ACTION RESEARCH AND INNOVATION WITH DISABLED STUDENT IN UNIVERSITY

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Abstract

The literature indicates that participation, and participatory action research in particular, has the potential to explore physical disabled student in university. This study draws on the experiences of participation in this process, both from the perspective of the participants (counseling lecturers, physical disabled counseling student and three peers). The main objective of this action research was to assist disabled student to overcome his difficulties when using the walker. Qualitative data collection based on personal reflection of physical disabled student to explore the need and inspiration was used. Group discussion and reflection were also used and thematic analyses at different levels were planned to organize the intervention. Personal reflection of disabled student tried to identify critical issue and his inspiration to be more self-reliance using multi-functional walker for him to move around. The ongoing cyclical process in action research was employed in this study. The most challenging experience was how to help the disabled student's dream to have his walker with multi-functioning aids. The first challenge was to find technical skill people who were willing to help in making it a reality. The first stage of the innovation began by fixing the foldable seat using one pipe and school children's belt for the user to sit. The recycle modified walker was named as "I-OK Innovation". I-OK Innovation group participated in innovation competition at university level and had won third prize. The university Research and Innovation Center had chosen this product to compete in National Research Innovation Competition organized by other university which was at international level. The second stage of the action research challenge was to fix the wheel for the user to be more mobile, self-reliance and guaranteed safety. I-OK won Special Jury Award for Disabled Student and inspired the group to find research fund for future action research. Implication and limitation of this research were discussed.

 Keywords: action research, innovation, disabled student, reflection

Introduction

The Malaysian Ministry of Education announced that 67,388 students were offered by government universities and only 56 special needs student were qualified and fortunate to be the first year university student in academic session 2014/2015 (Fauzi Mohd, 2014). Statistics of special need in Government University for 2012 were 816 students that are 10.1% from total of 8118. Haynes (2013) described that; lately disabled student is the "new" marginalized student on campuses of higher institution (Barber, 2012; Wolakin & Steele, 2004). The disabled are one group that social change deeply affects. This scenario indicated that educational system undergone process of transformation and brings opportunities for the disabled to play their roles of connectedness and hope as described by Mansbach-Kleinfeld, Sasson, Shvarts, and Grinspoon, (2007). However, there is little literature that speaks directly to the academic motivation and successes of the disabled student.

Unfortunately, the traditional research has marginalized disabled people and can be assumed as irrelevant and meaningless to them (Harriet Radermacher, 2006). According to Harriet Radermacher (2006), the literature indicates that while participation, and participatory action research in particular, has the potential to empower people with disabilities, it can also serve to disempower them. The social model of disability requires that research about disability should be controlled and managed by people with disabilities themselves.

The Australian government through educational system actively promotes and explores action research not only in education but also in other sectors. This statement supported by literature for example according to Purcal, Bevan, Cooper, Fisher, Meltzer, Wong and Meyer (2014), the Australian Government with assistance from a grant offered under the National Disability and Development Agenda, jointly implemented by disability representatives from Commonwealth, State and Territory governments funded the project of entitle self-directed disability support building people's capacity through peer support and action research. Pitt (2007) from Southern Cross University reported an action research in industry entitle Leading Innovation and Entrepreneurship: An Action Research Study in the Australian Red Meat Industry.

Harriet Radermacher (2006) used the term 'people with disabilities presents disability as a noun, suggesting that it is tangible, while the term 'disabled people' presents it as a verb, emphasizing that it is a process that occurs. She agreed with the justification for using the term 'disabled people', and chosen to conform to convention in Australia. Harriet Radermacher (2006) thesis with the topic, Participatory Action Research with People with Disabilities: Exploring experiences of participation. It is often assumed that "the impairment itself presents the greatest obstacle or source of distress. However, people with disabilities typically identify social barriers and negative attitudes as the greatest impediment to wellbeing (Prilleltensky, 2005; Radermacher, Sonn, Keys & Ducket, 2010). We can only assumed how difficult the disabled student cope with the social barriers and negative attitudes to struggle school and finally achieved academic qualification to qualify as university student. Furthermore, there are only few of them servile and success compare to normal people.

The opportunity of physical disabled student in university student should be consider grateful to lecture and counseling student because of giving them authentic experience dealing with this minority group. Caring and loving society in campus can be seen through the flexibility of academic staff, peer and administration department dealing with the special need of the disabled students. However, the challenge faced to explore problem of disabled student sometimes because of fear to sensitivity issues which might discourage them. Research fund to sponsor a case study of special need student is also another issue. Dilemma of failure to conduct action research involving disabled student becoming more challenging. Thus, the commitment of disabled and the peer themselves are crucial because social support is the main emotional support factor and extrinsic motivation toward success.

This research team considered lucky because the curriculum in counseling program trained counseling student to be open minded, empathy and non-judgmental with unconditional positive regard has positive effect in their friendship. Member of the course mates becoming sincere critical friend toward each other and treat them like sisters and brothers. The positive psychological environment created enabled them to explore opportunity to cooperate and collaborate in planning action research project even though it did not have any relation with their assignment in class.

The literature about the nature and importance of innovation appear to be important (Chandler, Keller & Lyon 2000, Pitt, 2007) and the effectiveness of innovation management contributed to sustainable competitive advantage. According to Lin (2001), the success in the twenty-first century can only come from competing through continuous corporate innovation. According to Van de Ven, Polley, Garud and Venkataraman (1999) innovation has been recognized as an extremely complex, highly unpredictable and chaotic scope of research. Thus, the researchers need determination and willing to challenge idea into action research and innovative process. The main objective of this action research was to assist disabled student to overcome his difficulties when using the walker.

Purpose and Research Questions

In the studies discussed earlier, the researchers explore the special need of physical disabled student which focused on the issues faced in using the walker.

The research questions which guided this study were:

1. What is the problem with the original walker to the disabled student?
2. Are the self-reflection journals exercises contribute to disabled student in becoming more open minded to share the dream of having a better walker?
3. Is the disabled student willing to cooperate and collaborate in the action research to enable the dream of having walker with multi-function?

Method

Participants

This research employed a purposive sampling technique (Patton, 2002). Three lecturer and one disabled student and three counseling students involved in this project. Identifying participants in this way ensured that the individuals most critical for addressing the research question were included in the study.

Procedure

This study employed qualitative action research which consisted of two discrete stages of data collection. These stages comprised personal reflection, an individual semi-structured and also team member interview.

The research study was conducted over a period 12 months and consisted of two major research cycles (at the macro level) with multiple 'cycles within cycles' (at the micro level of individual activities and interventions) embedded within the overall research design. Figure 1 illustrates the process of this research in two cycles or phases.

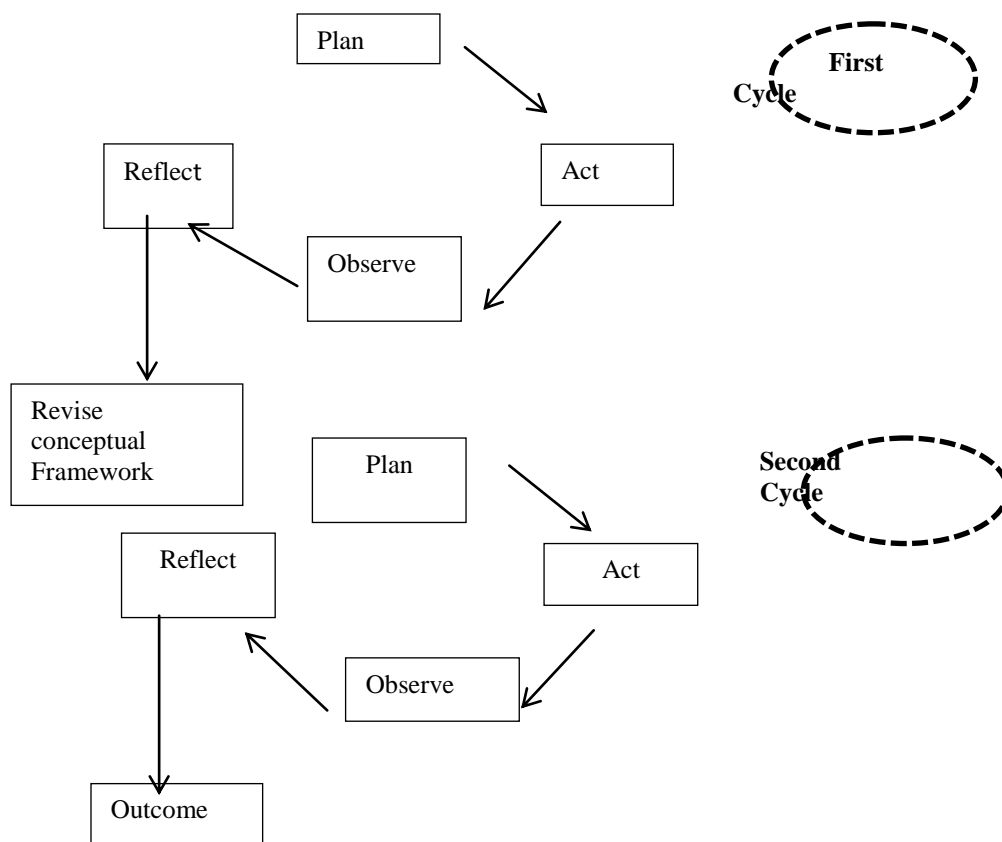*Cyclical Stages in Action Research*

Figure 1: Phases of action research

The conceptual framework was refined through reflection in the first phase and the planning for action in second phase. This reflects the often complex nature of action research which must remain flexible and adaptive to the realities of the research context (Pitt, 2007). For the purpose of promoting clarity in topic, the two stages of data collection are incorporated into the description of the seven research phases. Table 1 indicates at what point the stages of data collection occurred within the research phases.

Table 1
Mapping Seven Phases of the Research Process against Two Stages of Data Collection

Phases of research process	Stages of data collection	
Brief interview with disabled student the idea to explore possibility of doing action research	1	
Initial interviews with peer team member	2	
Organizing strategic planning days	3	1.Initial individual semi-structured interviews
Strategic planning days and developing the strategic action plan	4	
Implementation of action towards innovation	5	2. Follow-up individual semi-structured interviews
Observation the practicality	6	
Revise version for improvement	7	

Instrument

In qualitative and action research the researchers were considered as the main instrument (Yin, 1984). First stage of this study used personal reflections were collected from disabled student and group interview report. Several meeting and further adjustments were made as the interviews progressed. The aim of the interview was to elicit participants' views and the idea of the strategic planning process.

Data Analysis

"Data analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence, to address the initial propositions of a study" (Yin, 1984). The method of analysis in two inter-related parts: firstly, that which focuses primarily on personal reflection of disabled student and secondly, the group discussion data. Thirdly, data analysis focused from planning and action by observation followed by group reflection. The first cycle provided idea to revise conceptual framework for the second phase of action research.

As noted by Miles and Huberman (1994), data analysis in qualitative involves: selecting, condensing and transforming data; displaying these data in an organized way; and drawing conclusions from the condensed display. A systematic approach to analyzing data from qualitative interviewing as proposed by Rubin and Rubin (2005) was used in the first cycle or phase of this study for in as follows:

Step One: Recognition involving a breakdown of the data (from the detailed Personal reflection journal) into data units in order to identify themes, concepts, events and notable quotes.
Step Two: Data reviewed across group discussion to clarify and synthesize what is meant by specific concepts and themes.
Step Three: Elaborate and integrate themes and concepts in order to develop new ideas, identify connections and develop a holistic understanding.
Step Four: Develop codes (and brief labels) for each of the concepts, themes, and events (based on the initial conceptual framework; as suggested by the literature; and most importantly, as indicated by the data itself).
Step Five: Code the data by highlighting the data units.
Step Six: Progressively build up the main themes (and ultimately a revised conceptual framework) based on a detailed analysis of the coded data, progressive engagement with the relevant literature, and reflection by the research team.

The second step that was planning which appear in every phase of this study also recognized using of mind mapping (Buzan & Buzan 2000) as the tool to both analyze and display the data suggested by Pitt (2007). As noted in Buzan and Buzan, mind maps are ideally suited to academic endeavor as they assist the researcher to:

• Explore all possibilities idea for intervention
• Clear the mind of previous assumptions of and innovation
• Create new conceptual frameworks within which ideas can be organized
• Find new connections and association of ideas
• Identify patterns
• Develop and capture flashes of insight
• Manage large quantities of information
• Bridge the gap between thinking and writing
• Convert complexity into understanding and simplicity

The third step was observation to the implementation of ideas into practice which involve students' psychological progress and behaviors. This step involved cooperation and collaboration not only from the team member but also other expertise comment which lead to continuous reflection process. Thus, mind mapping as the tool to analyze data still relevance to apply.

Reliability and Validity

The research team aware of reliability and validity issues as stressed by Greenwood and Levin (2000) that reliability, credibility and validity in action research can be assessed by the positive attitude of local stakeholders to accept on the outcome of the action research. According to Pitt (2007), the fundamental key to achieving rigorous and validity in action research lies in the inclusion of dialectical processes which refer to the continues effort to assess the result.

The interpretations during and between action research cycle were essential in order to preserve the reliability and validity of the findings. Action researchers must ensure that their data and conclusions have strong support or evidence to encounter any effort to disprove them (Dick, 1997).

This way of looking at things from various angles is known as 'triangulation' in which suggested by other peoples opinion within a certain school community; different methods of data collection; different research team members. Systematic iterative triangulation methodologies have been identified by a number of researchers (Bourgeois, 1979; Weick, 1989) as providing superior processes for the development of higher quality theories.

In conclusion, triangulation process was adopted for this study according to ideas of Lewis (1998). Pitt (2007) also proposed the on-going active involvement and integrating outcomes progressively from an engagement with the literature as distinct from the more traditional approach of completing a detailed review at the beginning.

Finding

Reflection of Disabled student
Disable student daily reflection journal as an assignment in subject Technique and Counseling Process was the initial document used in this study. One of the self-reflection written:
> *"I am so grateful to Allah SWT and thankful to my family, teachers, friends and my lovely walker that make my dream come true to be one of a university student"*
>   (Disable student, daily reflection journal)

The reflection journal was very meaningful and touching that inspired the lecture as the team leader to explore more about the student life history. The level of empathy becoming the motivational factor to encourage the student to share what his really needs to be more self-reliance in campus. He mentioned:
"My walker is my best buddy, I wish I don't have to burden my friends because of my disability, I want to be more independent and self-reliance"
> (Disable student, daily reflection journal)

Assuming the statement as the intrinsic and extrinsic motivation factor that need to explore and starting point to plan for the action research.

Planning
The strategic planning was addressed to focus on the issue raise by the disabled student. The questions were: "How to help him to be more self-reliance?" "Who should be involve in the project" "Who will be the technical person that are willing to help?

Through the insights and with a view to exploring the nature of the barriers to participation, the implications of this study should also carefully discussed and plan. The first question was answered by the disabled student to share his dream of what can make him be self-reliable with the walker.
> *"I wish to have the walker with wheels to make me easier to walk"*
(Team member, initial interview)
> *"How we can make his dream come true"*
(Team member, discussion question)

Brain storming session with team members were discussed with the idea of modifying the original walker to be fixed with wheels. However, the constraint was to get technical person verify the possibility of fixing the wheel that can guarantee safety for the user. The idea was postponed and team member proposed the idea of fixing a seat to the walker for disabled student to sit and rest after a long walk.

Acting

Implementation of the innovation started from a simple idea and to act into practically with technical person as one of the most challenging barrier. The team approached a technician working with steel workshop in helping to fix the fordable seat to the walker. He was willing to modify the walker using pipe and screw to fixed as foldable seat. Strong strap using schools' children belt was used as base of the seat which can be easily rolled was fixed to the pipe.

Observation

Disabled student used the walker and members of the team observed to see whether any inconvenient, difficulties and most important was comment by the user. The team noticed that original handle hindered the user and did not function as a proper back rest.

Group reflection

Reflections process becoming more effective and the cohesiveness among group members were the most valuable experience that inspire them to proceed with the innovation project. The decision made to participate in student innovation competition at faculty proven and the recycle walker was named as "I-OK Innovation" and won second prize. The second innovation competition was at university level and won third prize in social science category.

The team became more motivated and every comment was considered for continuous improvement. Every member acted as "sincere critical friend" that enhance further discussion and commitment to proceed with the action research and innovation.

Discussion

The action research projects were clearly undertaken with a dual purpose: action to increase conscious awareness of disabled students to practice in writing reflection journal and team member to be more empathy with their disabled students. The role of team members to be a sincere critical friend and be open minded were proven to be the main factor that contributes to the success of the action research. The research contributes to hands-on activities and continuous constructive learning process and creates new insights. The research also has achieved a degree of success in both of trying to understand difficulties of disabled person and challenge the creative and critical thinking. The cyclical processes through reflective thinking contribute to continuous improvement in making the dream come true. The commitment from team member of the action research not only contribute to ideas improvised the original walker into a multipurpose smart walker name as I-OK innovation but also inspire them to participate in innovation competition.

I-OK Innovation group participated in innovation competition at university level and had won third prize. The university Research and Innovation Center had chosen this product to compete in National Research Innovation Competition organized by other university which was at international level. The second stage of the action research challenge was to fix the wheel for the user to be more mobile, self-reliance and guaranteed safety. I-OK won Special Jury Award for Disabled Student and inspired the group to find research fund for future action research.

This implies that action research consistent with the Purcal et al. (2014) in building people capacity through peer support. Furthermore, the project had achieved two goals: action research with people doing research activities and sharing their findings about disability support with other people peer support through groups learning.

The research team embarked upon the research with a desire to take on a 'facilitating' role. This meant that while the team co-ordinate the process, and act as a mediator (Balcazar et al., 2004), it was expecting that all the decisions about the process and how it would be structured would be made by participants in developing the intervention. This team experienced also support Harriet Radermacher (2006) study with disabled people.

Finally, this action research found that the fundamental to achieving impact from the creation of new knowledge are the processes that ensure knowledge is distributed in a timely manner and that effective strategies are in place. Based on the innovation cycle developed within the research team also identified the need to build networking capability in relation to knowledge dissemination and facilitating innovation adoption which support the action research by Pitt (2007).

Conclusion

The researcher recommends for future studies to increase the number of samples and conducting action research involving more disabled student to motivate collaboration in innovation. Apart from only using 'participation-observation' the research being a qualitative method, I would recommend for future studies to include a quantitative questionnaire in order to investigate and identify the awareness and knowledge about disabled students in university. In doing so, it enables us to recognize and identify the statistic of understanding and awareness toward caring society. Finally, to increase the knowledge and awareness among the public the importance of maximizing the opportunity to provide helping hand to special need people.

The judges in the innovation competition suggested that, the multipurpose smart walker for the disabled person should be exploited and create a world market potential. This is another opportunity to assist disabled person to become self-employed and involve in entrepreneurship. However, the support from various sectors to encourage and sustain the motivation of student involve in action research and also innovation for future generation to become creative and innovative.

Another suggestion is for future researchers to widen the options in finding expertise and sponsorship to improve the outcome of the innovation to be more professional. Future researchers are also encouraged to investigate thoroughly the physiological assistance of medical support to identify and ensure safety features for future improvements of the innovation.

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