tools to communicate and assign tasks when not in class such as email, e-book, web, ...Next to the second and the fourth one, the combination shows more clearly with the explanation shown in the figure. The final quarter is the highest level of integration, favoring online learning and using complex tools.

Similarly, according to Nam [19, p. 165], B – learning could be divided in to three forms: (1) Low-level integration: adding a number of online activities for the available course in traditional form; (2) Medium-level integration: replacing some online activities for the available course in traditional form; (3) High-level integration: redesigning the entire course in a suitable and significant combination.

Although B – learning brings enormous benefits in learning and teaching but how to deploy B-learning model with a combination of face-to-face and online forms depends on many factors such as facilities, teacher's capacity and learners in using information technology, investment in time and work load...etc. That is a problem that requires cooperation from stakeholders.

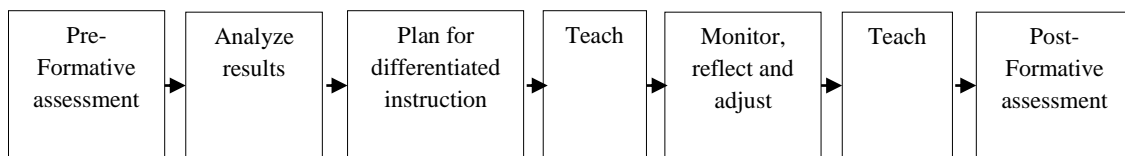
## 2.2. Research Design

Similar to how a finished architectural blueprint must contain everything needed to guide the actual construction of a building, it is necessary to first design the ‘big picture’ blueprint of a comprehensive instruction and assessment model – including all the major components of that system before attention turns to ‘building’ each individual component. As educators and leaders work together to effective design one essential component of a comprehensive instruction and assessment system before proceeding to the next component, they make the define, incremental progress toward eventually finishing the big picture system they are constructing.

Many education institutions in Viet Nam, including our university have implemented new educational plans and strategies that suitable to the strengths of each university. Starting from a learner-centered philosophy, all activities related to teaching and learning must be approached in a way that is conducive to learners now and in the future.

The change in management and teaching needs a roadmap and time. However, first of all, each teacher needs to change themselves; the syllabus needs to be re-compiled according to new requirements from their institution. In addition, in order to match the goals, it is compulsory to determine the learning outcomes of each subject when preparing the module outline. Each subject usually has twelve or fifteen learning outcomes. All other components related to the outline should be designed to achieve those learning outcomes.

The major components in our model and their status at our university that we focus may be conducted by Figure 2:



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In this model, the pre-formative assessment is intentionally aligned to the post-formative assessment. Teachers analyze the pre-formative assessment results deliberately to identify student learning strengths and areas of need. They then modify instruction accordingly to meet the specific learning needs of all students, the effectiveness of which can then be measured on the post-formative assessment. Teachers continually monitor and differentiate instruction throughout the entire process – after the pre-formative assessment, while instruction is taking place, and again after the post-formative assessment.

### **2.3. Implement Recommendation**

As teachers keep emphasizing on continually assessing students' progress toward learning goals, the classroom environment becomes more focused on learning. Students feel more control and take a more proactive approach to their learning while teachers' focus is "less on teaching and more on the learning in the classroom" [20, p. 7].

Implementing a blended learning program requires coherent and coordinated planning to be successfully highlighted among the variety of policy issues that universities need to consider [21, p. 95]. Tutor or teacher training is especially critical in universities where teachers are responsible for curriculum and assessment design in addition to implementing blended learning. Higher education staff identified a lack of staff support/training and a lack of skills as the biggest barriers to implementing blended learning program at their institution. They suggest that their program would not have been successful without specialist training, cautioning that others wishing to introduce their own program should ensure that teaching staff are trained to deal with all aspects of blended learning [22, p. 11].

The statements above also apply in the context of Vietnam. According to [19, p. 165], with the aim to keep up with the development of higher education in the world, higher education in Vietnam has also changed. There has been a rise in local researches by Vietnamese authors on the teaching and learning models, form of B - learning teaching and its forms in teaching at the university level. The format of online in the form of B - learning teaching is based on web 2.0 technology, and there are many different forms: from wiki, blog, website, social network, even using learning management system,...

When students receive frequent information about their progress, they focus more on learning. They know exactly how they will be assessed since the assessments reflect authentic work in the discipline. As they move through the subject matter of the unit, they receive information about how they are doing, what goals they are meeting, and what they can do to improve. When the time comes at the end of the unit for them to show what they can do, they have had multiple opportunities to build their understanding and skill, and they are not surprised by the outcome.

In merely pure traditional class, formative assessment results certainly still promote its effectiveness in guiding design. Here, the B - learning model is used. In other words, there is a combination of traditional and technology classes and accordingly, the formative assessment also has the support of technology.

From the beginning of the course, our teachers must have available detailed design to deploy the B - learning model of the module. This plan can be viewed as a general teaching and learning plan agreed by the members of the teaching department. For each specific class, this plan must be adjusted to fit the learners.

**Table 1.** *Formative assessment and instruction in the teaching and learning process* below is a summary of the combination of formative assessment and instruction in the teaching and learning process. Note that all related activities take the making are as orientation to adjust. The final goal is that students must fully meet the learning outcomes of each lesson content. Certainly, due to the different learning capacities and styles of each learner, it is imperative that the adjustment of

instruction based on the feedback obtained from the formative assessment is appropriate for each learner or group of learners.

**Table 1. Formative assessment and instruction in the teaching and learning process**

<b>Formative assessment before Instruction</b>	<b>Formative assessment during Instruction</b>	<b>Formative assessment after Instruction</b>
<ul style="list-style-type: none"> <li>▪ Teacher recall misconceptions that students often have and areas that have proven to be particularly difficult.</li> <li>▪ Records of tests and quizzes give them useful information about the effectiveness of previous instruction.</li> <li>▪ This kind of information is useful and important as a foundation for planning, but it is only the beginning.</li> <li>▪ Collecting information about individual student's understanding before beginning a unit helps teachers gauge students' needs and plan learning activities that increase their motivation to learn and help them succeed.</li> <li>▪ Suitable formative assessment forms: discussions, asking students to fill out graphic organizers or write in journals, teachers can get a sense of students' understanding about a topic and their general attitude about the subject.</li> <li>▪ Recommend online implement, at home.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Teacher collect information about students' skill development and how their thinking and understanding of the topic is progressing.</li> <li>▪ This information helps the teacher differentiate instruction by making on-the-spot decisions, such as taking time out to review a concept before moving ahead with a scheduled activity or revising a sequence of activities to take advantage of student interest.</li> <li>▪ Knowing how students are thinking about a topic also helps the teacher to "make adaptations for individual learning differences to ensure that all students understand, practice, and master each component as they progress toward the final goal.</li> <li>▪ Through individual feedback and flexible grouping, teachers can help students grow from where they are to where they need to be. Instruction that meets students' individual needs gives them the confidence that they will learn and motivates them to become engaged in the topic and even to take risks with their learning. Another important purpose of formative assessment is the development of thoughtful, independent, self-directed learners.</li> <li>▪ Suitable formative assessment forms: learning logs, anecdotal observations, checklists, conferences, peer- and self-assessment,... help students</li> </ul>	<ul style="list-style-type: none"> <li>▪ Teacher designed task in order to elicit the students' level of understanding and to provide them with opportunities to demonstrate their learning.</li> <li>▪ When formative assessment is a daily occurrence, teachers begin to think more in terms of what their students are doing than in terms of what teachers are doing.</li> <li>▪ The teacher wants students to learn what will be on the test without telling students exactly what will be there, since the test items are merely a sample of the knowledge students are expected to learn. Students want to find out exactly what will be tested so they can do well and not have to learn any "unnecessary" information.</li> <li>▪ Teacher help students assess their own learning over a period of time and give teachers and schools important information for long-term planning.</li> <li>▪ Suitable formative assessment forms: reports, essays, presentations, artistic performances, and demonstrations, allow students to show what they have learned about content, about working with others, about thinking, and about their own learning processes. Other kinds of long-term assessments, such as portfolios and ongoing conferences, provide teachers</li> </ul>



Formative assessment before Instruction	Formative assessment during Instruction	Formative assessment after Instruction
	<p>become independent learners who understand their own strengths and needs and know how to set goals and monitor their own progress.</p> <ul style="list-style-type: none"> <li>▪ Recommend combine both face to face and online implement, at class and at home, depends on B – learning design.</li> </ul>	<p>and students with the opportunity to make connections among units of study, even different subject areas, and individual goals.</p> <ul style="list-style-type: none"> <li>▪ Recommend combine both face to face and online implement, at class and at home, depends on B – learning design.</li> </ul>

These proposals are based on the published researches mentioned above, which partly clarify the relationship between formative assessment and instruction, it could be used for reference in implementation at universities in Vietnam.

### 2.3. Discussion

Researches over the past decade have presented an overwhelming case in favor of providing feedback to students that is frequent, specific and accurate. In other words, formative assessment is essential for all universities, not merely those that they are under pressure to improve academic achievement. Despite this evidence, many teachers are reluctant to give students accurate feedback for fear it will damage student and teacher morale. They hesitate to assess frequently, reasoning that it would reduce teaching time. They fail to assess specifically but opt for generic items from a test bank because they think it will save time. For formative assessment to achieve its potentials, we must recognize that student and teacher morale will soar only when achievement is genuine and not contrived.

The most frequent complaints from teachers today is “We don't have the time”. Thus, it is essential to focus on identifying standards which have greatest impact on student achievement. Formative assessments that attempt to address every standard are doomed to failure and consume enormous time of both students and teachers. But formative assessment that focuses on learning outcomes will allow teachers, students and leaders to have assessments that are brief, taking only a few minutes of classroom time, and, most importantly, redirecting instruction into the areas that are most necessary for each student.

In fact, many universities are wasting enormous amounts of time by requiring what they call ‘formative assessment’. It must be noted that formative assessment without formative analysis and instructional impact is not formative assessment. Here, the question is not simply “How did the students perform?” but rather, “How can we adjust teaching and learning practices so that we improve student performance?”. Thus, teachers who are provided with a useful and practical guide on using formative assessment for learning will be the ‘winner’.

Another aspect to note is collecting data. In many cases, ‘Data rich, information poor’ situation still happened. If we have all the data we need, the problem to be solved is finding out a systematic process for using that data to inform and differentiate our instruction’. Data – driven instructional decision making should involve five steps: (1) the charting of student performance data; (2) analyzing the data; (3) setting a goal for improvement; (4) selecting specific teaching strategies to meet that goal; and (5) determining result indicators to gauge the effectiveness of selected teaching strategies.

Regarding the implementation of B - learning model, it is getting more popular in Vietnam universities. However, the level of integrating the two forms of B – learning model into teaching -

learning process is different, depending on the different resources of each university. How to train teachers, learners and leaders to evaluate the effectiveness of applying this model is a big challenge.

Another issue that needs to be exchanged is that education reform cannot be done by only a few teachers but requires the cooperation of all the stakeholders, including the teachers' community, learners, and leaders. Regular and timely exchange is needed to adjust from strategy to action.

### 3. Conclusion

The paper once again highlights formative assessment position and its role in the teaching and learning process. Combined with instruction, formative assessment provides teachers basic tools to design an appropriate instruction and satisfy learners' needs. In addition, using B - learning model helps promote effective application of technology in teaching. How effective the combination of these factors depends on firstly responsibility and attitude of the teacher, then facilities, regimes and support policies of the University to foster a pioneering pedagogical community.

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