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Personal factors as predictors of students' academic achievement in colleges of education in South Western Nigeria

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Educational stakeholders have continued to express concerns over the poor academic performance of Nigerian students at virtually all levels of academic engagements. This paper investigated personal factors as predictors of students' academic performance in the South-Western Nigeria. The study employed the ex post facto design using a survey design and a multiple regression model. The samples used for the study consisted of 1,100 (200 and 300) National Certificate of Education (NCE) students in Federal, State and Private NCE-awarding institutions in South Western Nigeria, using stratified sampling techniques. The validated research instruments used for the study had the following psychometric properties: Cronbach alpha (α) [0.79 (students) and 0.73 (lecturers); Guttman split-half 0.78 (students) and 0.71 (lecturers; and Spearman-Brown equal length results were 0.69 (students) and 0.70 (lecturers)]. The study found that a number of personal factors like students' interests, home environment, parental support and study habits were significant predictors of students' academic achievement in the Colleges of Education sampled. On the other hand, students' perception of course and self-concept were not found to be significant predictors of academic achievement. The study proffered a number of recommendations to improve the quality of educational policy outcomes geared towards improving students' educational performance and hence enhance the achievement of national economic goals.

Key Words: Personal factors, academic achievement, Nigeria, expost facto design, stratified random sampling, multiple regressions.

INTRODUCTION

Background to the Study

The development of any nation is hinged on solid educational foundation for its citizenry. This suggests that education is a means of effecting changes in the society in order to build a well-developed country. The objective of education includes creativity, objectivity and intellectual adventure. Education enables a child to develop

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physically, mentally, socially, emotionally and intellect-ually. Education is the key to creating a society, which is dynamic and productive, offering opportunity and fairness to all. Therefore, it is axiomatic that efforts should be geared towards maintaining high standards in schools. The standards will be reflected in students' academic achievement.

Like in all other facets of national planning and deve-lopment, education has its own share of poignant challenges. Academic problems are frequent indicators of larger problems, often having to do with personality and lifestyle, societal and economic factors and the family. Problems of non-achievers are numerous but the truth is that they lack the knowledge of their abilities and strengths, moreover, they have not developed the neces-sary study skills and techniques and they also lack the interest and motivation that are requisite for achievement.

For example, Uwadiae (in Dike 2007) stated that students' performance in the West African Senior School Certificate Examination (WASSCE) from 2001 and 2005 has declined with mass failure recorded in the two basic subjects that form the foundation for good academic achievement in tertiary institutions. This, no doubt calls for concern of stakeholders. Dike passed a guilty verdict on government and parents for students' failure in English Language and Mathematics.

Financial Standard (2008) in an editorial captioned 'Mass failure in WAEC Examination' described the perfor-mance of students in the May/June 2008 examination conducted by the Council as disturbing. Only 188,442 candidates, that is, 13.7% of 1, 36,142 candidates who sat for the examinations made credit passes in English Language, Mathematics and three other subjects. A total of 232,755 other results have yet to be released due to errors made by the candidates during registration. Of the pending results, 74,956 were being investigated for various examination malpractices. Available examination statistics from WAEC showed that the May/June 2008 WASSCE result was the worst performance in the last seven years. According to the Council's examination statistics, the average failure recorded in English Language and Mathematics between 2001 and 2005 was roughly 38% of the total number of candidates that sat for the examination. It is upsetting that the results of the recently released May/June 2008 WASSCE showed that over 80% of the candidates did not score credit in English Language and Mathematics. The result showed that the number of candidates that obtained credit in English Language, Mathematics and three other subjects in the May/June 2008 WASSCE actually plunged by almost 6% from 2007 record.

Obe (1996) identified the causes of mass failure in examinations. The factors responsible for mass failure include students' weak background, students' low intelli-gence, lack of aptitude and poor interest for the subject, students' bad habits and poor study skills, students' weakness in comprehension and inability to express

themselves, lack of qualified teachers for some subjects, lack of parental motivation and support, teachers not dedicated to duty, poor school infrastructure and poor learning environment, overcrowded classrooms, lack of good textbooks and libraries and subsequently incessant strikes by teachers due to poor conditions of service.

The trend record of low academic achievement is not limited to secondary schools but also rampant among students of tertiary institutions. This has been a subject of major concern to educational planners, administrators, stakeholders in education and the students themselves. In support of this, Falola (2008) commented that a total number of 39 students of the Niger state owned University, Ibrahim Badamosi Babangida University, Lapai have been expelled from the institution over poor academic performance, while two others have been expelled for examination malpractices according to the vice chancellor. Professor Muhammed Chado, the vice chancellor, further stated that the students were dis-missed for failure to meet up with the minimum academic requirements after two academic sessions on probation.

Previous research in related studies pointed out many factors that may account for students' academic achie-vement. Some of these researchers concentrated on the Nigerian environment (Osarenren, 1996; Ogunkola, 2000; Ojerinde, 1998; Fabiyi and Fagbamiye, 2001; and Kabiru, 2003); and other studies (for example, Nelson and Soli, 2000; Garzuk and Chagok, 2001; Mark, 2002; Bazargan, 2002; Sucharita, 2004) were based on foreign countries.

However, none of these studies have concentrated on personal factors in relation to colleges of education, especially in Nigeria. This might be due to the piecemeal approach to the research into academic achievement in the colleges of education in the country. This gap in knowledge should not be allowed to continue un-investigated if the country is to achieve the educational objective of providing qualitative graduates to power Nigerian economic and political development program-mes. The quality output of any operation is a function of the input that is processed. Consequently, the quality output of primary and secondary school certificate holders depends, to a large extent, on the quality of trained teachers from colleges of education. This factor is recognized by the Nigerian National Policy on Education (2004:33) which states that the minimum qualification for entry into the teaching profession shall be the Nigeria Certificate in Education (NCE).

Statement of the problem

The consequences of not addressing the problem of students' academic achievement are many. Students by their nature do get involved in very many activities outside their studies. When students lose interest in their studies, failure rate will be higher. They may engage in very many unlawful activities like cultism, robbery,

prostitution and tyranny, among other vices. Furthermore, students' low academic achievement may result in failure. When failure becomes persistent, students may easily withdraw from the school system. Research finding has also shown that economic deprivation could lead to failure.

In addition to this, students may engage in all forms of disruptive behavior inside and outside the school system. Drug addiction is one of the problems likely to be encountered by the students. Research reports confirmed that more students are into drug addiction. Reports survey carried out in Lagos and Kano showed that cannabis, heroine and cocaine are widely abused by Lagos and Kano students. The national drug law enforcement agency (NDLEA) drug force reports showed that the common drugs abused mainly by smokers were marijuana (86.9%), cannabis (66%), alcohol (22%), cocaine (18%) and heroine (13.8%) (*Vanguard,* February 21st, 1994).

However, excessive alcohol consumption creates numerous health problems and shortens lifespan. Heavy drinkers are at greater risk of cancer, ulcer, heart disease, muscle wastage, malnutrition and cirrhosis of liver. These problems could lead to death. Low academic achievement could also lead to joblessness after the students have graduated. Hence, the students may find it difficult to compete with their colleagues who have passed out of the school system with very good grades. This may lead to further problems like robbery, prostitution, general violence, alcoholism, smoking and drug trafficking, among others.

Achievement is important in education. Despite the huge resources expended by government, results are not forthcoming. It is in view of these problems that research is currently being done to look into the personal factors that are responsible for students' academic achievement among students in colleges of education so as to enable the students to bring about better performance.

Aim and objectives of the study

The broad objective is to investigate the personal factors responsible for students' academic achievement in colleges of education in South-Western Nigeria,
i. The specific objectives are: to identify the level of students' academic achievement in federal, state and private colleges of education in that part of the country.
ii. It also includes a comparative study of personal factors as they affect students in colleges of education under study.

Research Questions

The study was designed to provide answers to the following questions:

i. Is there any difference in the influences components of

personal factors affecting educational achievement across federal, state and private colleges of education in South Western Nigeria?
ii. What is the significance of personal factors as predictors of students' academic achievement in the colleges of education in the South Western Nigeria?
iii. What are the educational policy implications of the empirical findings of this study?

The Statement of the Hypotheses

In order to answer the research questions, the following propositions are made:
i. Personal factors are not significantly related to students' academic achievement in colleges of education in South Western Nigeria.
ii. There is no significant difference in the ranking of personal factors among students.

Significance of the Study

This study is significant in many respects. The study will help to reveal the components of personal factors responsible for students' academic achievement in colleges of education in South-Western Nigeria. It will compare the relationship of the variables with one another as they affect students from the colleges used for the study. Ranking of the factors will be done according to the perception of the students to make readers have an overview of the interrelatedness of the variables used for the study. This is of particular significance in a democratic environment where political parties attempt to improve educational performance in a competitive manner. The study therefore offers empirical support to assist educational policy makers, administrators and educators in the educational planning and implementation. Finally, students would also benefit from the study through suggestions offered on ways of improving students' academic achievement by the various interactions of the components of personal factors identified in the study and the study will lay a solid foundation which subsequent researchers in similar studies may build upon

Scope of the Study

The study investigated the personal factors responsible for students' academic achievement in Nigerian Colleges of Education in South Western Nigeria. It also reported how the factors is related to one another among the Colleges studied.

Theoretical Framework/Conceptual models

Theoretical Framework: The study of comparison of

factors responsible for students' academic achievement in identified Nigerian colleges of education cannot be complete without considering the theoretical background on which some of the factors are based. Consequently, this thesis is anchored on a number of fundamental theories. These include theory of achievement motivation; Watson's theory of learning; Thorndike (S-R) Reinforcement theory; Skinner's operant conditioning theory and Hull's theory of learning. The theories are explained thus:

(a) **Theory of Achievement Motivation**: This theory was propounded by McClelland (1951) of Havard University. According to the theorist, the psychological study of the individual and the nation can contribute a great deal to the problem of economic growth. Human beings differ from one another in the strength of achievement motive. It is this difference in the strength of motivation to achieve that is important in understanding the differences in the economic growth of nations. This theory can be related to the study and has been upheld by a number of researchers (Misanchuk, 1977; Dunham, 1973 and Ajila and Olutola, 2000) and is also relevant to the current study.

For example, the development of achievement motives is affected by a number of variables in home, school and society. Home plays an important role in the early training of children for the development of attitudes and motives. Parental expectation and guidance will assist the child to develop the need for high achievement in life. The society and its social philosophy is an important variable in developing achievement motive. There are communities which are achievement-oriented. There are other societies which believe in fate and leave everything to God. The teacher can help students to develop achievement motive.

(b) **Watson's Theory of Learning**: According to the theorist, the explanation of learning, understanding of brain and its functioning is very essential. This theory holds that people's behaviour is learned by interacting with external environment stimuli. Emphasis is laid on providing conducive environment in school for efficient and permanent learning. Suffiecient practice and exercise are necessary to make the bondages between S-R permanent. This theory has relationship with the current study because academic and social integration affect student persistence and achievement in colleges

REVIEW OF RELEVANT LITERATURE

History and Development of Teacher Education in Nigeria

In Nigeria, formal teacher education started with the arrival of the European missionaries. The missionaries introduced primary education referred to as elementary schools. Secondary education and then teacher training colleges followed.

Specifically, the Phelps-Stoke Commission of 1920 identified the loopholes in the education provided by the missionaries. The way the curriculum was designed did not meet the aspirations of the people. Besides, there was a need for highly conscientious and efficient classroom teachers. The report led to the 1925 memorandum on education, which gave birth to the establishment of two types of teacher training colleges -- the grade III and grade II teacher training colleges. In addition to these, colleges were also established to produce teachers that were awarded grade I certificate to teach in the lower classes of secondary schools.

With the emergence of universal primary education programme, there was a need to expand primary and secondary school education because the teachers on ground could not match the increasing number of students' enrolment. This led the government to organize induction course for secondary school certificate leavers in order to qualify them to teach at the secondary schools.

The Ashby Commission of 1960 discovered a lot of discrepancies in this arrangement and its report led to the establishment of colleges of education. The colleges were established to expand the human resources in terms of personnel to teach in the colleges of education. Today, there are about seventy-two of such colleges (private, state and federal) all over the Nigerian federation.

Personal Factors that affect Students' Academic Achievement

A number of variables appear to affect the effectiveness of teacher education in Nigeria. For national educational policies to achieve their goal of engendering national development, these factors may be of relevance to all educational stakeholders in Nigeria: Government, schools, provost/principals, teachers, students and the society at large.

The personal factors considered in this study as identified in literature include: home environment, students' interest, study habit, self-concept, peer influence, students' perception of course and parental support.

Personal Factors and Students' Academic Achievement

Home Environment: Yusuf (2001) conducted a study on the future of teaching and learning mathematics in Katsina State. It was observed that pupils from educationally advanced homes, most often, required the teacher to confirm the knowledge and ideas they have already acquired informally, as different from waiting on the teacher as the custodians of knowledge. In other

words, students who are from formally educated parents are likely to learn faster and achieve more than students from illiterate parents.

In another study carried out by Gadagbui (1998) it was observed that most children had serious financial and sociological problems at home, which had effects on their academic progress. Furthermore, the West African Examinations Council (WAEC) Report (2000) indicated that children should also be blamed for academic failure. The report stated that many of the children were not committed to their studies. As a matter of fact, it was observed that many of them lacked English Language proficiency as they spent too much time watching television.

Children from alcoholic homes often experience stress, feel insecure, angry and frustrated and this affects their academic performance. Kuperman et al. (1999) carried out a research on students from alcoholic and non-alcoholic families. The researcher found that children from alcoholic families have more anxiety and low mood than children from non-alcoholic families. The children also have lower verbal and reading scores, increased delinquency, truancy and social inadequacy and more school related behaviour problems at age 13. Such children also begin to drink at an earlier age and as they grow older, they become alcoholics and develop increasing problems. In addition, Buyanov (1986) stated in his study that children born by alcoholic mothers have cerebrasthenic syndrome (which is a brain defect during pregnancy). They suffer from travelling sickness, vomit a lot, poor memories and have short attention span. They sleep deep and cannot wake up to urinate; they are irritable or over joyful and careless. Worse of it all, they have poor marks at the end of each lesson with answers poorer than the first one.

In another study by Ajila and Olutola (2000), which investigated parents' socio-economic status on university students' academic performance, it was reported that the family exerts a great influence on the students' psychological, emotional, social and economic state. The researchers noted that the state of the home affects the individual since the parents are the first socializing agents in the individual's life. Therefore, the family background of an individual and the context of his family environments affect his retention to life situations and his level of performance. Furthermore, the study revealed that family income, occupations, house type, level of parent's education and dwelling area exert a significant influence on academic achievement. The study confirmed that the extent to which parents are able to care for their children financially, determines their disposition and motivation to educational achievement. The level of education and occupation of parents reflect their perception of educational importance, which influence the encouragements and involvement of such parents in their children's educational attainments.

In a similar study by Kingdom (1996) it was reported that home factors have significant correlation with students' academic achievement. The researcher argued that student's age and number of hours of home study per week affect academic achievement. He confirmed that longer home study enhances learning particularly in mathematics and that age reflects the negative influences of low motivation and grade repetition. Travel time to school is also reported to have a positive influence on achievement. Kingdom (1996) also identified family economic status as being significantly related to academic achievement, for example low caste pupils have significantly lower achievement than their non-low caste colleagues, even after controlling for parental education and household wealth. The statistical tools used for the study are descriptive and inferential (regression). The findings of the study show that the number of siblings in a family affect academic achievement for parental attention will be less if children are many.

Additionally, Cutrona et al. (1994) investigated the presence of parental social support and reported that parental social support is positively related to college achievement. The researchers used multiple linear regression and Pearson moment correlation coefficient.

Chadwick, Bahr and Stauss (1976) conducted a study on Indian education in the city: correlates of academic performance and found that family instability affect academic achievement of male child more than the female because the son is deprived of male role model. Therefore, family instability is significantly related to GPA (Grade Point Average) for females and not for males.

According to the Moynihan (1965) thesis, the matriarchic nature and instability of the Black family contribute to the economic, social and psychological disadvantages, which Blacks frequently experience in India. Conclusively, it was found that family instability may contribute to inappropriate behaviour such as: delinquency, crime, suicide, alcoholism, and other pathologies and this may lead to inadequate school performance. However, family instability was found to be inversely related to academic achievement.

Students' Interest: Interest also contributes to students' academic achievement. Interest has to do with a learner's predisposition to react positively in certain ways toward certain aspects of the environment and interest is usually developed in relation to and remain allied to more basic motives. Interest reaction to any situation depends upon the situation's potential or actual fulfilment of personal needs and goals. Students' interest in courses has been cited as a partial explanation for overall course ratings, occupational choice and achievement. Bycio and Allen (2007) in their study of factors associated with performance on the Educational Testing Service pointed out that GPA and motivation were significantly related to major field achievement test in business performance. Multiple regression and t-tests were used to examine the degree to which the entire set of predictors (that is. GPA,

SAT and the student motivation scale) could account for scholastic performance. Similarly, Okebukola (1997) observed the link between attitude and academic success and noted that a positively high level of attitude towards a particular subject is said to translate into a high level of need for achievement and ultimately, a high level of performance. In other words, if students have positive attitude towards a particular subject, there is assurance of good performance. This gives credence to the fact that interest contributes in remarkable dimensions to students' academic achievement.

Study habit: Study habit is an important factor in students' academic achievement. Many students pay little or no attention to their studies and may also not be regular at school. As a matter of fact, some of them could abandon the classrooms to engage in non-profitable tasks like stealing, gossiping, bullying other students, visiting video clubs and engaging in other unwholesome group behaviour. Adesemowo (2000) noted in her study that a major cause of under achievement at school is poor study habit; even a brilliant student can underachieve if he has faulty study habit. Richter (2006) studied the inter-temporal consistency predictors of student performance and reported that study habit, high school grades and standardized tests of educational achievement have the greatest predictive power with respect to the academic performance of students in University education when compared with other factors. The researcher made use of regression and analysis of variance. The study further revealed that high school grades are the most important predictors of the performance of business administration students.

Adesoji and Oladele (2003) conducted a study on student and teacher related variables as determinants of secondary school students' academic achievement in chemistry in Lagos State, Nigeria. The study revealed that study habit and attitude had no significant and direct relationship with secondary school students' academic achievement. According to the researchers, this is not to say that they did not have effect but their effects are not significant particularly in the presence of the teacher variables such as teacher experience, teacher qualifications and teacher's age. This finding established the importance of teacher in a teaching-learning situation.

Peer Influence: Peer group relationship may also lead to acts of truancy and absenteeism on the part of the students. Adolescence is a period of increasing influence of one's peers and peer values and a diminished role of parents as a primary reference group. Their main values are social participation, group loyalty, individual achievement and responsibility. Peer acceptance is particularly crucial to the adolescent and the influence of the group may be powerful and all encompassing. This is because whatever is right to their friends automatically becomes the right thing to do. This accounts for the reason why students would insist that they must buy certain things, which members of their peer group already possess.

Reinforcement of students' academic work by significant others like parents, teachers, peer group and fellow students affect academic performance. Oldfather and McLaughlin (1993) in their study found that students are motivated to learn in classrooms where teachers impress the students that they can make it, where teachers praise and encourage students for efforts made and where teachers encourage students not only to compete with others but also to compete with themselves. They confirmed that when students are taught in this manner, they are always motivated to learn to fulfil their teachers' prophecy that they can make it. Such students become academic successes.

Students' Perception of Course: Campbell, Brownlee and Smith (1996) carried out a study on the differential impact of teachers' approaches to teaching on secondary school students' approaches to learning. They found that students' conception of learning significantly affected differential impact of teacher's approaches to teaching. The researchers used some models of teaching and learning in their investigation. Besides, one-way analysis of variance was used to test for differences between six classes on each scale of LPQ and for learner self-concept. According to the researchers, university students conceptualized learning in six qualitatively different ways, which are increasing one's knowledge, memorizing and reproducing, applying, understanding, seeing something in a different way and changing a pattern. These six categories can be further categorized into quantitative (reproductive) and qualitative (constructivist) dimensions, which relate to particular epistemological positions, and influence students' approaches to learning (Biggs, 1989). The first three conceptions represent a quantitative orientation to a learning similar to Perry's "dualists" where knowledge is viewed as absolute and categorical and learning involves surface strategies (Perry, 1981). The second three conceptions reflect a qualitative conception, which is likely to involve deep approaches to learning.

Parents' Support: The family has an important role to play in the education of children. Parents are the custodians of their children's education. Their attitude to the education of their children may make their (children) educational achievement. The levels of parents' education, their income and their occupation or socio-economic status exert a significant influence on their children's educational achievement. Race also has a remarkable role to play in educational achievement. In Nigerian setting, for instance, there is the general belief among the Hausas that a female child should get married earlier it is also observed in other major ethnic groups (Yoruba and the Igbo). The northern Nigerian culture also favours religious education over the western education.

Indeed, Opare (1999) noted that parents' education,

especially, mother's level of formal education is strongly related to their productivity to reinforce their children's academic work. Hence, literate mothers more than literate fathers tend to offer psychological support to their children's work and this has a positive effect on the children's academic achievement. In this study, data were collected from 600 students, 254 boys and 346 girls and the results showed a strong positive relationship between mother's reinforcement of their children's academic work on one hand and the children's academic effort on the other. This suggests that mothers are more likely to offer psychological support to their children's schoolwork and that such a support motivates the children to work harder. The findings of this study corroborate that of Kalmjin (1994), which showed that educated mothers provide their children with more materials and activities that promote high educational outcomes. These findings are also consistent with research findings that educated mothers tend to reinforce their children's effort at school and that such children invariably do well in school (Handa, 1996).

RESEARCH METHODS

Research Design

The research design employed for the study is *ex-post facto* using a survey design and a multiple regression design. Asika (1991) stated that *ex-post facto* research is a systematic empirical study in which the researcher does not in any way control and manipulate the independent variables because the situation for the study already exists or has already taken place. The author further opined that the researcher could not manipulate the independent variables because they cannot be manipulated. However, the researcher can indeed create or contrive a situation that will generate the requisite data for analysis. In this study, the authors located the personal factors studied from education literature.

Population

The population for the study consisted of 1,900 lecturers and 12,420 (200 Level and 300 Level) NCE students in federal, state and private NCE-awarding institutions in South Western Nigeria: Ekiti, Lagos, Ogun, Ondo, Osun and Oyo States.

Sample and Sampling Technique

The sample for the study was drawn from the Colleges of Education in each of the six States of the South Western Nigeria. The population was stratified into the homogeneous groups of federal, states and private Colleges of Education. Subsequently, random sampling technique was applied to pick the institutions for the study. In all, there are seventeen Colleges of Education in the population. On the basis of this selection process, the sampled Colleges of Education are listed in Appendix 1 of this research report.

Some States (Osun, Ekiti and Ondo States) have no privately owned Colleges of Education at the time the study was conducted. Hence, the sample of privately owned Colleges of Education is limited to two States. One hundred students were randomly selected for the study from each of the institutions and questionnaires were

administered on them. In addition to this, questionnaire was administered on at least ten lecturers from each of the institutions in order to make the data robust.

The questionnaire required the students to rank the personal variables that affect students' academic achievement from the most significant variable to the least. Students were also required to state other factors, that are not listed in the instrument, which affect their academic achievement. Opinions of lecturers were also sought on factors they thought were likely to affect students' academic achievement.

Research Instruments

Two similarly structured questionnaires were used for the study. The first questionnaire was designed for the students while the second was targeted at the lecturers. The instruments are 4-point likert scale questionnaires aimed at eliciting the respondents' perceptions of personal factors that are likely to affect students' academic achievement in the State, Federal and Private Colleges of Education in South Western Nigeria.

Part One of the questionnaires sought for information on demographic data such as sex, age, name of institution, department, state of origin, level of schooling, qualifications, residential area, parental social-economic status, grade point average in school tests and exercises and assignments. Part two of the questionnaire required the respondents to supply information on personal factors that affect their academic achievement. The data gathered was analyzed using multiple regressions. Part three of the questionnaire requested the respondents to rank the personal variables affecting students' academic achievement from the most highly ranked to the least. Such ranking enabled the comparison of the multiple regression results with the ranking of the variables by respondents.

Instrument Validation

Content Validity: Validation is the process of' ensuring the degree of effectiveness of each of the items in the research instrument. It is the process of determining the extent to which each of the items measures what it is designed to measure. The draft questionnaires were given to some advanced students in two Colleges of Education who were to serve as the representative sample of the population of subjects to be used for the study. Their comments were noted and these were considered in preparing the second draft. This approach was necessary to ensure that the items were clear enough and easily understood and to know whether there was a need to include more items.

The draft questionnaires were also given to lecturers in Olabisi Onabanjo University who are experts in the fields of education and institutional management to enable them make their inputs. These were subsequently incorporated, before the final questionnaires were printed.

Reliability of the Instrument: Reliability is necessary to ascertain whether the instruments are capable of reproducing consistent or similar results after a number of repeated administrations. Copies of the final drafts were administered to 30 students and 10 lecturers in Colleges of Education. Their responses were found to be consistent and reliable, after two administrations. Reliability tests were also carried out to determine whether the measuring Instruments were consistent and reproducible. The results are Cronbach alpha (α) 0.79 (students) and 0.73 (lecturers); Guttman split-half 0.78 (students) and 0.71 (lecturers) and Spearman-Brown equal length results are 0.69 (students) and 0.70 (lecturers). Given these results, the questionnaires were considered reliable for the study.

Data Collection

Primary and secondary data were generated and used for the study. The two sources of data were exploited to ensure that reasonably robust and reliable analyses were made.

Primary Data Collection

Primary data were derived from respondents' opinions on the items in the questionnaires to be administered. This was used to ensure that the researcher got direct information from respondents. The method would afford the researcher the opportunity to structure the questions in such a way that respondents would understand them. In addition to this, their responses would be easier to manage because the questionnaire items are structured.

This method however is not without some shortcomings. The researcher was not able to retrieve the entire questionnaire sent out. Respondents might have reacted similarly as the instruments were administered at the same time in the same environment. In addition to this, respondents might have been biased in their responses and this might make the findings to be subjective. However, the administration of the questionnaire was carried out as independently as possible from one respondent to the other. Also, the benefits of using the questionnaires appeared to outweigh the costs to be incurred.

Secondary Data Collection

The data realized from this source consist of relevant data not directly prepared for the current study. The most relevant of these is the students' Cumulative Grade Point Average (CGPA), which constitutes the dependent variable. The two sources of data (primary and secondary) were used in order to generate sufficient facts for the study.

Method/Procedure for Data Analysis

Model development for the components of Personal Factors Responsible for Students' Academic Achievement: Correlation and multiple regression techniques were employed to analyze the data obtained. These techniques have been employed in many prior studies (fpr example De Berard et al., 2004; Adesoji and Oladele, 2003; Fabiyi and Fagbamiye, 2001; Pascarella et al., 1996). In the model:

$$ACADACH = \beta_o + \beta_1 HOMENV + \beta_2 STINT + \beta_3 SHABIT + \beta_4 SELFCON + \beta_5 PEERINF + \beta_6 SPERCEP + \beta_7 PSUP + \varepsilon \quad (1)$$

The dependent variable (students' academic achievement - ACADACH) was regressed on the following personal factors:

Home Environment (HOMENV)
Students' Interest (STINT)
Study Habit (SHABIT)
Self Concept (SELFCON)
Peer Influence (PEERINF)
Students' Perception of Course (SPERCEP)
Parental Support (PSUP)
β_o = constant term
ε = residual term

The variables of this study are operationalised by representing the dependent variable (Academic Achievement) by the cumulative grade point average collected from the students' records in the various institutions. The data for the independent variables are gathered through the responses to the questionnaire items.

Statistical Tools/Analytical Procedure of Survey Data

The statistical tools that were used for the survey part of this study were means, variances and standard deviations. These enabled the researcher compare the variables identified easily. Parametric and non-parametric statistics were used to test for differences in perceptions of some of the independent variables while the differences between two means scores in pairs were also tested. Kendall's W (coefficient of concordance) was also used.   In addition, various weights were attached to the rankings of the personal factors affecting students' academic achievement collected through Part Three of the questionnaires. The weights used are:

Ranking	Weights
7	7
6	6
5	5
4	4
3	3
2	2
1	1

These weights enabled the calculation of the total scores per variable, which were subsequently ranked for the purpose of determining the rank-order correlation coefficients.

RESULTS

Research Question 1

Is there any difference in the influences of components of personal factors affecting educational achievement across federal, state and private colleges of education in South Western Nigeria?

Table 1 presents the descriptive statistics for 1,100 students' ranking of the seven components of personal factors proposed to affect academic achievement (home environment, student's interest, study habit, self-concept, peer influence, student's perception of the course and parental support).

The minimum rank is 1.00 while the maximum rank is 7.00. This range of ranks applies to all the components of personal factors.   However, student's interest with a mean rank of 5.1482 and a standard deviation of 1.7289 is adjudged as the most important personal variable. This is followed by home environment (mean = 5.0445; standard deviation = 1.9851) and parental support (mean = 4.8345; standard deviation = 2.2014). On the other hand, the least ranked components of personal factors are student's perception of the course (mean = 4.3287; standard deviation = 1.8184) and peer influence (mean = 4.4255; standard deviation = 1.8071) respectively.

In order to test hypothesis one, the above descriptive findings were also subjected to inferential statistical test. Kendall's W Test is applied to determine if there is any significant difference in the various ranks. The resulting statistic represents the level of agreement among the

Table 1. Descriptive Statistics of Personal Factors (Students) Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Homenvir	1100	5.0445	1.985512	1.00	7.00
Student	1100	5.1482	1.72886	1.00	7.00
Stdhabit	1100	4.8182	1.65044	1.00	7.00
Sconcept	1100	4.4591	1.76333	1.00	7.00
Peerinfl	1100	4.4255	1.80710	1.00	7.00
Spercept	1100	4.3827	1.81839	1.00	7.00
Parsupp	1100	4.8345	2.20139	1.00	7.00

Source: SPSS output

Table 2. Kendall's W Test (Students' Ranking of Personal Factors)

Ranks	Mean rank
Homenvir	4.36
Student	4.53
Stdhabit	4.06
Sconcept	3.65
peerinfi	3.61
Spercept	3.53
parsupp	4.26

Test Statistics

N	1100
Kendall' W[a]	.039
Chi-Square	254.185
df	6
Asymp. Sig.	.000

a. Kendall's Coefficient of Concordance
 Source: SPSS output

groups of Federal, State and Private colleges of education students in the South Western Nigeria. The result of this test is presented in Table 2.

From Table 2 Kendall's W (coefficient of concordance) is 0.039. The p-value is 0.000. This shows that there is a significant difference among the rankings of the various components of personal factors. In other words the components are significantly different in accounting for students' academic performance.

Table 3 shows the statistics for 110 lecturers' ranking of the seven components of personal factors proposed to affect academic achievement (home environment, student's interest, study habit, self-concept, peer influence, student's perception of the course and parental support).

The lecturers from the three groups of colleges of education also ranked student's interest with a mean rank of 5.7000 and a standard deviation of 1.4561 as the most important personal variable. This is followed by home environment (mean = 5.1000; standard deviation = 1.6534) and study habit (mean = 5.0545; standard deviation = 1.4453). On the other hand, the two least ranked components of personal factors are student's self concept, (mean = 4.3818; standard deviation = 1.6422) and student's perception of the course (mean = 4.8727; standard deviation = 1.4596) respectively.

The descriptive findings from the lecturers were also subjected to inferential statistical test using Kendall's Coefficient of Concordance. This is to determine if there is any significant difference in the various ranks. The resulting statistic represents the level of agreement among the lecturers in Federal, State and Private colleges of education in the South Western Nigeria. The result of this test is presented in Table 4.

Table 4 shows a coefficient of concordance of 0.084. The p-value is 0.000. This shows that there is a significant difference among the rankings of the various components of personal factors. The components are significantly different in accounting for students' academic achievement.

A comparison of the students' and lecturers' rankings of the seven components of personal factors reveals an interesting development captured in Table 5.

The two groups of respondents (students and lectures) across all the eleven schools studied from Federal, State and Private Colleges of Education ranked students' interest as the most important component of personal factors. Also, home environment is ranked as the second most important component of personal factor. However, study habit was ranked third by the lecturers in contrast to the rank of fourth given by the students. The most significant difference in the rankings are in relation to self-concept ranked fifth by the students and seventh by the lecturers, just as peer influence was ranked fourth by the lecturers and sixth by the students and parental support ranked third by the students and fifth by the lecturers. The three least ranked factors by the students are students' perception of the course, peer influence; and self-concept, in comparison to self-concept, students'

Table 3. Descriptive Statistics of Personal Factors (Lecturers)

	N	Mean	Std. Deviation	Minimum	Maximum
Ihomevir	110	5.1000	1.65336	1.00	7.00
Istudint	110	5.7000	1.45608	1.00	7.00
Istdhabi	110	5.0545	1.44525	1.00	7.00
IIsconce	110	4.3818	1.64223	1.00	7.00
Ipeerinf	110	5.0091	1.55920	1.00	7.00
Ispercep	110	4.8727	1.45960	1.00	7.00
Ipersupp	110	4.7364	1.80050	1.00	7.00

Source: SPSS output

Table 4. Kendall's W Test (Lecturers' Ranking of Personal Factors)

Ranks	Mean rank
Ihomevir	4.20
Istudint	5.02
Istdhabi	4.08
IIsconce	3.06
Ipeerinf	4.04
Ispercep	3.76
Iparsupp	3.85

Test Statistics

N	110
Kendall's W[a]	.084
Chi-Square	55.210
Df	6
Asymp.Sig.	.000

Kendall's Coefficient of Concordance
Source: SPSS output

The analysis undertaken to answer the second research question proceeds to regress CGPA on the components of personal factors. The results of the multiple regression model for the CGPA (a measure of academic achievement) and the seven components of personal factors are shown in Table 6. It is evident that the Variance Inflation factor (VIF) statistics are sufficiently low as to preclude the existence of multicollinearity. The adjusted R^2 shows that 45% of the variance in the academic achievement of colleges of education students is accounted for by the independent variables included in this regression model. An inspection of the regression model co-efficients in Table 6 shows that STUDENTS' INTEREST ($p < 0.01$), STUDY HABIT ($p < 0.05$), HOME ENVIRONMENT ($p < 0.01$) and PARENTAL SUPPORT ($p < 0.05$) were significant in explaining academic achievement. The result of the regression further suggests that SELF CONCEPT ($P > 0.05$), PEER INFLUENCE ($p>0.05$) and STUDENT PERCEPTION ($p > 0.05$) had no significant predictive power.

Research Question 3

What are the educational policy implications of the empirical findings of this study?

The answer to the research question can be provided from two major perspectives to the study of educational management: positive perspective and normative perspective. The positive perspective to the study of educational management deals with objective and scientific explanation of the application of educational psychology, methods and techniques in educational management. Provision of answers to research questions one to five has relied mainly on the positive approach. Here, descriptive and inferential statistics have been mainly used as tools of analysis. The aim of the positive approach to educational management is to explain scholastic and institutional decisions and the effects of these decisions on educational achievement of students. In relation to the impact of personal and institutional

perception of the course and parental support given by the students. The two rankings could not be statistically treated further because of the low robustness of the data from the lecturers (110 data points) compared to the students' 1,100 data points. However, it is significant that lecturers and students alike reached significant and equal rankings of students' interest and home environment as the most important components of the personal factors affecting students' academic achievement in the South Western part of Nigeria.

Research Question 2

What is the significance of personal factors as predictors of students' academic achievement in the colleges of education studied in the South Western Nigeria?

Table 5. Comparison of Students' and Lecturers' Rankings Of the Components of Personal Factors

Variable	Students' Ranking	Lecturers' Ranking
Home environment	2	2
Student's interest	1	1
Study habit	4	3
Self concept	5	7
Peer influence	6	4
Student's perception of course	7	6
Parental support	3	5

Source: Computed from Administered Questionnaire

Table 6. Model 1: Regression of CGPA on the Components of Personal Factors

Model	Coefficients		T	Sig	Collin Earity
	B	Std. Error			VIF
1 (Constant)	1.833	.360	5.090	.000	
Log_Stint=LG10(stint)	.856	.129	6.640	.000	2.600
Log_study_habit	.051	.234	2.180	.031	1.100
Log_self_concept	-.139	.303	-.458	.647	1.083
Log_home_environment	.494	.092	5.390	.000	1.000
Log_per-influence	-.262	.171	-1.530	.126	1.200
Log_student_perception	.125	.500	.251	.802	1.200
Log_parental_support	.389	.184	2.120	.036	2.400

Dependent Variable: cgpa
Model Statistics: Adj. R^2 = 0.45; $F_{(7, 292.87)}$ p < 0.001
Source: SPSS Output

factors as predictors of students' academic achievement in Colleges of Education, the purpose of the positive study is to satisfy curiosity about why the educational management and outcomes are as practised and the outcomes are as observed. Secondly, the positive approach is adopted in order to have some bases for predicting how students and institutions will respond to educational policies at a specific point in time.

On the other hand, the normative approach to understanding educational management outcomes offers recommendation on personal value judgement. It is presumed, however, that the judgement would be informed by a working knowledge of educational administration along with its possible variations in different educational institutions across the various categories of colleges: Federal, State and Private. For example, there is a current national policy on the teaching faculty of primary schools to the effect that the minimum teaching qualification for this level of schooling is NCE. When the demand for NCE holders at the secondary school level is added to the faculty requirements, the increasing demand in the number of NCE teachers cannot be over-emphasised. It therefore becomes important to train soundly qualified NCE graduates with high academic achievements, which will enable them to undertake further courses leading to higher level of certification.

The purpose of Nigerian educational policy is to provide the needed manpower development to stir the nation's socio-economic exigencies left by the colonial masters. The non-directional policy issues have been the bane of the educational system particularly with reference to the curriculum structure. So far, the country has had three different systems borne out of incessant changes in policies: 9-5-4 (nine years of elementary education, five years of secondary and four years of tertiary education); 6-3-3-4 (six years of elementary education, three years of junior secondary, three years of senior secondary and four years of tertiary education) and now 9-3-4 (nine years of basic education, three years of secondary and four years of tertiary education). It has become a tradition to abandon policy mid-stream. The effect of this policy tumble cannot be over-stressed. Lack of initiative, innovation, skills, independent/constructive mind and creative ideas has been held to characterize the current system of Nigerian education. This system encourages memorization in learning processes and theoretical

explanation to areas that need practical illustration. The system favours cognitive development above other domains of education. Bolaji (2007) argues that Nigeria's school system is geared toward building students with cultural orientation with deficiency in problem-solving approach that requires more than simply recall or performance of rudimentary skills. Philosophers in the field of education are yet to come to terms with a national ideology with the cardinal objective to build a self-reliant nation contrary to what is apparent in the present system of education. Oduolowu (2001) opines that no positive impact whatsoever will be made with a system that promotes theoretical knowledge, places emphasis on paper certification rather than stressing the development of innate abilities in a learner evolving through training and practice. In other words, there exists an aberration in policy formulation and implementation. The need to revisit the existing educational policy has become necessary; hence the urgent need to save Nigeria's educational system from the gully of irrelevances and hopelessness that manifests in poor academic achievement. In all these policy changes, the services of high quality graduates of Colleges of Education are of great significance.

SUMMARY AND DISCUSSION OF FINDINGS

This study found that a number of personal factors (students' interest, home environment, parental support and study habit) were significant predictors of academic achievement in the Colleges of Education. The findings regarding students' interest was similar to those of Okebukola (1997), Pressley and McCormic (1995) and Grolinics and Slowiaczer (1994). It should, however, be noted that all the researchers based their study on foreign institutions except that of Okebukola (1997).

The findings of the current study, says home environment is a predictor of academic achievement, was corroborated by Yusuf (2001), Gadagbui (1998), and Ajila and Olutola (2000) and Dike (2007) and Uwadiae (in Financial Standard, 2008). All the studies took place in Nigeria and Ghana, which share similar socio-economic characteristics of developing countries. The study conducted by Opare (1999) into the significance of parents' support also corroborated the findings in the current study. This predictor cuts across both developing and industrialized countries to underline its importance.

Study habit is not only found to be significant in the current research, it was also upheld by Adesemowo (2000) and Adesoji and Oladele (2003). Its pervasiveness is also attested to by the findings in McCausland and Stewart (1974).

A number of other personal factors were not found to be significant predictors in the current study. For instance, self-concept was found to be a significant predictor by Nedwek and Neal (1994), the results in Bassey and

Ubangha (2003) study were not found to be remarkably relevant in the current study. Whereas Campbell, Brownlee and Smith (1996) found student perception of the course as significant, the current study did not find the variable as significant.

Similarly, peer influence was not found to be a strong predictor of academic achievement. On the other hand, Oldfather and McLaughlin (1993) held peer influence, Among other factors, as a predictor of academic achievement. One explanation for the divergent findings could be the perception of teacher's education, especially, in Nigeria. Student teachers in Nigeria might exhibit a high level of discipline impressed upon them by the regimented school environment. This might have significantly reduced the level of peer influence. Age might also have an effect. Many teacher-trainees in Colleges of Education have been out of the secondary schools for a few years, have tried without success to gain admission to the university and have probably settled for Colleges of Education after attaining a significant state of maturity which tended to reinforce their personal interest and commitment.

In relation to the gender of student-respondents, both male and female students found home environment to be the most important predictor of students' academic achievement. However, while students' interest was found to be the next most significant factor for female students, the male students ranked self-perception as the next significant factor determining academic performance after home environment. Educational managers should focus attention on policies that will stimulate positive change in the following personal factors:

i. student's interest;
ii. study habit and
iii. Peer influence.

Educational managers should also play an active role in evolving other socio-economic policy initiatives that will favour home environment and increase parental support.

CONCLUSION

The current study has been able to ascertain some relevant personal variables that educational stakeholders need to address in order to improve the quality of educational outcomes in the NCE students in Nigeria. Educational stakeholders, especially the regulators need to, as a matter of policy, commission research into the dynamic relationship among personal factors and academic performance. This may involve the injection of research funds and the sensitisation of researchers to promptly access the required funds. There is also the need to set up a feedback mechanism to continually assess the extent to which policy objectives have been achieved. The current study focussed on Colleges of

Education in the South Western Nigeria, though the study sample appeared to be robust, in order to improve the level of generalisation of findings future research should extend this frontier to cover all the educational institutions in Nigeria.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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Full Length Research Paper

Burnout in prospective elementary school teachers: Is it related to reasons for choosing the elementary school teaching major, beliefs about the teaching career and satisfaction with the choice?

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The present study was carried out to examine the relationships between elementary school teacher candidates' motivations for choosing the teaching profession, beliefs about the teaching profession, satisfaction with the choice, and burnout. The study was carried out with 171 senior elementary school teacher candidates at one public university in Turkey. Results showed student burnout was significantly and negatively correlated with ability, intrinsic career value, social utility value, and prior teaching and learning experiences as motivations to enter the teaching profession. It was also found that student burnout negatively and significantly related with task return and satisfaction with the choice of career. Moreover, there was found to be a significant and positive relationship between burnout and fallback career as motivating factor, which reveals that students who chose teaching profession as a last resort profession experienced a greater level of burnout. Regression analysis revealed that ability-related motivations to entering into teaching contributed negatively to student burnout, whereas fallback career and personal utility value motivations contributed positively to student burnout. Regarding beliefs about the teaching profession and satisfaction with the choice, it was found that task return and satisfaction with the choice were negative contributors to student burnout.

Keywords: Elementary teacher education, student burnout, reasons for choosing teaching as a career, beliefs about the teaching profession, satisfaction with the choice

INTRODUCTION

Burnout is a psychological syndrome that was conceptualized by Maslach and Jackson (1981) as involving three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. Initially studied in the context of human service employees, burnout has been expanded to students since they also have

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workloads, assignments with deadlines, and other responsibilities that cause them to develop burnout syndromes (Erturgut and Soyşekerci, 2010; Law, 2010; Lee et al., 2010; Mostert et al., 2007; Parker and Salmela-Aro, 2011). "Burnout among students refers to feeling exhausted because of study demands, having a cynical and detached attitude toward one's study, and feeling incompetent as a student" (Schaufeli et al., 2002, p. 465). Due to its adverse influences on human service employees and students, burnout has been the subject of many studies attempting to shed light on conditions arousing burnout (Bresó et al., 2011; Kao, 2009; Yang, 2004). The adverse effects of burnout that occurs during college years manifest in both pre-service and in service years. For example, studies with students revealed that burnout has a significant negative impact on academic performance (Balkıs et al., 2011; Lee et al., 2010; Schaufeli et al., 2002; Yang, 2004) and commitment (Jia et al., 2009), and that there is a negative correlation between burnout and engagement (Alarcon et al., 2011; Kutsal and Bilge, 2012; Mostert et al., 2007; Salanova et al., 2010; Schaufeli et al., 2002; Schaufeli et al., 2002; Uludağ and Yaratan, 2010; Zhang et al., 2007), between burnout and self-esteem (Lee et al., 2010), between burnout and life satisfaction (Chang et al., 2011; Capri et al., 2012), and between burnout and student departure (Kelly et al., 2012). Burnout may result indissatisfaction from school, low commitment, skipping classes, intention to leave college, and low academic performance (Law, 2007; Maslach and Leiter, 2008). Furthermore, the impact of burnout can expand to after graduation years so that burnout experienced during college education years can predict the burnout level after graduation; in some cases, burnout during college can predict an even greater rate of burnout post-college (Yang and Farn, 2005).

Burnout among college students and associated factors

The studies on school burnout show that it is a multi-source syndrome that is associated with personal characteristics of individuals, e.g. gender, age, self-efficacy, personality traits, socio-economic status, relationships with others etc., and school related factors,e.g. academic workload, exams,adjustment to school environment, career concerns, etc. (Mehdinezhad, 2011; Morgan and De Bruin, 2010). Studies have revealed that self-efficacy (Fives et al., 2007; Yang, 2004; Yang and Farn, 2005) and social support (Gündüz et al., 2012; Yang, 2004; Yang and Farn, 2005) are significant variables that predict less burnout among students, indicating the more social support they receive and the more they feel self-efficacious the less burnout they have. Particular demographic characteristics of students were also related to school burnout (Morgan and De Bruin, 2010). For

instance, years of study and age (Balkıs et al., 2011; Bekir et al., 2012; Bernhard, 2010; Gündüz et al., 2012;Ören and Türkoğlu, 2006) financial status or perceived socio-economic status (Bekir et al., 2012; Cushman and West, 2006; Salmela-Aro et al., 2011; Tümkaya and Çavuşoğlu, 2010) were found to be significant predictors of student burnout, suggesting that upper classes and/or elders, and students having financial difficulties are more likely to experience burnout. One of the other mostly studied demographic variables seems to be gender. Findings related to gender and burnout association are not consistent. For example, Yang (2004) and Balkıs et al., (2011) found that male students felt more burnout as compared to females; Erturgut and Soyşekerci (2010) and Ören and Türkoğlu (2006) found that females have more emotional exhaustion than males; however, in other dimensions such as self-efficacy and cynicism, males felt more burnout compared to females. As for academic factors, research by Baş (2011) showed that standardized exams carried out nationwide were a significant predictor of burnout. Other academic factors such as student workload that is assignments, the overabundance of homework and exams, and coursework involvement were also found to be significant predictors of burnout, indicating that the more students have to do the more burnout they experience (Bernhard, 2010; Cushman and West, 2006; Gündüz et al., 2012; Kao, 2009; Law, 2007; Yang, 2004). These are typical activities that result from the status of being a student; however, they can cause burnout (Salanova et al., 2010). Teacher-related factors such as "teacher apathy", "teacher ego", and "teacher boredom with the subject matter", instructors' unclearness, unavailability, arrogance, "instructor's indifference", "lack of a caring attitude",and "perceived egotism"were also mentioned as reasons for burnout by students in a study by Cushman and West (2006, pp. 26-28). There is a dearth of studies examining relationships between students' career choicemotivations, their beliefs about teaching, and satisfaction with their choice and student burnout. However, there is ample empirical research examining the impact of career choice reasons and/or beliefs about the profession for individuals. For example, Demirtaş et al. (2011) found a positive relationship between teaching commitment and teaching self-efficacy, suggesting prospective teachers who held more positive attitudes toward the teaching profession felt more self-efficacious. Moreover, studies showed that academic performance of preservice teachers is related to their intrinsic reasons for becoming teachers (König and Rothland, 2012) and positive attitudes towards the teaching profession (Özder et al., 2010). These studies corroborate the negative effect of an unwilling choice of career or negative perceptions of teaching on academic outcome (Topkaya and Uztosun, 2012). Several studies found that future teachers who preferred the teaching profession for more intrinsic reasons, as opposed to

teaching as a fallback career, held more positive attitudes toward teaching than those who chose teaching as a fallback career or for extrinsic reasons (Akpınar et al., 2006; Bozdoğan et al., 2007; Özder et al., 2010). Others found that intrinsically motivated prospective teachers had greater occupational respect than extrinsically motivated prospective teachers (Ünal and Şimşek, 2008); intrinsically motivated prospective teachers planned to exert more effort in the profession (Fokkens-Bruinsma and Canrinus, 2012a; Watt and Richardson, 2007); and intrinsically and altruistically motivated teacher candidates were motivated to learn more and had a lower level of anxiety related to learning (Aktürk, 2012). Likewise, Rots et al. (2010) found that future teachers who had greater commitment to teaching had more intention to become a teacher after graduation.Moreover, studies found positive correlations between satisfaction with the choice and professional engagement and career development aspirations (Eren, 2012; Eren and Tezel, 2010; Watt and Richardson, 2007) and satisfaction with the choice and affective professional commitment to the teaching profession (Fokkens-Bruinsma and Canrinus, 2012b), and negative correlations between fallback career choice, negative beliefs about teaching and planned effort, intention to remain in the profession, and commitment (Eren and Tezel, 2010; Fokkens-Bruinsma and Canrinus, 2012a; Watt and Richardson, 2007).

Based on the studies, one can infer that student teachers' reasons for choosing teaching and beliefs about the teaching profession not only affect their achievement during teacher education, their attitudes towards the teaching profession and their desire to leave or remain in the profession (Sinclair, 2008; Chan, 2006) but also their feeling of burnout, e.g. lack of energy to study, desire to leave the school, and feeling incompetent (Alarcon et al., 2011; Salanova et al., 2010; Schaufeli et al., 2002; Yang, 2004). Watt et al. (2012) argue that teacher candidates "who find themselves in settings which do not allow them to realise their motivations are likely to feel less efficacious, less satisfied with their career choice, and to experience burnout or leave the profession" (pp. 800-801). If individuals choose a career in which there is incompatibility between the job and themselves, it is more likely that they will experience more burnout or leave the profession (Natan and Becker, 2010; Maslach et al., 2001).

A study by Pisarik (2009) found that "individuals who experienced greater levels of intrinsic motivation to attend college (e.g., those who are motivated by the satisfaction and pleasure derived from academic tasks) were more likely to experience lower levels of exhaustion and cynicism". In the same vein, in other studies (Bekir et al., 2012; Cushman and West, 2006; Erturgut and Soyşekerci, 2010) satisfaction with the major or disinterest in the chosen major was found to be a significant predictor of the burnout, suggesting that students who are not satisfied with their major are more vulnerable to burnout.

METHODOLOGY

This study used correlational design (Creswell, 2008) and sought answers the following research questions: (1) what are the relationships between elementary school teacher candidates' motivations that is reasons for choosing the teaching profession, beliefs about the teaching profession, satisfaction with the choice, and burnout; and (2) do elementary school teacher candidates' motivations for choosing the teaching profession, beliefs about the teaching profession, and satisfaction with the choice predict their burnout.

Participants

In the present study, the participants were 171 senior elementary school teacher candidates at one public university in Turkey. One hundred twenty three (71.9%) of the participants were female, and 48 (28.1%) were male. The average of the age of the participants was 21.87(SD=1.84). In terms of maternal and paternal education level, most of the participants' mothers had completed elementary school as the highest level of education attained (61.4%), which was followed by high school (17.0%), no formal schooling (9,4%), higher education (7.6%), and middle school (4.7%). In terms of the highest level of educational attainment for fathers, almost half of the participants reported elementary education (41.5%), which was followed by high school (28.1%), middle school (14.0%), higher education (14.0%), and no formal schooling (2.3%).

Instruments

In the study, Turkish versions of the factors influencing teaching choice scale (FIT-Choice scale) and Maslach Burnout Inventory – Student Survey (MBI-SS) were utilized to collect the data.

FIT-choice scale

This scale was developed by Richardson and Watt (2006) and Watt and Richardson (2007) and consists of 12 factors (ability, intrinsic career value, fallback career, job security, time for family, job transferability, shape future of children/adolescents, enhance social equity, make social contribution, work with children/adolescents, prior teaching and learning experiences, and social influences) measuring motivations for choosing the teaching profession (38 items), 5 factors (expertise, difficulty, social status, salary, and social dissuasion) measuring beliefs/perceptions about teaching (17 items), and 1 factor measuring satisfaction with career choice (3 items) constructs (Eren and Tezel, 2010; Richardson and Watt, 2006; Watt and Richardson, 2007, 2008). Out of motivations for choosing the teaching profession factors, job security, time for family, and job transferability comprise higher-order personal utility value; shape future of children/adolescents, enhance social equity, make social contribution, and work with children/adolescents comprise higher-order social utility value; of beliefs/perceptions about teaching factors, expertise and difficulty comprise higher-order task demand construct; and social status and salary comprise higher-order task return construct (Richardson and Watt, 2006; Watt and Richardson, 2007). The present study used the Turkish translation of the FIT-Choice scale, which was translated by Eren and Tezel (2010). As reported by Eren and Tezel (2010), Cronbach's alpha reliability coefficients of the scale's Turkish version yielded good results as ranging between.77-.95 for motivation factors, .79-.88 for beliefs about teaching factors, and .87 for career choice satisfaction factor. Participants rated their agreement with the items on a 7-point Likert scale (7 = extremely important, 1 = not at all important for motivation items; and7=extremely, 1 = not at all for beliefs about teaching and satisfaction with choice items) (Eren and Tezel,

2010; Richardson and Watt, 2006; Watt and Richardson, 2007).

MBI-SS

This scale was modified from the Maslach Burnout Inventory—General Survey (MBI-GS) by Schaufeli et al. (2002) to measure burnout among students on three dimensions as being Exhaustion (5 items), Cynicism (5 items), and Efficacy (6 items) (Schaufeli et al., 2002). In the present study, the Turkish version of MBI-SS, which was adapted by Çapri et al. (2011), was utilized to measure student burnout. The Turkish MBI-SS consists of three subscales as with the original MBI-SS; however, during reliability analysis of the Turkish version,1 item from Cynicism and 2 items from Efficacy subscales were removed from original MBI-SS; as a result Cronbach's alpha reliability coefficients of the MBI-SS's Turkish version were reported as ranging between.61-.82, suggesting that Turkish version of the scale is a reliable measure (Çapri et al., 2011). In the Turkish MBI-SS, students indicate their burnout level on a 5-point frequency scale (1= *never,* 5= *always*); high scores on exhaustion and cynicism and low scores on efficacy subscales indicate high level of burnout (Çapri et al., 2011). To measure the burnout level of students in the present study, only exhaustion and cynicism subscales were used, as previous studies (Bresó et al., 2011; Galánet al., 2011; Mostert et al., 2007; Salanova et al., 2010; Schaufeli et al., 2002; Skaalvik and Skaalvik, 2010) have suggested these two dimensions are core elements of burnout.

RESULTS

Research question 1

First research question was what are the relationships between elementary school teacher candidates' motivations that is reasons for choosing the teaching profession, beliefs about the teaching profession, satisfaction with the choice, and burnout? To determine the relationships between elementary school teacher candidates' motivations for choosing the teaching profession, beliefs about the teaching profession, satisfaction with the choice, and burnout, the Pearson product moment correlation analysis was conducted. The means, standard deviations, and intercorrelations were presented in Table 1.

As seen in Table 1, there were found to be significant relationships between burnout and elementary school teacher candidates' several motivations for choosing the teaching profession. Namely, student burnout negatively and significantly correlated with ability (r= -.31, p<.01), intrinsic career value (r= -.23, p<.01), social utility value (r= -.15, p< .05), and prior teaching and learning experiences (r= -.19, p< 05). In contrast, student burnout positively and significantly correlated with fallback career (r= .26, p<.01). However, no significant correlations were found between student burnout and personal utility value (r= .08, p>.05) or social influences (r= -.01, p>.05). As for relationships between burnout and beliefs about the teaching profession and satisfaction with choice, it was found that there was a negative and significant relationship between burnout and task return (*r*= -.28, *p*<.01) and satisfaction with choice (*r*= -.37, *p*<.01). There were no significant relationships between burnout and task demand

(*r*= .04, *p*> .05) or social dissuasion (*r*= .12, *p*> .05).

Research question 2

The second research question was *do elementary school teacher candidates' motivations for choosing the teaching profession, beliefs about the teaching profession, and satisfaction with the choice predict their burnout?* To test whether elementary school teacher candidates' reasons for choosing the teaching profession and beliefs about the teaching profession predict their burnout, multiple regression analyses were performed on the data. To determine whether satisfaction with the choice predicts their burnout, simple linear regression analyses was used. Table 2 shows multiple regression analysis for motivations for teaching variables predicting student burnout.

As seen in Table 2, the results of multiple regression indicated that the motivations of elementary school teacher candidates for choosing the teaching profession, when combined, explained 17% of the variance in burnout, R^2= .17, $F(7, 163)$=4.81, p<.001. It was found that ability (β = -.33, p< .01), fallback career (β = .18, p<.05), and personal utility value (β=.17,p<.05) were significant predictors. However, intrinsic career value (β= .09, p>.05), social utility value (β= .01, p>.05), prior teaching and learning experiences (β=-.15, p>.05), and social influences (β= .07, p>.05) were not significant predictors.

These results revealed that a high level of ability-related motivations to become an elementary school teacher were associated with lower levels of burnout; on the other hand, high levels of fallback career and personal utility value motivations were associated with higher level of burnout.Table 3 displays the results from multiple regression analysis for beliefs about the teaching profession variables predicting student burnout.

As seen in Table 3, social dissuasion, task demand, and task return together accounted for 9% of the variance in student burnout, R^2= .09, $F(3, 167)$= 5.62, p<.001. However, the only significant predictor of student burnout was task return (β = -.28, p< .001), indicating that a higher level of task return was associated with lower level of burnout.Table 4 indicates the results from regression analysis for satisfaction with the choice variable predicting student burnout.

As seen in Table 4, satisfaction with the choice accounted for 14% of the variance in student burnout, R^2= .14, $F(1, 169)$ = 27.21, p<.001. Standardized beta coefficient reveals that high level of satisfaction with the choice was associated with lower levels of burnout (β = -.37, p< .001).

CONCLUSION and DISCUSSION

The present study was carried out to examine the relationships between elementary school teacher candidates'

Table 1. Means, Standard Deviations, and Intercorrelations for Burnout and Motivations for Teaching, Beliefs about the Teaching Profession, and Satisfaction with the Choice Predictor Variables.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
Burnout	2.75	.80	-.31**	-.23**	.26**	.08	-.15*	-.19*	-.01	.04	-.28**	.12	-.37**
Predictor Variable *Motivations for Teaching*													
1. Ability	5.54	1.05	—	.74**	-.31**	.29**	.59**	.35**	.24**	.25**	.33**	-.05	.58**
2. Intrinsic career value	5.48	1.22		—	-.50**	.33**	.65**	.36**	.21**	.23**	.27**	-.11	.65**
3. Fallback career	3.19	1.72			—	.04	-.31**	-.15	-.06	-.07	-.16*	.17*	-.55**
4. Personal Utility Value	4.92	.94				—	.45**	.30**	.22**	.16*	.23**	.00	.18*
5. Social Utility Value	5.77	.91					—	.36**	.23**	.42**	.24**	.02	.53**
6. Prior teaching and learning experiences	5.29	1.46						—	.29**	.24**	.19*	.01	.33**
7. Social influences	4.62	1.69							—	.11	.17*	.14	.14
Beliefs about the Teaching Profession													
8. Task Demand	6.00	.83								—	.07	.15*	.21**
9. Task Return	3.79	1.03									—	-.07	.35**
10. Social dissuasion	3.43	1.48										—	-.07
11. Satisfaction with the Choice	4.88	1.46											—

*$p < .05$. **$p < .01$.

Table 2. Multiple Regression Analysis for Motivations for Teaching Variables Predicting Student Burnout.

Variable	*B*	*SE B*	β	*t*	*p*
(Constant)	3.12	.47		6.63	.000
Ability	-.25	.08	-.33	-3.01	.003
Intrinsic career value	.06	.08	.09	.68	.495
Fallback career	.08	.04	.18	2.09	.038
Personal Utility Value	.14	.07	.17	2.01	.046
Social Utility Value	.01	.09	.01	.07	.947
Prior teaching and learning experiences	-.08	.04	-.15	-1.92	.057
Social influences	.03	.04	.07	.90	.371

Note. $R^2 = .17$, $F_{(7, 163)} = 4.81$, p=.000.

motivations for choosing the teaching profession, beliefs about the teaching profession, satisfaction with the choice, and burnout. Results showed student burnout was significantly and negatively correlated with ability, intrinsic career value, social utility value, prior teaching and learning experiences as motivations to enter the teaching profession, suggesting that students who identify with these motivations and rate them higher as inspirations to choose teaching are less likely to experience burnout. It was also found that student burnout negatively and significantly related with task return and satisfaction with the choice. There was found to be a significant and positive relationship between fallback career and burnout, which reveals that students who chose teaching profession as a last resort profession reported a higher level of burnout. Further analysis revealed that ability reasons to enter into teaching contributed negatively to student burnout, whereas fallback career and personal utility value motivations (e.g. job security, time for family, job transferability) were positive contributors to student

Table 3. Multiple Regression Analysis for Beliefs about the Teaching Profession Variables Predicting Student Burnout.

Variable	B	SE B	β	t	p
(Constant)	3.12	.48		6.56	.000
Social dissuasion	.05	.04	.09	1.19	.235
Task Demand	.05	.07	.05	.63	.526
Task Return	-.22	.06	-.28	-3.77	.000

Note. R^2= .09, F(3, 167)= 5.62, p=.001.

Table 4. Regression Analysis for Satisfaction with the Choice Variable Predicting Student Burnout.

Variable	B	SE B	β	t	p
(Constant)	3.74	.20		18.78	.000
Satisfaction with the Choice	-.20	.04	-.37	-5.22	.000

Note. R^2= .14, F(1, 169)= 27.21, p= .000.

burnout, suggesting that students who were extrinsically motivated and who chose teaching as a last resort career are more susceptible to burnout. In contrast, students who chose teaching career because they consider teaching to be suitable to their abilities are less likely to experience burnout. Regarding beliefs about the teaching profession and satisfaction with the choice, it was found that task return and satisfaction with the choice were negative contributors to student burnout. Students who believe teaching is high in social status and salary are less likely to experience burnout; additionally, if they are satisfied with their choice to become an elementary school teacher, they are less likely to experience burnout. These findings—which are favorable for those choosing the teaching profession for ability reasons and who express satisfaction with their choice, and which arenot favorable for those who are motivated by personal utility values and considered teaching a last resort profession— are not surprising. Previous research has shown that intrinsically motivated teacher candidates were motivated to learn more and had a lower level of anxiety related to learning (Aktürk, 2012). On the other hand, those who chose the teaching profession as a fallback career were uncertain to remain in the profession (Eren and Tezel, 2010; Fokkens-Bruinsma and Canrinus, 2012a; Watt and Richardson, 2007), had low academic performance (König and Rothland, 2012; Özder et al., 2010), and held more negative attitudes towards teaching (Akpınar et al., 2006; Bozdoğan et al., 2007; Özder et al., 2010). Moreover, other studies also found relationships between burnout and disliking the career chosen (Akansel et al., 2012) and being uncertain about choosing the right career (Cephe, 2010).

Students in their forth years in elementary school teacher education programs have a greater work load compared to previous years at schools of education. In addition to their regular classes, they have a student-teaching course, which is a five-credit course for two semesters, in the last year. Students spend one school day a week at an elementary school and carry out their responsibilities for this course under the guidance of two mentors: one from the elementary school they visit and one from the university. Moreover, following their graduation, students need to take the Personnel Selection Examination for Public Organizations (KPSS), which requires intensive preparation to be recruited as an elementary school teacher at public schools. Responsibilities necessitated by student teaching and KPSS preparation increase student workload, which can result in burnout (Tümkaya and Çavuşoğlu, 2010). Studies showed that student burnout is related to workload (Bernhard, 2010; Cushman and West, 2006; Gündüz et al., 2012; Kao, 2009; Law, 2007; Yang, 2004) and standardized exams (Baş, 2011).

According to the findings of the present study, we can conclude that students who choose teaching profession due to their ability and express satisfaction at their choice can successfully handle stressors such as homework, exams, and responsibilities of student teaching that can cause burnout; these students can easily adapt to teaching practices and, as a result, meet the requirements of student teaching. As asserted by Tümkaya and Çavuşoğlu (2010), teaching is a job that entails ability, and those who choose any profession that does not suit their abilities and interests are more likely to experience negative emotions that can result in burnout. As such, students choosing the teaching profession primarily for personal utility values or extrinsic factors were found to be more susceptible to burnout. These students were motivated by extrinsic factors such as job security, time for family, and job transferability. This result supports the findings of Pisarik (2009), whose research showed that students who attended college for extrinsic reasons experienced more burnout. We can argue that as long as

these extrinsic motivations for becoming an elementary school teacher exist during pre-service years, it is possible that these students may concentrate on their study in a similar manner as shown by those students motivated by ability reasons. However, a problem can emerge when these external factors disappear. In the absence of the external factors that attracted students to teaching profession, such students would lose their purpose, which can make them susceptible to burnout. For example, on 10 September 2012, the last teacher recruitment cycle before the data collection, the total number of the elementary school teacher candidates who applied for employment at public schools was 4378; however, the total number of the elementary school teachers who were recruited at public schools was 324 (MEB, n.d.), which means only 7.4% of applicants were given the opportunity to work as an elementary school teacher at public schools. It can be asserted that this low recruitment of elementary school teachers may have contributed to future elementary school teachers' burnout, since student teachers motivated by external reasons for becoming a teacher may have more concern for the future because of low recruitment (Tümkaya and Çavuşoğlu, 2010). Future elementary school teacher candidates would be aware from the last recruitment cycle that most of the applicants will not succeed in attaining a secure job, reliable income, lengthy holidays, short working days, and other factors that motivated them to choose teaching profession, all due to recruitment policies.

To conclude, findings in this study have shown that guiding individuals as they make their career choice is of great importance; students should be helped to choice a profession that best suits their abilities, so that they can avoid or successfully handle stressors that will inevitably arise during pre-service years. As a limitation, this study was carried out with prospective elementary school teachers. Therefore, to better understand the relationship between student burnout and reasons for choosing the teaching profession, the following are advisable: (1) similar studies conducted with different teacher education programs, and (2) longitudinal and qualitative studies.

Conflict of Interests

The author have not declared any conflict of interests.

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Full Length Research Paper

An 'adventure' of MBA students in Europe: How volcanic ash produced an incidental learning experience.

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Because the volcanic ash that affected air travel in Western Europe in 2010 was considered as one of the most meaningful learning experiences by a group of MBA students, this article aims to outline the main aspects of an incidental learning situation, rarely described on management education literature. Incidental learning is an unsystematic apprentice's experience leaded by tacit knowledge. Our central objective was to describe ways of learning that developed from this situation, herein referred to as the "adventure in Europe", and also deepens the understanding of the role of incidental learning in formal education. This qualitative-exploratory study included ten senior managers from a Brazilian International Executive MBA program. Data were collected by a focal group, an objective questionnaire and two rounds of interviews. The results show the combination of reflection, reflexivity and cooperation in dealing with an incidental and loosely structured situation regarding two aspects used by students to produce significant knowledge: engagement in action and decision-making process. We discuss the relevance of educational strategies that provide opportunities so that incidental experiences can be explored creatively in management education to produce significant and experiential learning for the apprentices.

Key words: Incidental learning, tacit knowledge, experiential learning, volcanic ash, management education, engagement, Decision-Making Process.

INTRODUCTION

Incidental learning experiences are unexpected and embedded situations that challenge individuals to react rapidly, under time pressure and/or dynamic conditions, without enough previous, specialized or structured knowledge. There are no expectations to learn something, but

in dealing with it, individuals must trigger tacit their knowledge and get new information activating the process of implicit learning. This learning process occurs in the absence of explicit awareness to learn and it depends more directly on contextual factors (Francis et al., 2009;

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Nokes and Ash, 2010). Therefore, incidental learning is an unsystematic learning experience leaded by tacit knowledge.

In MBA educational contexts some studies have drawn that learning which is not confined only to the formal education space (Blasco, 2009; Thursfield, 2008). It is acknowledged in the literature that the transmission of a specific content favors the flow of formal knowledge through activities designed to achieve specific educational purposes. However, other modes of knowledge production by MBA students are shown on management learning field, such as informal and incidental learning (Chia and Holt, 2008; Flach and Antonello, 2010).

This paper is rooted in this approach and sought to discuss incidental learning as significant to the development of MBA students. During our investigation on learning within MBA programs in Brazil, interviews with students indicated that coping with an unexpected incident was regarded as one of the most significant learning experiences of their MBA program. Because their reports showed that an unplanned learning situation was important to the formal MBA education process, we considered it relevant to investigate their learning experience in the incidental situation, which is referred to as the "adventure in Europe."Deepening our understanding about the role of incidental learning experience to produce significant knowledge for MBA students allow us to identify the learning dynamic in the activities of a management education program and advance in the debate about the effectiveness of the MBA. The discussion about the "most appropriate design" or the "most adequate educational technology" can be enriched critically, reflecting on how much an MBA program can engage students in the appropriate pedagogical contents aim to transform them in meaningful knowledge to their practical accomplishments.

The main idea of this paper is to shed light on the dynamics used by students facing the challenges arising from the incident, highlighting the important aspects that triggered meaningful learning in an unplanned situation. The investigation question that guided this research was: which aspects in the incidental learning situation drove the MBA students to an active transformation of this experience into relevant knowledge to their professional practice? Our main objective was to characterize the process of incidental learning situation, deepening the understanding of apprentices' learning experiences and the role of incidental learning to their formal education.

LEARNING IN AN INCIDENTAL SITUATION

Current theories on management learning define learning as a dynamic flow embedded in an ongoing socio-political process wherein individuals connect multiple contents and experiences. By this process, they become more sensitive to new possibilities, diverse meanings and actions among actors (Antonacopoulou and Chiva, 2007). In this perspective, MBA students' learning process is grounded by apprehending, seizing and transforming information, contents and experiences in specialized and relevant knowledge to their practices. The debate about learning processes and strategies used by students to increase their knowledge level has advanced in the different theoretical approaches. It was not our objective to discuss the various schools of thought on this subject, although the variety of existing categories to characterize types of learning should be highlighted.

The mode of learning was traditionally discussed in the literature is reflection, which is characterized as an analytical process to deal with daily challenges seeking for rational control and practical solutions in order to reorganize and reconstruct experience through cognitive processes (Elkjaer, 2004). Kolb (1984) demonstrates that experiential learning can be produced by exploring the meanings of past experience, creating new meanings from the results of the performed action in a process named reflection on action. Schön (1987) argues that reflection in action can emerge from unexpected events, causing the individuals to think about their actions as they are being performed. Developing reflective and analytical thinking is the main objective of MBA educators, considering the most traditional pedagogical approaches (Raelin, 2009; Rubin and Dierdorff, 2009).

However, some authors consider that the experience of questioning does not necessarily correlate with a problem to reflect upon. In this sense, the concept of reflexivity as a mode of learning refers to a process of questioning the individual's experience in practice (Cunliffe, 2009). This process involves questioning of underlying assumptions in the ideological positions of the critic, a movement of self-awareness (self-reflexivity) by learning about oneself via interaction with others, by observation, by exchange, by diversity in the comprehension of situations. In this perspective, Eriksen (2012) proposes an innovative way of teaching by a Model of Authentic Becoming Cycle. According to this author, by improving classroom learning, practical reflexivity leads students to relief their experiences more than cognitively. To facilitate the students' learning process is also to ask them to look at their feelings, thoughts, relationships, etc., to make decisions and take actions to influence their process of becoming.

However, learning by cooperation involves collective aspects of recognition of individuals as legitimate participants of social interaction. Handley et al (2006) argue that the learning process is sensitive to events that offer opportunities for participation in socialized practices and develops an identity that promotes a sense of belonging and commitment. In this perspective, Warhurst (2011),

Chia and Holt (2008) claim for a redesign of MBA educators' pedagogical strategies to better enable their apprentices' identity-formation. Also, Wright and Gilmore (2012) propose an innovative design of teaching using a threshold conception of 'management and practice informed by theory' that can be useful to develop in-depth questioning and reflexivity in MBA students and their identity-work.

Reflection reflexivity and cooperation represent different ways that MBA students can connect multiple contents and learning experiences with relevant knowledge in their practice. But, considering the situated nature of learning process, the context in which daily events occur is another important aspect to understand sources of learning and the way that it can shape learning experiences. Literature on management learning presents three distinct learning situations: formal, informal and incidental. Formal learning is conceptualized as a previously structured situation, with objectives, content and activities constructed to transfer specific knowledge. The prevalent MBA educational context is planned by educators in formal learning situations, previously structured in order to enhance apprentices' competences and capabilities (McGuire and Gubbins, 2010). But, as individuals learn more than their deliberative goals or intentional educators' pedagogical objectives, the value of unplanned learning situations stands out in what students learn facing a variety of unpredictable challenges that can enhance their expertise in meaningful experiences (Runger and Frensch, 2010; Francis et al, 2009).

Unplanned learning situations are called informal or incidental in the literature and are related to the knowledge acquired outside the instructional composition previously constructed. What is common between these two situations is the assignment of self-directed learning to students, where they must delineate goals of knowledge. Despite the crucial role of formal learning situations to teach specialized knowledge, informal learning is highlighted by researches that their approaches focus on learning that occurs through on-the-job experiences (Flach and Antonello, 2010; Raelin, 2008). In informal learning situations, individuals build their learning goals seeking to acquire significant knowledge through work experience and professional interactions in the workplace. In this context, the collaborative aspect of informal learning is an element that stands out because the interactions are crucial to produce relevant knowledge to practical accomplishment (De Vries and Lukosch, 2009). While informal learning experiences can be potentially useful for enhancing performance at work, the main problem is the difficulty to systematize and gather into practice information obtained as tacit knowledge. Therefore, McGuire and Gubbins (2010) claim that formal learning play a central role in education, which could not be supplanted by technologies based solely on informal

or incidental learning.

Differently from formal and informal learning, when individuals are coping with an incidental learning situation they do not have the intention to learn something from it. They are dealing with an unanticipated and unexpected event that has to be solved. An incident is characterized by a situation in which individuals have to perform in an unpredictable way and for this reason, they may be sensitized to learn unconsciously. The central principle of this concept is that individuals learn important contents in challenging situations, even though there is no awareness of the knowledge that is being apprehended. So, the main aspect of incidental learning is its provocative nature in exposing individuals to a novel situation, which may be potentially creating learning opportunities to push them beyond (Francis et al,. 2009). But, the tacit feature of incidental learning leads educators to undervalue its role on management education. And, just the exposure to incidental learning experiences is not sufficient to produce relevant knowledge. Thus, how can individuals effectively learn from an incidental situation? Incidental experiences are loosely structured situations and require reactions from individuals under time pressure and dynamic conditions. Because of its unexpected nature, they challenge individuals to react rapidly, triggering unconscious knowledge for which there is no immediate explanation. According to cognitive psychology, individuals have to be sensitive to variations in the incidental context, drawing their responses on tacit knowledge accumulated through experience and quickly retrieved through pattern recognition. Some of these automatic responses can be associated to insights that emerge trough educational or work activities or to intuitions in decision-making process (Runger and Frensch, 2010; Sinclair et al, 2008).

Similarly, Bandura and Huston (1961) argue that incidental learning has the potential to produce significant and lasting changes, with indirect effects on performance growth. Bandura (1997) develops this concept to argue that there is a difference between the full range of life events and incidents that are selected for our attention and also receive a different connotation. It is in this vein that the identification process generates imitative behavior models, increasing the belief in personal self-efficacy. Therefore, to generate meaningful knowledge and expertise from loosely structured situations it is necessary to scrutinize the learning experience arising, connecting unconscious learning stemmed from exposure with awareness of one's own thinking processes.

Nowadays, it is noticeable that current authors are emphasizing pedagogical approaches considering tacit knowledge in developing managerial competence in MBA programs (Eriksen, 2012; Wright and Gilmore, 2012). Sadler-Smith and Burke (2009) suggested building unfamiliar situations in classroom activities to guide

students through the solving of those problems with coaching and feedback. Chia and Holt (2008) propose the knowledge-by-exemplification being transmitted by behavior, style and mannerisms of MBA educators. And Warhurst (2011) argues that it flows through interactions among students and between students and professors, which generate some unanticipated tensions and conflicts, which would be potentially significant in forming a new professional identity in MBA students. It is in this sense that it is possible to relate the volcanic ash in the European incident analyzed in this paper, to more typical events in the learning experience of MBA students.

But, how do people acquire conscious knowledge from an incidental learning situation? In Experiential Learning Theory, Kolb (1984) suggests that when individuals do not have conceptual schemes to interpret and deal with problem-situations in lifework challenges they accommodate new cognitive concepts, transforming the tacit knowledge obtained in active experimentation and reflexive observation on significant knowledge. This heuristic process is unique because individuals give meanings to emerging aspects of their incidental experiences and reinterpret the situations making explicit some unconscious knowledge that have been learned in this ongoing process. Consequently, individuals become capable to deal efficiently with similar situations, generalizing the knowledge learned by accommodation. This process of assimilation allows them to rapidly apprehend tangible characteristics of the situation and apply concepts and/or instruments that work well in the latter novel situation experienced.

According to authors of Cognitive Learning Theory, the key to this question lies in the individuals' observation of regularities in the environment and the sensitivity to variations in unexpected events (Haider and Frensch, 2005). By this process it is possible to learn musical structures incidentally (Kuhn and Dienes, 2006), spatial content to apply on navigation routes (Van Asselen et al, 2006), or word sequencing in sentences in a foreign language without inhibiting the sequence of the native language and still being capable of producing a new sequence (Francis et al, 2009).The verbal report of the incidental experience stands out, therefore, as a relevant aspect to make tacit knowledge have access to consciousness. This willingness to render explicit knowledge must rely on the conscious effort to verbalize perceived regularities and connect them with their underlying rules or logic (Runger and Frensch, 2010; Nokes and Ash, 2010).

The debate on learning situations demonstrates the authors' efforts to advance the theory and teaching methods aimed to balance the incidental learning within situations of formal education. According Runger and Frensch (2010), Francis et al (2009), Van Asselen et al (2006) and Khun and Dienes (2006), any theoretical concept can be fostered in incidental situations, but such situations, by themselves, are not sufficient to foster significant knowledge. At MBA programs for instance, it is possible to learn about leadership, decision-making and negotiation in a provocative and incidental experience. In this perspective, making explicit the implicit knowledge obtained in the incidental situation is a crucial manner to learn with the incidents. First, MBA students must be exposed to provocative situations so that they can produce implicit knowledge. If such learning experiences are aligned with pedagogical strategies of public reflection and feedbacks about their performance and tensions then the students may examine and question underlying assumptions and decisions. This might lead to new learning experiences that may foster significant knowledge in an educational context (Eriksen, 2012; Raelin, 2008, 2009; Vazquez and Ruas, 2012).

However, how can educators deal with incidental situations driving their apprentices' in transforming this implicit learning experience in more systematic and useful knowledge? Based on Kierkegaard's concern over the tension between detached theorists understanding backward the activities lived forward by involved practitioners, Weick (2004: 467,468) argues that these distinctive ways of interpreting the 'real world' can be made tangible by adopting Heidegger language of three modes of human engagement:

"People engaged in practical activity are concerned with projects and action in context and their concerns shift as their needs shift. What practical activity does not consist of is a separation between subject and object. Instead, it consists of 'absorbed coping', which Heidegger describes as a *ready-to-hand* mode of engagement. When people act in this engaged mode, they are aware of the world holistically if an ongoing project is interrupted, then experience changes into an *unready-to-hand* mode.

Problematic aspects of the situation that produced the interruption stand out in the manner of a figure-ground organization, but people still do not become aware of context-free objects the third mode of engagement, which again involves a shift of experience, is *present-at-hand*. This occurs when people step back from their involvement in a project and reflect on it using analyses that are general and abstract and context-free".

Therefore, Weick (2004) argues that these moments of interruption or breakdowns in ongoing activities are fruitful to produce situated detachments in which people act and make meaning simultaneously. This process, when practitioners are interrupted, is the crucial point to produce relevant knowledge, as they are best able to discover relevancies that had been invisible up to that point. We consider that enhancing our understanding about MBA students' learning experiences in incidental situations allows us to discuss educational aspects that could be useful for teaching in MBA courses.

METHOD

This qualitative-exploratory study included ten (10) senior managers from the International Executive MBA program at Universidade Federal do Rio Grande do Sul (UFRGS), Brazil. Their age ranged from 25 to 52 years (M=41 years) and experience in managerial functions ranged between 2.5 and 20 years (M=9.5 years). They were experts in the business area in which they operated, with advanced educational background. Due to the part-time program design, all of the participants in this research pursued educational activities while continuing to perform their managerial duties.

Data collection was carried out by three researchers: one of them conducted a focal group about the learning experience in the MBA program and participated in the international module observing MBA students' educational activities; the other two researchers did two rounds of interviews when MBA students returned to finish their MBA regular classes in Brazil. In the first round of interviews, we asked three open questions: (a) which situations were more relevant to increase your knowledge in the learning process at the MBA program? (b) Which characteristics in this situation can you point out as key factors to develop your expertise? and (c) which knowledge, educational contents and/or learning experiences can you point out as meaningful to your practical accomplishment?

Also, we applied an objective questionnaire formulated to identify situations and learning modes that culminated in increased levels of knowledge and performance in the students' professional practice. This instrument aimed to assess how significant the students' experiences were during their educational process, considering two investigated aspects: the influence of learning situations and the learning mode used to produce relevant knowledge to their practice. The incident of volcanic ash in Europe emerged as one of the most significant learning experiences in the responses to this questionnaire. So, we conducted a second round using in-depth interviews to understand the influence of the incidental situation on the learning process of MBA students. With the participants consent, the interviews were recorded and transcribed. Follow up questions were elaborated to validate our interpretation regarding the theoretical framework adopted.

For interpretation of the data, a content analysis technique and a theoretical saturation criterion were used to codify emergent categories and to ground a theory to explain the phenomena investigated (Strauss and Corbin, 2009). The Important aspects to ensure the validity of the data obtained were the *follow up* questions and the second round of interviews. This approach, based on a communication technique, provided support to validate the researchers' analyzes, leading to coherent interpretation (Sandberg, 2005).

MBA STUDENTS' EXPERIENTIAL LEARNING IN AN INCIDENTAL SITUATION

This incidental situation occurred while the first part of the international module of the course was being held at HEC-Paris, France, during which a combination of three factors contextualized the incidental situation experienced by the students. Between the 15th and 21st of April, 2010, the volcanic eruption in Iceland produced ash clouds that caused the closure of airspace in several countries. Nearly 95,000 flights were canceled during the period, leaving just Portugal and parts of Italy and Spain with only partial flight disruption.

The last day of the students' educational programming in Paris took place on Friday, April 15th. The activities would resume in Barcelona on Monday the 18th. With the airport closings and flight cancellations, scheduled air travel had become impossible. As a result of this unexpected event, the students mobilized to find solutions to avoid losses in the program planned for the next week. However, two other situations further complicated the incident. During this period much of the French railway system was affected by a strike, which made it practically impossible to travel by train. And finally, the weekend coincided with the start of Easter school holidays, which, considering the problems in air and rail transport resulted in a great demand for car rentals in Paris. Therefore, getting to Barcelona became an unexpected challenge for students, who had no ready answers; experts were to assist them, or similar experiences to help them resolve the issue. Despite the impasses and tensions, they reached Barcelona on time and characterized this incidental situation as one of the most significant learning experiences in their MBA program.

Which aspects in an incidental experience that presents all the elements to be seen as an impasse becomes actively reinterpreted by these MBA students as a significant learning experience? The literature sustains that formal and informal learning situations play different roles in the process of producing significant knowledge in MBA students (Flach and Antonello, 2010; McGuire and Gubbins, 2010). Formal learning allows students to keep in touch with the last concepts, theories and tools in a systematized and specialized way. In this context, informal learning is highlighted as an important situation to gather the knowledge learned in the students' professional practice. Building specific solutions to their daily work challenges, they can reflect on what they have learned in the MBA formal situation and analyze this information in comparison with the tacit knowledge apprehended in informal situations. In the other hand,
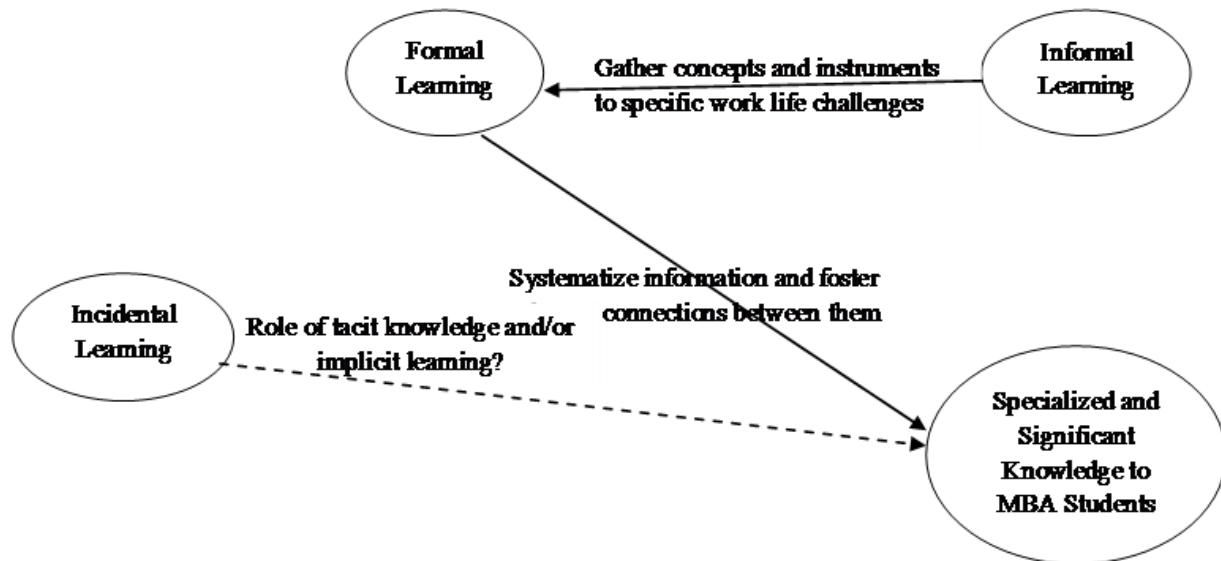
Figure. 1. Conceptual map of MBA learning situations

incidental leaning situations are pointed out by some authors (Francis et al, 2009; Handle et al, 2006), but not their role to foster specialized knowledge in the formal learning process. Our results are rooted into this perspective of analysis. Figure 1 show the conceptual map of these learning situations.

Accordingly, we investigated the incidental learning experience as an interpretative and heuristic process of accommodation by the MBA students to deal with the unexpected situation (Kolb, 1984). The results describe their use of reflexive observation, active experimentation and modes of learning to overcome difficulties and being successful. In addition, we characterize incidental situation as *unready-to-hand* or *present-at-hand* (Weick, 2004) regarding to detect and describe different aspects learned by the apprentices in the volcanic ash incident. Thus, our empirical data led to the identification of two main aspects that MBA students learnt in an incidental situation: (a) their engagement in action and (b) the decision-making process to cope with it.

Firstly, the learning experience was driven by MBA students' engagement in reaching Barcelona on time to attend their next classes. The first direct effect of the volcanic ash on the students was the replacement of one class due to the flight cancellation of a professor that was coming from Asia. Initially, the majority of the respondents understood that the cancellation of flights would be reversed in 24 hours and that they could proceed with certain ease on Sunday. According to Weick's (2004) perspective, this volcanic incident threw the students into an *unready-to-hand* situation which they had to handle and to make meaning simultaneously. A group of six

students, who were traveling together around Europe before the international module started, perceived the incidental situation more readily and decided to leave Paris immediately. They rented a van at the end of the day and enjoyed the trip to Barcelona. Other 16 students considered it better to wait and try to reschedule their air transportation on the next days. They only figured out the scope of the incidents much latter and their options become scarcer. Their engagement in action started when they interpreted the incidental situation as a problem that they should surpass, although they did not have immediate solutions. To overcome this, they used reflection as the main learning mode to cope with the difficulties:

"We read about the volcanic ash and air traffic problem. But, at the beginning it seemed only an inconvenience that was going to be solved. Suddenly, someone figured out how serious the situation was. So we analyzed our options and left Paris immediately" (interviewee 9)

"At lunch time we were making plans to rebook hotels, do some sightseeing and go shopping in Paris. We were stress-free" (Interviewee 4)

"Although we have been MBA colleagues for almost 2 years, we have never had to cope with a practical situation implicating all of us. When we realized that, we tried to obtain updated information and search feasible options. In the afternoon, we had a meeting to analyze data and decide what it could be done" (Interviewee 10).

Analytical and cognitive reasoning was used to obtain rational control of the situation integrating data, discussing brainstorming ideas by questioning the solutions

presented (Elkjaer, 2004). In both groups, the process of experiential learning was evidenced both by reflection in the action and subsequently, (Schön, 1987).The learning process of accommodation was actioned because MBA students do not have previous knowledge, information, tools or experiences to deal efficiently with the situation. The volcanic incident and its consequences on the urban mobility provoked a 'real life' challenge to them. Moreover, they assumed this challenge as a problem that must be solved by engaging in the reflexive observation of available data (Kolb, 1984).

As the cognitive perspective authors, we observed that the reflection process lead to the integration of relevant data for action in observing regularities in the environment and increasing awareness of the knowledge that was being produced and clarified throughout the process (Runger and French, 2010; Francis et al, 2009). However, coordination to update information and analyze available options was important, but not sufficient. They figured out that their reasoning was bounded because of the uniqueness of the situation and messy information. It was a loosely structured situation where a deliberative judgment would not be enough; therefore, they started to act intuitively using improvisations (Sinclair *et al*, 2008; Chia and Holt, 2008).At this point, they try to accommodate new information obtained by reflexive observation and transform it in an optimal solution by active experimentation (Kolb, 1984).

The results showed that, in doing so, some MBA students faced the demand to engage into a group decision-making process and the consequent challenge to open their minds to a novel way of thinking and acting. The group of 16 students had adopted the principle that the solution should be collective in a way that would lead to a single egress for all. This demand breakdown the individuals' reflexive observation regarding a different feature of improvisation to solve the problems and led the MBA students to deal with *present-at-hand* problems in a collective and innovative way. Therefore, they experienced a collective decision-making process to create rapid solutions using tacit knowledge to seek optimal solutions by trial and error and by craft innovation (Sadler-Smith and Burke, 2009).

Initially, several attempts were uncoordinatedly improvised, creating tension and conflict in the discussion of solutions. After noting the difficulty of achieving consensus in the decision-making process, one of the students led two other colleagues in the search for alternatives without discussing it with the larger group. They rented a car and informed the other 13 colleagues of the solution they had adopted, being criticized for their individualistic attitudes. The individualized approach was criticized by colleagues, who claimed the proposition that cooperation should have been the basis for finding solutions. Thus, collective engagement was required by

the group as a basis for legitimizing the solution. Finally, the rest of the group found a rental agency with cars available in a town near Paris. However, to get there they had to travel via suburban train lines, including those partially affected by the railway strike, in the midst of a "withdrawal" movement from Paris due to the Easter holidays. As if these more general difficulties were not enough, the students also faced specific difficulties such as communicating in French in a situation where speed to resolve the issue was very important, and bearing in mind that, at that time, the demand for car rentals was much higher than the supply. But, even when they had obtained enough cars to transport everyone, difficulties of coordination, leadership disputes and the lack of consensus remained. The group decided to make their journey together and to travel through the same route in the four rented cars, following the principle of collective solution. Due to the decision that the cars should go together to Barcelona, group cohesion was only obtained when its members resolved to establish a criterion for legitimacy of leadership. Colleagues who were driving were charged with the responsibility of deciding the route to be followed. Through communication among these leaders, the social interaction between everyone was established in a new form and free of tension. What stood out in this movement was the gradual transformation of the aspects that generated tension into an attitude of cooperation by requiring a collective solution. Impelled by this, they exploited new ways of thinking which enabled them to make decisions in a loosely structured situation. Given what they had to overcome, students combined a cooperative learning mode with an analytical interpretation of incidental situation. So, another learning mode that stood out in the experience of these students was learning by cooperation (Handley et al, 2006).

The reports show that the learning experience was significantly different to these 16 students as they were not a group before the incident. The inherent tensions of the incidental situation brought together difficulty of consensus, failure during the trial and error attempts, emotional conflicts between colleagues and lack of coordination. This situation *presents at hand* (Weick, 2004) created interpersonal tensions, demonstrating that this incident was a milestone as a learning situation. Facing that, they decided to cope with the situation applying a collective principle that bounded their participation in seeking solutions. This principle stated that any solution had to be collective, that is, had to be built together and ought to be considered as a good solution by everyone. Social interaction was established in a novel pattern of participation in collective action by sharing meanings between them (Handley et al, 2006).

"At first everyone wanted to impose their ideas. Everyone was tense, it was a stressful situation and when it was solved, the first feeling I had was, 'good, now

I'm getting out of here, I'm running away and getting out,' trying to work it out individually, but we really defended the idea that we had to stick together. We would travel through an unknown country; in an unknown situation and it made no sense for us to let each one take his own way. There were N paths, so we said 'Let's go by one path', 'which way?', 'I don't know, nobody knows, but we should go together, right? Let's make the same journey.' And it was very important to have done that." (Interviewee 3). The emotional tension, coupled with co-operation has promoted the gradual increase in freedom of expression of perceptions, feelings and ideas among the group. Through social interaction, they received information about themselves, about others and about the situation (Warhurst, 2011). Students emphasized that learning by cooperation changed their social interactions, increased their willingness to learn from colleagues, from the situation and from their own reactions.

"A problem was necessary to bring people together and it was great! This experience, all I'm telling you, that I learned, it was all after that. After the split, there was such a cooperation, I think that both for intellectual and behavioral learning, it was much better!" (Interviewee 2) "We had some very important life experiences at the time of the transfer, leaving Paris for Barcelona, which was the climax of the problem. It was really neat how things were solved. We arrived in Barcelona strengthened." (Interviewee 3) "because we went through bad moments during the journey, due to the volcano. And then during the trip, people started talking to each other and managed to talk about it again. I remember that during the trip we said: "wow, five adults, managers, directors, needed five months to sit and talk about what had happened and it was something so strong, that people began to cry" (Interviewee 6)

In this context, learning by reflexivity helped to over-come conflicts and maintain collaboration. Feedbacks and interpersonal exchanges promoted the increase of self-knowledge through questioning and through the resolution of interpersonal conflicts. Individual differences were being connected by empathy in building these collaborative solutions. So, this experience increased their reflexivity and self-reflexivity upon underlying assumptions and competitive interests in the process of decision-making (Cunliffe, 2009; Eriksen, 2012). "I received negative feedback for having acted in a more individualistic way in the search for a solution and I now consider that there are other ways of doing things." (Interviewee 1 "The necessity of a concrete problem, which was going from Paris to Barcelona, made the group, somehow, unites. After that, everything changed because the paradigm of prejudice broke, the stigmatization of people, you could see what each one of them had to offer. And you begin to learn with that. But this was only possible after the split and the split happened

on the occasion of a problem" (Interviewee 2). "From the volcano on, from then on it was perfect. We remained in such a great interaction! Then all those people who started out, like, 'I am so-and-so,' 'I'm X', 'that one there has experience in whatever', somehow so snobbish, then we all became equals and in the evening we would get together to relax, to enjoy and we'd say to one another 'Gosh! I didn't like you,' you know? So, it was pretty cool. From then on, everything, even the classes we had, my God, it was totally different!" (Interviewee 4) "I can tell you that a situation that I think drew much attention was what happened, that everyone had to come together as one team, or the thing wasn't going to work, it was one thing that I started to question within the firm. If I think I handle it or that I can do everything, it's not going to work. Now if I start using everybody for the process to succeed, that, I think, was what the volcano really has taught us" (Interviewee 4).

The incidental situation earned connotations of significant learning experience for having provided the students new ways of: (a) perceiving and interpreting situations (past and present), (b) dealing with interpersonal conflicts and (c) cooperating and interacting. As a result, the experience of incidental learning promoted new ways of thinking, leading them to challenge adopted assumptions, rearticulate ideas and modify their actions significantly. And this apprenticeship promoted the recognition of the value aggregated by incidental learning to the formal learning that MBA students expected to obtain in the MBA (Vazquez and Ruas, 2012; Weick, 2004). Table 1 summarizes our results.

The incidental learning situation, started by the volcanic ash, proved to be an external interruption about which MBA students were impelled to do something in an *unready to hand* event (Weick, 2004). Time pressure, need of updated information, need to rebook hotels during a holiday, transportation collapse, foreign language and conflicts between colleagues could be listed as some of the challenges they had to face. How a situation most likely to be seen as a harmful occurrence, could be reported as one of the most significant learning experiences for them? A response that can shed light to this question was given by one of the MBA students:

"I would say that it was a real game - not virtual but real game - and we had an amazing experience. I want to draw attention to the team spirit reached by awareness and coordinated actions dealing with this unique situation. By our own expertise, we wouldn't have reached the same results. This experience strengthened our friendship, but more than that, all individual knowledge about planning, readiness and strategic analysis were mobilized to balance what would be better for the group given its costs and consequences. All of it under time pressure. If we had planned a business game to our MBA

Table 1. Synthesis of MBA students' learning experience in an incidental situation

Empirical findings	Engagement in action	Decision- making process	Learning process
Plenty of information available about the volcano and the difficulties to traveling by train or car.	*Unready to hand* situation	Systemic view bounded for messy data	Reflective observation
Two kinds of decision were made by students: (1) Some decided to live Paris immediately, and (2) Some interpreted that the ash would dissipate on time to live Paris by air.	Looking for solutions by improvisation and trial.	Deliberative reasoning	Reflection
Affective reaction when they figured out that they did not have previous expertise or means to rapidly solve the problem in a more structured way.	Control of affective reactions	Group decisions	
Two competitive ways of acting: to find a collective solution or to solve the problem individually. The prevalence of the first lead them to a significant relational experience.	*Present at hand* situation	Leadership was legitimated	Active experimentation
Feedbacks on ways of acting. Exam of underlying assumptions and decisions outcomes of the experience. Inquiry allows them to deal with conflicts and tensions questioning their options, knowledge, means and choices.	Adoption of collective principle	Principle of 'what one decides matters to the whole group'	Cooperation / Reflexivity

Source: Illustration elaborated by authors.

program, I would say that the volcanic incident is a practical example. In 12 hours we had to decide the path, sequence and tasks, with the risk of harming our educational planning. This situation was critical to mobilize knowledge, experiences and maturity of each one in this organizing structure created by us to cope with a practical situation in which all should participate and be engaged." (Interviewee 10)

This report shows that the incidental situation was just a learning experience settled within the educational process in the MBA program, especially as it was referred by them as one of its most significant events. This aspect highlights the ongoing learning process, in which significant meanings are being gathered as they become relevant to MBA students' practical coping (Antonacopoulou and Chiva, 2007). The group decision-making process in this incidental situation was valued by them as a learning opportunity to develop their judgment capabilities in experiencing learning modes that enhanced their sense of self-efficacy (Bandura, 1997; Bandura and Huston, 1961). Figure 2 represents their learning dynamics in the incidental situation of volcanic ashes.

It is worth to mention that students continued the formal learning activities of the program in Brazil. They reported that, from the incidental learning in this event in Europe, their subsequent participation in class was transformed, presenting an increase in the level of knowledge due to changes in interactions and in dealing with interpersonal conflicts. Engagement in educational activities came to have, as a premise, the idea that the process should be collective and that everyone had significant contributions.

CONCLUSION

This paper aims to characterize the main aspects of an incidental situation and subsequently, increase our understanding about the role of incidental learning in the formal education of a MBA program. We identified two aspects as central in producing significant knowledge to apprentices: engagement in action and decision-making process. Generally, the results show that the provocative and tensioning nature of an incidental situation leads MBA students to produce significant knowledge. Dealing with an *unready to hand* situation, they engaged in action to solve the problems by reflexive observation of messy data. They transform these data and experiences in sufficient knowledge to build an efficient solution to them by using reflection, reflexivity and cooperation as modes of learning. They did that driving their engagement in an active experimentation of *present at hand* problems by improvisation and cooperative behavior.
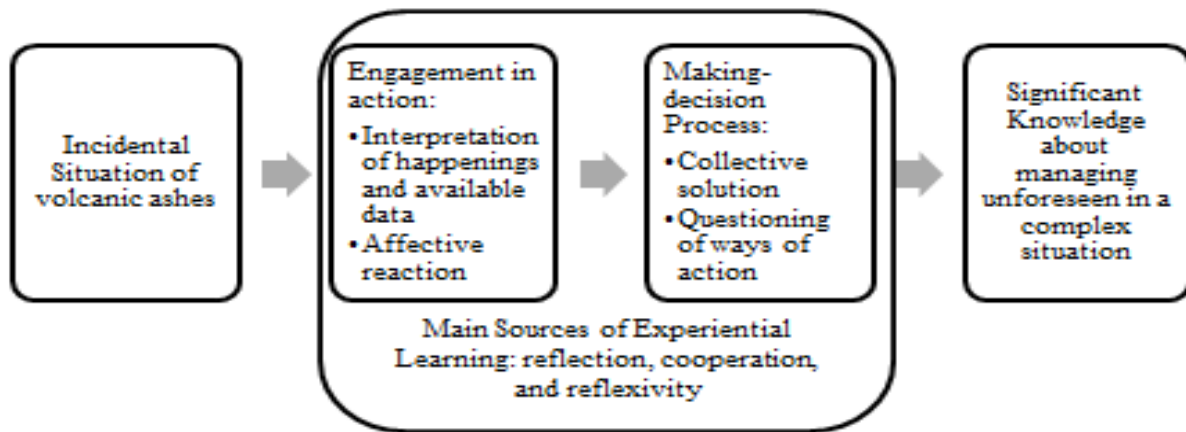
Figure. 2 Process of MBA students' learning in an incidental situation
Source: Illustration elaborated by authors.

The main contribution of this article is to highlight the role of an incidental situation as a learning experience that provoked an open-mindedness' individuals behavior and drove apprentices in experiencing new ways of thinking and acting. Being successful in a complex and unexpected situation as this volcanic ash experience allowed the MBA students to transform their tacit knowledge into efficient solutions involving all of them. Because of this, they produced significant knowledge about managing unforeseen situations using intuition, collective principles and reasoning during their process of formal education in the MBA program.

Considering this, we question in what way do these findings which allow us to advance the debate on learning in MBA programs? The discussion that we proposed in this paper was directed at questions about how MBA educators can link their formal learning strategies with aspects of incidental learning that are relevant to enhancing students' knowledge. One important aspect highlighted in our data was the MBA students' engagement to solve the situation. Facing the incidental situation, they could have simply waited in Paris until the problem was solved even taking the risk to be late to some classes in Barcelona. Nevertheless, precisely this engagement on an *unready-to-hand* situation grounded their openness to think differently than they do routinely, that is, by reasoning judgment (Handley et al*,* 2006; Weick, 2004). Although incidental experience was crucial to engender some aspects in a significant way, solely the unexpected situation would not be sufficient to foster reflexivity and Knowledge. Reflexivity requires an exam of underlying assumptions and decisions, recognition of competing interests in decision-making and inquiry of conflicts and tensions questioning the consequences of decisions regarding ethical or moral ways of acting in a given situation (Cunliffe, 2009). Interviewers reported that this incidental learning experience was relevant to them because they could enact practical judgments so that knowledge was triggered by ways of acting that solved affective conflicts and increased their sense of confidence and self-efficacy (Antonacopoulou, 2010; Eriksen, 2012; Wright and Gilmore, 2012). We argue that the incidental experience was important to improve the value of the MBA program to students, not as an isolated event but as a meaningful learning experience in which what they learned could be gathered with their practical coping. It is also important because it shows how close a MBA program can get to the 'real-world' of their students.

Therefore, we questioned what key aspects of this incidental situation could highlight the role of the educators while teaching MBA students. We seek to understand how incidental learning could be creatively explored by MBA educators, positively impacting the broadening of knowledge gained by students. Instead of emphasizing a disciplinary knowledge to enhance expertise we will focus on making students think, judge and decide in not so structured contexts of learning, that is, exposing them to opportunities of learning that challenge them to look for solutions using implicit and structured knowledge at the same time. At this point, we discuss three key aspects about this subject. The first aspect regards the provocative nature of the incidents. Tensions and no 'ready-made' solutions impelled the MBA students to engage and to make an effort to create loopholes by improvising, questioning, resolving conflicts, integrating information and producing new knowledge (Weick, 2004). The tensions experienced provoked a cognitive effort to perceive the regularities of situation, making it possible to learn about its implicit characteristics (Runger and French, 2010; Francis et al, 2009). The

incidental learning promoted increased awareness through verbalization of the implicit knowledge captured by the students in the discussion of improvisation and solutions (Sadler-Smith and Burke, 2009; Sinclair et al, 2008). The increase of knowledge produced in action was obtained through the reorganization of the experience and the generalization of what was learnt by the students (Elkjaer, 2004; Nokesand Ash, 2010).

How can students be encouraged this way in an MBA? Obviously we cannot provoke a volcanic ash to produce significant knowledge to them. But, thinking differently can be fostered by building *unready-to-hand* experiences in the class. In planning strategies and pedagogical activities, MBA faculties should acknowledge that tensions are potentially provocative toward meaningful actions of learning and ask themselves about what pedagogical activities could be useful to foster new ways of thinking and competences in their students (Raelin, 2008, 2009; Rubin and Dierdoff, 2008; Vazquez andRuas, 2012). However, it requires openness to rethink their pedagogical strategies and explore which activities could drive students to produce significant knowledge (Schmidt-Wilk, 2011).

Our interviewees reported that the conflicts they lived in this experience are similar to those faced in the classroom, in the relationships with their colleagues and with professors. Such conflicts are evident routinely in situations such as: experiential activities in which they act in a different role as habitual, and they have to think about the consequences of their decisions; being challenged to create solutions to a dynamic and complex situation similar to what they can face in their practical routine; or collective exercises in which a group does not do well in the proposed activity due to a mistake in the performance of a colleague. So, it is possible that potentially provocative tensions toward meaningful actions in the learning process can be planned by the MBA educator as a strategy to their formal activities.

The second aspect is the emergence of a collective identity from the process of cooperation established because of the breakdowns that emerged during the incidental learning experience. With regard to the adventure in Europe, cooperation was set up by the sharing of identity among the students, giving relevant meaning to shared action. In management education, several formal educational activities are planned to be cooperative, such as games, workgroups, group dynamics, or theatrics. As Warhurst (2011), Chia and Holt (2008) and Handley et al (2006), we argue that MBA educators should foster collaborative learning modes by collective activities in a meaningful way to MBA students' inquiry and questioning of professional identity and actions. Note that the incidental learning caused a shift in the patterns of relationships through identification.

Certain behaviors and postures of the colleagues, then,

proceeded to be admired as a model, generating the process of learning by imitation (Bandura and Huston, 1961). In this context, stand out the role of interpersonal (including some conflicting) exchanges, feedback as a promoter of self-awareness and reflexivity through learning from others (Handley et al, 2006; De Vries and Lukosch, 2009; Cunliffe, 2009).

The last aspect of this discussion was the disclosure of multiple learning modes to confront an incidental situation, through the dynamic combination of reflection, cooperation and reflexivity. The adventure in Europe can be understood as a complex scenario of discoveries capable of promoting multiple learning processes in the students (Runger and Frensch, 2010; Nokesand Ash, 2010). Furthermore, the combination of these learning processes was analyzed by the students as a differentiating factor of the MBA due to the aggregated value of this learning opportunity towards their personal and professional transformation. This fact is observed especially in the way students changed their patterns of cooperation in the classes following the event in Europe.

The production of knowledge through content that is not formally planned and through the implicit perception of regularities is an activity resulting from the multiple learning modes of the students (Francis et al, 2009; Van Asselen et al, 2006; Kuhn and Dienes, 2006) that must be recognized and explored creatively in the activity planning and educational objectives of MBA programs. For elaboration of teaching strategies that balance incidental with formal learning in MBAs, it is necessary to enrich the learning situation by the insertion of unstructured content that can emerge as conscious knowledge through multiple learning modes (Wright and Gilmore, 2012).

The atypical incident of volcanic ash in Europe became 'an adventure' because MBA students faced it as a 'real game' (Interviewee 10) or a learning opportunity. In this sense, they brought the incidental situation into the MBA program seizing and transforming it in meaningful knowledge to their practice. We argue that fostering MBA students to produce significant knowledge in incidental experiences means that individuals dealing with breakdowns (*unready-to-hand* or *present-at-hand* situations) have to transform the reflexive observation and active experimentation of this situation in explicit and relevant concepts likely to be assimilated and generalized into their daily practices. In this context, the pedagogical purpose would be to sustain this heuristic process of accommodation provoked by an incidental learning experience when learners are improvising and innovating optimal solutions. By creating or exploring incidental situations, MBA Educators can enhance the implicit learning process to produce tacit knowledge. Jointly, they should drive their learners to systematize the knowledge obtained in these situations by public reflection,

feedbacks, exposition of regularities realized by them, working on meanings they give to the incidents, problematizing the decision-making process and their subjacent assumptions, etc. Therefore, their apprentices will be lead to foster the tacit knowledge in more structured and/or specialized knowledge by shaping learning opportunities to transform what they learned by accommodation in contents that they can assimilate and generalize to their practice.

Using our empirical data, we highlighted key aspects to address approaches that could be useful to teaching in management education. However, our data is hard to generalize because of the size of our sample and the specific feature of the incident investigated. New research on incidental learning experiences and its role on formal educational is necessary. Also, further studies investigating meaningful learning situations to MBA students and considering their openness to exploit new ways of thinking could foster our understanding of the impact of MBA programs and the educators' teaching approaches.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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