

Exploring the Embedment of Research into Mainstream Curriculum for Undergraduate Management Studies

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DOI: [10.36348/sjbms.2020.v05i02.002](https://doi.org/10.36348/sjbms.2020.v05i02.002)

| Received: 30.01.2020 | Accepted: 06.02.2020 | Published: 12.02.2020

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Abstract

The aim of this study is to explore research skills and abilities that can be embedded into the mainstream curriculum for undergraduate management studies. The paper draws on surveys and relevant literature in the field of undergraduate research and explores the extent to which research skills and abilities can be incorporated in curriculum development at undergraduate level. It further proposes strategies in teaching and assessment for research framework that can be embedded into the main stream curriculum for undergraduate management studies.

Keyword: Higher education, undergraduate research, management studies, inquiry based learning.

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INTRODUCTION

The need for undergraduate research in management studies

Higher education is stirring from acquisition of knowledge and skills to professional capabilities. Research plays a vital part in the students' contribution for preferred career. Research activities enhances all required managerial competences in an integrated ways in Academia [1]. The pursuit of research proceeds to rethink and explore fundamental concepts for undergraduate management education. Scholars around the world have validated that undergraduate research considerably improves student learning [2, 3].

Although research is given in the work life, research is likewise made use in teaching through teacher inputs gained through the experience of pursuing research. Undergraduate research may represent diverse practices and be named in a different way through out international contexts [2]. The deepest engagement occurs when students start working in close relationship in all phases of the research process along with their academic staff [4]. Mentors' roles have been exhibited by faculty members in supporting student learning in course embedded in undergraduate [2] and

undergraduate theses [5]. Research work at undergraduate level enriches mentoring, teaching and a sensation of achievement of scholarly and creative outcomes among the academic scholars.

The Research curriculum: Theoretical back ground

Research is a journey of threefold transformation from the level of 'Trading' to 'Domino' to 'Layer' [6]. Healey's [1] systematized the research variants as termed by Griffiths [7] into 'research-led', 'research-oriented', 'research-based' and 'research-tutored'. Researchers captured ways by which research and teaching can be associated by categorizing the research content into four approaches namely research-led, research-tutored, research-oriented and research-based [8]. An altered distinction was proposed by Levy and Petrusis [9] on basis of the inquiry and the student's relationship with knowledge. Scholars tend to agree that more open and more active forms of student-led inquiry strengthen the research-teaching connection in university education and contributes on the part of students as either learning current insights, or as 'participants in research' [10].

The Adelaide Research Skills Development Framework focused on a holistic, yet consistent and explicit method for cultivating research skills to help build the prerequisite skill for success in undergraduate research [11]. There are numerous case studies on wide range of initiatives embedding the undergraduate research into the mainstream curriculum from Australasia, Europe and North America. These demonstrate some of the approaches that have been adopted and disseminated for developing research-based curricula and engaging students in undergraduate research. The undergraduate research movement in the United States has delivered a dominant and influential stimulus to ensure that selected students in selected institutions can learn through inquiry and research. An investigation was undertaken for selected and broadly represented US undergraduate research programs for mainstream student inquiry and research. The main objective was to widely disseminate the result in all higher education institutions in a sustainable way in the United Kingdom. In the UK the national system has progressively embarked on increasing best practices in strengthening subject - centered teaching-research associations [12].

Business education in Saudi Arabia needs to educate future leaders with a new set of skills based on practical wisdom, global thinking, entrepreneurial and innovative talents and decision-making. Poor critical thinking is the chief cause of inadequate decision making in Businesses [13]. Some students will go out to be researchers in their own ways, but the prerequisites for graduates will be to build up research potential as well as holistic development of competencies for a sustainable environment. Regardless of the advantages of close student-staff collaboration throughout the research process, university practices often distance students of full participation in university research [14]. The inclination to learning is in the Middle East and particularly among Saudi students is heavily influenced by historical and cultural position. This is deep-rooted in regurgitation of memorized facts. There exists contentment with doing the minimum just to get by, resulting in inadequate study habits [15, 16]. The increasing affluence seems to affect student commitment and motivation to memorize in a rich manner [17].

The primary focal point of this research report is to increase student engagement through research-guided learning and supply budding research scholars with research skills, abilities and deep critical enquiry thereby generating knowledge worker. The session will further explore the diversity of ways in which undergraduate research and research based learning can stimulate learning development from beginning to final year using various instruction and assessment schemes. The study will append to the sparse literature on the embedment of research into mainstream curriculum for undergraduate management studies. The Prime research

question of this work was, "How can you bring about embedment of research into mainstream curriculum for undergraduate management studies?"

RESEARCH METHOD

The research work focuses on 'mixed-methods research', which makes utilization of both qualitative and quantitative data and provides advantages through triangulation. The universe of study includes data from the graduates involved in research projects during their graduation projects and faculty members of management fraternity who have guided research projects in the eastern region of Kingdom of Saudi Arabia. The research objectives are (a) graduates perception about the extent to which research skills and abilities can be enhanced in curriculum framework development at undergraduate level (b) Faculty proposition about strategies in teaching and assessment for research curriculum framework that can be embedded into the main stream curriculum.

Structured questionnaire comprising of 11 statements. Each statement represent variables representing various research skills and abilities. Variables covered in the questionnaire included inspirational capability, Problem Solving, Literature Reading skills, Critical thinking, Quantitative skills, Research Writing skills, Computing Skills, Innovative thinking, Resourceful, Team Building and Respecting Ethical code. All the questions have five point Likert scale with five ranges, starting from strongly disagree (1) to strongly agree (5). The surveys were circulated among the graduates of management fraternity .The statistical tools are Reliability test, correlation analysis and multiple regressions using SPSS (Statistical Package for Social Science).

The Narrations of Faculty focus group related to level of research, Focus in term of pedagogy and teaching strategies, contact hours and assessment strategies were collected, compiled and summarized.

RESULTS AND DISCUSSIONS

A) Graduates perception about the extent to which research skills and abilities can be enhanced by changes in curriculum framework at undergraduate level

The below statistical test were conducted and analyzed to examine the significance of different identified variables and the extent of their relationship with research performance.

Reliability Test

The Cronbach's alpha coefficient was run to ascertain the reliability of all the questionnaire items. The value of alpha coefficient for all items is above 0.75-0.81 as shown in Table-1 Reliability Analysis. According to George and Mallery [21] the reliability of each group of items is as > 0.90 = Excellent, 0.80 - 0.89 = Good, 0.70 - 0.79 = Acceptable, 0.60 - 0.69 =

Questionable, 0.50 - 0.59 = Poor and < 0.50 = Unacceptable. The nearer the Cronbach's alpha coefficient is to 1 the greater the internal consistency of items in the scale. The values shows in Table-1 that the items have a better internal consistency. Hence, it can be established that the questionnaire is reliable.

Descriptive Analysis

Table-2 displays the descriptive statistics of the 11 variables of Research Performance. Descriptive Analysis refers to basic features of the data in a significant way. The mean of the variables are above the mid-point on a five point Likert scale. The mean is maximum for 'respecting ethical code' it can be concluded that all the other variables are also of great significance for research performance.

Correlation

A Pearson product correlation was calculated to ascertain the relationship between research performance and respective variables. If the result number is more nearer to the number 1 it means the relationship between two variables is much stronger. The plus sign with result number indicates a positive correlation while a minus sign indicates a negative correlation. Table-3. Displays Pearson's r with a plus sign between all of the respective determinants and research performance. Therefore, there is a positive relationship between the 11 determinants and the research performance. The p-value point to a significant correlation at 0.01 level inferring that there is a significant and positive correlation between the 11 determinants and research performance.

Multiple Regression

Multiple Regression test helped in projecting the relationship between 11 independent variables and the dependent variable which is research performance. In Table-4 the variance for Problem Solving is 32, Literature Reading skills is 94, Critical thinking is 43, Quantitative skills is 95, Research Writing skills is 121, Computing Skills is 125, Innovative thinking is 72, Resourceful is 17, Team Building 81 is and Respecting Ethical code 74. The value of 'p' is 0.000 for all the variables which indicate that all the amount of association among the variables are highly significant and the model is highly valid.

(b) Faculty proposition about strategies in teaching and assessment for research framework that can be embedded into the main stream curriculum

One to one interviews were conducted to deliver proposition from the faculty members of the management fraternity regarding strategies in teaching and assessment framework for research. All the narratives were summarized to build a research framework for embedment into the mainstream curriculum. The students learning style and Blooms taxonomy were taken into consideration for building research framework.

Learners fall under styles of diverges, assimilators, converges or accommodations with a connected range of traits [18, 19]. The features of inquiry-based learning are recognizable in every learning style and the most ease with experiential learning are the accommodators. Bloom's taxonomy demonstrates the students move along a continuum and create up the vertical axis while the horizontal axis identifies the degree of student autonomy and can be seen as going from a low level of autonomy (students working along a closed inquiry, requiring structure and guidance) to a high level of autonomy (students working along an open inquiry). The different points of inquiry, start from confirmation inquiry to structured inquiry to guided inquiry to come to 'true' or 'open' inquiry was brought into thoughtfulness. It can be considered that the fourth layer of inquiry describes the graduate thesis process, although advocates of inquiry-based learning have advocated its value at all stages of instruction.

The proposed undergraduate research framework will occur within the parameters set by the program as shown in Table-5. It will be embedded in the mainstream curriculum as a course in freshman, sophomore, junior and senior levels. It will have clear course description, curriculum framework, structure of assessments and resource required the learning outcomes will help to communicate expectations to the students. Significant care will be delivered for the growth of critical thinking, integrative problem-solving and teamwork [20]. The above characteristics facilitate learning and can enhance academic achievement and higher order learning outcomes to promote reflection. This pedagogy will enable students for self-directed learning and become life-long learners progressively by preparing them for case studies report, poster presentation, paper presentation and publication of research paper.

Appendix

Table-1: Reliability Analysis

	Respecting Ethical code	Inspirational capability	Team Building	Problem Solving	Research Writing skills	Literature Reading skills	Innovative thinking	Critical thinking	Resourceful	Quantitative skills	Computing Skills
Cronbach's Alpha	0.81	0.82	0.77	0.76	0.79	0.78	0.80	0.75	0.79	0.75	0.77

Table-2: Descriptive Analysis

	Respecting Ethical code	Inspirational capability	Team Building	Problem Solving	Research Writing skills	Literature Reading skills	Innovative thinking	Critical thinking	Resourceful	Quantitative skills	Computing Skills
Mean	4.05	3.76	4.03	3.78	3.86	3.78	3.81	3.89	3.86	3.71	3.84

Table-3: Correlation Analysis

	Respecting Ethical code	Inspirational capability	Team Building	Problem Solving	Research Writing skills	Literature Reading skills	Innovative thinking	Critical thinking	Resourceful	Quantitative skills	Computing Skills
Respecting Ethical code	1										
Inspirational capability	.31	1									
Team Building	.54	.29	1								
Problem Solving	.32	.47	.23	1							
Research Writing skills	.35	.30	.39	.23	1						
Literature Reading skills	.31	.51	.48	.48	.29	1					
Innovative thinking	.47	.33	.36	.36	.48	.37	1				
Critical thinking	.33	.23	.39	.39	.28	.38	.46	1			
Resourceful	.49	.26	.28	.28	.28	.29	.47	.41	1		
Quantitative skills	.37	.36	.33	.33	.28	.25	.43	.42	.52	1	
Computing Skills	.41	.36	.31	.45	.22	.40	.33	.31	.57	.49	1

Table-4: Multiple Regression Analysis

	Respecting Ethical code	Inspirational capability	Team Building	Problem Solving	Resourceful	Literature Reading skills	Innovative thinking	Critical thinking	Research Writing skills	Quantitative skills	Computing Skills
R²	.44	.45	.46	.25	.15	.50	.43	.31	.56	.45	.57
Adjusted R²	.43	.44	.46	.25	.14	.49	.44	.30	.56	.49	.56
F	74	77	81	32	17	94	72	43	121	95	125

Table-5: Research curriculum Framework

	Research Methodology For Freshman	Research Methodology For Sophomore	Research Methodology For Junior	Research Methodology For Senior
Level of research	Research is conducted at the level of a closed inquiry and they are provided with structured guidelines within the program	Research happens at the level of a closed inquiry, but independently and autonomously in accordance within the program.	The level of research shifts to open inquiry, but within the framework of structured guidelines within the program.	The level of Research is open inquiry with self-determined guiding principle within the program
Teaching Focus	The focus is on case studies that denote practices within organizations. Discuss the Review of Literature Provide an overview of Case Reports as a "research" vehicle and present the case report in structured format	The focus is on conceptual paper. The analysis and review of these papers will help to frame hypotheses, Final presentation of the work is by carrying out Poster presentation summarizing main objectives, brief modules on each sections and finding. Exposure to One-on-one discussion as well as respond to questions from each viewer	The focus is on paper presentation on a relevant topic related to emerging trends in the discipline through evaluation of literature, specifying hypotheses, objectives and finding Final presentation of work is using power point slides with bulleted phrases charts and tables. Exposure to panel discussion and questions from the audience.	The focus is on writing Research paper which report research methodology the research activities, designing and implementing questionnaires, interviews, Quantitative and qualitative data gathering implications of the research, including the limitations of the results. Present the work in the form of full sentences and paragraph in formal essay structure in house journal .Audience interaction can be through occasional email or in person queries
Assessment	Formative and summative assessments	Formative and summative assessments	Formative and summative assessments	Formative and summative assessments

CONCLUSION

The proposal focuses on development of research skills progressively through engaging students in some form of 'inquiry' or 'research' during the four year of undergraduate management studies. The study considers the potential opportunities and strategies to support student engagement in research by building inquiry led learning environment. Advocating an inquiry approach can stimulate and motivate learners by setting off their curiosity this will as well assist them to gain relevant competencies required to work optimally as managers in Saudi Arabia.

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