

PROMOTING TRANSFORMATIVE LEARNING THROUGH FORMATIVE ASSESSMENT IN HIGHER EDUCATION

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Abstract

This paper presents a discussion on the advancement of transformative learning through formative assessment in higher education and why researchers believe this concept of formative assessment and transformative learning hold so much promise as an inclusive approach in higher education. The researchers of this study conducted a survey in a Malaysian public university to examine the perceptions of lecturers, undergraduates and postgraduates as on how formative assessment can enhance the development of transformative learning using a self-regulated and student-focused assessment model. In this study, researchers identified the impact of formative assessment on transformative learning in higher education. Based on the study conducted, the researchers also present a model of sustainable assessment that emphasizes how formative assessment can facilitate transformative learning in higher education. This formative oriented assessment model proposes a meaningful and student-oriented learning environment for effective self-regulatory learning among students. The researchers hope this study will fulfill a need in higher education for both practical and theoretical information for experts in a wide array of tertiary education settings.

Keywords: active learning, formative assessment, higher education, transformative learning

INTRODUCTION

According to Popham (2008:6) the Formative Assessment for Students and Teachers (FAST SCASS) formulated the following definition of formative assessment

Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes.

Popham (2008: 6) further defined formative assessment as follow:

Formative assessment is a planned process in which assessment-elicited evidence of students' status is used by teachers to adjust their ongoing instructional procedures or by students to adjust their current learning tactics.

From the definitions stated, one can conclude that formative assessment is assessment conducted at regular intervals of a student's progress with accompanying feedback in order to help to improve the student's performance. However, Boud (2000) cautioned that current

assessment in higher education is insufficient to the task of preparing students for lifelong learning. Hence, Boud and Falchikov (2005) suggest that we need to move from summative assessment that focuses on specifics, standards and immediate outcomes to more sustainable assessment that can aid students to become active learners not only in managing their own learning but also assessing themselves to life beyond the end of the course. To date, there is enough evidence in research (Nicol & Owen, 2008; Nishigaki, 2008; Merrill, 2008; Manbeck, 2008) to indicate that formative assessment can contribute significantly to the learning experiences of university students and is a significant driver for transformative learning in higher education.

As defined by Cranton (2006: 23), transformative learning is “a process of examining, questioning, validating, and revising our perspectives” in relation to how we make sense of the world. Generally, transformative learning theory rests on the assumption that learning comprises of various facets or phases that the learner experiences. One important element is that of critical self-reflection, as argued by Brookfield (2000: 126) as learning that engages the person in “trying to identify assumptions they hold dear that are actually destroying their sense. Hence, Brookfield (2000: 142) emphasises that though transformative learning does require one to critically reflect, “it does not mean that transformative learning inevitably ensues”. In fact, according to Howe (1998), learning at all levels requires active mental processing of information, the making of meaningful connections between ideas, repetition, practice and memorization. Thus, effective learning involves both transforming and reproducing new material. Nevertheless, critical self-reflection is a vital phase of both formative assessment and transformative learning for it provides the opportunity to critique long held assumptions and worldviews, hold them up for examination and either reject or accept them. As Black and William (1998) pointed out, the student gains in learning triggered by formative assessment were among the largest ever reported for instructional innovations. Indeed, the gains “are larger than most of those found for educational intervention” (Black & William, 1998:141). A particularly impressive conclusion of the Black and William review is that the formative-assessment process is sufficiently robust so that it can be carried out by teachers in a variety of ways yet still lead to substantially improved learning for students. Thus, formative assessment could be seen as an important element to transform learning in the higher education.

Formative Assessment and Transformative Learning

Since transformative learning was first introduced by Jack Mezirow in 1978, the concept of transformative learning has been a topic of research and theory building in the field of adult education (Taylor, 1998). The concept of transformative learning has evolved "into a comprehensive and complex description of how learners construe, validate, and reformulate the meaning of their experience" (Cranton, 1994: 22). In fact, centrality of experience, critical reflection, and rational discourse are three common themes in Mezirow's theory (Taylor, 1998). Centrality of experience is the starting point. People's assumptions are generally constructed by their interpretation of experience (Mezirow, 1991). Critical reflection attempts to deconstruct the learner's prior assumptions such as beliefs, value systems, attitudes, and social emotion in a rational way. According to Burbules and Berk (1999), critical thinking is best suited for recognizing faulty arguments, assumptions lacking evidence, and obscure concepts. However, rational discourse is a catalyst for transformation, as it induced the various participants to explore the depth and meaning of their various world-views, and articulate those ideas to their instructor and classmates (Mezirow, 1991).

In this highly competitive information and communication technology era, all individuals should become active learners, learning how to learn and learn to make our own interpretations rather than act on the beliefs and judgments of others. Transformative learning according to Mezirow (1997: 5) will develop such autonomous thinking which is both crucial and critical for knowledge workers to survive. For learners to change their "meaning

schemes (specific beliefs, attitudes, and emotional reactions)", they must engage in critical reflection on their experiences, which in turn leads to a perspective transformation (Mezirow, 1991: 167).

Basically, transformative learning is the kind of learning we do as we make meaning of our lives. It goes along well with formative assessment methods. Upon pooling the information on the estimated effects of improved formative assessment on summative test scores, Black and William (1998) reported unprecedented positive effects on student achievement. With the implementation of formative assessment, teachers inspire as well as instruct, it will help to shift the focus from teaching to learning. Furthermore, students are encouraged to construct knowledge; they do not take it as it is disseminated, but rather they build on knowledge they have gained previously (Cross, 1998). Not only that, students benefit from working together in the group work, and they may learn best from each other (Annis, 1983). Black and William (1998) also identified that "improved formative assessment helps low achievers more than other students and so reduces the range of achievement while raising achievement overall."

The implication of this newly emerged emphasis on formative assessment has a significant effect on what is taught and how it is taught. Hence, assessing authentic performances should become an integral part of the instructional cycle, and the feedback provided by the lecturer and peers should be formative in order to help students assess their strengths and weaknesses, identifying areas of needed growth and mobilizing current capacity. Not only does it enable students to develop and shape their own learning but it can also foster greater levels of self esteem and motivation. Therefore, it is believed that formative assessment practices can help create options for divergent learners and provide opportunities for applying practical, critical, original and even encourage the usage of higher order thinking skills.

In formative assessment, students are asked to utilize higher order thinking skills, and to develop reflective techniques by realizing the connection between assigned task and their individual lives. Research (Ewell, 1997) suggests that students learn best in the context of a compelling problem where they learn through experience (Cross, 1999). In such authentic learning environment, the role of the student has also changed as elaborate projects in authentic tasks push and encourage students to take an active role in their own learning. This formative assessment which demonstrates constructivist practices, assist students in reflecting upon the learning that has occurred in the classroom or gleaned from their textbooks. The many benefits of formative assessments display the fact that certain procedures and practices in higher education need to be initiated to move this agenda in the right direction. Highlights of these innovations are the establishment of a new model of formative assessment between student and lecturer, a networking from student to student, and an acknowledgement of students' insights and expertise.

In this new model that the study is putting forward, students are active learners engaging in a cooperative effort to achieve the defined outcomes. Hence, this transformative learning moves students beyond simply knowing, to being able to do (McTighe & Wiggins, 1999). Thus, this learning focuses on not only what students need to know but to be able to do. The emphasis is on using the knowledge to address problems in real-life contexts. As such, assessment becomes an integral tool to diagnose learners' abilities and progress toward achieving real-world abilities. It is the students, not the teachers, who are the ultimate arbitrators of the learning process and the learning experience.

RESEARCH METHOD

The success of any assessment depends on the effective selection and use of appropriate procedures as well as on the proper interpretation of students' performance. Appropriate assessment procedures will help in evaluating the suitability and effectiveness of the curriculum, teaching methodology, and instructional materials. This study investigated the impact of formative assessment on transformative learning in higher education from the perspectives of undergraduates, postgraduates and lecturers. A total of 42 undergraduates, 27 postgraduates and 30 lecturers at a Faculty of Education in a public university in Malaysia were involved in the study. Both quantitative and qualitative research methods were adopted. Two sets of questionnaires using a 4 point Likert-scale were developed by the researchers. The first set of the questionnaire was for both undergraduate and postgraduate students, whilst the second set which had similar questions were rephrased for the faculty lecturers. Both closed-ended and open-ended questions were listed in the questionnaire to gauge students' and lecturers' perceptions towards formative assessment and transformative learning in higher education. In order to gain a better insight into the assessment practices in higher education, closed-ended and open-ended questions were also used to interview three undergraduates, three postgraduates and three lecturers from the group. To formulate a conceptual model of self-regulated formative assessment towards transformative learning, the researchers sought to investigate the following two important aspects:

1. What is the impact of formative assessment on transformative learning in higher education?
2. What kinds of assessment activities that enhance transformative learning in higher education in Malaysia?

RESULTS AND DISCUSSIONS

The Impact of Formative Assessment on Transformative Learning in Higher Education

In educational contexts, understanding the student's learning must take into account of the student's construction of meaning and reality. Reality as experienced by the student has an important additional value. This assumption also applies to a student's perception of evaluation and assessment. In fact, students' learning behaviour is not only determined by the examination or assessment modes that are used, but students' perceptions about the assessment methods which also play a significant role. Struyven, Dochy and Janssens (2005) indicated that students' perceptions about assessment significantly influence their approaches to learning and studying. Conversely, students' approaches to study influence the ways in which they perceive evaluation and assessment. In general, Struyven, Dochy and Janssens (2005)'s findings suggest that students hold strong views about formative assessment towards transformative learning in higher education. Similar results were also identified in this study.

Table 1 One-way ANOVA analysis of the impact of formative assessment

Impact of Formative Assessment	Groups	Mean	SD	df	F	Sig
Provides opportunities for applying practical skills	Undergraduates	3.36	.59	2	13.032	.080
	Postgraduates	3.73	.87	92		
	Lecturers	3.60	.49	94		
Provides opportunities for applying higher order thinking skills	Undergraduates	3.15	.59	2	.355	.702
	Postgraduates	3.04	.84	91		
	Lecturers	3.20	.76	93		
Reinforces centrality of experience and rational discourse	Undergraduates	3.12	.45	2	2.375	.099
	Postgraduates	3.04	.74	88		
	Lecturers	3.22	.64	90		
Enhances critical self- reflection skills among students	Undergraduates	3.26	.55	2	3.457	.063
	Postgraduates	3.69	.68	90		
	Lecturers	3.40	.68	92		
Fosters learning how to learn and learn to make our own interpretations	Undergraduates	3.23	.67	2	.496	.611
	Postgraduates	3.08	.64	91		
	Lecturers	3.10	.71	93		
Trains students to see the connection between assigned task and their individual lives	Undergraduates	3.08	.63	2	1.250	.291
	Postgraduates	3.48	.69	90		
	Lecturers	3.10	.71	92		
Provides authentic, relevant tasks with potential to encourage collaborative and reflective learning	Undergraduates	3.20	.52	2	1.816	.168
	Postgraduates	3.00	.59	91		
	Lecturers	3.30	.65	93		
Demonstrates constructivist practices that assist students in reflecting upon the learning	Undergraduates	3.10	.55	2	3.954	.062
	Postgraduates	3.29	.73	89		
	Lecturers	3.40	.68	91		
Facilitates the development of self- assessment in learning	Undergraduates	3.25	.49	2	2.172	.120
	Postgraduates	3.15	.67	90		
	Lecturers	3.09	.49	92		
Encourages teacher and peer dialogue around learning	Undergraduates	3.28	.66	2	5.863	.064
	Postgraduates	3.10	.83	91		
	Lecturers	3.05	.51	93		

Scale: 1=strong disagree, 2=disagree, 3=agree, 4=strongly agree

As depicted in Table 1, one-way between-groups analysis of variance was conducted to explore lecturers' and students' perception on the impact of formative assessment on transformative learning in higher education. The results in Table 1 show that the mean values among the three groups for each of the items relating to the impact of formative assessment on transformative learning were found to be very similar. In terms of the average scores the impact of formative assessment on transformative learning, all the mean scores obtained indicate a high level of agreement irrespective of the academic qualification of the respondents. The F statistics in Table 1 provides further evidence that undergraduates, postgraduates and lecturers share similar sentiments and agree with the positive impact of formative assessment on transformative learning in higher education ($p > .05$).

During the interview, respondents were asked their opinions on formative assessments and transformative learning. They were also requested to list the kinds of assessment activities conducted in their respective courses. They were also expected to highlight which assessment activity they felt was the most appropriate to facilitate transformative learning.

Interview sessions with respondents highlighted that there were a variety of assessment activities that promote transformative learning. Responses from the undergraduates revealed that these kinds of learning consisted of giving presentations, preparing portfolios, conducting case studies, taking quizzes, writing project papers, doing article reviews and group discussions. On the other hand, responses from postgraduate students highlighted formative assessment processes were observed during discussions, project work, reflective and self learning. However, lecturers highlighted the use of formative performance-based assessments and emphasized on project work such as the writing of proposals and getting students to do presentations.

Moving a step further respondents highlighted assessment methods which in their opinion were most appropriate to facilitate transformative learning in higher education. Both postgraduates and lecturers stressed that formative assessments such as project work was deemed suitable for transformative learning as it constantly required students to monitor progress and self-regulate their on-going learning whilst accomplishing the task. The undergraduate students were rather divided. Even though a majority favoured formative assessment, there was some contention as to the different composition of formative and summative assessments that should be adopted in their assessment in higher education.

Based on data obtained from interviews, a large majority agreed to the many benefits of formative assessment and transformative learning. Most of the undergraduates and post graduates favoured formative assessment that led to transformative learning due to the frequent and on-going constructive feedback they obtained from their lecturers. A post graduate highlighted that formative assessment activities encouraged "critical reflection and allowed me [her] to work at her own pace and ability." An undergraduate further added that formative assessment helped her make connections between theory and practice "as I [she] can see what we learn in class applied at the work place – especially when I went to teach in school the classroom activities and assessments become more meaningful ." A lecturer further added that "formative assessment activities take students' life experiences as their starting point and encourage critical reflection and rational discourse when they are working in groups or on their own." This he emphasized can be viewed as a starting point for transformational learning.

With so many benefits postulated by formative assessment procedures relating to transformative learning, the question that still arises is as to why its practice is not as widespread as it should be. There are several answers to this question, which been listed by the Assessment Reform Group (see www.assessment-reform-group.org.uk) cited in Harlen and Winter (2004). The main inhibiting factors were seen as residing in:

- Assessment practices that give more attention to grading and assigning learners to 'levels' rather than giving feedback about how work could be improved;
- The lack of awareness of teachers/lecturers of students' learning needs; and
- The high stakes attached to national test results, which encourage teachers to focus on the content of the tests and practicing test-taking.

Besides that, Black and William (1998) also point out that there is a need for the general principles of quality formative classroom assessment to be translated into practice for teachers to promote transformative learning:

What they need is a variety of living examples of implementation, by teachers with whom they can both derive conviction and confidence that they can do better, and see concrete examples of what doing better means in practice (Black and William, 1998: 16).

Conceptual Model of Self-Regulated Formative Assessment Towards Transformative Learning

Based on the survey and interview data collected, a conceptual model of self-regulated formative assessment model inspired by Nicol and Dick (2006) was formulated to promote transformative learning in higher education. This is illustrated in Figure 1.

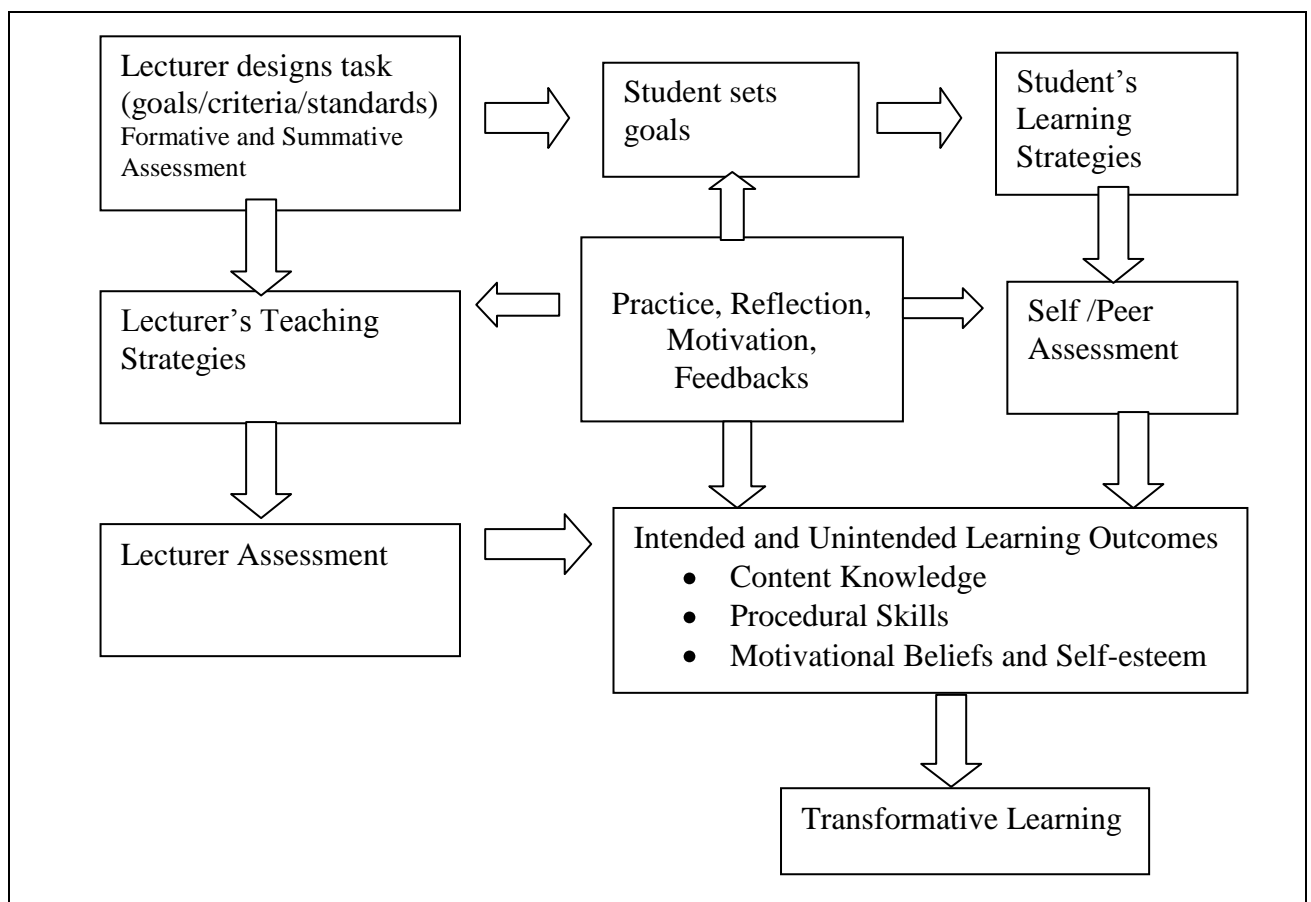
Pintrich and Zusho (2002) relate transformative learning as “an active constructive process whereby the learners set goals for their learning and monitor, regulate and control their cognition, motivation and behaviour, guided and constrained by their goals and the contextual features of the environment” (p. 64). In the model presented, an academic task is set and designed by the lecturer. A formative assessment task is usually criterion-referenced and includes the goals, criteria and standards. More importantly the lecturer highlights the percentage of marks allocated for both formative and summative classroom assessments and all these were highlighted in the lecturer's instructional practices in the classroom or via online learning platforms.

Having to complete a task within a given time frame based on specified criteria initiates self-regulatory processes within students. As students engage themselves in the given assignment they need to rely on both their readings and learning strategies. More importantly it requires them to draw upon their prior knowledge and motivational and philosophical beliefs. It is only through critical reflection that they can begin to make meaning, negotiate and learn to construct a personal interpretation of the task and its requirements. It is on this premise of internal conception that students begin to formulate their own learning goals to accomplish the assessment task/assignment. These goals set out by students would help shape the students' learning strategies that they are going to use to accomplish the learning task to generate the required outcomes.

According to Nicol and Macfarlane-Dick (2006), the outcomes can be both internally and externally observable. The internal changes could be either cognitive or affective such as increased understanding or changes in self-perceptions of one's ability whilst the external observable outcomes could be the tangible products required by the assessment procedure (e.g. term paper or creative project) or some form of student behaviour (e.g. student presentation).

While working on the task students will be actively involved in constructing their own knowledge and monitoring the interactions with the task which may generate both internal and external feedback. Internal feedback would encompass self assessment whilst external

feedback would include both lecturer assessment and peer assessments. Feedback received from all these quarters will help bring about new meaning and perhaps result in changes at a variety of levels such as cognitive, motivational and behavioural. For instance, self-generated feedback as a result of self-assessment and critical reflection might culminate in the students revisiting his/her learning strategies or the re-interpretation of the assessment task. Such a move may result in more self-regulatory measures been taken by the student to accomplish the task. The continuous feedback and self-regulatory measures taken by the students would result in the accomplishment of both intended and unintended learning outcomes such as increased content knowledge and procedural skills. Such self-regulation may also result in the students having to revisit their motivational beliefs. If students successfully accomplish the assessment task it may be a boost to their self-confidence and self-esteem.



Inspired by: Nicol and Dick (2006)

Figure 1 Conceptual model of self-regulated formative assessment towards transformative learning

While working on the formative assessment task and receiving continuous feedback from peers, lecturers and self, students will be actively involved in a variety of forms of transformative learning such as Learning-How-To-Learn, collaborative learning, reflective learning encouraging self-reflection and finally putting them on the path to become autonomous life long learners. According to Nicol and Dick (2006), good quality external feedback is information that helps students trouble-shoot their own performance and self-correct; that is, it helps students take action to reduce the discrepancy between their intentions and the resulting effects. Hence, students who actively self-monitor themselves through self-regulatory mechanisms during formative assessment tasks may be challenged

to be different and learn to think out of the box resulting in more creative outcomes leading to increased student achievement.

IMPLICATIONS AND CONCLUSION

This exploratory empirical study has been able to confirm several assumptions of the impact of formative assessment towards transformative learning that the researchers held prior to going into the field. The initial findings obtained from respondents in this study indicated positive impact of formative assessment, where learners are required to demonstrate their ability to reflect their learning with real life situations. A majority of the lecturers interviewed drew attention to the fact that university academia should provide more constructive and continuous feedback on student assignments.

For instance, a lecturer teaching at the post graduate level in the field of Educational Management highlighted that “though many of us are aware of the importance of constructive and continuous feedback, not many are able to do that due to increased workload and increasing student enrolment in post graduate studies.” A number of the undergraduates suggested that there should be more consultation sessions with lecturers. Some students recommended at least 3-4 meetings per semester instead of the current 1 to 2 meetings per semester. Increased consultation with lecturers was also echoed by post graduate students. A post graduate TESL student emphasized that “we all would appreciate if our lecturers can provide us more consultation time so that we can improve our assignment”. Another echoed that “the lecturers are very busy people and sometime the time and feedback provided is too little for us to do our best.” They felt that increased interactive sessions with many small assignments ought to be held between lecturers and students. A TESL postgraduate student emphasized that every time she met her supervisor she ‘saw new light’ as it challenged her initial beliefs especially in writing a literature review (she highlighted she did not know that the author’s voice could be included in a literature review) and this motivated her to challenge herself to push herself forward on her own learning curve.

Last but not least, four out of five lecturers interviewed stressed that formative assignments especially those that involved group work should concentrate on higher order thinking skills like getting students to analyze, synthesize, evaluate and apply information read. More importantly formative assessments should stress on authentic or real-world tasks that students may face in real life situations. Such student involvement would in the long run encourage the development of learner autonomy.

In conclusion it can be summed that the many benefits of formative assessments should be viewed as catalyst for transformative learning in higher education as such activities encourage students to explore the depth while negotiating meaning making of their personal and community world-views.

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