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Nurturing Research Culture in Malaysia: The Social Sciences Undergraduates' Responses

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Abstract: One of the goals of teaching and learning in social sciences is to produce a social scientist that is capable to conduct, analyze and practice a scientific research. During their learning sessions, students are normally taught to explore, interpreted and resolved an array of a society's real issues and problems. Hence, over the 3 years of learning, the students will acquired both the knowledge in a specific discipline as well as the basic of research skills and culture in the field of their study. However, little attempts were made to understand and discover the students' responses on such capacity of exposures. Based on a convenient survey of 100 undergraduates in a research university in Malaysia, this study aims at delineating the undergraduates' responses on efforts on nurturing research culture among them. This study reveals that the research skills are developed in tandem with the aims of nurturing research culture among undergraduates, particularly at individual and university level.

Key words: Research culture, social sciences, writing and data analysis, field work, undergraduates, specific discipline

INTRODUCTION

It is well demonstrated that undergraduate engagement in research has desirable impacts on students, university and nation at large. From the students' perspective, engagement in research helps student learning and personal development as well as career path and employability (Merkel, 2001; Hampton, 2002; Krabacher, 2008; Jenkins and Healey, 2010). While at the university and national perspectives, development of research is also acknowledged as one indicator of excellence and economic competitiveness of a country (Pratt *et al*., 1999; Li *et al*., 2008; Rose, 2009; Sim *et al*., 2003). It is through research that the innovation and creative industries as well as talent researchers are produced and sustained in the country. In fact in both developed and developing countries, the roles of universities in anchoring research are vital and it becomes a norm to the higher learning communities (Li *et al*., 2008; Healey and Jenkins, 2009; Jenkins and Healey, 2010; Cheetham, 2007).

In a simple manner, a university has to play active roles in engaging and nurturing research culture at all levels of education including undergraduates regardless of their disciplines be they enrol in the social sciences or pure sciences (Merkel, 2001, 2003;Werthmann, 2004; Healey and Jenkins, 2009; Scott *et al*., 2006). Hence, doing research is one of the norms of the higher learning institution which provides a means for the students to be engaged, learned, exposed, performed and acquired what is called as research culture. Therefore, it is equally relevant and crucial for a social science undergraduate to be engaged in research to possess the culture of doing research as well as to acquire the soft skills and technical skills to meet the challenging knowledge economy.

While, there are many writings that explored the needs, benefits and impact of research culture at the undergraduate levels in developed countries (Healey and Jenkins, 2009; Jenkins and Healey, 2010) studies at the micro level, pertaining the extent of effectiveness, acceptance and responses of the undergraduates in the developing countries is still understudied. In Malaysia, the urgency to enhance and nurture undergraduates in research is not a new matter as most of the universities offer research project or dissertation as one of the requirement of a degree.

In fact, many of the school, faculties and programmes degree set up various mechanism to ensure this procedures been met by both the students and the administrators at each university. As of recent development whereby the needs for producing talent and creative researchers are the concern of the nation doing

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research is seen to become one of the specialities of training that the undergraduates have to undergo. In fact by doing research project, their skills, understanding and culture of research are mould with better ways and goals. Bearing in mind that doing and nurturing research among undergraduates is crucial, the study of exploring the undergraduates' responses is therefore relevant. Therefore, this study fulfils the gap of knowledge in research with emphasis on the undergraduates' perspectives. Perhaps with the empirical finding from developing country, Malaysia in particular, this study helps to widen the understanding of what research culture is all about from the client perspectives, especially the undergraduates.

Nurturing research culture among undergraduates: some experiences: Generally, a research culture refers to efforts of adopting an appropriate research method on the field being able to communicate and presenting research results that coherent with the comprehensive reading and references. Culture of research allows students to do research with scientific enquiries, using relevant data and make a good conclusion. Based on existing literatures, this section further elaborates the meaning of research culture, their benefits and responses from the students pertaining their experiences while conducting research projects.

Defining undergraduate research, research culture and research mechanism: It is important to understand what undergraduate research meant, research culture and the institutional mechanism before looking into the students' perspectives on their engagement in various forms of research.

There is numerous documentation of undergraduate's research as it may take many forms including creative activity, empirical inquiry and other forms of scholarship across the arts, humanities, sciences and social sciences (Thomas and Gillespie, 2008; Healey and Jenkins, 2009; Houlihan, 2010). Wenzel reveals 3 definitions of undergraduate research. Developed in 1997, the first definition refers undergraduate research as an inquiry or investigation conducted by an undergraduate who makes an original intellectual or creative contribution to the discipline. The 2nd definition broadened the notion of research whereby an ideal research consists of clearly communicated purpose and potential outcomes, well-defined objectives and methods, use of advanced concepts and techniques and come to an end in a comprehensive written report. Similar to the 1st definition, the 2nd definition and its characteristics requires that study needs to be original and is disseminated to the scientific community. The 3rd definition emphasizes on 2 features, namely the creation of knowledge as well as the communication of knowledge. Cheetham (2007) in delivering his thoughts about a growing research culture' emphasizes the needs to appreciate the meaning of research and culture before constructing the meaning of a research culture. Research to him consists of 3 intertwining elements-creative construct, systematic basis and increasing knowledge. In defining culture, he referred to a well accepted meaning of a pattern of human activity and the symbolic structures that give such activity significance. It denotes the whole product of an individual, group or society of intelligent beings (Cheetham, 2007). Thus, a research culture constitutes the following characters:

- Research is a learned behavior
- Research culture is the structure that gives behavior significance to understand and evaluate the research activity
- In a university, research culture is the structure based on the behavior of the staff and students which allows the transfer of knowledge gained through a systematic process to students and community (Cheetham, 2007)

In general, there are many ways that the undergraduates may experience and learn about research. Healey and Jenkins (2009) assert a typology of research as follows:

- Research-led learning about current research in the discipline
- Research-oriented developing research skills and techniques
- Research-based undertaking research and inquiry
- Research tutored engaging in research discussion. Meanwhile, Houlihan (2010) provides four types of research namely
- International university-based research in which the student conducts research on a topic as part of a course or term study
- Independent field-based research in which the student identifies a topic, organizes the project and conducts the field work, analysis, write-up, etc., for an overall grade
- Collective field-based research, in which students, working under the guidance of a lecture, conduct a research project as part of a course or complementary to the lecturer's research focus
- Client-focused, research conducted is in response to or in collaboration with a specific client ranging from an NGO to a corporation to an indigenous community or a governmental agency

As of recent development, research mentoring, community based research, action research and authentic experience are becoming familiar to the undergraduates' community (Vogelgesang and O'Byrne, 2003; Edwards *et al*., 2007; Krabacher, 2008; Scott *et al*., 2006). Based on the research universities' experiences in the United States, Merkel (2001) further emphasizes the importance of students, instructors and lecturers to know what research concept being used at the undergraduate level. Wenzel (Merkel, 2001) in his writing "Undergraduate Research: A Capstone Learning Experience" however, defines research as follows:

> …an inquiry or investigation conducted by an undergraduate student that makes an original, intellectual or creative contribution to the discipline. The elements of the definition make it applicable to all disciplines, make no judgment on the value of the work allowing both student-faculty and student-student collaborations and establish a high standard by maintaining that scholarship be original and contribute to the discipline

Conversely, Stehlik (2009) claims that just what a research culture might look like is unclear and seems to be a different construct when viewed from the varying perspectives of academic staff, university management and undergraduates. In fact, Cheetham (2007) describes three strengths that emerged from the merger of research, teaching and knowledge transfer where research is embracing the systematic generation of new knowledge, development of new ideas and experiment with new techniques. Meanwhile, teaching is explicates a body of ideas is informed by available research and instils habit of inquiry that reflects the provisional nature of knowledge and knowledge transfer is an academic interaction with a variety of people to discuss, develop policies to government, industry and the community. Studies to exhibit research culture among undergraduates are not really a new venture, let alone in universities in the developed country. Research practice in United Kingdom is a mandatory for final year students to graduate while undergraduate research in the United States is associated with the innovative work of Margaret MacVicar who founded the pioneering Undergraduate Research Opportunities Program in 1969 at the Massachusetts Institute of Technology (Healey and Jenkins, 2009). However, the culture of research in UK and United States was found to experience both internal and external problems in teaching and learning as the engagement of undergraduates in research was not only becoming less prominent but have been criticized by the Boyer Commission (Healey and Jenkins, 2009). The research universities have often failed and continue to fail, their undergraduate populations, thousands of students graduate without seeing the world famous professors or tasting genuine research. Therefore, providing undergraduate research opportunities with faculty experts guidance is a means of developing familiarity and comfort with the scientific method and analytical process as well as a means of building skills in problem solving and critical thinking (Tan, 2007). Healey and Jenkins (2009) perform a study on how undergraduate research and investigation methods are developed. Based on experiences of various universities, undergraduate research should be at the centre of the undergraduate experience. Most prominent they asserted that the questions are centred on characteristics of the following:

- Research at the undergraduate level is still relevant for the development of a country
- The formation of research culture requires both human capital and economic capital
- Every university has formed its own research culture and each level has a different content
- Students can easily get research materials and resources through websites, public relations and enrollment for reference
- The challenges to expanding research is centred to the research opportunities, funding and evaluation
- Proposal to expanding researches is through research campaigns that Keep the Conversation Going and guaranteed funding

While there are many ways of acquiring research culture, one of the most familiar methods among undergraduates is through fieldwork. Therefore is expected that fieldwork correlates with the culture of research adopted by undergraduates. By definition, fieldwork varies accordingly to the field of study. Hitherto ffieldworks has its roots in the observation and close examination and analysis in the field of an accessible piece of a country showing one or more aspects of areal differentiation (Ajibade and Raheem, 1999). This definition is intended to be generic one encompassing varieties of field observations as fieldwork, field studies or field teaching. From the anthropology's perspectives, fieldwork encompasses participant-observation, interview and dialogue, collaboration and critique.

According to Kelty (2008), three important allotropes of influential in setting a fieldwork are the site, method and substance. Site can be a classical geographic locale ranging of a village, a street corner, a cafe to some kind of conceptual object as well state surveillance and policing,

economic development or identity politics. Method concerns the what, where, who, when and why of field research. Finally, substance defines the structure of fieldwork not simply as a tangible substance but the subject matter of a study (Kelty, 2008). Therefore, engaging undergraduates in fieldwork means each of the courses provide the tools and platform for the ease of inculcating and nurturing research culture among the knowledge community.

Skills in fieldwork consist of components that shape a student to become qualified and have the necessary skills needed to be a social scientist. These qualities can be achieved because in fieldwork, students learned and taught in various matters such as teamwork, leadership, communication and personal skills. Besides opportunities for students to become researchers, the students who undertake outside research activities will face real problems that existed in diverse location, background and ethnicity (Scott *et al*., 2006; Gubbins *et al*., 2008). Hence among the tutors, instructors and lecturers, initiatives to bring out students to fieldwork helps to widen the perspectives of the learning process and enhance research culture.

Meanwhile, Brown and McCartney (1998) advocate that it is useful to consider the relationship between teaching and research by placing learning in the real world. Equally important is the extent of research to exhibit deep or surface learning. It is found that the former existed when there is a willingness to encourage students to understand and appreciate research knowledge. On the other hand, the latter surface learning exists when the students perform what was instructed to them to obtain a good grade.

Research culture

The undergraduates' respond: Looking into the students responses although, literatures of this subject are diverse of themes and issues, several researchers came to an agreement that every course had different ways of engaging undergraduates into research (Edwards *et al*., 2007; Tait, 2009; Scott *et al*., 2006; Seymour *et al*., 2004; Hampton, 2002). Even though, research skills acquired by the undergraduates are nurtured and this includes the understanding of what constitutes a research and form of service to local communities (Bauer and Bennett, 2003; Thomas and Gillespie, 2008), some researchers, nevertheless, questioned the extent of engaging undergraduate in research (Seymour *et al*., 2004; Bryan, 1997; Healey and Jenkins, 2009). Based on the international research evidence, many undergraduate students feel they are at arm length from the university research community and do not see themselves as stakeholders in that research (Healey and Jenkins, 2009). In fact, Boyer Commission is aware of tensions among students whether undergraduate research is for all students or just for selected students in elite institutions whereby in reality, it seems to favour research based as the standard of the able undergraduates rather than to all undergraduates (Healey and Jenkins, 2009). It therefore is vital to ensure that in engaging research, the students need to feel their roles as an integral of the research.

Participation in undergraduate research is of great benefit to students (Bauer and Bennett, 2003; Merkel, 2003; Tan, 2007; Jenkins and Healey, 2010). According to Merkel (2003), benefits include gaining experiences in the research process increasing the student's disciplinary knowledge and understanding how knowledge be applied defining and refining research and learning about the world of academia, graduate life and career interests. Commonly agreed, undergraduate research is important and popular for the following reasons:

- To integrate young scholars in the community of learning
- To expose undergraduates to become independent thinkers
- To ensure that research experience be a necessity
- To prepare students for a graduate program (Tan, 2007; Merkel, 2003)

Other than, the aim of ensuring sustainability of research at higher learning, Tan (2007) summaries both extrinsic and intrinsic benefits gained by students engaging and doing research form major scholars in teaching and learning. This includes gaining a degree, individual personal growth and confidence and self-esteem, sense of allies and increase of research culture. On the other hand, Tan (2007) concludes that high research spirit and interests were attained when they learn and apply appropriate research methods. The students were pleased with the mentoring system that exist among the student-lecturer because of the credibility of the instructors who is competent, knowledgeable and approachable, open, caring, motivated, responsible and easy to communicate as well as to ease an appreciation of the research study. Most importantly, the American reseacher Jenkins and Healey (2010) argues research activity can and does serve as an important mode of teaching and a valuable means of learning students involvement in research is an efficacious way to educate throughout the education system the great mass of students, as well as the elite performers for the inquiring society into which we are rapidly moving.

All in all, the body of literature in exploring research culture among the undergraduates provide the understanding that the task of nurturing such culture is extraordinary challenging. Therefore, undertaking this study in a exploratory manner with 100 respondents perhaps provide an in depth and empirical of what research culture mean for undergraduates.

MATERIALS AND METHODS

This study is part of an action research aiming to delineate the pattern of research culture among undergraduates who have undergone courses that offered them fieldwork as well as conducting research projects. The survey was conducted as a convenient sampling in 2009, particularly in one of the elective courses attended by the students of Social Sciences and Humanities. A total of 100 students who were in their 2nd and 3rd year enrolled in the course identified. The selection of students from this elective course allows the researcher to get a balance response from students of various programmes at the Faculty of Social Sciences and Humanities. A session of a survey was held in one of the classes and students answered questions pertaining to research culture in various aspects.

This study followed a 3 tier of research handling as proposed by Thomas and Gillespie (2008) that is at the beginning, the middle of the process and at the end of research whereby the outcome is presented and accessed by their lecturer.

As such, the questionnaire contains several sections, leading to gauge the student's background, their work at the beginning of a research at the middle of handling the projects and at the final stage of research projects including their comments and recommendation of the subject matter. The results of the survey are processed by employing SPSS software and this study utilizes the findings of the survey.

Being a social sciences researcher

Background of the respondents: The study involved a convenient sampling of 100 students in 2nd and 3rd year and their backgrounds are shown in Table 1. Majority of respondents were female accounting 81 respondents (81%) and the rest 19 respondents (19%) were male. They were in the same age group, ranging from 20-23 years old. In terms of academic year, two third of respondents (68%) were third year students and the remaining one third of respondents (32%) were the second year students. In term of academic achievement, there are two dominant groups of students following the course. Group one is the students who possess a CGPA of 3.00-3.33 accounting a total of 37%. The second group is the students possess a CGPA of 3:34-3.67 of about 34% of the total respondents. This background reflects that students of Faculty of Social and Humanitarian have good performance and definitely capable to conduct, learn and enhance research culture when embarked on such activities.

Table 1: Background of respondents

Aspects	Category	Total	Percentage
Gender	Male	19	19.00
	Female	81	81.00
Age	20 years	2	2.00
	21 years	36	36.00
	22 years	54	54.00
	23 years	8	8.00
CGPA	2.0-2.66	4	4.00
	2.67-3.00	18	18.00
	3:01-3:33	37	37.00
	3.34-3.67	34	34.00
	Over 3.67	2	2.00
	Not answered	5	5.00
Academic year	2nd year	32	32.00
	3rd year	68	68.00
Research exposure	Yes	89	89.00
	No	11	11.00

Fieldwork, September-October 2009. Number of respondents is 100. The total response is 100%

RESULTS AND DISCUSSION

Starting a research project: The students' experiences in starting a research project were gathered through their responds. Not all undergraduate students have similar, exposure in doing research as element of the course structure. It was found that their experiences are quite diverse in term of quantity and quality of projects. Of the total respondents, almost 90% have done at least one project during their academic years. Only 11% has mentioned that they did not have the opportunity to do so (Table 1). Based on the results of the survey, a total of 20% stated they have >5 times doing a research project. However in each course, the students agreed that they need guidance from their lecturers to become social scientists. From Table 2, a total of 89 respondents (89%)

Table 2: Student's involvement in research

Aspects of research	Answers	Frequency	Percentage (%)
Received project description during lecture	Yes	89	89.0
	No	7	7.0
	Not mentioned	4	4.0
Active in writing research proposal	No	8	8.0
	Yes	88	88.0
	Not mentioned	4	4.0
Building issues and research question	No	1	1.0
	Yes	89	89.0
	Not sure	6	6.0
	Not mentioned	4	4.0
Methodology	No	4	4.0
	Yes	88	88.0
	Not sure	4	4.0
	Not mentioned	4	4.0
Involved in formulation of questionnaires and survey	No	6	6.0
	Yes	86	86.0
	Not sure	4	4.0
	Not mentioned	4	4.0
Involved aspect of research	No	4	4.0
	Yes	86	86.0
	Not sure	6	6.0
	Not mentioned	4	4.0
Involved in sampling of respondent	No	5	5.0
	Yes	84	84.0
	Not sure	7	7.0
	Not mentioned	4	4.0
Structuring the report writing	No	4	4.0
	Yes	81	81.0
	Not sure	10	10.0
	Not mentioned	5	5.0

Fieldwork, September-October 2009. Number of respondents is 100. The total response is 100%

mentioned that they received information and explanation on the project brief as a whole. Among those answered yes to this question, their remarks were the lectures introduced and brought problems to light especially in understanding the overall aims, scope and aspect of study. More important, the lectures had facilitated them in analyzing what would be encountered in the project and also in the field. Even the tactical ways for addressing, the elderly and women were stressed for practicality.

The study also looks into the details of research skill, especially the central part of a research that is the writing research proposal, identifying issues and determining research question, scope and aspects of study as shown in Table 2. The data showed that >80% of the respondents were actively involved in formulating the research project. Only on the tasks of organizing the project report, a total of 81% respondents were involved, leaving about 19% in the doubts of not involved and not sure of their involvements. Based on the open questions pertaining problems faced during research, some of the students mentioned that writing research question and determining the aspects of study, demand much of their notional hours. In fact, a majority of students agreed that it was the hardest part of research.

Nurturing research culture through and during fieldwork: As has been argued that fieldwork helps nurture research culture, it is quite obvious that many of the students have undergone through such experiences. Based on their feedbacks, a total of 76% respondents had done fieldwork while a total of 24 respondents (24%) have not done the fieldwork. The location of their fieldwork was diverse throughout the country. Often, the chosen location was based on the suitability of issues of study, funding, sponsorship number of students and willingness of the host area. More importantly, the students were exposed to rural and urban area as well as traditional, modern and aboriginal community. Table 3 shows the details of tasks while embarking on their project outside classroom.

The students were asked whether they received a detail of procedures on the fieldwork. Majority of respondents (89%) have received an extensive explanation about the project as well as the fieldwork. Only a small number of respondents (7%) stated that they did not receive information and four respondents (4%) did not answer the question. There is a probability that those who did not receive the explanation are due to their absence in lectures and tutorials. Nevertheless, further information was usually given either before or during their fieldwork or posted in the e-learning website that eased the students to download at their own capacity. Even though, a project based learning is considered a student centered learning as most of the students mentioned that their lecturer would have did the briefing thoroughly, the current exercises seemed to favoring a teacher centered learning.

The study also looks into the students' involvement in planning fieldwork. Based on the survey results, a total of 83 respondents (83%) stated their involvement in the planning process before doing fieldwork.

The rest, a total of 13 respondents (13%) did not participate in the process of planning the survey and four respondents (4%) did not answer the questions. In fact, a total of 88 respondents (88%) stated that they were pro-active in the process of preparing for the field trip. They even have their committees set up to ensure their work, safety and rest were taken care collectively.

Table 3: Involvement of undergraduates in fieldwork

Articles	Answers	Frequency	Percentage
Attended procedures for conducting fieldwork by lecturers	Yes	89	89
	No	7	7
	Not answered	4	4
Plan work during the fieldwork	Yes	88	88
	Not	8	8
	Not answered	4	4
Know the ethics of fieldwork	Yes	86	86
	No	10	10
	Not answered	4	4
Ways of learning ethics of fieldwork	Yes	78	78
	No	18	18
	Not sure	4	4
This method study for fieldwork (>1 answer)	Head of determining the division of labor	74	74
	individual work	17	17
	Work performed only a handful of people	9	9
	Division of work waiting for every member of the initiative	39	39
	There is no method of work	4	4
	researching together	1	1
	Discussion and division of duties	1	1

Fieldwork, September-October 2009. Number of respondents is 100, the total response is 100%

Table 4: Reason for choosing courses offering fieldwork and project

	Total and percentage								
Reasons for enrolling	5	4	3	2	1	0	Sum	Mean	SD
Scoring is commensurate with the fieldwork	23	50	21	2	0	4	778	7.78	18.728
Find a different experience	41	48	7	0	0	4	814	8.14	18.650
Experience of going places	41	44	11	0	0	4	810	8.10	18.660
Experience teamwork	33	53	8	1	0	4	898	8.98	20.766
Something different from the course they usually take in their program	32	54	10	0	0	4	802	8.02	18.675

Fieldwork, September-October 2009; description: 5: Strongly agree; 4: Agree; 3: Neutral; 2: Disagreed; 1: Strong disagree, 0: No respond

Normally, a male student was elected to be the mastermind of the project. Only a small number of students were not proactive and not answering questions each 8 and 4% of respondents, respectively. The existence of such a situation shows that there are still some students who do not have the courage and motivation to express their ideas in group study. This may slow down the ability of the students in communication and presentation of ideas. Often when the students did their fieldwork in group study and did their presentation, their skills were sharpened and were better in quality. This study also solicits reasons of choosing courses that offers fieldwork among students.

Table 4 shows the students responses on 5 given reasons. Overall, the students were aware of their reasons for choosing such course and all the reasons were considered influential. As for those who responded strongly agreed, their reasons were primarily because they wanted to look for a different experience and to experience of going places which account for 41%, respectively. Noticeably for those respondents who agree, their reasons were centred to the benefits of working in a team, experiencing something different from the course they usually take and getting an opportunity to get a good grade. The findings showed that students seek fieldwork, not only because of bored with monotonous teaching and learning in the classroom. Apparently, they seek for an alternative exposure, especially at the fieldwork of diverse background and location, besides ensuring them a good grade as a result of their committed performances.

Writing ability, data manipulation and presentation in research culture: The ability to write a good report with perfect formatting, effective and systematic data manipulating and attractive presentation are elements of skills that can be obtained from research projects. The ability to manipulate data is important in order to create sharp and holistic analysis. In the meantime, the presentation makes students closer to master public speaking, communicate with other participants and actualize research findings to targeted groups. Thus, these three abilities are the fundamental skills that should be mastered by social science students. Students respond on writing, processing and simulating data and presentation are shown in Table 5. From Table 5, a total of 67% of the respondents acquired knowledge and lesson on how to get the writing study will and in the right field. Though, the majority of students felt they learned and acquired knowledge to writing a report, a total of 33 students who did not have knowledge of procedures in good writing was a big number. This phenomenon showed that misunderstanding of what constitute a tradition of a research culture which include good ways of writing reports still exist. Generally, students get the direct lesson on techniques and procedures of good writing and according to the UKM's style in selected courses. Students are then expected to master and follow those procedures in each of the courses they enrolled. The study also evaluates the students' roles during the process of writing. Total >80% of the respondents stated that they played active roles. Only a small proportion of students (17%) were not undertaking such roles which mean that there are always students who were not participating in writing the report due to several reasons. This includes lack of time, unable to discuss in group work and minimal acquisition of techniques of writing. However, their concern on learning and teaching techniques and procedures of writing, especially UKM writing style was high as agreed by 92% of the respondents. Element of skills that is equally important in nurturing research culture is the ability to acquire soft skills, particularly on software that enables appropriate processing in both quantitative and qualitative data. Roughly, 50% of the respondents employed the SPSS software for statistical data processing while the other half (50%) used simpler tools such as Ms Excel, Ms Word and Ms Access.

About >70% students assert that learning software in the classroom was on the theory basis. Instead, 90% of students agreed that working on how to operate the software was equally important and it can be done easily in courses that offered fieldwork and research project. This will sharpen the students ability to reveal the meaning of the data, thus making them to become a social science researcher with a critical mind of analysis and knowledge. The next element is the presentation of fieldwork results systematically, effectively and efficiently. The purpose of the presentation was to

Table 5: Writing, data manipulation and presentation

Articles	Answers	Frequency	Percentage
Follow lecture about writing procedures of conducting a research project	Yes	67	67
	No	33	33
	Not answered	0	0
Play an active role in the process of writing	Yes	83	83
	No	17	17
	Not answered	0	0
The need for learning on report writing in courses offering fieldwork	Yes	92	92
	No	8	8
	Not answered	0	0
Software commonly used in data processing	Ms Excel	24	24
	SPSS	48	48
	Ms word	19	19
	Ms Access	1	1
	Others	4	4
	Not answered	6	6
Mastering the software used	Yes	71	71
	Not	29	29
	Not answered	0	0
The need for the learning to manipulate data if the course offers fieldwork	Necessary	90	90
	Not necessary	9	9
	Not answered	1	1
Has conducted a research project presentation	Yes	97	97
	No	1	1
	Not answered	2	2
Active role in the presentation	Yes	37	37
	No	50	50
	Not answered	12	12
Knowledge on effective and systematic presentation	Yes	75	75
	No	23	23
	Not answered	2	2

Fieldwork, September-October 2009. Number of respondents is 100. The total response is 100%

present the findings briefly for participants to understand the research that are being done. In the course sessions, presentations are usually done more than once which are the presentation of research proposal, presentation of research findings and final research presentation. This presentation will benefit the students besides the use of soft skill ability to create slides presentations effectively and attractively.

Presentations also sharpen their public speaking skills. Students are also taught on how to overcome the feeling of nervous and scared when appear and speak in public. From the questionnaire, a total of 97 respondents (97%) had done the presentation, especially in the classroom. However, not all students are playing active roles in the presentation. Almost half (50%) of students played inactive role in the presentation and only 37 respondents (37%) stated that they had played an active role while the rest of 12 respondents (12%) did not answer the question. Too many students that do not play an active role can indicate many things in which students may have not mastered the topic presented by the group or themselves. This could be because only a few students from the group were involved in the presentation and perhaps only a few students were active in research, either in the process of writing and up to the presentation. This is the risk of working in a group. When cooperation between group members was not established effectively and systematically, the active role of students was not as expected whether in writing the report, processing the data and everything up to the presentation of fieldwork. Other reasons are the technical problems in the presentation such as the file being attack by the virus, lack of preparation (last minute preparation of presentation slides) and the internal conflict among members of the group.

Undergraduate project exposure as key drivers to research: It is expected that undergraduate's projects exposure would lead to them to look forward for a more serious research programme at postgraduate level. Based on the survey results as shown in Table 6, majority of the respondents have positive thoughts of lecturers' initiatives to engage students in research at undergraduate level. In fact, their exposure has increased their desire towards pursuing higher education. Nevertheless when asked about the confident limit of handling research on their own about and conduct their own research; they will also be impressed to see the current issues and intend to do research on it. However, as shown in Table 6, the sensitivity to the niche of UKM is still not encouraging as only 39% of students that know about this.

Table 6: Future prospects after conducting undergraduate research

Aspects	Answer	Frequency	Percentage
Can you conduct your own research alone?	Yes	69	69.0
	No	31	31.0
Do you know the niche areas of research of your university?	Yes	39	39.0
	No	61	61.0
Are you alert of the current issues and intend to investigate?	Yes	82	82.0
	No	18	18.0
Do you think that your research will contribute to policy implication of the country or state?	Yes	81	81.0
	No	19	19.0
Do you refer to journals to search for issues, methods and matters relating to the topic of research?	Yes	96	96.0
	No	4	4.0
Do you want to further your research at Masters programme when you have been able to investigate at undergraduate level?	Yes	90	90.0
	No	10	10.0

Fieldwork, September-October 2009. Number of respondents is 100. The total response is 100%

However, the students voice their problems while doing their research. Most of them stated that they did not get good cooperation from the respondents. Some students were quite unhappy when the community refused to be interviewed. Several students pointed internal problems of the group work as there was less cooperation between members, unsatisfactory results. In fact, about 20% of the respondents agreed that their problems were personal problems including financial problem, data lost, tiresome and time constraints.

Based on the findings of the study, several patterns of research culture among undergraduates in the research university are emerging. This can be summaries at 3 levels of achievements at the student's level, program or faculty's level and at the university's level as well as at the higher learning policy. At the individual level, the results showed that skills to do proper research in the fieldwork are familiar among students of social science studies. Skills in fieldwork consist of various elements that make students become qualified and have the necessary skills as the social scientist. Particularly, the student's ability to be engaged and nurtured a research culture is secured. This quality can be achieved because in fieldwork, a student is exposed to the elements that can develop the skills and expertises. This includes co-operation (either before the fieldwork during or after the fieldwork), the ability of report writing, presentation of research findings, processing fieldwork data, communication skills, time and people management. However, this study has the limitation of categorizing whether the research culture among students is favouring the deep or surface research culture and therefore, it warranted further study to detail this orientation.

Students also proposed that to create the research skills, components in the form of financial incentives is crucial. According to them with costs up to RM 200.00 for a single field trip is quite burdensome. It is worst if they had to do at least 3 projects at once. In a simple word, they suggested a funding initiatives and award should be established in helping them to do their research. Other proposals received from the respondents are to do fieldwork of the projects within their capacity of notional hours of learning especially at the beginning of the semester so, they would have enough time to make preparations whether restructuring proposal doing fieldwork, writing and presentation of fieldwork. An adequacy of time is very important for students when there were several courses offering fieldwork. In fact, they proposed that the current policy of delimiting to only special areas of studies be considered as choosing areas far from their university could expand their horizons and experiences. They even proposed to do fieldwork outside the country, particularly in asean region as it gave encouragement to students to be proactive in research and widen their real experiences.

At the program or faculty's level, there seems a control and mechanism of ensuring what constitute the meaning and definition of undergraduate research. Added to this is a compulsory course, namely project study as part of the requirement of rewarding a degree. From the students responses, the faculty only controlled fieldwork in terms of procedures of the lecturers taking students to the field whereas the real quality needed is beyond the administrative procedures. Meanwhile among the lecturers, research done by the students in coursework is part of the assessments and their choice of topics is determined by many factors including the faculty's funding, location allowed and their creativity in teaching and learning as well as contact with the stakeholders and community.

As of the current situation, the undergraduate research and fieldwork have not been formally established in line with the niche research of the university. In fact, the data bank of research done by the undergraduates can only be retrieved through the library but not through the data bank of research at the faculty or program level. Therefore, looking into the mechanism of managing the undergraduate research as part of the research arms of the faculty will strengthen research organization of the university.

The study also found that students doing research and fieldwork as well as producing reports were accessed, evaluated and rewarded only at the course level. It might be quite a radical approach if the students are also given chances to showcase their ability in conferences and writing journals as some research university did to establish undergraduate journals, giving a platform for students to produce academic writing under the control of the their lecturers. In fact, students doing research under the projects of their lecturers will have the actual access and training in producing academic studies. Reward for best studys in the undergraduate journal helps the students to be established as researcher and scientist as most of the previous practices underestimate the students roles.

At the university's level, research at the undergraduate level is generally given minimal concern as doing research is usually been emphasized at the graduate level. While this situation is gradually increasing in the higher learning in developed countries, it is timely that the research university would once again take the role of educating students to becoming a researcher at the undergraduate level. This is because it is the basic form of human capital that will further their studies at a higher level. Reward system in an innovative learning must include elements of student exposure to real situations and issues. Most relevant, throughout the fieldwork, network between university and community and faculty with the Centre of Excellence University, especially Langkawi Research Centre, Tasik Chini Research Centre and Mersing Marine Research Centre will be more apparent. Thus, this opens a wider opportunity for students and lecturers to create research culture equivalent to the UKM's rating as a research university in the country.

At the university's level and at the national higher learning policy, this study also raise the need of the higher learning ministry to look into the mechanism of engaging and nurturing research culture among the social sciences in the research universities in Malaysia. As of 2010, there are five research universities in the countries yet the mechanism of teaching and learning research culture are left to the universities own means and standards. With the beliefs that there are vast potentials to engage undergraduate in serious and granted research, a comprehensive study which delineated the national scenario should be ventured.

CONCLUSION

In this study, a research culture among undergraduate students is worth developed and nurtured as research broaden the spectrum of teaching and learning of the higher learning institution. More importantly, the Malaysian New Economic Model demands a creative and talent human capital which through nurturing research culture from the beginning of their higher education which is at the undergraduate level, provides both quality and quantity of the human capital needed in the knowledge economy.

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REFERENCES

Ajibade, L.T. and U.A. Raheem, 1999. A reappraisal of fieldwork as a teaching method in geography. http://www.unilorin.edu.ng/publications/raheemua/A%20REAPPRAISAL%20OF%20FIELDWORK%20AS%20A%20TEACHING%20METHOD%20IN%20GEOGRAPHY(2).pdf.

Bauer, K.W. and J.S. Bennett, 2003. Alumni perceptions used to assess undergraduate research experience. J. Higher Educ., 74: 210-230.

Brown, R.B. and S. McCartney, 1998. The link between research and teaching: Its purpose and implications. Innovations Educ. Train. Int., 35: 117-129.

Bryan, D., 1997. Teaching research methods to undergraduates. Journalism Mass Commun. Educator, 51: 54-64.

Cheetham, A., 2007. Growing a Research Culture. University of Western Sydney, Australia.

Edwards, A., S.M. Jones, E. Wapstra and A.M.M. Richardson, 2007. Engaging students through authentic research experiences. http://eprints.utas.edu.au/8581/1/edwards.pdf.

Gubbins, S.M., C. Harmon and L. Delaney, 2008. Undergraduate research experiences: Benefits and good practice. http://www.iua.ie/iua-activities/documents/UndergraduateResearchExperiencereport5.doc.

Hampton, R.L., 2002. Creating a culture of student inquiry: The case for Undergraduate research. Proceedings of the Conference on Undergraduate Research and Scholarship and the Mission of the Research University, Nov. 14-15, College Park, Maryland, pp: 1-7.

Healey, M. and A. Jenkins, 2009. Developing Undergraduate Research and Inquiry. Higher Education Academy, York, UK.

Houlihan, P., 2010. Supporting Undergraduates in conducting field-based research: A perspective from on-site faculty and staff. http://www.frontiersjournal.com/documents/introHoulihanvolxiv.pdf.

Jenkins, A. and M. Healey, 2010. Undergraduate research and international initiatives to link teaching and research. CUR Q., 30: 36-42.

Kelty, C., 2008. Allotropes of fieldwork in nanotechnology. Philosophy Med., 101: 157-180.

Krabacher, A.C., 2008. Undergraduate research as a means of student engagement: A study of researchs involvement in five areas of college life. http://drc.ohiolink.edu/handle/2374.OX/4503.

Li, B., J. Miller and P. Hudson, 2008. Building research capacity: Changing roles of universities and academics. http://www.aare.edu.au/08pap/bai08493.pdf.

Merkel, C.A., 2001. Undergraduate research at six universities. A Pilot Study for the Association of American Universities. http://ugr.tamu.edu/opportunities-1/faculty/undergraduateresearch.pdf/view.

Merkel, C.A., 2003. Undergraduate research at the research universities. Directions Teach. Learn., 2003: 39-54.

Pratt, M., D. Margaritis and D. Coy, 1999. Developing a research culture in a university faculty. J. Higher Educ. Policy Manage., 21: 43-55.

Rose, L.P., 2009. Students as researchers: A framework for using action research principles to improve instruction. Int. J. Teach. Learn. Higher Educ., 20: 284-291.

Scott, S., F. Miller and K. Lloyd, 2006. Doing fieldwork in development geography: Research culture and research spaces in Vietnam. Geographical Res., 44: 28-40.

Seymour, E., A.B. Hunter, S.L. Laursen and T. DeAntoni, 2004. Establishing the benefits of research experiences for undergraduates in the sciences: First findings from a three-year study. Sci. Educ., 88: 493-534.

Sim, L.L., S.E. Ong, A. Agarwal, A. Parsa and R. Keivani, 2003. Singapore's competitiveness as a global city: Development strategy, institutions and business environment. Cities, 20: 115-127.

Stehlik, T., 2009. Building a university research culture-what does it look like?. http://www.atn.edu.au/docs2/Building%20a%20university%20research%20culture.rtf.

Tait, K., 2009. Understanding tertiary student learning: Are they independent thinkers or simply consumers and reactors?. Int. J. Teach. Learn. Higher Educ., 21: 97-107.

Tan, E., 2007. Research experiences of undergraduate students at a comprehensive university. Int. J. of Teach. Learni. Higher Educ., 19: 205-215.

Thomas, E. and D. Gillespie, 2008. Weaving together undergraduate research, mentoring of junior faculty and assessment: The case of an interdisciplinary program. Innovation High Educ., 33: 29-38.

Vogelgesang, L.J. and K. O'Byrne, 2003. Undergraduate research as community service. Acad. Exchange Q., 7: 146-150.

Werthmann, K., 2004. A field full of researchers. Fieldwork as a collective experience. The Working Papers. Institut für Ethnologie und Afrikastudien, Johannes Gutenberg-Universität, Mainz, Germany. http://www.ifeas.uni-mainz.de/workingpapers/WerthmannFieldwork.pdf.