

The Implications of Learning Theories to Assessment and Instructional Scaffolding Techniques

Agaton P. Pattalitan Jr. *

Secondary Education Department, College of Teacher Education, Quirino State University, Main Campus

*Corresponding author: docagapattalitanjr@gmail.com

Abstract Learning theories, which provide a profound coherence and understanding in changing teaching practices and standards, are imperative to the choice and employment of assessment and instructional scaffolding techniques. The paradigm shift of assessment “of” learning to assessment “for” learning has brought diversity to educational practice especially in the propagation of creativity and critical thinking among students. Faculty members are to embrace this challenge of systematization of assessment and instructional scaffolding techniques if they are committed to effective teaching and learning. Hence, they need to extend feedback and feed-forward mechanisms and model situations for the learners to engage in appropriate action which lead them to the closure of the gap between current and good performance.

Keywords: *learning theories, assessment, assessment for learning, assessment as learning, assessment of learning, instructional scaffolding*

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1. Introduction

Instructional scaffolding is regarded as the impinged outcome of the converging impact of both the school of thoughts (the learning theories) and assessment techniques that suit best its instructional design. The two major school of thoughts that influence teachers in their instructional scaffolding techniques are the behaviorists and cognitivists. The behaviorists look bests at regular self-testing and formative feedback. On the other hand, the cognitivists look at graded questions in taking assessment in attaining higher order thinking skills. Hence, learning theories are bases for assessment and instructional scaffolding.

Relating assessment and instructional scaffolding requires a keen understanding of the underpinning learning theories. Assessment and instructional scaffolding are the basic strategies of the teacher in moving forward to the attainment of a learning outcome. Teacher’s instructional scaffolding techniques draw authentic apprenticeship contexts in his quest to control elements beyond the learner’s ability; this includes a genuine and cautious understanding of various learning theories supportive to this noble task.

Owing to the scope of socio-cultural acumen of teaching and learning, student-learners internalize criteria by translating them “from latent to manifest and back to latent again” until these criteria become “so obviously taken for granted that they need no longer be stated explicitly”. Concomitantly, this strategy develops evaluative expertise among students so they could become proficient at monitoring their own learning. This kind of

interactive technique fosters intrinsic motivation as well as cognitive and metacognitive learning [1].

The evolving new American-European educational model, from content to learner centered curriculum, has led academic communities to evaluate drawbacks of student outcomes to instructional scaffolding. Qualitative evaluation of outcomes through auspicious researches shows that learning theories provide a profound coherence and understanding in changing teaching practices and standards. Learning theories provide a springboard that helps academic planners decide what to focus when they can't rely on past experiences of instructional scaffolding. Concomitantly, it provides dogmatic bases in fitting together research-based strategies into a pedagogical approach [1,2]. Innovations to educational approaches underpins both critical thinking and creativity as the classroom must be the avenue in inviting students to come across learning towards optimal educational learning experiences.

The propagation of creativity and critical thinking is seen at the forefront of any activity and experience in the dynamic learning environment through knowledge-activation technique. Instructional scaffolding techniques strengthen knowledge-activation abilities of the learners through feed-forward mechanisms of learning feedbacks. This technique may be done through feedbacks from inner-rater, inter-rater, intra-rater and criterion-rater. Using the KWL technique [2], students are tasked to draw learning through instructional scaffolding. Students are able to discern learning from himself, from his groupmates, from his classmates and from his teacher. Albeit unreliable as numerous researches reveal, peer-

assessment poses a potential avenue for mutual learning through feedbacks and reflections.

Effective feedback plays an important role in instructional scaffolding that result into learning gains. Thus, learning is shared and constructed in a collegial environment. [1,3], identified 3 conditions necessary for students to gain from feedback in any learning task: (1) The student must know what is a good performance (i.e. the student must possess a concept of the goal or standard being aimed for); (2) The student must know how to relate current performance to a good performance (for this, the student must be able to compare current and good performance); (3) The student must know how to act to close the gap between current and good performance. From this analysis Sadler [1] made an important observation: for students to be able to *compare* actual performance with a standard (as suggested by condition 2), and take action to close the gap (condition 3), then the student must possess some of the evaluative skills similar to his teacher. For this reason, teachers must focus on the strategies (instructional scaffolding) to strengthen the development of skills, e.g. self-assessment, as students generate significant progress in their learning as they look-back to the process (inner-rater). This learning is reinforced as the inter-and-intra-raters feed their observations. At times, inter-and-intra-raters offer unfavorable learning feedbacks especially if the class is a big class under high competition. Albeit difficult, the teacher (criterion-rater), as facilitator of student-learning, plays a critical role in order to reap and reduce the drawbacks of the contrasting learning feedbacks drawn by the students. Hence, an analysis on the implications of learning theories to peer assessment and instructional scaffolding.

The objective of this paper is to provide understanding on the influences of learning theories to assessment for learning and instructional scaffolding as influenced by the change of educational mandate – from traditional model to the evolving American-European education model. Specifically, it tries to analyze the efficacy of feedback as a feed-forward mechanism in strengthening student' learning together with the accompanying instructional scaffolding techniques of the teacher to back-up the learning process.

2. Methodology

This study used a case study under the symbolic interpretative paradigm. Given the extensive nature of the study, analysis and interpretation of the implications of learning theories to assessment and instructional scaffolding were done vis-à-vis with the paradigm shift of assessment “of” learning to assessment “for” learning.

3. Results and Discussion

3.1. The Underpinning Learning Theories Influencing Assessment and Instructional Scaffolding

The Cognitive Processes of Learning. Student-learners are engaged in three important cognitive

processes – selecting, organizing and integrating [4]. At first, the student-learners select incoming verbal information to yield a text base and are applied to incoming visual information to yield an image base. These text based and image based information are organized to create a verbally-based model of the to-be explained system and is applied to the image base to create a visually-based model of the to-be-explained system. As a final point, integration occurs when the learner builds connections between corresponding events (or states or parts) in the verbally-based model and the visually-based model [5].

Metacognitive Theory of Learning

Flavell [6] postulated that metacognition consisted of both monitoring and regulation aspects that can be regarded to the learner's ability to manage the input, storage, search and retrieval of the contents of his own memory. He further said that metacognition leads to selection, evaluation, revision or deletion of cognitive tasks, goals, and strategies. It helps the individual make meaning and discovers behavioral implications to one's metacognitive experiences. The theory was composed of four classes. This includes (a) metacognitive knowledge, (b) metacognitive experiences, (c) tasks and goals, and (d) strategies or actions [7].

Metacognitive Knowledge is regarded as a self-knowledge and belief about the factors that affect the learner's cognitive activities as it facilitates or impedes his learning performances to various conditions of learning. Cognitive and metacognitive knowledge are regarded as mutually dependent and interrelated to each other as they are related to one's interests, abilities and goals [7]. This includes the (a) person variables, (b) tasks variables, and (3) strategy variables. These activities are geared towards an individual's knowledge and beliefs as thinkers or learners and to his beliefs about other learner's thinking processes. It was stated that ‘*A cognitive learning strategy is a plan for orchestrating cognitive resources, such as attention and long-term memory to help reach a learning goal*’. This calls for skill, will, and self-regulation .

Metacognitive Experiences are regarded as a “stream of consciousness” as the learner recalls and integrates his information, memories, or earlier experiences in the process of solving a current-moment cognitive problem. This encompasses affective responses to various learning tasks and other activities. It includes the learner's successes or failures, satisfaction or frustrations, among others. These overlap the nature of his metacognitive knowledge and experiences in pursuing various learning tasks. It can be said that becoming aware of one's inconsistencies, paradigm differences, and counterexamples are likely to generate strong affective responses [8].

Metacognitive Goals and Tasks are the desired aims or results of any cognitive scheme. These include comprehension, committing facts to memory, or producing something, to any mental activity – both written and oral, or of simply improving one's knowledge about a topic or a problem. The achievement of these goals and objectives is expected to draw a great impact to the learner's metacognitive knowledge and metacognitive experience. These schemes are believed to precede learning [7].

Metacognitive Strategies are the learner's ordered processes to ensure the attainment of his cognitive goal and objectives towards any learning activity. These are

believed to oversee his learning pace and processes in planning and monitoring his cognitive activities. These make the learner compare his own cognitive outcomes to internal and external standards towards his goals (both cognitive and metacognitive domains). This is regarded as the look-back portion of the theory as it monitors the efficacy of the strategies done in the entire process through self-assessment and evaluation.

Metacognitive strategy training is divided into five primary components: (1) preparing and planning, (2) deciding when to use particular strategies, (3) monitoring strategy use, (4) learning how to orchestrate various strategies, and (5) evaluating strategy use. In the *preparing and planning* component, students are prepared in relation to their learning goal and start thinking about what their goals are and how they will go about accomplishing them. In the process of *deciding* when to use *particular strategies*, learners think and make conscious decisions about the learning process and choose the best and most appropriate strategy in a given situation. In the *monitoring strategy use* component, they need to ask themselves periodically whether or not they are still using those strategies as intended. While *learning how to orchestrate various strategies*; students coordinate, organize, and make associations among the various strategies available. In the last component, *evaluating strategy use*, students attempt to evaluate whether what they are doing is effective by means of self-questioning, debriefing discussions after strategies practice and checklists of strategies used can be used to allow the student to reflect through the cycle of learning. At this stage, all the previous stages are evaluated. Cognitive and metacognitive strategies as used in this study are limited to rehearsal, elaboration, organization, critical thinking and self-regulation [9].

Rehearsal Phase includes simple tasks used in learning to activate bits of information that serves as the students' central schema, e.g., items familiarization like enumeration, recitation, memorization of key words and context clues, and listing. These strategies are assumed to switch the encoding processes but do not construct internal connections in integrating the information with their prior knowledge and experiences.

Elaboration Phase includes strategies that will lead learners to store information into long-term memory building as it constructs internal connections in integrating the information with their prior knowledge and experiences, e.g. summarizing, paraphrasing, creating analogies, and note-taking.

Organization Phase is characterized as a dynamic endeavor that involves the learners to a particular learning task resulting to better performance. This includes organizing bits of information like concept-mapping, diagramming, clustering and outlining. It further employs charts and table to further organize the presentation of thoughts for a more vivid analysis.

Critical Thinking Phase is the development of skeptic evaluations towards the attainment of higher order of thinking in leveraging knowledge and understanding. This includes the ability of the learners to integrate their past experiences to their current situations in order to solve the problem, draw conclusion and make recommendations vis-à-vis with critical judgment.

Self-Regulation Phase is referred to the ability of the students to practice goal setting and do task analysis

relative to their self-control and self-regulating capacity (planning). This further includes self-testing and questioning (monitoring), checking and correcting learning behaviors (regulating) in improving their learning performance.

The crux is: center to the cognitive and metacognitive theories of learning are zone of learning of both cognitive and behavioural frameworks under the one's efficacy and regulation.

The Social Learning Theory. Bandura's Social Learning Theory presents the interrelationship of observation and modeling of behaviors, attitudes, and emotional reactions of others in the learning process of an individual learner. The theory posits that human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action." Social Learning Theory (SLT) is also influenced by reciprocal causation: the person, behavior and environment are influencing each other through self-efficacy and self-regulation. Learning employs self-confidence towards learning (self-efficacy) under circumstances of an individual's personal ideas on the appropriateness and inappropriateness of actions in improving his own behaviors (self-regulation). Self-regulation involves modeling (doing what others do both live model and symbolic models) and imitation (using another learner's behavior as a discriminating stimulus both vicarious reinforcement and vicarious punishment). Therefore, SLT spans to both cognitive and behavioral frameworks by encompassing attention, memory and motivation. Hence, the central role of social learning is on behavioral interpretation of modelling. These leaps are link to the Social Development (Vygotsky) and Situated Learning (Lave) Theories.

Social Development Theory posits that the social interactions made by a student-learner precede development, consciousness and cognition. Hypothesizing that cognition and development is the end product of socialization and social behaviors, the theory posits the following tenets: (1) Social interaction plays a fundamental role in the process of cognitive development. Vygotsky felt social learning precedes development. He states: "Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological);" (2) The More Knowledgeable Other (MKO). The MKO refers to anyone who has a better understanding or a higher ability level than the learner, with respect to a particular task, process, or concept. The MKO is normally thought of as being a teacher, coach, or older adult, but the MKO could also be peers, a younger person, or even computers. (3) The Zone of Proximal Development (ZPD). The ZPD is the distance between a student's ability to perform a task under adult guidance and/or with peer collaboration and the student's ability on solving the problem independently. According to Vygotsky, learning occurred in this zone. (Vygotsky [10], as cited in <http://www.learning-theories.com/vygotskys-social-learning-theory.html>).

Situated Learning Theory argues that learning is a function of various activities, contexts and culture of inquiry under social interactions in a process of "legitimate peripheral participation. Social interaction is a

critical component of situated learning. Student-learners are invited to come across learning in a "community of practice" which embodies certain beliefs and behaviors to be observed and practiced. As student-learners involve themselves in the process of cognitive inquiry, they become more active and engaged within each interaction. Hence, the student-learners assume roles in the learning environment which is usually unintentional rather than deliberate. (Lave [11], as cited in <http://www.learning-theories.com/situatedlearning-theory-lave.html>).

Apparently, students have to construct their own learning from what their teachers and peers give them. Constructivism is a view of learning and teaching that has at its core concept: learning is something that happens inside the heads of learners. No matter how meticulously teachers plan or what marvellous strategies they use in teaching, they can't reach inside learners' heads and put learning for there will always be a gap between learning and teaching that *learners* have to negotiate in order to construct new knowledge, skills and attitudes [12]. In this regard, students must use their prior knowledge as their starting point in learning. Students, as individual learner, are constructors, neither trivial nor radical constructivism consider to any great extent, the effect of the environment and interactions within the environment on learning [4].

The crux is: Learning theories emphasizes learning with understanding. This means that instructional scaffolding, including assessment for learning, should also emphasize understanding rather than routine memorization. Teachers, being the facilitator of student learning, should assess for understanding rather than surface knowledge and simple recall of facts.

3.2. The Efficacy of Feedback as a Feed-forward Mechanism in Assessment for Learning

Assessment for learning has been extensively defined as the process of seeking and interpreting evidence for use by learners and their teachers to decide where learners are in their learning, where they need to go and how best to get there [13].

Dynamic assessment, or the act of finding out what a student is able to do independently as well as what can be done with adult guidance, is integral to Vygotsky's idea of a zone of proximal development. This type of interactive assessment, which allows teachers to provide assistance as part of assessment, does more than help teachers gain valuable insights about how understanding might be extended. Students' participation in the assessment process is of paramount importance in the new context because the new American-European education model seeks not only to convey content and specific knowledge, but also a set of skills and abilities defined as transferable skills that can be applied to real life problems [7]. This argument becomes the overarching epoch of the new academic standard in the acumen of work globalization and internationalization in education. Hence, the change of assessment "of" student-learning to assessment "for" student-learning [3].

Purposively, assessment is geared for 3 main purposes [7]: (1) Assessment for learning. This occurs when teachers use inferences of student progress to scaffold

instruction. Assessment *for* learning ascertains the influence of assessment to motivation and self-esteem of students as it provides them with constructive feedback. Hence, assessment is developmental. Assessment *for* learning encourages the active involvement of students (inner-inter-and-intra-rater) in their learning and it depends on teachers' diagnostic skills (criterion-rater) to make it work; (2) Assessment as learning. This occurs when students experience the learning process by reflecting and monitoring their progress and performance in learning. This cognition empowers students to ask reflective questions and consider a range of strategies for learning and acting. Over time, students move forward in their learning when they can use personal knowledge to construct meaning, have skills of self-monitoring to realize that they don't understand something, and have ways of deciding what to do next; and (3) Assessment of learning. This happens when teachers use evidence of student learning in making judgment on students' achievement of educational goals and standards. This provides evidences to plan for future learning tracks. Hence, assessment is judgmental.

Summative assessment is assessment that is used to signify competence or that contributes to a student's grade in a course, module, level or degree. Formative assessment, on the other hand, is assessment strictly used to provide feedback to the student on their learning. It provides the student with advice on how to maintain and improve their progress, but should not form part of their summative grade or mark. Continuous assessment usually involves a series of tasks that are individually assessed, though sometimes it is appropriate to add a final assessment to continuous assessment. Formative assessment is essential to learning in its aim is to give appropriate and timely feedback to students on their learning, and to help them to improve their future work. This should be enough to motivate your students to take formative assessment seriously, but students will also be motivated if they clearly see the point of their work; how it relates to the course, the module, and their career goals; if it is inherently rewarding or interesting; or if they can see their skills and expertise advancing.

Corollary to change of assessment standards are the Principles of Good Practice for Assessing Student Learning of the American Association for Higher Education [14], to wit: (1) The assessment of student learning begins with educational values; (2) Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time; (3) Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes; (4) Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcome; (5) Assessment works best when it is ongoing, not episodic; (6) Assessment fosters wider improvement when representatives from across the educational community are involved; (7) Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about; (8) Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change; (9) Through assessment, educators meet responsibilities to students and to the public.

Using self-regulation and social construction at the center of student-learning, students learn at every pace and experience that they have in the learning environment through cognition and metacognition. Self-regulation is an active construction whereby students set goals for their learning and monitor, regulate and control their cognition, motivation and behavior, guided and constrained by their goals and contextual features of the learning paradigm [15]. On the other hand, theories of intelligence had been replaced with a new understanding that cognitive abilities are developed through socially supported interactions. Hence, the social-construction of knowledge.

The notion of interaction must become the integral concept of assessment for student learning. Interaction refers to reciprocal events involving at least two actors and/or objects and at least two actions in which the actors, objects, and events mutually influence each other. Hence, verbal immediacy behavior is still the central concept of reciprocal events and mutual response if assessment is to enhance student learning in fostering active stimulus for cognition processes. Thus, feedback and feed-forward mechanisms are inherent strategies as fore-arms for assessing learning. The benefits of successful feedback set in the context of learning outcomes are many. A successful feedback will: (1) build confidence in the students; (2) motivate students to improve their learning; (3) provide students with performance improvement information; (4) correct errors; (5) identify strengths and weaknesses [2].

Numerous researches had emphasized the importance of success criteria, as it plays an integral part of the feedback and feed-forward mechanisms for assessing student learning. Feedback and feed-forward mechanisms must be a 2-way process: student gives feedback to his teacher and the student receives feedback from his teacher and classmates. The first process is necessary for the teacher to diagnose the current state of the learner as to his learning. The second deals with the process of obtaining non-judgmental comments showing improvements from his teacher, his groupmates and classmates. Conveying the message is valuing comments that poses action for improvement. Learning is extensively affected by the intertwined mechanisms of providing rich evidences necessary to move forward to the next step of learning phase. Provision to these leaps is the promotion of greater thinking and discussion that opens opportunities for peer-discussion and open dialogue [2,3,8,13,16,17].

According to Black and Harrison [16] a feedback, if it is to be effective, must reflect the following: (1) should initiate thinking enabling the learner ‘to discuss his or her thoughts; (2) with the teacher (criterion-rater) or a peer (inter-or-intra-rater) in order to instigate improvement; (3) prompts immediate action; (4) relates back to the success criteria; (4) allows learners to match their own judgment of quality (inner-rater) against that of the teacher or peer; and (5) may direct learners ‘where to go for help and what they can do to improve their work.

Therefore, it is said that the learner has to (a) possess a concept of the standard (or goal, or reference level) being aimed for, (b) compare the actual (or current) level of performance with the standard, and (c) engage in appropriate action which leads to some closure of the gap [18]. This can be done through instructional and assessment scaffolding as reflected in Figure 1.

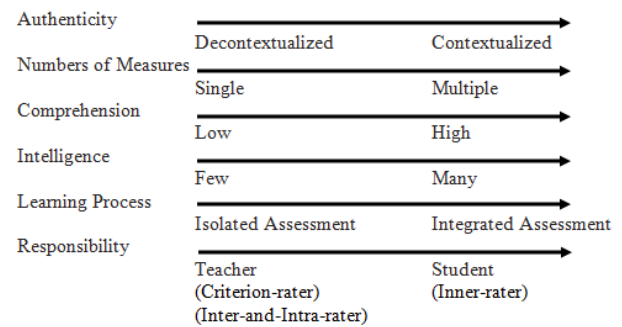


Figure 1. Directions in Assessment (Adopted from Current Perspective in Assessment, 2005)

The foregoing paradigm for assessing student learning underpins a new assessment culture in order to assess real learning and understanding. As students are invited to come across learning, students are made aware that they need to become active participants of learning and become responsible in their own learning tasks: to reflect and keep track of their own performance. Hence, teachers come to scaffold both instruction and assessment to support students to close the gap between the desired goal and the current level of performance.

Assessment, in general, generates the following achievable skills among students if it is to be well-planned and well-implemented: (1) Analytic skills, (2) Communication skills; (3) Contextualization; (4) Critical awareness; (5) Independent judgment; (6) Intellectual powers; (7) Interrelation of knowledge and understanding; (8) Intuitive powers; (9) Problem solving skills and (10) Vocational demonstration of skills [2].

The crux is: feedback is crucial as it needs to be detailed, comprehensive, constructive, meaningful, challenging and supportive, and developmental. This redirects student learning in a collegial manner. Peer assessment and peer collaboration is highly wanting as (a) the peer teacher and learner are at closer stages of cognitive development (according to Vygotsky) and (b) peers have more similar levels of learning experiences with respect to the concept being learned [10].

3.3. The Instructional Scaffolding Techniques of Teachers.

On the acumen of the change of assessment ‘of’ learning to assessment ‘for’ learning, key elements are traced that led to the instructional scaffolding techniques.

This domain shift arises to a systematic incorporation of feedback and feed-forward mechanism to prompt instructional scaffolding techniques and practices under social construction at the regulation of the learner. Using cognitive and metacognitive learning strategies, students learn best through interaction and collaboration. Along with this prompt are principles that will enhance student-learning [19]: (1) Good practice encourages contact between students and faculty. A good practice in instruction scaffolding is a continued-contact of the teacher and student and vice versa in and out of the theory room. This continued contact maintains a community of inquiry in the learning process. It also helps enhance motivation to students as they see his teacher’s concern. Hence, it draws encouragement among students to take a better stride towards his values and commitment to do his tasks; (2) Good practice develops reciprocity and

cooperation among students. A good technique to practice in instructional scaffolding is the introduction of team work as there is synergy in team activities that propel learning and understanding. Learning is taken with collaboration and not with competition and isolation. Students, especially the underprepared, learn best when they are in within similar levels of learning experiences. Feedbacks and feed-forwards are taken and understood easily especially when they are advancing to their learning status; (3) Good practice encourages active learning. Learning includes interaction that masters creativity and critical thinking using prior knowledge and understanding. Students need to be part of the process for them relate their past experiences to the present competencies. They must apply what they learn to real life situations; (4) Good practice gives prompt feedback. Students need proper feedback and feed-forwards, either from inter-and-intra-rater or criterion-rater, for them to reconstruct learning. This enables them to get chances to reflect and monitor growth in their learning tasks; (5) Good practice emphasizes time on task. As students need help in effective learning, teachers are likewise exuding effective teaching. Learning tasks must be well-planned that will provide students with opportunities to integrate their studies with time management. Competencies are clustered and dealt with appropriate pace of learning prototypes; (6) Good practice communicates high expectations. Clear learning outcomes are imperative to effective teaching and learning. Progression of skills and competencies propel reinforcement strategies; likewise with expectations. Learning is drawn from motivation. Students get motivated as they complete a module, program or any task; and (7) Good practice respects diverse talents and ways of learning. Students need the opportunity to showcase their talents. In the same manner, students come from different learning background, culture and practice; hence, a diverse technique to handle this diversity. Learning should be created to promote efficacy.

Implication to Research and Practice

The paradigm shift of assessment “of” learning to assessment “for” learning has directed educationists and classroom teachers to dwell on the multidimensional aspect of assessment and evaluation of learning outcomes. Owing to the scope of assessment and instructional scaffolding techniques, teachers are encouraged to experiment with the Assessment for Learning (AfL) methodology by adapting the theories and principles of formative assessment to suit best the needs of their own teaching needs. This is to highlight practice to cognition and the transfer of skills necessary to gain creativity and critical thinking in the learning process.

4. Conclusion

Effective integration of competencies in any educational plan and tactic emanates from holistic and diversified understanding of the learning environment, assessment model and instructional scaffolding technique. Feedback and feed-forward mechanisms are the fore-arms of assessment that draws creativity in tracing student’s improvement. Owing to theories of learning, a systematic incorporation of feedback and feed-forward mechanism to teachers’ instructional scaffolding techniques is highly wanting if teaching is to be effective.

5. Future Research

The utilization of feedback and feed-forward mechanism of assessment and evaluation is underdeveloped among classroom teachers as workload limitation is recognized. Hence, the use of it is highly wanting for improvement strategies in higher education if they are committed to the paradigm shift of assessment “of” learning to assessment “for” learning. An educational experiment for the AfL methodology implementation is hereby forwarded especially on the implementation of assessment for learning, assessment as learning and assessment of learning in the light of formative assessment, summative assessment and continuous assessment in evaluating academic performance.

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