A Content Analysis of Research Synthesis on Entrance Examination Scores for Higher Education Affecting Undergraduate Learning Achievement

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Abstract :

The purpose of this study is to synthesize the validity on predicting the learning achievement for higher education institutes. The study population consisted of 10 thesis topics by graduate levels as well as the papers from the educational sectors between 1972 and 2010. The record forms of research characteristics were used as data collection tools. The data analysis was made by the use of content analysis. It was found that 1) the research study was classified as 8 topics from the graduate levels and 2 topics, which were submitted from central and regional university, written by individual researchers at university. Students were recruited directly or in quotas: 4 parts totally, which meant that, 3 parts proceeded by University Admission System or Central, but 1 part not stated the recruitment method. The purposes of the study were to examine firstly the relation and secondly the prediction equation. In addition, the research hypothesis was proposed in advance, for example, directional and non-directional. The data were collected mainly as secondary, and the statistics were used as multiple correlation. 2) the entrance examination scores were considered from the learning aptitude, learning

achievement, ONET, ANET and GPA from secondary schools. As a result of the examination, these variables were related to the learning achievement of undergraduate levels, but certain faculties were not related.

Keywords: Higher Education, Learning Achievement, Student Admission, Research Synthesis

Introduction

Examination for Thai student admissions to a higher education institution has been systematically done for over 50 years. It began in the academic year 1961 by the Office of the National Education Council as coordinator. In the academic year 1973, it was transferred to the Department of Universities (now the Office of the Higher Education Commission), administrator (Nonglak Wiratchai. 2002:9). This was because there were a large number of graduates at the secondary education level who intended to continue on to the higher education level. However, the number of possible admissions was limited. Therefore, there had to be an examination system for admissions. The student admissions system for higher education of each era went through some development and change in order to respond to the situation in the era. During 1999 - 2005, there were 3 methods of student admissions for higher education: direct admissions or student admissions as per quotas of regional universities, admissions as per special projects, and examination designed by the Department of Universities. Components of the examination were Grade Point Average at upper secondary education level, exam result of basic academic knowledge and basic specific courses (Wachira Opaswattana. 2006: 11-12) and so on. In 2006, the central admissions examination system was used. Components of admissions were GPAX, Ordinary National Education Test (O-NET), General Aptitude Test (GAT) and Professional and Academic Aptitude Test (PAT). GAT and PAT were used to replace Advanced National Education Test (A-Net) in 2010.

For the admissions examination for higher education in which each institution is responsible for its own admissions otherwise known as direct admissions or quota system, each higher education institution sets out its own components

used to consider admissions and this may differ in each faculty or program. Admissions examination, either through the central system or the direct system, has a goal of selecting an individual with abilities that meet the criteria of the faculty or the program such individual applies for. Thus, some researchers are interested in studying variables related to scholastic aptitude, some researchers are interested in variables related to academic achievement and other researchers are interested in variables not related to cognition. Moreover, some researchers study general learning achievements of higher education institutions whilst some are interested in the learning achievement of a specific faculty or program. As a result, the researcher of this study is interested in studying variables related to admissions exam results of the cognitive part in order to find out the variables that have an impact upon the learning achievement in the overall picture of higher education institutions at the undergraduate level. This is done through research synthesis or research integration. It is a method that uses a large number of researches that investigate the same research problem. This problem is studied, analysed and compared in order to seek similarities and dissimilarities among each of the researches in their findings, methodologies and contexts as well as explanations about the causes of such dissimilarities so that knowledge is attained and can be utilised (Nongluck Wiratchai. 2009: 50).

Research Objectives

The objectives of this research were to synthesis relevant researches published between 1972 - 2010 in relation to variables of admissions exam results, which correlate or affect the learning achievement at the undergraduate level. I used the content analysis technique to obtain conclusions that may become a guideline of developing an effective admissions examination system. The sub-objectives were as follows:

1. To study the characteristics of relevant researches in relation to predictive validity of learning achievement at undergraduate level.

2. To find variables that affect the learning achievement at the higher education level.

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Research Methodology

1. The population used in this research was research reports related to variables that correlate or are influential in the learning achievement at the higher education level. The criteria for research selection are as follows:

1.1 10 of the graduate level researches or research reports belonging to an educational sector, which are published and publicised in a library or found in ThaiList Digital Collection (TDC) of ThaiLis – Thai Library Integrated System between 1972 - 2010

1.2 Be a research containing sufficient written findings for content analysis.

1.3 Be a research with an independent variable of cognition and a dependant variable of learning achievement at the undergraduate level.

2. The instrument used in this research was a summary of research characteristics record form developed by the researcher through studying concepts and synthesis methods of relevant documents and researches. By doing so, the instrument was developed for the purpose of data collection. The instrument was piloted by using it in the process of selecting the researches. The instrument was amended in its question part so that it accorded with and covered the research characteristics.

3. For the data collection process, the researcher searched for 10 researches in TDC of Thai Library Integrated System between 1972 - 2010 that met the set criteria by looking up words related to the issue that the researcher intended to study.

Research Findings

The researcher studied 10 relevant researches in relation to the predictive validity of admissions exam results for higher education institutions that affected the learning achievement at the undergraduate level from TDC and analysed the content of the researches. The findings were as follows:

Research type, the predictive validity of admissions exam results for higher education institutions was studied, there were researchers who conducted researches of this type between 1972 - 2010. In the early period prior to 1977, only one research

was found. Between B.E. 1987 - 2012, there were 9 relevant researches of the same type. These included 1) Rukdee Jintanasonti (1972) 2) Kistakon Sattasopon (1993) 3) Dussadee Luecha (1994) 4) Serm Tadsri and Somphop Lumwatanaporn (1995) 5) Montharat Choopinit (1997) 6) Jatuporn Panmee (2001) 7) Maneerat Krungsaengmuang (2006) 8) Amphika Oopakaew (2005) 9) Wachira Opaswattana (2006) and 10) Patama Arwae Monsikarn Preprat and Pissamai Phincharean (2010). These were 8 master's degree level researches whereas the other 2 were individual researches of a university.

      According to producing institution/program, there were 5 researches from producing institutions in the central region including 1 of College of Academic Studies Prasarnmitr, 3 of Chulalongkorn University and Pranakorn Rajabhat Institute. There were 5 researches from universities in regional areas including 2 of Srinakharinwirot University Mahasarakham Campus, 2 of Prince of Songkhla University and 1 of Srinakharinwirot University Southern Region Campus. As for the researches at the master's degree level, the fields that were conducted included measurement in education, research in education, measurement and evaluation in education, and measurement and research in education.

      Student admissions, there were 4 researches that focused on the direct system or quota, and 3 researches that focused on the central system or the integrated system of the (former) Department of Universities, 3 researches that focused on both the central system and the direct system or quota, and 1 research of non-specified admissions system.

      Setting research objectives, objectives of 8 researches were to study correlation, 4 were to formulate predicting equation in order to find the weight of the equation, the rest were to study the quality of tests, to compare or study the effectiveness of validity, to develop and test models, and to study variables of non-congnition.

      Setting research hypotheses, there were 8 researches that had hypotheses of which the directional and non-directional types were in equal number, and there were 2 researches that had no hypotheses.

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Data Sources, the data from the researches were secondary data registration division, student admissions office, registration and statistics office, registration and evaluation office, academic service office, academic affairs office of each faculty. There were only 2 researches that used the primary and secondary sources because of to need to collect the data that were variables of non-cognition.

Sample, used in the data collection process of each research were at least 107 persons and at most 2,500 persons. The average was 1,130 persons.

Statistics used for data analysis, mostly these were simple multiple correlation and multiple regression. Only one research used logistic regression.

Prediction or variable used for admissions examination, it was found that this was the exam result variable from aptitude test, learning achievement measurement test at the secondary school level, and GPA at the secondary school level. There was only one research of Rukdee Jintanasonti (1972), which used the aptitude test and the learning achievement test as components used for admissions. The aptitude test used for admissions examination was the aptitude test for language, mathematics, spatial ability and reasoning (metaphor and odds one out). There were 3 researches that used the learning achievement test as components for admissions, 3 researches used the learning achievement test of mathematics, 3 researches used the English language test, 3 researches used the Thai language test, 2 researches used the social science test whereas tests for chemistry, biology and physics were used separately as specific tests. Further, there have been other 2 researches related to the application of the findings produced by the National Institute of Testing Service using the ONET and ANET results and average results per study field of 5 groups. As for the GPA at the upper secondary school level, there are 8 researches which studied the components of cognition. According to the analysis, it was further found that 3 researches studied the component of non-cognition. However, this was beyond the scope of this research.

Research results of each research found that the prediction that was studied included results from the aptitude test in which this was the only one-time study. This correlated with the learning achievement at the undergraduate level. Results from various learning achievement tests or results from groups of field study, ONE results and ANET results correlated with the learning outcome at the undergraduate level as well. However, for some researches it is to be noted about the correlation. For example, Rukdee Jintasonti (1972) found that the results from academic tests correlated with learning outcomes for mathematics, science, English language, history and Thai language majors at the undergraduate level. As for the researches related to the GPA at the secondary school level, there were 8 researches. It was found that there was correlation with the learning outcomes for every field at the undergraduate level. Exception was found in Jatuporn Panmee (2001). It was found that GPA correlated with learning outcomes at the undergraduate level except for some faculties including Faculty of Natural Resources, Faculty of Dentistry, Faculty of Nursing, Faculty of Education and College of Islamic Studies. Also, in Wachira Opaswattana (2006), it was found that the predicting variable included GPA at the secondary school level, results of each field, ONET and ANET results, which had no significance for commercial studies. Further, admissions results of students had positive correlation with the learning achievement at the significant level except the admissions results of the students of the Faculty of Engineering, Faculty of Medicine, Faculty of Natural Resources, Faculty of Pharmacy and Faculty of Dentistry in which there was no correlation with the learning achievement. In addition, Dussadee Luecha (1994) found that the admission results correlated with the learning outcomes at the undergraduate level only for the group of direct admissions through the (former) Department of University. However, for the admissions through quotas, it was found to be no correlation. Other than the analysis related to predictive validity of the variables that had been studied by researchers, some researches used the comparison and the non-comparison techniques to find conclusions whether the prediction would be different. The findings indicated that it had no effect on the predictive validity. As for the study of variables, most

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researchers studied GPA or learning achievement at the undergraduate level, there was also another research done by Patama, Arwae, Monskikarn, Preprat and Pissamai Phincharean (2010) who studied variables that were different from other researches and they also used different statistics, which was logistic regression. The learning achievement at the undergraduate level was divided into the group that completed their studies and the group that did not. The findings indicated that students whose university admissions results were at least 41 percent could complete their studies by 78 percent. For the students whose GPAs at the upper secondary school level were more than 3.00 had a chance of completing their studies by 77 percent.

Discussion of the Findings

After synthesizing researches, it was found that the first research found on TDC was the master's degree research which was published in 1972. The results used for admissions were from the aptitude test and the academic learning achievement test at the upper secondary school level. This was the only research that used the result from the aptitude test. After this, there were researches during 1992 - 2005 which used results from the learning achievement test and the learning outcomes at the upper secondary school level. Following 2005, which was the early period of the central testing system, it was found that there were two researches that used GPA, results from ONET and ANET as components as part of the admissions into the undergraduate level.

The results from the above research, the components that were used as part of the admissions into the undergraduate level correlated with the learning achievement at the undergraduate level. Even though only for some faculty and program in which it was found that the results that were used as part of admissions had no correlation with the learning achievement. An example was the College of Islamic Studies where limitations in the language proficiency had an impact upon reading and analytical abilities about the test. Furthermore, as for the student group that passed the admissions examination, if the range of the coefficient of

dispersion was relatively low, it means that the students' abilities were not significantly different. Thus, the study of the academic exam results rendered no effect upon the learning achievement at the undergraduate level.

Recommendations

1. From the researches in 1972 - 2010, it is to be noted that each research was the study on the results as a component such as the learning aptitude component, the academic achievement component, or the GPA component that had an impact upon the learning achievement. Thus, there should be an investigation on these components in order to obtain clear conclusions as to which component may be correlated with the learning achievement at the undergraduate level.

2. There should be synthesis of researches in relation to the exam results used for student admissions into higher education institutions. This should be done by expanding the scope of the research such as an investigation in each faculty of program.

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