Addressing Diversity through “Innovative Teaching ‘SPARK’: Special Preparation and Resources Kit”

Faizah A Majid*
Faculty of Education, Universiti Teknologi MARA, 40100, Shah Alam, Selangor, Malaysia

Abstract

‘Diversity’ is a common scenario in any classroom that educators are confronted with the need to be innovative in their teaching. However, none of them address diversity through an informative-interactive way as how ‘Innovative Teaching ‘SPARK’ has been designed and developed. “Innovative Teaching ‘SPARK’: Special Preparation and Resources Kit” translates relevant theories and concepts into meaningful and practical approach. The strength of this paper lies on the fact that it explores the theories which underpin ‘innovative teaching’ and adds the conceptualization of relevant theories which support the content development of ‘Innovative Teaching SPARK’.

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1. Introduction

‘Diversity’ is a common scenario in any classroom that educators are confronted with the need to be innovative in their teaching. However, many educators are still grasping with the idea of ‘Innovative Teaching’, let alone practising and assessing their own ‘Innovative Teaching’ practices. Innovative Teaching ‘SPARK’ was created with a noble idea of enlightening the educators in the simplest approach possible yet meaningful to accommodate the relevant knowledge and skills in practising ‘Innovative Teaching’ while addressing diversity in the classroom. ‘SPARK’ stands for ‘Special Preparation and Resources Kit’ which comes with a) an electronic inventory and descriptors/interpretation, b) an information booklet and c) an informative-interactive board game. Briefly, Innovative Teaching ‘SPARK’ was developed based on Self-directed Learning (SDL), Critical and Creative Thinking Skills (CCTS) and Action Research (AR) theories. The inter-relatedness of the three main theories complete the conceptual framework of the product. The relevant information and skills as well as the practical suggestions introduced in Innovative Teaching ‘SPARK’ were translated from the theories. They are then presented in a simple yet engaging presentation via the inventory, its descriptors/interpretation, information booklet, and informative-interactive board game which act as the ‘SPARK’ that could initiate ‘Innovative Teaching’ by any educators regardless of discipline and programme.

* Corresponding author: Tel: +601 6238 4774; Fax: +603 8921 6266
E-mail address: faiza404@salam.uitm.edu.my
The product tries to narrow the gap that exists between what is aspired by the government through Vision 2020, Tenth Malaysian Plan, The Ministry of Education’s Teacher Professionalism agenda, and the National Higher Education Action Plan and what is the actual scenario in most Malaysian classrooms. Recently, one of the Malaysian public universities’ Vice Chancellor has addressed his concern over the deteriorating quality of teaching while the Chairman of the university’s Board of Directors, has expressed the poor performance of graduates in Malaysia (source: personal communication with Dato’ Prof Ir. Dr Sahol Hamid Abu Bakar and Tan Sri Dato’ Dr Wan Zahid Mohd Noordin). These concerns have brought to light the idea of innovation in diverse classrooms. Similar concern was translated in the Ministry Key Research Area (MKRA) and the national’s Critical Agenda Project (CAP). For example, there is urgency for ‘innovation’ to be in the academic culture (National Higher Education Action Plan). On a global note, demand for innovativeness in education has been loud and clear. Ewing Marion Kauffman Foundation (2007) claims that “…fuelling creativity, innovation and adaptability are the hallmarks of competitive, high-growth and emerging industries…” (cited in Faizah and Hazadiah, 2010, p. 57). This claim is further supported by Porter, Ketels and Delgado (2007) when they state, “...Advanced economies compete by producing innovative products and services at the global technology frontier using the most advanced methods” (cited in Faizah and Hazadiah, 2010, p. 56). Hence, to maximize the practice of innovation in education, ‘Innovative Teaching SPARK’ was produced. The novelty of the product is transparent through its main aim which is to enlighten the educators on the concepts of ‘Innovative teaching’ in addressing diversity in the classroom. The added value of the product is seen through the following:

- It was market-tested and the testimonies are evident of the relevance and usability of the product
- It was developed based on sound literature and research
- It is user-friendly with simple language complemented with relevant illustrations, and interactive
- It comes in three (3) separate yet related items; electronic inventory, information booklet, and informative-interactive board game
- It caters for the needs of any trainers, teachers, and lecturers regardless of discipline and programme

The following is the discussion on the theories and the conceptualization of “Innovative Teaching ‘SPARK’: Special Preparation and Resources Kit” which is the first phase of the design-based research employed in preparing the product.

1.1 Self-directed learning (SDL)

Different educationists have different perspectives on SDL. Merriam, Caffarella and Baumbartner (2007) see it as a process while Knowles (1988) perceives it as personal attributes. SDL as described by Garrison (1997) is an approach where learners are “motivated to assume personal responsibility and collaborative control of the cognitive and contextual process in constructing meaningful and worthwhile learning outcomes” (p. 18). Additionally, Knowles (1975) has defined SDL as “a process in which learners take the initiative, with or without the help of others, in identifying their learning needs, formulating learning goals, choosing learning resources, employing suitable learning strategies, and assessing learning outcomes” (p. 197 in Chang, 2007).

Turner (2007) provides further descriptions of SDL when he claims that several facts are true of self-directed learners and their learning process. First, individual learners can become empowered to be more responsible of his learning endeavour. Second, self-direction is seen as a continuum or characteristic that exists in everyone and learning situation. Finally, Self-direction does not necessarily mean learning alone. Norzaini (2006, pp.159-160) who quotes Knowles (1975) offers the following explanations.

1. “Those who are able to take the initiative for their learning, learn more purposefully and with greater motivation. They can increase learning productivity and often retain learning for longer periods of time.
2. As an essential part of maturing is taking increased responsibility for our own lives, it becomes evident that self-directed learning is more in tune with the natural progression of our psychological and cognitive development.
3. As new developments in education (student-centred and independent study, project work) become commonplace, learners are required to take a greater share of the initiative for their learning.
4. Our world is changing at an ever increasing rate. Change is becoming our only stability. It is no longer realistic to envision the sole purpose of education as transmitting what is known. Unless we are able to take the initiative for our learning, we will be unable to keep up with the changes around us”.

The points elaborated in item 4, “...Change is becoming our only stability...” and “...Unless we are able to take the initiative for our learning, we will be unable to keep up with the changes around us” (ibid.) led the author into initiating the product, “Innovative teaching SPARK”. Additionally, the author was also intrigued by another pertinent
point about SDL as postulated by Knowles (1975) who claims, “...those who are able to take the initiative for their learning, learn more purposefully and with greater motivation...They can increase learning productivity and often retain learning for longer periods of time”. In particular, the basis for the development of the product’s content was guided by the principles put forth by Knowles. Thus, the product capitalizes on self-discovery learning and intrinsic motivation of educators in addressing diversity through innovative teaching. Specifically, this principle could be seen translated in the informative-interactive board game. Additionally, the principles in SDL which could be summarized as the need to be able to access information, apply the information, and assess own progress and performance further guided the development of the product’s content. The content of the inventory centred on the three capabilities which are accessing, applying, and assessing. This concept is evident in the electronic inventory in which all the items were built and organized according to the three capabilities. The board game also highlights these abilities in the structure and format of the game.

1.2 Creative and Critical Thinking Skills (CCTS)

There is no single definition that could best describe ‘creative thinking’ (Chua, 2004). According to Razik (1966, p. 160),

Creative thinking involves the ability to produce original ideas,
to perceive new and unsuspected relationships, or to establish
a unique and improved order among seemingly unrelated factors.
Creative thinking does not involve just one kind of behaviour.
It operates in various fields of human endeavour. It is potential
that all people have, but to different degrees.

In short, creative thinking is best understood by understanding the process one undergoes in order to get ideas which are original, and unique. It is also obvious from the descriptions of creative thinking that its aim is to stimulate curiosity and promote divergence. It is also interesting to note that several personal attributes are associated with ‘creative thinking’ as postulated by Rhodes (1961), Gowen (1972), Taylor (1976), Davis (1983), and Starko (1995). According to them, a creative person is someone who is; imaginative, curious, open, objective, flexible, sensitive to sensory stimulation, humorous, confident, and willing to try something new to name a few. Nonetheless, according to Starko (1995) and Chuah (2004), creative thinking is quite likely to be more than the listed characteristics put together.

On the other hand, ‘critical thinking’, according to Chua (2004, p. 66) who quotes Beyer (1995), is “making reasoned judgements”. He further elaborates that critical thinking is thinking in a manner to evaluate before any judgment on the validity of the issue is confirmed. Scriven and Paul (1996) concur with Beyer when they conclude that critical thinking is a process of conceptualizing, applying, analysing, synthesizing, and evaluating information which may be pooled from a variety of sources and means such as observations, reflections, reasoning, and communication. At this juncture, it is worth to note that all of the listed processes are identified as the higher order thinking skills (H.O.T.S) in Bloom’s Taxonomy (Bloom and Krathwohl, 1956). Silverman and Smith (2002) further claim that critical thinking is thinking which is “purposeful, reasoned, and goal directed” (cited in Chua, 2004, p. 66). They also confirm that critical thinking is “the ability to analyse carefully and logically information and ideas from multiple perspectives” (ibid.) as proposed by Scriven and Paul (1995). It is quite obvious that critical thinking involves logical thinking and reasoning. In order to accomplish this, skills such as comparison, classification, sequencing, cause-effect, patterning, analogies, deductive-inductive reasoning, forecasting, planning, hypothesizing, and critiquing are important (Copeland, 2005).

The product has translated CCTS theories through relevant items in the electronic inventory. Likewise, the theories are also evidently captured in the informative-interactive board game. This was done through the challenges players need to face and strategies they need to think of in completing the game. In addition, the board game provides situations which inductively guide players of the dos and don’ts in practising innovative teaching in diverse classrooms. The format and structure of the game which are based on these theories have enabled the game to be both informative and interactive. The board game is rich with theory application making it informative while at the same time it requires feedback and action from the players, making it interactive even when it is played alone.
1.3 Action Research (AR)

According to Arhar, Holly and Kasten (2001, p.33), action research (AR) is a process of “theorizing and testing our own, as well as other people’s ideas and theories in practice”. Burns (1999) further states that the main concern of an action research is the immediate concrete and practical issues of the practitioner. This in turn has given rise to its other name which is ‘practitioner-led research’. Dong (2005) who quoted Richards, Platt and Platt (1992) has defined action research as “…teacher-initiated classroom research which seeks to increase the teacher’s understanding of classroom teaching and learning and to bring about improvements in classroom practices…” (p. 40). In their paper on an action research, Halim, Buang and Meerah (2010) claim, “…Action research also known as ‘teacher-research’ is a form of research that aims to improve practice and consequently students’ learning” (p. 2869). To this end, it could be summarized that action research is done by the practitioner on himself or his class in his attempt to improve his practice.

Additionally, Carr and Kemmis (1986, p 162 cited in Burns, 1999, p. 30) have defined action research as;

…simply a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices and the situations in which the practices are carried out.”

Besides confirming the other definitions, Carr and Kemmis have suggested an important principle in action research; ‘self-reflective’. The word ‘reflection’ is derived from a Latin word, “reflectere” which means ‘to bend back’. In the teaching context, reflective refers to an activity or a process in which an experience is recalled, considered, and evaluated in the attempt to improve one’s teaching (Richards, 2005). Extending this notion, Valli as cited in Burke (2006) claims that reflective teaching describes a teacher who thinks back on what he sees or hears, thus becoming a purposeful thinker. In his effort to clarify reflective teaching, Schulman (1987) states that reflective teaching involves looking at the teaching and learning process that has occurred and then reconstructing, re-enacting, or recapturing the events, emotions, and accomplishments of that teaching episode. It is through these processes that teachers may learn from experience and go through a ‘reflective cycle’ whereby their formal education and practical skills positively collide which in turn generate personal changes for the betterment of their teaching (Richards, 2005).

Reflective thinking is reflected in action research through the necessary steps in an action research process. The steps in conducting Action Research are; Reflection, Planning, Action, and Observation (Kemmis and McTaggart, 1988 in Burns, 1999). All the four steps form a spiral or a circle indicating a developmental progress of one step leading to the other in the attempt of the teacher trying to combine theories with practice and filling up the gap between teaching and researching. At this juncture, the conceptualization of Self-directed learning (SDL) and Critical and Creative Thinking Skills (CCTS) become relevant. Firstly, conducting an action research normally begins with self-motivation. The practitioner is aware that something needs improvement resulting in him seeking for the relevant information. In his attempt, he would apply what knowledge and new information he has while at the same time self-assessing his progress. Clearly, this is related to SDL. Moreover, literature on self-reflective emphasize on critical and creative thinking. It is through these modes of thinking does the practitioner-cum-learner self-reflect. In this instance, the relationship between CCTS and action research is obvious.

Innovative Teaching ‘SPARK’ captured these relationships through the items in the inventory and the structure and format of the board game. Briefly, the players are required to apply their CCTS as they complete the inventory which taps on their SDL ability. Besides the items in the inventory, the board game also capitalizes CCTS and SDL theory application. This was materialized as the players are exposed to the application of the respective theories throughout the game through the challenges, strategies and the dos and don’ts of innovative teaching in diverse classrooms.

2. ‘Innovative Teaching ‘SPARK’; Special Preparation and Resources Kit”

The product, “Innovative Teaching ‘SPARK’; Special Preparation and Resources Kit” comes with three separate yet related items namely the electronic inventory, information booklet, and board game. The availability of the three items in the kit provides its uniqueness. Users could gauge their level of innovative teaching ability through the self-explanatory electronic inventory. The descriptor/interpretation which comes along with the inventory details the learning points from the inventory. Later, the users could also be enlightened by the information booklet before
playing the informative-interactive game which brings them through an ‘innovative teaching journey’. At the end of
the game, players could pick up relevant strategies and practical suggestions for innovative teaching. The following
is a brief description of each item in the product.

A) SET OF ELECTRONIC INVENTORY
The inventory enlightens the users on the innovative teaching concepts by introducing the required preparation
needed. The preparation covers the awareness, application, and assessment categories. Additionally, the set of
inventory provides the users with relevant items under each category which could gauge their level. The items are
categorized according to the three abilities of SDL which are relevant with innovative teaching namely; awareness
(10 items), application (20 items), and assessment (10 items). Each item comes with three options for the users to
choose from. Each of the option has its own point; 1 point, 2 or 3 points. The points are accumulated at the end of
each level. An interpretation of the score range is provided detailing whether the users have a low, medium or high
level of awareness, application, and assessment.

B) INFORMATION BOOKLET
The information booklet summarizes the theories underpinning the product and provides relevant illustrations
which enable a quick reference. The theories cover SDL, CCTS, and AR. It is expected that the booklet could
prepare the users in attempting the inventory and playing the board game.

C) BOARD GAME
The board game was developed based on the concepts introduced in the inventory and booklet. As users play the
game, they are required to tap on their awareness, application, and assessment of innovative teaching. The
challenges faced and strategies employed while playing the game provide a simulation to the users’ own innovative
teaching. As the board game is meant to be informative and interactive, it could also be played alone. Additionally,
as the game is not necessarily competitive in nature, winning is secondary to being enlightened.

3. Methodology, Formative evaluation and Findings
In developing “Innovative teaching ‘SPARK’: Special Preparation and Resources Kit”, the researcher adopted
design-based research approach. This approach integrates both theoretical orientation and pragmatic goals relevant
to practitioners (Anderson, 2004). Additionally, the approach allows a variety of research methods such as literature
review, interviews and evaluation resulting in the product development process seen as an integrated part of the
research. There are three main phases in the design-based approach. The first phase involves the literature review
and study of relevant past research. This will serve as the preliminary work of the research since it will identify the
suitable design principles for the proposed product and content. Literature on the SDL, CCTS, and AR served as the
foundation to the concept of the product. The second phase includes the developmental stage. Based on the
identified design principles and content from the first phase, the proposed product was developed as a prototype.
Expert assistance from the designer was sought at this stage. In particular, the assistance was given on the design
and format of the product. Finally, the third stage involved formative evaluation since a continuous improvement
was required during the developmental stage of the product. A total of twenty educators from various programmes
participated as the respondents. They were involved in try-outs and interview sessions. The feedback gathered from
them was fed into the development process of the product for necessary improvements of the prototype. Validity of
the product development process was ensured through expert and peer reviews of the literature review, development
and evaluation. Issues of generalizability and representativeness were dealt with through extensive literature review
and “thick, rich descriptions” (Lincoln and Guba, 1995) of the content and design. Reliability of the research was
enhanced through extensive reporting on the methodology, process of data collection, and findings.
User-trials were conducted during the preview of the prototype on the 17th of August 2010. Each of the
respondents tried the product for the first time separately. The respondents had a chance to try the electronic
inventory, read the booklet, and play the board game. Interestingly, as the board game is informative rather than
competitive in nature, it could be played alone. Once completed, the respondents were invited to fill in the prepared
feedback form. A semi-structured interview followed. Their feedback and responses from the interview were
analyzed thematically. It is worth to note that the validity of the product development process was already ensured
by the appointed experts and peer reviews. Hence, the user-trials were specifically conducted to get feedback on the
content, format and structure of the three items of the product. In relating the content, format and structure of the
product with its objective which is addressing diversity in classroom through enlightening educators on the concepts.
of innovative teaching, the analysis of the findings were guided by the relevant categories. The following are discussions on the findings of the user-trials.

The categories that follow guided the analysis; questioning and reasoning, adapting to change, methods in collecting relevant information and feedback, continuous professional development, and self-regulation. The three main theories that form the conceptual framework of the product; SDL, CCTS, and AR were translated into practical suggestions and hands-on activities based on the categories. Hence, in analyzing the feedback and responses given by the respondents in the feedback form and semi-structured interview sessions, similar categories were referred to. Generally, the respondents who tried the product claim that it has a great potential in increasing their awareness of the innovative teaching concepts. Additionally, the product tested their ability to apply relevant theories which reflect their innovative teaching. The product also has prompted them to consider their self-assessment on their innovative teaching practice.

Electronic inventory: Most of the respondents stated that the language used is simple and the items were written clearly. The options provided are relevant as they are common to the respondents. The strength of the inventory is actually its descriptor/interpretation. The respondents claim that while they had fun completing the inventory and were informed of their level of awareness, application, and assessment, it is the descriptor/interpretation of each item and their score range that enlighten them the most. They were able to understand why a certain option is the best option and why the other is the worst in addressing diversity in the classroom through practicing innovative teaching. The interpretation of their score range further enlightens them on what they needed to do in order to improve. Nonetheless, there are some comments made on the improvement of the inventory. There are some respondents who suggested that the inventory to be dual-language. This suggestion was made based on the consideration for educators who may not be as proficient in English. In order for the product to reach a greater audience, dual-language is an option worth considering.

Information booklet: The respondents agree that the booklet is helpful to them. Relevant definitions and examples provided enabled for a quick review of the innovative teaching concepts for classroom diversity. The obvious value of the booklet is the fact that the explanation of the concepts was concise and made simple through practical examples. However, some respondents claim that several aspects need consideration for the booklet to be more effective. First, they thought that it could also be written in Malay. According to the respondents, some educators who lack the proficiency in English language may find it difficult to grasp the concepts especially when they were summarized in English. Reading summaries in English requires skills which are specific to English language proficiency. Additionally, there were concerns on the diagrams used in the booklet. Some respondents suggested the diagrams to be original and not taken from the internet. According to them, this could avoid any related ethical issues regarding copyrights.

Board game: All of the respondents seem to like the board game the most as it resembles ‘Monopoly’. However, unlike ‘Monopoly’ which objective is to be the richest player in the game, this board game’s objective is to enlighten the players with the innovative teaching concepts through simulations and practical situations. The simulations include challenges and strategies on innovative teaching while the situations include the day-to-day activities of an innovative educator in addressing diversity in the classroom. The respondents’ comments include the informativeness and interactiveness of the game. Unlike other board games, the one developed for the product encourages enlightenment more than competition. Better still, as claimed by the respondents who played the game, players could play the game individually and still be able to enjoy the game. This is due to the fact that the game is interactive. There are interaction between the game and the player through the simulations and situations provided in the boxes on the board and the coloured cards which the player has to pick when required. The different colours used in the design of the game were also found to be one of the game’s strengths. Likewise, there are suggestions on how to make the board game more effective. Some respondents agreed that the game could also be in Malay. Similar reasons as given on the booklet and inventory were used. The other suggestion is to make the board game appear ‘original’ by making use of researcher’s own pictures and diagrams. The quality of the board material and the printing of the cards could also be improved.

4. Conclusion

In conclusion, developing “Innovative teaching ‘SPARK’: Special Preparation and Resources Kit” had gone through a tedious process as required in a design-based research approach. The validity of the developmental
process was conducted through expert and peer reviews of the literature review, development and evaluation. The feedback from the user-trials complements the validity of the product in addressing diversity through enhancing the user’s knowledge and skills in practicing innovative teaching. Generally, the respondents like the product and the product was able to achieve its main objective which is to enlighten the users on the innovative concepts. All the three separated yet related items included in the product provided a variety in achieving its objective. In attempting to address diversity in the classroom, educators are encouraged to practice innovative teaching. The product, “Innovative Teaching ‘SPARK’: Special Preparation and Resources Kit” is an evident of an effort towards encouraging educators to practice innovative teaching. The content and design of the product highlight practical suggestions and hands-on activities of any innovative educators in their attempt to address classroom diversity.

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