European Journal of Educational Sciences (EJES)

2019 / March

Publisher:

European Scientific Institute, ESI

Reviewed by the "European Journal of Educational Sciences" editorial board *2019*

March 2019 edition vol. 6, no. 1

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Sincerely,
EJES, Team

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Experiences of Stakeholders on the School Counselling Services in Ohangwena Region of Namibia

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Abstract

This is an interpretive account of principals, teacher-counsellors, parents and learners' experiences and perceptions on school counselling services in Ohangwena region of Namibia. The study focused on what the stakeholders consider to be the characteristics of the Namibian school counselling programme. The study used a qualitative research approach to collect data. The sample consisted of fifteen learners, twelve teacher-counsellors, three parents and five school principals who were purposively selected. Interviews (in-depth semi-structured) and focus group discussions were used to gather data. The results revealed that participants consider counselling, academic development, career planning, education and/ or information dissemination, consultation and referral as the major services that characterize the Namibian School Counselling Programme. While the study highlighted the strengths of the Namibian School Counselling Programme, recommendations are also made regarding areas of the programme which can be improved.

Keywords: School-counselling services, School guidance, Stakeholders, Perceptions, Learners, Parents, Teacher-counsellors.

Background and context

Three fields, namely: vocational guidance, the testing movement and the mental health movement have influenced the school guidance movement. The gradual integration of these areas has resulted in the school counselling profession, as it is known today (Stone & Bradley, 1994). Early in the twentieth century, the first organised public school guidance programme was

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initiated in the United States of America. It has since expanded to other countries in the world including Namibia.

South West Africa (SWA), as Namibia was called before independence, was a Germany colony and then a mandated territory of South Africa until 1989. During that time, the education system was segregated along ethnic lines. Before Independence in 1990, there was no structured guidance and counselling services for the black children in the then South West Africa or they were exclusively for the whites and coloured schools. The development of guidance and counselling services reflected the same racial segregation in the whole education system of South West Africa. However, when Namibia gained Independence in 1990, the school counselling programme was expanded to cover all public schools to ensure that all Namibians have equal educational opportunities.

The school counselling programme in Namibia is under the auspices of the Programme Quality Assurance (PQA) division in the Ministry of Education, Arts and Culture. The counselling activities are coordinated under the umbrella of the Special Education Programmes sub-division by both School Counsellors from Head Office and Regional School Counsellors from each of the fourteen regions in the country.

Namibia experiences a growing number of social problems that affect the lives of young people. These problems include poverty, teenage pregnancy, peer pressure, domestic violence, unemployment, passion killings, HIV & AIDS and alcohol and drug abuse (Ministry of Education, Management Information System, 2009). These problems are not, however, unique to Namibia, as there is also an increase in the divorce rate and in the number of single-parent families all over the world, which is also a stress factor for learners (Chireshe, 2011). Not only does the ever-increasing needs of children and the expectations of today's society impose growing demands on the education system, but also requires schools to find solutions and respond to these needs by providing counselling services to all learners to learn effectively (Mbongo, Möwes & Chata, 2016).

The overall goal of the Namibian School Counselling Programme is the" total development" of learners. Lunenburg (2010) states that, it is crucial that schools create an environment conducive for teaching and learning so that every learner with an identifiable problem is cared for and supported to achieve his/her full potential and adjust well to life.

Although many studies have shed light on several counselling services offered in schools, (Mbongo, Möwes & Chata, 2016; Mushaandja, Haihambo, Vergnani & Frank, 2013; Talimethi & Mbewa, 2012; Alemu, 2013; Chireshe, 2011; Gallant & Zhao, 2011), there has been little evidence from a Namibian context. On this basis, the purpose of the study was to understand from the participants' perspective, the counselling services offered in Namibian schools

and their effectiveness on enhancing students' self-knowledge and understanding. This study aims to contribute to the existing knowledge by documenting the programme's service characteristics that are context-sensitive or directed to meeting the needs of the learners. The findings of this study also have potential to assist policy-makers and school managers in strengthening the provision of counselling services in schools and the accessibility of these services to all in need.

The study site context

The study was conducted in Ohangwena region. The region borders Cunene Province in Angola to the north and Kavango, Oshikoto, Oshana and Omusati regions in Namibia.

Ohangwena region has the second highest number of schools (253) of which 7 are privately owned while 246 are state owned schools. In 2015 the region recorded the highest enrollment rate of 13.9 percent followed by Omusati region with 13.7 percent (Namibia Statistics Agency (NSA), 2015). It is further documented that this region is one of the poorest regions in Namibia, has the ninth worst literacy rate, but has the third highest gross school enrolment ratio. Recent analysis of results of Standardised Achievement Tests (SATs) show that in Ohangwena region, 70% of Grade 5 learners were graded as "below basic achievement" (meaning the learner demonstrated insufficient knowledge and skills across all themes in the syllabus) in English compared to 21% in Khomas and 52% in Otjozondjupa (Ninnes, 2011).

Literature review

Various scholars have identified counselling services that characterize the school counselling programme (Borders & Drury, 1992; Gibson & Mitchell, 2008; Lapan, Gysbers & Sun, 1997; Gysbers & Henderson, 2001; Myrick, 2003; Gysbers, Lapan & Petroski, 2001; Schmidt, 2003; ASCA, 2003). The general consensus among academics is that both indirect and direct services are characteristics of the school counselling programme and these are frequently categorized as counselling and classroom guidance (direct services), consultation and coordination (indirect services). According to results of various studies (Gibson & Mitchell, 2008; Lapan, Gysbers, & Sun, 1997; Myrick, 2003; Gysbers, Lapan & Petroski, 2001; Schmidt, 2003; Chata & Loesch, 2007), practicing counsellors, their learners, teachers, principals and parents, endorse these services.

The study by Schimmel (2008) revealed that teacher-counsellors were engaged in tasks related to the foundation, management and delivery of accountability aspects of the comprehensive school counselling programme as outlined in the America School Counsellor Association, ASCA, (2003). The

majority of school counsellors involved in the study strongly felt that they were engaged in two main tasks related to the main components of the comprehensive programme including that school counsellors regularly consult with parents, teachers and principals, and that teacher-counsellors counsel learners individually about personal-social issues.

Bardhoshi and Duncan (2009); Frank (1986) and Kuhn (2004) found that items falling under the Responsive Services category rated as most or of highest importance, especially items related to Guidance Curriculum, System Support and Individual Student Planning. Under the School Guidance Curriculum category, the items rated were academic support, study and test taking skills, peer relationships, coping strategies and effective social skills. The least rated service was professional development. In the Individual Student Planning category, all respondents rated education on understanding of self, including understanding the individual personal strengths and weaknesses, and academic planning as important or very important.

These findings contradicted those of Pérusse, Goodnough, Donegan and Jones (2004) and Ross and Herrington (2006) who found that elementary school principals rated administering cognitive, aptitude, and achievement tests, maintaining learners' records, and registration and scheduling of new learners as appropriate counselling activities. More than 80% of the secondary school principals studied rated registration and scheduling of new learners, administering cognitive, aptitude and achievement tests, and maintaining learners' records as appropriate school counsellors' activities in that descending order of importance.

Zalaquett's (2005) study found that counsellors argued repeatedly that non-counselling activities have a detrimental effect on their capability to offer relevant services to their learners and have criticized principals for assigning them non-counselling administrative tasks. This type of finding is of interest to the current study as the study was designed to ascertain the different stakeholders' views of the services (administrative or otherwise) that characterize the Namibian school counselling programme.

Methodology
Research design and approach

The study adopted a case study design framed within a qualitative research approach which facilitated an exploration study in order to gain insight into the participants' comprehension of the phenomenon investigated (Babbie & Mouton, 2001). The qualitative approach helps researchers to describe and interpret participants' perceptions, attitudes, beliefs, and feelings relevant to their experiences of school counselling services received and used for improving the quality of students' learning. Data gathering involves interactions among participants permitting the qualification of ideas, values,

and meaning through the eyes of the participants than quantification through the eyes of outside observers (Neuman, 2011).

Participants

The stakeholders, including school principals, teacher-counsellors, parents and learners from Ohangwena Directorate of Education constituted the population for the study.

Learners being the primary beneficiaries of the school counselling programme were in the best position to provide relevant information on their school counselling programme. Teacher-counsellors being the implementers of the counselling programmes in schools were the best to know all the challenges facing the implementation of such programmes. Principals are the managers of the institutions where school counselling programmes are being implemented and services to address barriers to learning offered. The principals therefore were in the best position to offer evaluative information particularly about the services required to fulfil the objectives of the programme. In addition, parents are key stakeholders regarding the effectiveness of school couselling services provided to their children as many principals give considerable weight to parental input.

Sample and sampling methods

The sample of participants for this study comprised of twelve learners, five males and eight females. Their ages ranged between 10 to 19 years of age and were in grades 5 to 10.

There were also twelve teacher-counsellors, five males and seven females. Their age ranged between 22 to 35 years of age. Seven of them have more than five years teaching experience while five of them have three years of teaching experience. All teacher-counsellors have a Bachelor of Education degree. The other participants were school principals, two females and one male. Their ages ranged between 40 to 52 years of age. All principals have teaching qualifications and work experience of more than 10 years. Two parents were females and one was male. All have served on the school governing body for more than five years.

Purposive sampling method was employed to select participants. The selection of participants was performed under a set of strict restrictions in order to obtain, not only relevant, but also significant results. All participants were therefore required to have experience on the school counselling services offered in schools. This means that, all participants one way or another, were involved in counselling activities prior to their participation in the study.

For example, school principals were selected on the basis that they have been in that position for three consecutive years and that a school counselling programme is implemented at their respective schools. Learners, being the

beneficiaries of the counselling services, were required to have gone through the counselling programme and that they receive Life skills education. Teacher-counsellors as the primary implementers of the counselling services were sampled because they have undergone the Basic Counselling skills, Bereavement Counselling and Process of Counselling training prior to the study. In addition, they should have, at one-point referred learners from their schools to Regional School Counsellors. In the case of parents, they were selected based on the requirement that they have served for five or more years on the school governing body. Thus, the researcher selected these key informants based on their experience and knowledge of the school counselling services and their willingness to participate in the study. The purposive sampling technique was used based on Bertram and Christiansen (2015) who advised that when choosing a sampling technique and a sample itself, researchers need to remember to select participants who can best add to the understanding of the phenomenon under study.

Data collection methods and Instruments
        The study used focus groups and individual interviews in the data generation process. Focus group interviews are good for gathering rich data through direct interactions between researcher and participants and it is relatively inexpensive and effective with groups of lower literacy levels especially for parents with English as a second language as were the participants involved in this study. The individual interview method also allowed the researcher to obtain useful information as it explores and probes participants' responses to gather in-depth data about their experiences and feelings (Creswell, 2009). Principals, teacher-counsellors and learners' interviews were conducted in English at their respective schools in the afternoon to avoid lesson disruptions. However, the interviews for parents were conducted in a vernacular language (Oshiwambo) and then later transcribed verbatim due to their limited official language literacy levels. Focus groups and individual interviews lasted for between 30 to 45 minutes and were recorded and transcribed. All interview guides were developed to ensure that none of the important issues to be discussed is left out of the conversation.
        The focus group discussions guide to which learners and teacher-counsellors responded to covered the following questions: Could you please share with me, the types of counselling services that are offered at your school? Do you have personal experience in regard to counselling? Could you please share your experience? How is your experience similar to or different from others? How do you get access to career information at school? How do other stakeholders get involved in helping you if you have concerns/ problems at school? What happens to you if you have a problem that your Teacher-

counsellor cannot handle? Do you have any other information related to counselling services that were not covered in this interview*?*

Similarly, the individual interview questions with parents and principals were more or less the same with the focus group discussion questions. For example, participants were also asked to share with the researcher the types of counselling services offered at that particular school. What is your opinion about the counselling services offered at this school? How is your opinion similar or different from others? What are the other services available in the community for learners? How do other service providers come on board to help learners who are having problems? How do learners get information about career education? What happens to learners if they encounter problems at school? Who else is available in the community to help learners in need? Do you have any other information related to counselling services that were not covered in this interview?

Procedures for data collection

Before collecting data, the researcher submitted a research proposal for the present study to the Senate Research Ethics Committee of the University of the Western Cape and obtained an ethical clearance certificate with the registration number 11/9/32. Further, the researcher sought permission from the Ministry of Education, Arts and Culture to conduct a research. Permission to conduct the study in the selected schools in Ohangwena region was also sought from the Director of Ohangwena Directorate of Education. In each school involved in the study and with the assistance of the school principal, participants were informed of the purpose of the study and the conditions for participation both orally and in writing in groups within the school premises. In addition, the researcher obtained signed informed consent forms from each participant who participated in the individual one-on-one and focus group interviews. For instance, prior to participation, respondents were assured of their anonymity, the confidentiality of information they were to give as well as the voluntary consent to electronic recording of interviews, nature of their participation and the fact that, if they so wish, they could withdraw at any time from the study. Information in this regard and about the study in general, was contained in the informed consent form each participant signed before participating in the study.

Methods of data analysis

Data were processed using thematic analysis, which refers to identifying, analyzing and reporting patterns or themes across the data (Neuman, 2011). This involves several steps, namely: becoming familiar with the data by repeated reading of the transcripts, developing initial codes through line-by-line analysis of all statements that referred to participants' experiences

of school counselling services, searching for "patterned responses" among the initial codes and grouping them into themes that speak to the phenomenon of school counselling services, (e.g. identifying repetitions in content both within and across the interviews), and developing superordinate themes by looking for interconnections and overlaps among the themes (Bertram & Christiansen, 2015).

Findings

The results are presented below in the form of themes that emerged, with supporting quotations from focus group discussions and interviews' transcriptions.

Participants reported on a range of services offered under the Namibian school counselling programme that help learners to solve problems, make decisions, develop responsible healthy behaviours, attitudes and values and reduce learning problems. The services participants reported are counselling, information dissemination and or education, consultation (with teachers and parents), career development, curriculum support and academic skills development, orientation, referral and a number of other non-educational services.

Counselling services
Learners

When responding to a question on what they perceived as counselling services of the Namibian school counselling programme, learners reported that teacher-counsellors in Namibian schools often engage with learners, parents and teachers on an individual one-on-one basis, either as in personal counselling, or on a small group basis (family group) in an attempt to address various problem situations.
One student stated that:
"we come together as a group and teachers or nurses advise us to stay away from alcohol and drugs"[learner3].
Another student said:
"*we do have AIDS Awareness club where we meet as a group and do poems and songs[learner 8]*

Teacher-counsellors

On the question of counselling services of the Namibian school-counselling programme, teacher–counsellors highlighted that Window of Hope programme is also part of the counselling services as learners are exposed to various kinds of skills that they need to live a successful life. They felt that, by being taught Life skills as a subject in school, learners are being

empowered with knowledge and skills to effectively face diverse challenges in life.

One teacher-counsellor said:

"Window of Hope club also contributed and I regard it also as an activity of counsellor.[TC1]

The other one claimed that:

"the service which a Teacher-counsellor offers at school is just a counselling and teaching Life Skills subject[TC3]

Principals

Principals' responses regarding the counselling activities or services of the Namibian school-counselling programme included the view that learners are being grouped in small groups and motivated to be free and open to their teachers when they encounter problems. During guidance activities in the classroom, learners also practiced assertive behavior skills to enable them to boldly face life issues.

One principal said:

"so, we normally used to have the meetings every month for counselling where learners need to be motivated, to be disciplined and to be open to come to the Teacher-counsellor whenever they have got problems, either at school, or at home with teachers or perhaps with other support staff at school"[principal 1].

The other one added that:

" exchange of views in guidance activities…….practice assertive behaviours in role plays"[principal 2]

Parents

Parents' responses regarding what they perceived as counselling services of the Namibian school counselling programme included the view that learners performed certain types of dramas from various plays. Additionally, girls clubs are established where they discuss about reproductive health issues and all these are part of counselling services offered at school.

One parent indicated that:

"I remember that children do drama, certain types of dramas and various plays"[parent]

Another parent said*:*

 "…. girls clubs initiated at school….female learners reported about getting information on reproductive health issues"[parent 4]

The other parent added that:

……"motivational talks…..education campaigns on the prevention of violence in school"[parent 2]

Based on the participants' responses on school counselling services, one can conclude that they have the knowledge about the existence of the counselling services in schools, though they have different views and understanding on what specific activities the counselling program should comprise.

Career Planning Services
Learners
　　　　Learners' responses describing career-planning services of the Namibian school counselling programme revealed that every year, teacher-counsellors organised trips to the Youth Centers so that learners can meet officials from different organizations who share information on career opportunities available in the country and abroad. Learners indicated that this is an opportunity for them to know what careers to follow in the future and what specific requirements are there in terms of subject choices and pre-requisite courses.

One student stated that:

"…*guidance education and career orientation that took place at schools; for instance, Career Fair where we are exposed to various career opportunities"[learner 5]*

The other student added that:

 "*create a "Me and MY job" booklet…with learning about personal interests and responsibilities" [learner 7]*

Teacher-counsellors
　　　Teacher-counsellors' responses regarding career planning services of the Namibian school counselling programme are that Regional School Counsellors visit schools with other officials from line ministries to give talks and to motivate learners to study hard and choose appropriate subjects. During these visits, learners come into face-to-face contact with experts in various fields of study and thus create a better opportunity for them to learn from people with first-hand experience.

One teacher-counsellor said:

"*.…organize posters containing a list of the occupations they think women most commonly work in…"[TC 4]*

 The other one also added that:

 "*.……Regional career fairs are held every year for grade 10 and 12 learners"[TC 6]*

Principals
　　　Principals described the career planning services of the Namibian school counselling programme as sharing of career information with young people for them to choose better careers. Principals felt that career planning

should start as early as possible so that leaners would not have problems in the future to decide on what career to follow. They indicated that it is very common nowadays to find learners in grade twelve who have no idea of the career they want to pursue once they complete grade twelve.

One principal stated that:

"displaying career information on the notice boards to expose learners to various careers available in the country"{principal 3]

Another added that:

 "organize group meetings for presentation on the wide range post- secondary opportunities"[principal 2]

Parents

Parents' responses regarding career-planning services of the Namibian school counselling programme include engaging learners in discussions about the connection between education and career planning. Parents were also of the opinion that early exposure to career education will open opportunities for learners to advance in their career planning.

One parent said:

".… arrange field trips to nearby business to help learners… [get first-hand experience*][parent 3]*

The other one added that:

'…host school career day" [parent 5]

Concerning career planning services, participants reported on certain educational services (information and skills-based) of some non-governmental organizations which are coordinated by the Namibian school counselling programme. Some of these educational activities and or services include career fairs and field trips or career excursions organized to educate or provide information to learners on careers and further education opportunities.

Education Services (Information-based services)
Learners

Concerning education services (Information-based services), learners highlighted that they receive information through various platforms, for example, girls and boys HIV clubs, Window of Hope clubs and other programmes that disseminate information on social and communication skills. Learners felt that through various clubs at school, they are empowered with social skills that enable them to work together with other learners and appreciate diversity, not only in terms of cultural backgrounds, but also in understanding life issues.

One learner stated that:

"there is HIV and AIDS awareness club there[where learners are given information or educated about HIV and AIDS]*"[learner 8]*

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The other learner added that:

 "we do have Window of Hope (WoH) and My Future is My Choice (MFMC)
programmes where we learned about social skills, and communication skills"
[learner 9]

Teacher-counsellors

Teacher-counsellors' responses regarding education services indicated that they shared information with both learners and parents regarding HIV and AIDS and other diseases. They normally organise parent meetings and invite nurses and other knowledgeable people to address the parent-community at school. They also use Window of Hope and My Future is My Choice programmes to disseminate important information to leaners and other teachers.

One teacher-counsellor said:

"programmes such as Window of Hope, My Future is my Choice or
Educational development on decision making"[TC 10]

Another one added that:

 "we used to tell them [learners] *and inform them what is right and wrong and*
also to help them make informed decisions.[TC 4]

Principals

Principals described the education services of the Namibian school counselling programme as services where teacher-counsellors give relevant information to learners either thorough teaching Life Skills or life orientation subject or hosting information sessions at school. This service is not only important to learners, but also to teachers and parents. They felt that information is power.

One principal said:

"we have this My Future is My Choice program - which is now taught in the
life skills session"[principal 2]

On this similar issue, the other principal added that:

… during immunization campaigns weeks, nurses address learners on the
importance of being immunized"[principal 2]

Parents

Concerning education services, the parents' views are that it is of importance that teacher-counsellors make available to learners the latest information on a number of topics. They indicated that teacher-counsellors need to have resource materials in their offices, especially those which help learners in areas of educational information on how to study and information of a personal or social nature.

One parent said:

"children said they are taught by teachers in the classrooms on how to behave and how to be in life and give them advice on how to choose relevant careers"[parent 3]

In the same vein, the other parent said:

"in that school counselling programme, activities Window of Hope" My Future is My Choice also provide information to learners [parent 1]

Participants reported on education and or information-based activities, which are conducted in workshops, talks, club meetings and even at school assembly that serve as avenues for information dissemination and teaching of life skills. Some of these services are also reported to be offered in schools by non-government organizations but coordinated by teacher-counsellors or Life-skills teachers.

Academic development services
Learners

In terms of academic development services, learners stated that they learn study skills, test taking skills and note taking skills during the guidance classroom activities. They felt that this academic development process assists them in learning and coping well with academic demands. However, some learners felt that sometimes information is too much for them to handle at once, as they do not have enough time to practice those skills during school time.

One learner said:

"we do exercise on test taking skills and effective listening skills"[learner 5]

On the similar issue, the other learner said:

"teacher-counsellor organize after school hours meetings for us to discuss problem solving
skills" [learner 6]

Another one added that

" the school organize talks and bring former students to talk to learners about the values of education and the need to stay in school to complete",[learner 3]

Teacher- Counsellors

On the question of academic development services, teacher-counsellors emphasised the issue of organising meetings in small groups of learners to teach them how to apply study skills and all other important skills they need to succeed academically.

One teacher-counsellor said:

" teacher-counsellors organize discussions with learners to teach them how to develop and apply effective study skills"[TC 1]

The other one added that:

…" teacher-counsellors organize clubs for learners to learn important skills as critical thinking, problem-solving skills, individual initiative skills{TC 3]

Principals

About the academic development services, principals indicated that those are available for learners as teacher-counsellors organise seminars to help learners with how to take notes in class and discuss topics related to academic achievement.

One principal indicated that:

 "Teacher-counsellors organise workshops to train learners in note taking skills and study skills[principal 2]

The other principals said:

"learners do brain teaser exercises to practice thinking skills"[principal 3]

Another one also added that:

"Teacher- counsellors run a counselling group for learners on topics related to academic development and achievement"[principal 1]

Parents

Concerning academic development services, parents also indicated that the learners are exposed to study skills, examination taking techniques for them to overcome test anxiety.

One parent said:

"…they [learners] *practice good examination skills and learn how to apply them when writing an examination"[parent 3]*

The other parent shared that:

 "..Teacher-counsellors educate learners on how to overcome test anxiety by demonstrating relaxation techniques"[parent 1

Participants considered the most important goal of the Namibian school counselling programme to be the development of academic skills in the learners. Therefore, given priority are special services which participants reported to be specifically organized to act as academic support and to help learners develop study skills, make notes, manage their time, prepare for examinations and to develop favorable attitudes and values for regular school attendance and to avoid failure in the school.

Consultation Services
Learners

When asked about the consultation services, learners responded that teacher-counsellors involve parents and other stakeholders in education by inviting them to come and address the learners on issues affecting their

learning. Learners further indicated that parents are called to school to check their books and to see how their children are doing academically.
One learner said:
Teacher-counsellors organised parents' meetings to check our books" [learner 10]
Another learner added that:
"organizations such as UNICEF and RED CROSS provided school uniforms, school bags, tents, and some materials to schools"[learner 6]
One also shard that
.....teacher-counsellors invite police officers to school and address learners on the danger crime activities"[learner 2]

Teacher-counsellors
  In response to the question on consultation services, teacher-counsellors indicated that they organise community meetings where they educate parents on several issues, including the importance of the family literacy programme that is targeting parents of grade one learners. In those meetings, parents are also enlightened on issues of how to deal with unruly children.
One parent said:
"Parents education sessions are organised to discuss learner' progress in school"[TC7]
 Another parent said:
"[teacher-counsellors] consult with parents or guardians, other educators and community agencies on appropriate interventions and programmes for learners"[TC 4]
The other parent added that:
"organising groups of parents or other family members on how to deal best with learners-' developmental challenges"[TC 3]

Principals
  On the issue of consultation, principals shared that teacher-counsellors collaborate with other   service providers like Community Based Organizations (CBOs) such as Red Cross and UNICEF who help learners by providing schools with First Aid Kits and explain to learners the importance of healthy living or lifestyles. Principals had this to say.
"   under the umbrella of school counselling services, we got nurses from nearby hospital to come and talk to our learners on health related issues, especially. on how to maintain good health" [principal 2]
"... through school counselling services discussion groups on behavioural interventions or curriculum planning with teacher-counsellors are held"[principal 3]

Parents

Echoing school principals, parents emphasised that teacher-counsellors consult with other local service providers; for instance, Regional Constituency Councillors and Red Cross officials to contribute materials and other essentials to schools to use for counselling activities, and also consult with social workers and nurses to effectively provide a comprehensive school counselling programme.

One parent said:

"…follow-up…with social workers on social grants applications Orphans and Vulnerable Children(OVCs) and investigate why acquiring national documents is a problem to many orphans…"[parent 1

Participants reported that teacher-counsellors consult with other service providers such as nurses (for health related issues) and Social Workers (for social welfare related matters such as grants and financial support for low-income families). Participants further reported that due to the high prevalence of violence in schools, teacher-counsellors liaise with Police Officers to come to schools to address learners on alcohol and drug abuse. They further revealed that teacher-counsellors consult with community-based organizations, such as the RED CROSS, to help provide schools with the First Aid Kits and information on health-related issues and how to maintain good and healthy life styles to learners.

Referral services
Learners

On the question of referral services, learners indicated that when they encounter a problem or a crisis that a teacher-counsellor cannot handle, they are referred to other specialists in the area. There are many organizations and line ministries that teacher-counsellors refer learners to, depending on the case. For example, if it is a social issue, then learners are referred to Social Welfare offices to get help.

One learner said:

"we are sent to the Ministry of Gender Equality and Child Welfare to register for social grant support"[learner 9]

The other one added that*:*

…." parents are referred to social workers to secure social welfare services"[learner 5]

Teacher-counsellors

When responding to this question, teacher-counsellors highlighted that the availability of other service providers in the community makes it easy to refer learners. They specifically mentioned the Women and Child Protection

Unit in the Ministry of Gender and Child Welfare that deals with all types of abuses, so any one can be referred there to get assistance.

Teacher-counsellors indicated that:

"….. learners with severe behavioural disorders and emotionally disturbed are referred to private psychologist"[TC 8]

"…. referrals for one-on-one counselling of learners may come from both teachers and learners [TC 3]

Principals

To this question, principals responded that learners and their families receive help through other programs and/or individuals in the school system as well as from community agencies outside the school. They added that Orphans and Vulnerable Children (OVCs) are normally referred to social workers for social grant services.

One principal said:

…."families are referred to social workers, especially, needy families to secure financial and

Parents

Parents reported that referral services include learners being referred to social workers for the acquisition of social grants. They showed appreciation for this service as most of the needy children are being taken care of with public funds, but all this is happening because parents were shown the right channels and procedures to follow in order to secure funds for their children.

One parent said:

…" teacher-counsellor initiates referrals to private agencies"[parent 2]

The other one added that:

" abused learners are referred to Women and Child Protection Unity in the Ministry of Gender and Child Welfare"[parent 1]

Participants indicated that, in order to work with ease, teacher-counsellors make sure they maintain appropriate referral networks with personnel such as social workers, nurses and community agencies personnel to address some learners' issues. The reports by the participants also indicate that abused learners are referred to the Women and Child Protection Unit in the Ministry of Gender and Child Welfare.

Discussion

School counselling programme services refer to actions and activities carried out to actualize and make the school counselling programme operational in schools (Shertzer & Stone, 1981). School counselling programme services are structured activities presented systematically through

individual, classroom or group activities in order to achieve the objectives of the programme (Borders & Drury, 1992; Gibson & Mitchell, 1995; Lapan, Gysbers & Sun, 1997; Gysbers & Henderson, 2001; Myrick, 2003; Gysbers, Lapan & Petroski, 2001; Schmidt, 2003; ASCA, 2005; Chata & Loesch, 2007). School counselling programme has a broad range of activities and services for meeting the objectives of the programme such as assisting individual learners to understand themselves, their problems, their school environment and their world (Oniye & Alawane, 2008; Gibson & Mitchell, 1995; Lapan, Gysbers, & Sun, 1997; Myrick, 2003; Gysbers, Lapan & Petroski, 2001; Schmidt, 2003). These services are integral and essential components of the educational process for all learners as they progress through the educational systems.

The study found out that counselling, career planning, education and information dissemination, academic, consultation, and referral services were endorsed by the participants as being offered by the Namibian School Counselling Programme. These services are consistent with those described by Bardhoshi and Duncan, (2009); Frank, (1986) and Kuhn, (2004) as core services, which a school counselling programme, should provide, and these include counselling, consultation, planning and coordination. However, the study of Zalaquett (2005) and that of Ross and Herrington (2006) reported that when a counselling programme exists, teacher-counsellors are often asked to add administrative duties such as testing, supervising and class scheduling.

Included among services of school counselling programmes is a set of services described as responsive services that include individual and group counselling, crisis counselling, prevention and remediation services, consultation and referral. It is further contended that these services are essential for those students whose life challenges create barriers to classroom performance, academic success and healthy development in academic, career and personal/social arenas. Thus, as revealed in the contextual framework or the background introduction to this study, the Namibian environment with its disease burden of Human Immunodeficiency Virus (HIV) and poor socio-economic conditions of the majority of its people, the kinds of services endorsed by the participants of this study are probably those with high probability of addressing the life challenges of the beneficiaries of the Namibian school counselling programme.

The study further revealed that teacher-counsellors invite community members with expertise to come and address learners on pertinent issues affecting their lives. Echoing this sentiment, Chata and Loesch (2007) believe that it is important that individuals from the community may be approached to talk to learners about issues such as HIV/AIDS, drug abuse, personal safety or specific careers. Since the main mission of any educator is to see his or her learners progressing and achieving academically by making efforts to free the

learners from challenges and/or barriers to learning, this stance of the teacher-counsellors and the principals certainly finds support in the statement by UNESCO (2008) that the goal of any school is to focus on addressing intellectual, emotional, social and psychological needs of learners by employment of counselling, academic support and career development services.

Conclusion and limitations

Study findings revealed that the Namibian school counselling programme provides a structured and systematic broad range of services targeting individual, classroom and groups that help to facilitate educational, emotional, social, career and overall personality development of learners. The programme is also very context-sensitive as it provides services to meet the socio-economic needs and helps to address a number of their life challenges. Moreover, the services are found to be integral and essential components of the educational process for all learners as they progress through school. Equally important is the finding that the services, especially consultation and career development offer experiential learning and expose learners to various models of careers of interest to them. Services offering experiential and social learning opportunities help learners in their overall development particularly in their transition to further education and the world of work. The limitation in this study is that the sample from which the data was collected came from a single region of education and this limits its generalizability. Therefore, further research is necessary to explore the perceptions of other stakeholders from other regions.

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Parameters of Basic Science Test Item's of 2011 Basic Education Certificate Examination Using Item Response Theory (IRT) Approach in Delta State, Nigeria

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Abstract

This study determined the psychometric properties of the examination items in 2011 Basic Education Certificate Examination for Basic Science. The design adopted was survey research design. The instrument for data collection was the 2011 Delta State Basic Education Certificate Examination (BECE) in Basic Science Multiple Choice Test Items. The IRT model for item selection was used to determine the estimates of the item parameters. The findings of the study revealed that 45, 45 and 40 items satisfied the IRT difficulty, discrimination and guessing parameter respectively. While 38 items satisfied the combined three IRT parameter estimates. This result revealed a significant difference in the number of the selected items that satisfied all three IRT parameter estimates in BECE Basic Science.

Keywords: Determination, test item's parameters, IRT, basic science, BECE.

Introduction

The Nigerian government places great emphasis on the teaching and learning of science in our schools. Basic science is a revolutionary new introductory science curriculum developed for student's considering a career in science. Basic science formally known as integrated science is the first form of science a child comes across at the secondary school level. Hence, basic science prepares students at the junior secondary school level for core science subjects (physics, chemistry, biology, mathematics and geography) at the senior secondary school level. This implies that for students to be able to study

single science subjects at the senior secondary school level successfully such student had to be well-grounded in basic science at junior secondary school level. The subject has been made compulsory for all students because of its importance to everyday life. It plays key role towards the actualization of the scientific advancement in the society and enables students live efficiently within the global world. As a core subject, all students are expected to offer it, irrespective of their interest. Basic Science help learners develop skills needed for further learning for science in the senior classes and beyond. As important as this subject, there has been a downward trend in students' performance. The percentage of students who pass at credit level showed that from 2011 to 2014, the percentage of student with credit pass and above is less than 50% and occurring in a reducing trend (Ministry of Education Asaba, 2016). As a result of students' performances, researchers have done so many works on different teaching methodologies to determine if these methodologies could have positive influences on their performances but the issue of poor performances still remains the same.

　　　Considering the fact that teaching methodologies could not be the sole factor responsible for poor performances of the students, there is need to determine item parameters of test items constructed by examination bodies in order to determine if the test items met the psychometric properties that is expected of the test item. Test as viewed by Omorogiuwa (2010) is an item or set of items presented to an individual to whom they are expected to respond under specific conditions, with the intent to determine the extent to which such trait is present or absent in the respondent(s). Test items are composed of series of questions designed to measure series of behaviors such as intelligence, aptitude, attitude, acquired skills and knowledge in all field of education. For test items to achieve its aim, the test items must meet up with the theoretical scale for item selection using the item parameters.

　　　Item parameters are statistical indicators that define the quality of an item in the instrument employed (Orheruata, 2015). These statistical indicators are item difficulty, discrimination and guessing parameters. Item difficulty parameter (b) refers to the examinee's ability level at which approximately half of the examinees are likely to answer a particular item correctly. Item discrimination parameter (a) describes the strength of an item discriminating between examinee with trait level (θ) below and above the threshold (b) while guessing parameter (c) is the probability of getting the item correct by guessing alone (Embretson & Reise, 2010).A well-developed test needed to have its item parameters in conformity with the theoretical scale for item selection using test theories. McDonald, (1999) defined test theory as the fundamental collection of mathematical concepts that formalize and clarify certain questions about constructing and using tests, and then provide some methods

for answering them. The author, further explained test theories as tools for addressing inferential problem within the measurement framework.

There are two test theories used in determining test item parameters. They are the Classical Test Theory (CTT) and the Item Response Theory (IRT). The Classical Test Theory (CTT) and the Item Response Theory (IRT) are the two contrasting measurements frameworks which address measurement problem. Both CTT and IRT are scientific methods which have a pioneer role in educational measurement and psychometric process. It is a known fact that Basic Education Certificate Examination body has been determining their test items before now using CTT (Ministry of Education Basic and Secondary Examinations and Standards, Asaba)**.**

Classical Test Theory (CTT) according to Allen and Yen (2002) is a body of related psychometric theory that predicts outcomes of psychological testing such as difficulty of items or the ability of candidates. The theory actually deals with the effect of both unsystematic and systematic influence on the observed test theories. Classical Test Theory is based on the decomposition of observed scores into true and error scores and also views that the observed score changes as the amount of random (unsystematic) error changes. The problem with Classical Test Theory estimators has to do with circular dependency. It is also on record that the Classical Test Theory estimators of item difficulty and item discrimination indexes are not generalizable across populations. Classical Test Theory is limited in the comparison of performance of different examinees. The examinees must be given either the same or parallel items (Omorogiuwa, 2009). Embretson and Reise (2010) reported that Classical Test Theory provides no bases for determining how an examinee might perform when confronted with a test item and that CTT assumes that the measurement error is the same for all examinees. These limitations have led to a new measurement theory which is Item Response Theory (IRT).

Item response theory is one of the statistical frameworks that generate a mathematical function to describe the relationship between student performance in a test and ability or trait level. Its procedure improves psychometric methodology and assessment instruments. It provides meaningful information about examinee when its methodology is focused on the relationship between each individual item and the underlying (latent) trait or ability assessed by the instrument. A group of items responded to by a group of examinees are used to estimate the item parameters in order to discover an item's measurement qualities. A test developed using IRT provide information about an item at its difficulty level, discrimination level, and guessing level for efficient procedure for estimating item parameters.

The name Item Response Theory is due to the focus of the theory on the item, as opposed to the test-level focus of Classical Test Theory, by modeling the response of an examinee of given ability to each item in the test.

The term item is used because many test questions are not actually questions; they might be <u>multiple choice</u> questions that have incorrect and correct responses. IRT is based on the idea that the <u>probability</u> of a correct/keyed response to an item is a <u>mathematical function</u> of person and item <u>parameters</u>. Item parameters include difficulty (location), discrimination (slope or correlation), and pseudo-guessing (lower <u>asymptote</u>).Considering the quality of IRT, this study was an attempt to determine item parameters in 2011 Basic Science test items in Delta State Basic Education Certificate Examination using IRT approach.

Theoretical Approach

This study is hinged on item response theory (IRT) framework. The theory was adopted due to its applicability to sift through item level statistics. IRT generated new rules of measurement and presented as modern and superior alternative to CTT (De Boeck& Wilson, 2004; Embretson & Reise, 2010; Nering & Ostini; 2010, Zickar & Broadfoot, 2008). Three of the pioneers who pursued parallel research work independently were the Educational Testing Services psychometricians known as Frederic M. <u>Lord</u>, the Danish mathematician, George Rasch, and Austrian sociologist Paul<u>Lazarsfeld</u> (Millikarjuna, 2014). Lord (1952) brought the idea of latent trait or ability and at the same time differentiated this construct from observed score. Lazarsfeld (1950) only described the unobserved variable as accounting for the observed interrelationships among the item responses. While Rasch (1960) reported the need for creating statistical models that maintain the property of specific objectivity, the idea that people and item parameters be estimated separately but comparable on similar metric.

In using IRT, one can assess through the item characteristics within a multiple item test and estimate the examinee's ability given the item parameters and the response pattern to the test by that examinee. A more comprehensive approach to psychometrics that rectifies many of the perceived shortcomings associated with classical approaches is also provided by IRT. It implemented new concepts to describe tests (item characteristics curve, item/test information function and so on). It puts the focus on the estimation of item's operational characteristics like assessment of test dimensionality, estimating of the difficulty, discriminating, guessing parameters, item bias and differential item functioning. IRT methods differentiate error more finely, most especially with respect to characteristics of individual items that may affect their performance. A goal of IRT is to enable a researcher to establish certain characteristics of items that are independent of who is completing them. It examines the level of the attribute being measured that most strongly influences an item. The purpose of IRT is to estimate both the value of the latent trait for each respondent and the item parameters for each item. In IRT,

each item specifies three parameters that define an s-shape logistic curve, called item characteristic curve (ICC), linking probabilities of individuals into position of the individuals in the latent trait (or ability).

Statement of the Problem

Over the years, the Basic Education Certificate Examination Chief examiner's report in Delta State has been showing a downward trend in the performance of students in Basic Science. In order to overcome this issue of poor performances, the government has been organizing workshop and seminars to improve on teachers' professional skills most especially in the area of teaching methodology but the issue still remains the same. The persistent issue of poor performances has shown that the teaching methodology could not be the sole factor responsible for students' poor performances. As a result of this, there is need to determine the psychometric properties of the examination items used to determine the performance of students. Psychometricians have relied so much on observed scores to represent the best estimate of a person's ability. Examinee ability is obtained from the score an individual obtains from a test and this really depends on the quality of the test taken. As a matter of fact, a student's score is due to some unspecified combination of his/her ability and the properties of the items, such as how difficult they are. When representative samples are carefully selected, reliable item and test statistics can be used to generate parallel forms measuring the same construct. Determination of the psychometric properties of examination items are important to ensure public examinations items are measuring good psychometric properties that are expected of the items used for examination purpose. Based on the above, the problem of this study is to determine item parameters in 2011 Basic Science test items in Delta State Basic Education Certificate Examination using Item Response Theory approach.

The main purpose of the study was to determine the item parameters of 2011 Delta State BECE Basic Science multiple choice test items using the Item Response Theory approach. Specifically, an attempt was made to:

- determine the number of items of the 2011 Delta State BECE Basic Science multiple choice items that satisfied the theoretical expectation of the IRT difficulty parameter estimate.
- determine the number of items of the 2011 Delta State BECE Basic Science multiple choice items that satisfied the theoretical expectation of the IRT discrimination parameter estimate.
- determine the number of items of the 2011 Delta State BECE Basic Science multiple choice items that satisfied the theoretical expectation of the IRT guessing parameter estimate.

• determine the number of items of the 2011 Delta State BECE Basic Science multiple choice items that satisfied the theoretical expectation of the combined IRT item parameter estimates.

Research Questions

The following research questions were raised to guide the study:

1. How many of the 2011 Delta State BECE Basic Science multiple choice items satisfied the theoretical expectation of the IRT difficulty parameter estimate?

2. How many of the 2011 Delta State BECE Basic Science multiple choice items satisfied the theoretical expectation of the IRT discrimination parameter estimate?

3. How many of the 2011 Delta State BECE Basic Science multiple choice items satisfied the theoretical expectation of the IRT guessing parameter estimate?

4. How many of the 2011 Delta State BECE Basic Science multiple choice items satisfied the theoretical expectation of the IRT combined item parameter estimates?

Hypotheses

The following hypotheses were formulated to guide the study:

H_{01}: There is no significant difference in the number of items that satisfied the theoretical expectation of the IRT item difficulty parameter estimate and the total number of items in BECE Basic Science.

H_{02}: There is no significant difference in the number of items that satisfied the theoretical expectation of the IRT item discrimination parameter estimate and the total number of items in BECE Basic Science.

H_{03}: There is no significant difference in the number of items that satisfied the theoretical expectation of the IRT guessing parameter estimate and the total number of items in BECE Basic Science.

H_{04}: There is no significant difference in the number of items that satisfied the theoretical expectation of all selected three IRT parameter estimates and the total number of items in BECE Basic Science.

Methods

The survey research design was adopted in this study. This design is employed because it meets the expectation of this study for effective analysis. It is adopted to collecting data on and describing in a systematic manner, the characteristics, features and facts about the population of the study. The strength of this design is that it provides latitude for full description of relevant variables in relation to the given population. This survey research design is concerned with description of events as they are. It is purely for collecting and

interpreting information. It does not involve manipulation of information. Population of this study consist of Three Thousand, Nine Hundred and Thirty-one (3,931) students from Twenty-Three public schools preparing to write their 2014/2015 BECE in Oshimili North and Oshimili South Local Government Areas of Delta State. The number represents the entire population of JSS3 students in both Local Government Areas.The sample of students for this study comprise of One Thousand, Two Hundred and Ninety-Seven students (1,297). Proportionate stratified sampling technique was used to select 33% of 23 schools which is 8 schools. This includes 4 schools from Oshimili North Local Government Area and 4 schools from Oshimili South Local Government Area. Simple Random Sampling Technique was used by balloting to select the 1,297 students from the selected 8 schools in Oshimili North and South Local Government Areas.

The research instrument is the June 2011 Basic Science Multiple Choice Test Items of Basic Education Certificate Examination (BECE). It contains sixty (60) items with one correct answer and four distracters drawn across the Basic Science syllabus. The instrument was adopted whole without modifications. The validity of the instrument was done by the BECE Board being a standardized item by their originality. The Board has the credit and merit of adopting different approaches of determining validity. The reliability of BECE instrument used was also done by the Board and as such regarded as standardized items. The permission of the school principals and Basic Science teachers was sought and obtained before the administration of the instrument. The teachers informed the students of writing the examination in Basic Science in two weeks before the examination. The instrument was administered to the students with the help of 3 Basic Science teachers of the various schools selected serving as research assistants and the researchers personally supervised some schools that were used for the study. The instrument was administered as mock examination under similar conditions as given by examination body. Having retrieved all the data responses from one thousand two hundred and ninety-seven (1,297) students, the response sheets were sorted out. Correct responses were scored as "1" and incorrect as "0". The response sheets were numbered from 1 to 1297. Having generated the item parameter estimates, the selection of items using the IRT procedures were carried out. The selected items were used to answer the research questions 1 through 4. For research question 1through 4, frequency count was adopted. The obtained number of satisfied and non-satisfied items of item difficulty parameter estimate, item discrimination parameter estimates, the guessing parameter estimate and all selected three parameter estimates were subjected to further analysis using the Statistical Package for Social Sciences (S.P.S.S). Hypotheses 1 through 4 were tested using chi-square test of goodness of fit at

an alpha level of 0.05. Selection of items was based on having satisfied all three IRT parameter estimate concurrently.

Results

Table 2; Number of items that satisfied the theoretical expectation of the IRT difficulty parameter estimate and those that did not

Status of item	No of items	Items	%
Satisfied	45	1,3,5,6,10,12,14,15,17,19,20,21,22,23, 24,27,28,29,30,31,32,33,34,35,37,38,39, 40,41,42,43,44,46.47,48,49,50,51,53,54,55, 56,57,59&60	75.00
Not satisfied	15	2, 4,7,8,9,11,13, 16,18,25,26,36,45, 52 &58	25.00

Table 2 above shows that the number of items that satisfied the theoretical expectation of the IRT difficulty parameter estimate are 45 which is75.00% of the items and 15 (25.00%) did not satisfy it.

Table 3; Number of items that satisfied the theoretical expectation of the IRT discrimination parameter estimate and those that did not

Status of items	No of items	Items	%
Satisfied	45	1,3,4,5,6,10,12,14,15,17,19,20,21,22,23,24, 27,28,29,30,31,32,33,34,35,37,38,39,40,41,42, 44,46,47,48,49,50,51,53,54,55, 56,57,59 &60	75.00
Not satisfied	15	2,7,8,9,11,13,16,18,25,26,36,43,45,52&58	25.00

Table 3 shows that the number of items that satisfied the theoretical expectation of the IRT discrimination parameter estimate are 45 which is 75.00% of the items and 15 (25.00%) did not satisfy it.

Table 4; Number of items that satisfied the theoretical expectation of the IRT guessing parameter estimate

Status of items	No of items	Items	%
Satisfied	40	1,2,3,4,5,6,10,12,14,17,20,21,22,23,24, 27,28,29,30,31,32,34,35,41,42,44,46,47, 48,49,50,51,53,54,55,56,57,58,59&60	66.67
Not satisfied	20	7,8,9,11,13,15,16,18,19,25,26,33,36,37, 38,39,40,43,45&52	33.33

Table 4 shows that the number of items that satisfied the theoretical expectation of the IRT guessing parameter estimate are 40 which is 66.67% of the items and 20 (33.33%) did not satisfy it.

Table 5; Number of items that satisfied the theoretical expectation of the IRT combined item parameter estimates and those that did not

Status of items	No of items	Items	%
Satisfied	38	1,3,4,5,6,10,12,14,17,20,21,22,23,24,27,28, 29,30,31,32,34,35,41,42,44,46,47,48,49,50, 51,53,54,55,56,57,59, &60	63.33
Not satisfied	22	2,7,8,9,11,13,15,16,18,19,25,26,33,36,37,38, 39,40,43,45,52&58	36.67

Table 5 shows that the number of items that satisfied the theoretical expectation of the combined IRT parameter estimates are 38 which is 63.33% of the items and 22 (36.67%) did not satisfy it.

Table 6;Chi-square goodness of fit of IRT item difficulty parameter estimate

Items	Observed	Expected	Df	Chi-square	Sig
Fit	45	30			
			1	15.0	0.295
Not Fit	15	30			

$\alpha = .05$

Table 6 shows a chi-square value of 15.0 and a p-value of .295. Testing at an alpha level of .05, the p-value is greater than the alpha level, so the null hypothesis which states that there is no significant difference in the number of items that satisfied IRT item difficulty parameter estimate and the total number of items in Basic Education Certificate Examination in Basic Science is retained.

Table 7; Chi-square goodness of fit of IRT item discrimination parameter estimate

Items	Observed	Expected	Df	Chi-square	Sig
Fit	45	30			
			1	15.0	0.295
Not Fit	15	30			

$\alpha = .05$

Table 7 shows a chi-square value of 15.0 and a p-value of .295. Testing at an alpha level of .05, the p-value is greater than the alpha level, so the null hypothesis which states that there is no significant difference in the number of items that satisfied IRT item discrimination parameter estimate and the total number of items in Basic Education Certificate Examination in Basic Science is retained. There is no significant difference in the number of items that satisfied IRT guessing parameter estimate and the total number of items in Basic Education Certificate Examination in Basic science.

Table 8;Chi-square goodness of fit of IRT guessing parameter estimate

Items	Observed	Expected	Df	Chi-square	Sig
Fit	40	30			
			1	3.574	0.059
Not Fit	20	30			

<div align="center">α = .05</div>

Table 8 shows a chi-square value of 3.574 and a p-value of .059. Testing at an alpha level of .05, the p-value is greater than the alpha level, so that null hypothesis which states that there is no significant difference in the number of items that satisfied IRT guessing parameter estimate and the total number of items in Basic Education Certificate Examination in Basic Science is retained.

Table 9; Chi-square goodness of fit of all selected three IRT item parameter estimates

Items	Observed	Expected	Df	Chi-square	Sig
Fit	38	30			
			1	4.939	0.026
Not Fit	22	30			

<div align="center">α = .05</div>

Table 9 shows a chi-square value of 4.939 and a p-value of .026. Testing at an alpha level of .05, the p-value is less than the alpha level. Therefore, the null hypothesis which states that there is no significant difference in the number of items that satisfied all selected three IRT parameter estimates and the total number of items in Basic Education Certificate Examination in Basic Science is rejected.

Discussion
Number of items that satisfied the theoretical expectation of the IRT difficulty parameter estimate

The findings revealed that there is no significant difference in the number of items that satisfied the IRT item difficulty parameter estimate and the total number of items in BECE Basic Science. What this means is that more than half of the number of items selected satisfied the item difficulty parameter estimate indicating that the items are good. Table 6 confirmed items that satisfied IRT item difficulty parameter estimate of BECE 2011 Basic Science multiple choice test items. The selected items are 45 (75%) of the 60 total Basic Science multiple choice test items. This implies that the achievement test met the required difficulty level because more than half of the items satisfied the item difficulty parameter estimate. The result could also mean that examinees really have the ability to answer the difficult items. It also showed that the number of items selected was good enough. Therefore, there is no significant difference in the number of items that satisfied IRT item difficulty parameter

estimate and the total number of items in Basic Education Certificate Examination in Basic science. This only means that generally, the items for the achievement test truly represent the learning ability of the test taker because most of the items can discriminate well between high and low performing groups. The findings are in agreement with the report of Bock, Muraki and Pfeiffenbergger (1998) who reported that only 63.22% of the physics achievement items satisfied item difficulty.

Number of items that satisfied IRT item discrimination parameter estimate
The finding revealed that there is no significant difference in the number of items that satisfied IRT item discrimination parameter estimate and the total number of items in Basic Education Certificate Examination in Basic science. This shows that the test items satisfied the item discrimination parameter estimate. This also shows that the number of items selected were good enough. Table 7 confirmed items that satisfied the IRT item discrimination parameter estimate of BECE 2011 Basic Science Examination objective test items. The selected items 45 of the 60 total Basic Science multiple choice test items presented for BECE. From this result, one would rightly say that more than half of the items satisfied the item discrimination parameter estimate. This goes to show that the items discriminated well enough. It also showed in the results that the number of items selected were good. Therefore, there is no significant difference in the number of items that satisfied the IRT item discrimination parameter estimate and the total number of items in Basic Education Certificate Examination in Basic science. The findings disagree with the findings of Pedraza, Sachs, Ferman, Rush and Lucas (2011). Results showed that successive items do not necessarily reflect a monotonic increase in psychometric difficulty, some items are inadequate to distinguish individuals at various levels of naming ability, multiple items provide redundant psychometric information, and measurement precision is greatest for persons within a low-average range of ability.

Number of items that satisfied the IRT guessing parameter estimate
The finding showed that there is no significant difference in the number of items that satisfied IRT guessing parameter estimate and the total number of items in Basic Education Certificate Examination in Basic science. This finding revealed that the test items also satisfied the guessing parameter estimate which also shows that the number of items selected was good enough. Table 10 confirmed items that satisfied the IRT item guessing parameter estimate of BECE 2011 Basic Science examination objective test items. The selected items are 40 of the 60 total Basic Science multiple choice test items presented for BECE. From this result, it showed that the number of items

selected is good. Therefore, there is no significant difference in the number of items that satisfied IRT guessing parameter estimate and the total number of items in Basic Education Certificate Examination in Basic Science. This is in line with Obinne (2012) who reported that the way an item is written can influence guessing on the item and advised that IRT method of item analysis should be employed to eliminate those items prone to guessing, so that when guessing occurs, it will not be blamed on the item.

Items that satisfied the IRT combined item parameter estimates

Thirty-eight items satisfied the IRT combined item parameter estimates and twenty-two did not. This shows that the number of items selected was not good enough. Table 5 confirm items that satisfied the IRT combined item parameter estimates of BECE 2011 Basic Science Examination objective test items. The selected items are thirty-eight of the sixty total Basic Science multiple choice test items presented for BECE. The findings of this result is at variance with the study of Orheruata (2015) who reported that 35, 48 and 31 percent of WAEC items satisfied the combined parameter estimates for 2012, 2013 and 2014 examination years respectively. These findings disagreed with Omorogiuwa (2009) who reported that only 46 percent of the 60 physics items satisfied the IRT combined parameter estimates. The result also revealed that there is a significant difference in the number of items that satisfied all selected three IRT parameter estimates and the total number of items in BECE Basic Science. This implies that when all selected three IRT parameter estimates were applied concurrently, the items selected did not satisfy these three conditions. This shows that the items failed the general test. Table 9 confirmed that the items selected did not satisfy these three conditions. Therefore, the result showed that the number of items selected were not good enough. This is because the p-value is less than 0.05. Therefore, there is a significant difference in the number of items that satisfied all selected three IRT item parameter estimates and the total number of items in Basic Education Certificate Examination in Basic Science. This therefore confirms that these items did not satisfy the selection procedures as required. Even though individually they satisfied some of these parameters when separated, but when the parameters were combined together, they did not satisfy these parameters for selection. This is because items can satisfy difficulty parameter and yet fail to satisfy discrimination parameter. Items can satisfy difficulty parameter and yet fail to satisfy the guessing parameter. Before any item can be selected, it must satisfy all conditions of all three IRT item parameter estimates, for the item to be desirable. The findings of this study confirms the views of McAlphine (2002) who reported that poor estimation of "C" parameter can degrade the estimates obtained for other parameters and unless limits are put on the item and ability parameter values, these procedures can fail, it is also possible that the test in

each item tends to confuse good students and that, can lead to a drop of performance which was not good enough. When the students have a 50% chance to answer the item correctly, the student has no advantage over the item. Examinees that did well on the total test tended to do well on the item as well. However, an interaction can exist between item discrimination and item difficulty. Item answered correctly (Or incorrectly) can have reduced power also to discriminate and thus, can have lower correlations.

Items with extreme difficulties can have lower discrimination values while Items with high discrimination power contributes more to the precision of measurement than items with lower discriminating power. An item provides less information when guessing is a factor in test performance. When guessing occurs, item provide their maximum information at a point slightly higher than the point corresponding to difficulty level. This was why Birnbaum (1968) questioned: Do the items in a test really differ from each other in discriminating power? Linacre, (2007), Lumsden (1978) argued that unequal item discrimination parameter indicates a violation of unidimensionality assumption governing the discrimination parameter and unidimensionality, need to be evaluated to determine the appropriateness of an item response model for a given data set.

Conclusion

When the item parameters were tested differently, that is difficulty, discrimination and guessing parameters, the number of items selected was satisfactory but when the three IRT item parameters were used together, it was found out that it was not satisfactory. Therefore, there is a difference in the number of items selected in the total items when the three IRT item parameters were put together. Ministry of Education should ensure that even though the examinations are standardized by state and local government, they should also ensure that there is some central monitoring for further standardization and ensuring of standards and ensuring of accuracy, validity and reliability on the bases that they have been validated and worked upon by the state group. Item Response Theory (IRT) analysis should be integrated into the construction and analysis of public examinations by examination bodies in Nigeria.

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Users' Assessment of Arabic-Spanish Retour: Non-Native Accent, Fidelity and Accuracy Criteria

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Abstract
        Arabic-Spanish simultaneous interpreting (AR-SP SI) in Spain and the Arab world is, on the whole, carried out by native Arabic speakers. Specifically, 87.5% of AR-SP SI interpreters in Spain have Arabic as A language and Spanish as language B.
Given this peculiarity, for this linguistic combination it was interesting, as well as novel, to analyse users' assessment of AR-SP retour quality and its acceptability, by studying three quality criterion, two relating to content - the fidelity and accuracy in the delivery of the source speech - and one relating to form - the non-native accent of the interpreter (NNAI) in Spanish. To this end, this mixed quantitative and qualitative study sounded out the opinion of 50 users by filling out a questionnaire. After watching a 30-minute conference video interpreted by a native Arabic interpreter, subjects completed 6 mixed close-ended and open-ended questions related to the three aforementioned criterions.
The results show that the wide majority of users evaluated the source speech delivery as good comprehension of the content, and that NNAI did not seem to have a negative impact on their overall evaluation.

Introduction: The state of the question

        In recent decades, Arabic-Spanish interpreting has witnessed a large increase, in all of its modalities. Nevertheless, this demand experienced in the professional sphere has not been accompanied by intense research activity in the field of interpreting, although there are exceptions such as the growing number of studies on AR-SP public services interpreting (Feria 2007, Taibi 2007 and Ortega-Herráez 2010, among others), and the appearance of the first works on AR-SP conference interpreting (Mahyub Rayaa 2013 and 2015, Mahyub Rayaa & Zarrouk 2013 and 2017). In the field of interpreting quality

assessment, despite three recent studies being had come to light (Barbato 2014, Mahyub Rayaa 2017a and 2017b); the need for empirical research is evident. This same reality could be applicable for other combinations that include Arabic, such as Arabic-English (Al-Salman & Al-Khanji 2002) or Arabic-French (Hassan 2009), which are much more disseminated and carried out than Arabic-Spanish. Amongst the factors that could contribute to this scarcity of research are, on the one hand, the academic community that works in the field of the Arabic language and its translation does not practice conference interpretation professionally, and on the other, the lack of academic and research experience in the collective of interpreters who carry it out. As can be seen, the reasons are very similar to the state of research on interpretation at its beginnings (Pöchhacker 2004).

In addition to the foregoing, amongst the reasons that have brought me to embark on this study is the fact the professional demand is almost always covered by interpreters who in general have Arabic as their A language and Spanish as their B language. The study of professional market undertaken by Mahyub Rayaa (2015) within the framework of his PhD thesis on the teaching and professional practice of SI showed that 87.5% of AR-SP conference interpreters working in Spain have Arabic as their A language and Spanish as their B language. In addition, the language profile of AR-SP translation students is very heterogeneous (Feria García 2014: 203-204).

Furthermore, in the multilingual events held in the institutional and free markets in Spain, when Arabic and other languages are employed, the pivot language is nearly always Spanish. Seldom is there a resort to one-way booths1 with interpreters of other language combinations (e.g. AR>EN or AR>FR), rather, there is a tendency to opt for AR<>SP two-way booths. This need means that there is a forced dependence on the Spanish relay from the Arabic booth. In this regard, it is no secret to say that this relay is not always perceived with satisfaction by colleagues in the other booths.

In view of these peculiarities of the AR-SP booth, an analysis of the AR-SP retour perceived quality could be revealing, beginning with the users' evaluation, who are the final interpreting recipients. In future stages this line could be expanded with the study of the evaluation of interpreters of other language combinations as recipients of the Arabic booth relay.

Therefore, this paper is in line with research that study users' assessment of the quality of SI. This line has been tackled in depth in recent decades by a number of authors (Bühler 1986, Kurz 1989, Collados Aís 1998, Pradas Macías 2003, Collados Aís et al. 2007, García Becerra et al. 2013, etc.).

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1 Booths which deliver interpretation just in one direction, e.g. from English into Arabic, but not the contrary.

Following the line of prior studies of Mahyub Rayaa (2017a and 2017b), the aim of this paper is to provide a new contribution to the state of the question of research in AR-SP SI perceived quality, expanding the study sample and varying the profile of users, as well as stressing two of the most important criterion in terms of content quality, and best valued by users and interpreters (Bühler 1986, Fernández Sánchez et al. 2007, Pradas Macías et al., 2007): *fidelity* (correct delivery) and *accuracy* (complete delivery) of the source speech. Although previous literature coincides in putting more importance on parameters relating to content than those relating to form, the formal criteria *non-native accent of the interpreter* (NNAI) (Bühler 1986, Cheung 2003 and Stévaux 2007, amongst others), was included given its relevance for retour, the subject at hand.

Working hypothesis and objectives

In light of the aforementioned works, it is the aim of this study to start from the following hypothesis: users of interpreting would give a bad overall evaluation of an AR-SP retour when the NNAI is pronounced, thus affecting the source speech delivery made by the interpreter. In addition to ascertaining whether this hypothesis is correct or not, the following objectives are sought:

To analyse how users perceive and evaluate the quality of AR-SP retour in overall terms.

To find out how they evaluate the NNAI criteria as well as the interpreting fidelity and accuracy.

To ascertain how the NNAI has an impact in the event of being pronounced in the users' assessment of the interpretation content.

Ascertain whether the presence of a pronounced NNAI leads users to evaluate negatively the interpretation general quality.

Material and method

This study applies a mixed quantitative and qualitative method. 50 users were sounded out by running a questionnaire2. In order to achieve the aforementioned goals, users were asked to answer 6 mixed close-ended and open-ended questions after watching a 30 minute conference video interpreted into Spanish by a native Arabic interpreter.

A 30 minutes event video with the audio of a real AR-SP SI3 was used. It involves the presentation of a novel, entitled in Spanish A escondidas, by its author Sonallah Ibrahim (Egypt, 1938). The event was held in the Casa Árabe

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2 See here: <https://figshare.com/s/316fb1ef80d70844fea5>

3 Available at: <https://www.youtube.com/watch?v=607dVVxoQPA> Video segment from 12:30 to 41:22 minutes. Last view: 2 November 2018

(Madrid), in June 13th 2013. The original audio of the video was superimposed by the AR-SP SI. The interpretation was carried out by a single interpreter with Arabic as A language and Spanish as B. He is Egyptian, as is the speaker, settled in Spain and boasts over 20 years' professional experience as a SP-AR conference interpreter, both direct and retour. The SI was selected for the study because of the NNAI, the directionality of the interpretation and the literary theme of the event, so a high register in Spanish is needed. These three criteria are addressed in the study.

The viewing of the video and the questionnaire were carried out in two sessions in the Faculties of Translation and Interpreting (May 9th 2017) and Philosophy and Arts (May 11th 2017), both at the University of Granada. Immediately following the viewing, participants were asked to respond to the questionnaire in the most possible detail. Lastly, the answers were put into an Excel worksheet for their subsequent statistical treatment.

Subjects

50 users took part in the study. All have Spanish as a first language (A). Notwithstanding, of the total number of users who participated, 20 (40%) also have knowledge of Arabic as a B or C language. 58% were studying or had completed a Bachelor's degree in translation and interpreting; 22% philology; and the remaining 20% has no University studies. The average age of the participants is 24.2 years old. 71.5% are women and 28.5%, men.

Results

The results obtained were then divided into different sections in accordance with the questions formulated to users. The responses to the open questions were summarised to provide them greater clarity.

Overall evaluation of the interpretation

The objective of the first question was to find out how the users would grade the interpretation just after having heard it, in order to get their first impression. The majority of users (58%) evaluated it as good, followed by *very good* (22%) and *average* (20%). None assessed it as poor or very poor. The users who elaborated on their evaluation justified their response with:

Comment	No. users
Good	
Good comprehension	21
Although the accent is pronounced	5
Good voice	4
Although there are pauses and hesitation	3
Very good	
Good fluency	3
Very good. Good choice of vocabulary	3

Average	
Not a native Spanish speaker (lack of naturalness)	6
Lack of coherence and cohesion	3
Lack of fluency	3
Monotonous intonation	1

Table 1. Additional comments to the overall evaluation of the interpretation.

Perception of the interpreter's non-native accent

The following question was regarding how the users would rate the NNAI. 76% of the participants perceived the accent of the interpreter as pronounced or very pronounced. The total results were as in showed in figure 1:
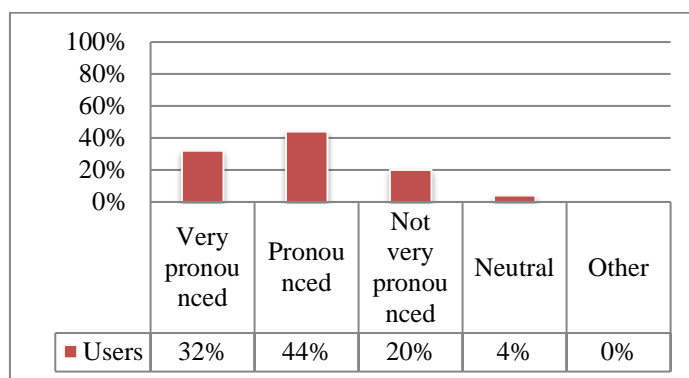

Figure 1. Perception of the interpreter's non-native accent.

Furthermore, I wanted to ask whether the NNAI had impeded their comprehension of the discourse according to their perception. More than a half of the users (32 subjects) perceived that it did not, whereas over a third (18) said it did.

Evaluation of the Interpreting fidelity

In response to the question of how they would rate the delivery of the message on the part of the interpreter, the majority of users evaluated it as correct (76%), followed by *not very correct* (20%) and *very correct* (4%). None assessed it as incorrect. The users who justified their response indicated:

Comment	No. users
Correct	
Good comprehension of the source speech or parts of it	9
Coherence and cohesion	2
Confidence transmitted by the interpreter	1
Very correct	
Appropriate vocabulary	2
Good Fluency	1
Voice of interpreter	1
Not very correct	

Literality	4
Lack of fluency	2
Inappropriate vocabulary	1
Tone of interpreter	1
Inadequate register	1
Lack of clarity	1
Lack of confidence	1
Others	
Cannot check it	2

Table 2. Additional comments to the perception of the *interpreting fidelity.*

In this regard, I wanted to ascertain if there are other elements that make comprehension difficult. 62% of users (31) thought they did, whereas 38% (19) thought the opposite. The users who provided justification to their response indicated:

Comment	No. users
Yes	
Not very natural syntactic structure	9
Accent	6
Incorrect collocations in Spanish	5
Not very natural vocabulary	5
Pauses	3
No	
Good comprehension	5
Appropriate vocabulary	2

Table 3. Other elements that make comprehension difficult.

Interpreting accuracy (complete delivery of source speech)

Asked whether the interpreter completely transmitted the source speech, the percentage of users who responded affirmatively, although slightly lower compared to the previous question on *interpreting fidelity*, was still a majority of 70% of respondents. 20% responded "no" and 10% does not know. The users who justified their response indicated the difficulty in producing an objective judgment; however, except five users (see Figure 5), they all evaluated this criteria and justified it as follows in table 4:

Comment	No. users
Yes, it was accurate.	
Although I am not familiar with the Arabic language	11
Good fluency (no pauses)	7
Confidence transmitted by the interpreter	4
Coherence	3
Good comprehension of the message or parts of it	3
Appropriate vocabulary	1
Although lack of confidence perceived in the interpreter	1
No, it wasn't accurate.	
Lack of coherence and cohesion	5

Lack of fluency	4
Loss of nuances	3
Monotonous intonation	2
Inappropriate vocabulary	2
Literality	2
Change of source meaning	1

Table 4. Justification regarding interpreting accuracy.

Analysis and discussion

The results collected in the previous sections are analysed and discussed below.

Overall evaluation

The data obtained indicate that no user evaluated the interpretation as poor or very poor. These results collected in the first question with the aim of finding out the user's first impressions endorse the retour, in which the NNAI is very pronounced (see Figure 1). In this manner, this overall evaluation would rule out my initial hypothesis while supporting the initial results of Mahyub Rayaa (2017a). Additionally, it would indicate a possible acceptability of AR-SP retour, at least amongst the group of users who participated in the study.

"Good comprehension" of the interpretation is by far the justification most provided by users for their positive evaluation, which could be interpreted as a prevalence of the content transmitted by the interpreter to the form in which such content is presented, in line with Marrone (1993: 38).

In this way, the NNAI, despite being perceived by six users as "non-native in Spanish" or "lack of naturalness", does not necessarily imply an overall negative evaluation (*cf*. Cheung 2003). Other factors, such as *fluency* and *appropriate vocabulary*, are provided as a justification of some "very good" assessments. Notwithstanding, amongst those who gave a rating of "average", *lack of fluency* was also indicated, but above all, the *lack of naturalness* in the interpretation; that is, the presence of calques and structures that were not very idiomatic, as well as *lack of coherence*. The elements of Spanish (syntactic structure, collocations, etc.) could also make the comprehension of the source speech more difficult.

Evaluation of the non-native accent

The data obtained in this section justify the choice of the interpretation analysed, given that 76% (38) of users perceived the NNAI as pronounced or very pronounced. However, in view of the results obtained in this and the previous section, and despite the users' subjectivity, the conclusion was that the NNAI did not have a negative influence on the overall rating provided by the users themselves, nor did it reduce the intelligibility or comprehension of

the source speech (see Figure 3). This detail would again rule out the starting hypothesis while reinforcing a number of statements in the previous literature (Baigorri Jalón 2000: 292 and Martin 2003: 432, amongst others), although they do not specifically refer to the Arabic accent in Spanish, and would increase the results of Mahyub Rayaa (2017b: 16-19) on the use of Spanish in AR-SP retour and its influence on the perception of interpreting quality. For Baigorri Jalón (2000: 292) a certain degree of non-native accent would be bearable and up to a certain point constitutes an exotic feature attributable to polyglots. In this regard, one should not forget the fact that in this study the speaker and the interpreter come from the same country, Egypt. So what Martin indicates could be a point in favor of the NNAI. In fact, in dubbing of TV reports and programs i.e. BBC, a voice over of the same accent of the speaker is often used.

As outlined in the overall evaluation of the users surveyed, it cannot be concluded that they evaluate an AR-SP IS with NNAI negatively, as the data obtained by Stévaux (2007: 35) and Cheung (2003: 96) seem to indicate. Always applying due caution, no relevant results that associate NNAI with unintelligibility were found. It is convenient, however, to investigate the fact that for 36% (18), the NNAI did have an effect on the comprehension of the source speech, what could be interpreted as a possible distraction, in line with Donovan (2004: 210). Focusing more on the users' linguistic profile, we can see a greater tolerance of the NNAI amongst the group that has some knowledge of the Arabic language (see "subjects" above). This could be interpreted as a criterion for users being identified with their foreign language (Brisau et al. 1994: 84-90, apud Stévaux 2007: 22). In this regard, criterion such as the interpreter's pleasant voice and their fluency could have had an influence on these users by causing a positive impact and/or softening the NNAI effect (see Table 1).

Interpreting fidelity

The great majority of users (76%) rated the source speech delivery as correct, although 42% (21) of these did not give justification for this (see Table 2). Despite the fact that this percentage could indicate a lack of capacity to providing an accurate justification regarding content, only two users expressly stated it thus. 58% (29) who justified their answer give a variety of positive and negative reasons, some on content-related aspects such as good comprehension, coherence and cohesion, or the literality of the interpretation, and others on form-related aspects such as interpreter's fluency and confidence. The data obtained clearly show that all of the users provided an opinion on how they perceived the interpretation. These opinions coincide with the results obtained by Collados Aís (1998: 187) and Fernández Sánchez et al (2007: 103), where no participant stopped evaluating this criterion.

Therefore, there is still a partial incapacity on the part of the users when providing reasoned opinions based on content, as pointed out at the beginning of this paper.

Interpreting accuracy

From the results obtained in this section, particular attention may be drawn to the fact that 70% (35) of users evaluated the source speech delivery as complete, and 11 of them indicated their lack of capacity to do so despite the evaluation given (see Table 4). Furthermore, in this same section there was an increase in the number of users who indicated their reservations in relation to confidently saying whether the interpreter completely transmitted the source speech, arguing that they did not know Arabic, and therefore their evaluation cannot be objective.

In this regard, differences can be appreciated depending on whether or not the users understand Arabic. Thus, amongst the group of users who do not understand this language, the percentage of those who think that the interpreter completely transmitted the source speech increases to 92% of this subgroup, although some of them expressed a certain contradiction on arguing in the justification that they cannot know it with precision. This contradiction is not so obvious amongst the group of those who understood Arabic, which would indicate the possibility of some users attempting to capture fragments of the source speech (e.g. following *décalage* pauses) and comparing them with the interpretation (see Table 4).

In addition, this criterion seems to interact positively and negatively with other non-verbal parameters closely linked to it, such as aspects of fluency as the absence/presence of pauses and confidence showed by the interpreter. This gives credence to the conclusions of previous works (Pradas Macías 2003, Pradas Macías et al. 2007: 120 and Mahyub Rayaa 2017a). Neither can the appearance of the *coherence* factor in this section be ignored, either irritating or as a source speech delivery facilitator (see Table 4), more so when involving a criteria often identified with the interpreting fidelity (Sánchez Fernández et al. 2007: 89).

Conclusions

Overall, the users positively evaluated the AR-SP retour. The fidelity of the AR-SP retour with a pronounced NNAI was perceived by the users as good, given that in their opinion the interpreter provided a good comprehension. The results indicate that the intelligibility of the interpretation (good comprehension) is the most influential factor on the overall evaluation of the users, being prevailing over formal criterion such as NNAI, even when this is pronounced. The NNAI, identified by the majority as pronounced or very pronounced, did not negatively influence the overall AR-SP retour

evaluation which, together with the previous conclusions, would rule out the initial hypothesis. Practically all of the users provided assessment on the interpreting fidelity and accuracy, although they lacked sufficient factors to be able to provide a reasoned opinion on these criteria. This would give credence to the conclusions of the previous literature (Gile 1995 and Pradas Macías et al. 2007: 104). Furthermore, a considerable number of users were aware of their inability to judge the interpreting fidelity and accuracy, either due to not speaking the source language, or not having access to the source speech. Despite this fact, the users assessed the content when required to do so (*cf.* Collados Aís 1998: 187). When asked about the complete delivery of the source speech (accuracy), users positively and negatively justified their evaluations with formal elements linked to the delivery itself such as the fluency, pauses and confidence of the interpreter, in line with Pradas Macías et al. (2007: 120) and Fernández Sánchez et al. (2007: 122), amongst others. However, the users did not just justify their responses with formal aspects. They also based their evaluation on the content through criteria such as coherence of the interpretation, structure and vocabulary, which are more closely connected to the content of the source speech. This extent supports the initial conclusions of Mahyub Rayaa (2017a). In this respect, it can be concluded that the user's assessment is not definitive, nor does it follow a single pattern, being very subjective and arbitrary, in line with the indications of previous studies.

Given the different interpretations that can be drawn from the results obtained, caution is recommended. In order to validate or reject these conclusions, there is a need for future research.

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Motivation in Learning English Language: a case Study at Vietnam National University, Hanoi

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Abstract
        In recent times, English has become the global language and plays an important role in order for people to communicate and fit into the real world. Learning and using English has become a necessary need of many people, particularly the young generation. Motivation is considered as one of the fundamental factors in successfully learning a language. This paper focuses on investigating the type and level of motivation in English language learning. The instrument of the study was adopted from Gardner's Attitude/Motivation Test Battery (AMTB). The participants in this study includes 371 first and second-year students of Vietnam National University, Hanoi – University of Engineering and Technology (VNU-UET). The collected data were summarized and analyzed by using SPSS software. The findings show that the students that participated in the study were highly motivated in English learning, and more instrumentally motivated. The study also examined some factors that influence motivation such as students' gender, the school year, the time students have spent in learning English, and parental ability in speaking English. The study shows that the school year and parental English ability had a significant influence on students' motivation in English language learning. The problems that the students face during the learning process was also discussed. Some recommendations were given to improve the students' motivation in English learning.

Keywords: Motivation, instrumental motivation, integrative motivation, language learning.

Introduction
        Presently, English is the global language and it plays an important role in order for people to communicate and fit into the real world. Although spending at least three years of learning English language education, many Vietnamese high-school leavers are still not proficient in this language. This is the reason why most of the institutions in Vietnam have to provide further

English language support for the first 2-years of higher education. However, the employers complain a lot about the level of English language proficiency among graduates. There are many factors responsible for low proficiency in English among vietnamese students. One of the factors might be attributed to the students motivation towards English language. This is because students' motivation has been extensively considered as an important factor which affects the rate and the success of foreign language learning (Ellis, 1994). McDonough (1983) also confirmed that "motivation of the students is one of the most important factors influencing their success or failure in learning the language".

The study aims to use one quantitative method to investigate the motivation of university students in Vietnam pertaining to the study of English as a foreign language, the English speaking people, and the students' future expectations about English. Furthermore, a better understanding of student's motivation may help English curriculum and instruction designers to build language learning and teaching programs which generate the motivation most conducive for more successful learners of English (Midraji, 2003).

Background of the Study

The VNU University of Engineering and Technology (VNU-UET) was founded by the decision of the Prime Minister of Vietnam as a member university of the Vietnam National University, Hanoi (VNU). The VNU-UET offers bachelor, master, and doctoral degree programs in engineering, technology, and management. As a leading university in engineering and technology in Vietnam, VNU-UET always tries to provide students with more opportunities to improve their English skills. In addition to the English skills the students have achieved in the high school education, most of the bachelor degree programs of VNU-UET provide students with 4 courses of general English (equally 20 credits) in the first 2-years of the programs. It is expected that the students of VNU-UET take the courses in English and use it as the medium of instruction. However, the students' progress in English skills is still not satisfactory. There are still many negative behaviors indicating that the students have low motivation to learn English as a foreign language.

The study on motivation to learn English based on the responses of the first and second-year undergraduate students at VNU-UET is expected to provide important information in determining the extent and type of their motivation to learn English. A better understanding about the motivation to learn English would help the university and English teachers work together to improve the language learning environment and to stimulate students' motivation. This would lead to better achievement in learning English as a foreign language for the first 2-years of undergraduate education and training.

Objectives of the Study

This small-scale study was implemented to determine the motivational type and level of the first and second year undergraduate students at VNU-UET, and to determine the factors that influence the students' motivation in learning English. The other objectives of this study are to find out the language difficulties that the students encountered during the learning process and to provide some recommendations for improving the students' motivation in learning English.

Research Questions

The following research questions addressed in this study are:
(a) What is the motivation for learning English as a foreign language by the students at VNU-UET?
(b) How does the students' background affect their motivation in learning English as a foreign language?
(c) What are the difficulties that students encounter during the learning process?

Review of Literature
The Motivation for Learning a Foreign Language

Motivation is a multifaceted concept that has been the subject of scholarly researches in different academic areas and no single available theory has yet captured its total complexity (Dörnyei, 2001). Gardner (2006) also confirmed that "motivation is a very complex phenomenon with many facets…thus it is not possible to give a simple definition." This is because the expression of motivation has been investigated differently by different perspectives. On the behavioral perspective, motivation is "quite simply the anticipation of reward" (Brown, 2000). Whereas the cognitive perspective views the term of motivation as being more related to the student's decisions, and the choices students make as to what experiences or goals they will approach or avoid, and the degree of effort they will exert in that respect. For the constructivists in their definition of motivation, they place further emphasis on the social context as well as the individual's decisions. Regardless of the differences in all the definitions of motivation given by the three different perspectives, the concept "needs" is emphasized, that is, "the fulfillment of needs is rewarding, requires choices, and in many cases must be interpreted in a social context" (Brown, 2000).

In terms of language learning, there are many definitions of motivation. Lightbown and Spada (1999) noted that motivation in second language learning is quite complicated to study. This can be explained in terms of two factors: students' communicative needs and their attitudes towards the second language community. In addition, Parsons, Hinson and Brown (2001)

defined motivation as an important component or factor in the learning process. Learning and motivation have the same importance in order to achieve something. Learning helps students gain new knowledge and skills, and motivation pushes them or encourages them to go through the learning process.

Gardner (1983), in his socio-educational model, considered that motivation is perceived to be composed of three elements such as: effort, desire, and effect. The effort refers to the time the student spend on a foreign language learning and the drive of the student. The desire indicates how much the student wants to become proficient in the language, while the effect means the student's emotional reactions which is related to language learning.

Types of Motivation for Learning a Foreign Language

The type of motivation answers the question of why a person is learning a language. The motivation here refers to the goal of learning a language. Many different reasons for learning a language could be listed such as: to be able to speak with members of that language community, to get a job, to improve one's education, to be able to travel, to please their parents, to satisfy a language requirement, to gain social power, etc.

Harmer (1991) used the word "goal" to classify the motivation in language learning into two different types which include:

(a) Short-term goal: It means that students wish to succeed in doing something in the near future. For example, students who want to pass their examination or get a good grade/high scores.

(b) Long-term goal: It refers to a wish that students want to get a better job in the future and be able to communicate with people who use the language (the target language) that they learn.

Gardner (1985) shows it is possible to classify the reasons for language learning so that they reflect some ultimate aims. Once classified, various categories would appear best identified as orientations in order to keep conceptual clarity. Ellis (1986) discussed the need to classify the reasons for language learning when he put forward that "motivation in language learning can be defined in terms of the learner's overall goal or orientation." Brown (2000) decided that studies on the motivation of foreign language students rarely refer to a distinction between two kinds of motivation namely, instrumental motivation and integrative motivation. Gardner (1985) considered that an integrative orientation towards foreign language learning reflects "a sincere and personal interest in the people and culture represented by the other group", and an instrumental orientation emphasizes "the practical value and advantages of learning a new language." The integrative orientation thus stresses an emotional involvement with other community, while the instrumental orientation does not.

According to Saville-Troike (2006), the integrative motivation in foreign/second language learning was defined as the desire to be a part of recognized or important members of the community or the society that speaks the language. It is based on the interests in learning the language, to associate or to socialize with the people who speak the language, and the purpose or intention to participate or to integrate the second language using the same language in that community. However, it sometimes involves emotion or affective factors a great deal. On the other hand, the instrumental motivation involves the concepts of purely practical value in learning the foreign/second language in order to increase learners' careers or business opportunities, giving them more prestige and power, accessing scientific and technical information, or just passing a course of their study in school.

In general, motivation is broadly classified into two main categories of extrinsic motivation and intrinsic motivation. Extrinsic motivation refers to a desire to get a reward or to avoid punishment. It emphasizes the external need to persuade students to take part in learning activities such as homework, grade, or doing something to please teachers (Arnold, 2000). Both integrative and instrumental motivations are also grouped under the branch of the extrinsic motivation (Harmer, 1991). Extrinsic motivation is based on external outcomes such as rewards or punishments. This type of motivation could bring a negative impact on the students. The reason is that with the extrinsic motivation, students do not learn with their strong intention or they learn because they are pushed by the interest in the rewards or by the punishment they would recieve. When a student is learning because he/she is promised rewards or wants rewards, there will be a high motivation to attend classes, to learn, and to achieve the goal that is set. However, when these rewards are taken away, or sometimes when there are no punishments, the student will not be interested in coming to class to learn the language any longer.

Intrinsic motivation refers to learning having its own reward (Arnold, 2000). It means that the students are willingly and voluntarily (not compulsorily) trying to learn what they think has worth or is important to them. The students with intrinsic motivation will have the internal desire to learn, and they do not have the needs for external outcomes. There are also no negative impacts to the students who have the intrinsic motivation. In addition, the intrinsic motivation pushes the students to learn without any rewards, because their needs are innate, come from inside, or depend on their own will. Lightbown and Spada (1999) mentioned that teachers do not have much effects on students' intrinsic motivation because the students are from different backgrounds, and the only way to motivate students is to make the classroom a supportive environment.

The Importance of Motivation in a Foreign Language Learning

Many previous pieces of research show that motivation plays an important role in the success or failure in learning a language in general, and in learning a language in particular. Spolsky (1990) stated that motivated students are likely to learn more quickly than students who are less motivated. In a specific learning situation, students who are less motivated are likely to lose their attention, to misbehave, and to cause discipline problems. On the contrary, students who are more highly motivated will participate actively and pay more attention to a certain learning task or activity.

Together with engagement, motivation is viewed in the literature as very important for enhanced learning outcomes of all students (Woolfolk & Margetts, 2007). Motivation is seen as a pre-requisite and a necessary element for student engagement in learning. Student engagement in learning is not only an end in itself, but it is also a means to the end of students achieving sound academic outcomes (Ryan & Deci, 2009). This is important because authentic engagement may lead to higher academic achievement throughout student life (Zyngier, 2008). If educators want to know and resolve the young students' issues and to make schools engaging places, then they actually have to listen to what students are saying about their classes and teachers (Mitra & Serriere, 2012).

Factors that Affect Motivation in a Foreign Language Learning

Harmer (1991) considered the following four factors that can be dangerous to the students' motivation in language learning. The first factor is the physical condition of the classroom. The physical condition means the atmosphere in the class. For example, if the students have to study in a bad lighting classroom, an overcrowded class with too many students, have to look at the small board, or have to study in an unpleasant and smelly classroom, they can lose their motivation or their motivation in learning will be lowered. The second factor is the teaching methodology. The method of teaching which refers to the way students are taught by teachers must affect their motivation. Whenever the students feel bored with the teachers' method, their motivation would likely be lost or gradually decreased as Harmer (1991) said: "If the students lose the confidence in the teaching method of teachers, they will become demotivated." The third factor that affects the motivation of the students in a language learning is the teachers. The teachers are considered as the most powerful variable of motivation, but they also can become a major part in demotivating the students. Lastly, the fourth factor that affects the motivation of students in a language learning is the success in learning. The success refers to the appropriate level of challenge designed by the teachers. If the difficulty of work or learning activity is too high or too low, it can lead students to a demotivated situation in learning. As Harmer (1991) pointed out

that giving high challenge activities may have a negative effect on motivation. Students can also equally be demotivated by a low level of challenge.

In addition, in the Krashen's affective filter hypothesis, the emotional states such as tiredness, depression, boredom, etc. can obstruct the learning process of the students. Furthermore, anxiety becomes a factor that influences the effective filter. Low anxiety is more helpful for second language acquisition (Krashen, 1988). This means that students' anxiety can affect their motivation. According to Krashen, there are three effective variables that interact with the affective filter which include: (a) Motivation which is beneficial for language acquisition, (b) Self-confidence which is also useful for acquisition, and (c) Anxiety which is good in the case where it is at a low level (Krashen, 1988).

Relevant Research

There are many different pieces of research in the past related to the motivation in a foreign/second language learning. The findings of most of these researches were consistent with the work of Gardner and Lambert (1972) which suggested that a person's need for studying a foreign/second language is for the ability to socialize with the target learning language community or integrative motivation, and for the ability to gain knowledge and skills applied from the target learning language or instrumental motivation.

For example, Hedge (2000) conducted a study that investigated the motivation of 20 Japanese students who were studying English. The findings of this study indicated that the most common reasons for studying English as a foreign/second language was for communicating with foreigners, finding employment in a high profile career, processing international information, and for understanding other cultures, etc.

Siriluck and Sirithip (2004) also conducted a study about the relationship between motivation and proficiency in English learning of undergraduate students. The study indicated clearly that high English proficiency students are more integratively motivated than low English proficiency students. However, there was no significant difference in the level of instrumental motivation between the two groups of students. Moreover, the study also showed that high English proficiency students are more motivated than low English proficiency students with low English achievement.

Research Methodology
Participants

The participants of the study were 371 students (first-year & second-year undergraduate students). These students belong to the undergraduate program of Information Technology (Faculty of Information Technology,

VNU-UET). They attend the general English courses which are compulsory courses for all students at VNU-UET.

Research Instrument

The instrument for this study is a paper & pencil questionnaire with 36 different items. The 30 main items of the questionnaire were designed using a 6-point Likert scale which was adopted from the original 7-point Likert scale format of Gardner's Attitude/Motivation Test Battery (AMTB). It ranged from 'Strongly disagree' to 'Strongly agree'. The 30 main items are statements used to gather information on participants' motivation in English learning as a foreign language (Part 1). The first 13 items demonstrate the integrative motivation (items 1-13), and 17 items (items 14-30) present the instrumental motivation. The other items are about the private information of the participants (the general demographic information, the time of learning English, the parental speaking ability, and language skills (Part 2).

Data Collection and Analysis

The questionnaires were distributed to the students during their English class with clear instructions and explanation for filling out the questionnaires from their English teachers. The questionnaires were then collected upon completion. Then the information on the questionnaires was put into an Excel file or SPPS file.

The data and information gathered from the questionnaires were summarized and analyzed by using statistical tools such as SPSS to answer research questions. A 6-point Likert scale was used to measure the level and type of students' learning motivation. The level of English learning motivation was classified based on the following criteria in Table 1.

Table 1. Level of English learning motivation

Mean Range	Level of Motivation
4.01 – 6.00	High
2.01 – 4.00	Moderate
1.00 – 2.00	Low

Findings
General Information about Participants

The questionnaire was administered in the spring of 2018. All participants (N= 371) were the first-year and second-year students who were enrolled in autumn of 2016 and 2017 at VNU-UET. Vietnamese is their first language and English was introduced to them as a foreign language from Grade 3 or Grade 5 at primary school. The participants were either in the first year (50.1%) or in the second year of university (49.9%) (Table 2). Therefore,

there is a very small difference between the number of students in the first year and in the second year.

Table 2. The school year of participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	first year	186	50.1	50.1	50.1
	second year	185	49.9	49.9	100.0
	Total	371	100.0	100.0	

Table 3 below reflects the gender of the respondents: males (58.5%) and females (41.5%). This imbalance is due to the fact that, in general, more male students apply to study technical programs than female students. The information technology programs at VNU-UET usually attracts more male students than female students.

Table 3. Gender of participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	217	58.5	58.5	58.5
	female	154	41.5	41.5	100.0
	Total	371	100.0	100.0	

Motivation
Integrative Motivation

As mentioned above, the integrative motivation in foreign/second language learning was defined as the desire to be a part of recognized or important members of the community or the society that speaks the language. Table 4 shows the level of integrative motivation of the participants in the study.

Table 4. Integrative motivation

Content of item	Mean	S.D	Level of motivation
1. Learning E makes me understand E-books, movies, pop music, etc.	5.15	0.402	High
2. Learning E makes me better understand and appreciate the ways of life of native E speakers.	4.72	0.565	High
3. Learning E enables me to keep in touch with foreign friends.	4.55	0.501	High
4. By learning E I can discuss interesting topics with people from other cultural backgrounds.	5.03	0.377	High
5. Learning E helps me convey my knowledge & information to other people.	4.39	0.492	High
6. Learning E helps me participate freely in academic, social, and professional activities among other cultural groups.	5.08	0.327	High
7. Learning E helps me understand and appreciate arts & literature in E speaking cultures.	4.61	0.492	High
8. Learning E helps me be more confident and comfortable.	5.01	0.431	High
9. Learning E helps me enjoy traveling to foreign countries.	5.15	0.402	High
10. Learning E helps me become an open-minded and sociable person.	4.72	0.512	High
11. Learning E helps me have more friends.	4.58	0.497	High
12. Learning E helps me integrate more easily into E speaking communities.	5.07	0.308	High

13. Learning E enables me to communicate easily with others online.	4.30	0.490	High
Mean of Measure	**4.79**	**0.226**	**High**

(Note: E = English; S.D = Standard Deviation)

From Table 4, we can see that the integrative motivation of the participants in the study is rather high with the mean for the whole measure of 4.79. The mean for items in the measure is ranging from 4.30 to 5.15. The item 1 and 9 show the highest mean score among the items of the measure (5.15), while item 13 show the lowest mean score among other items (4.30).

Instrumental Motivation

Once again, the instrumental motivation involves the concepts of purely practical value in learning the foreign/second language in order to increase learners' careers or business opportunities, giving them more prestige and power, accessing scientific and technical information, or just passing a course of their study in school. Table 5 shows the level of instrumental motivation of the participants in the study.

Table 5. Instrumental motivation

Content of item	Mean	S.D	Level of motivation
14. Learning E is important because I need it for my career in the future.	5.49	0.531	High
15. Learning E is important because it will help me to learn new things.	5.45	0.529	High
16. Learning E is important because it will help me get a good job in multinational corporations.	4.51	0.557	High
17. Learning E is important because I can get a lot of useful information for my work in the future.	5.38	0.489	High
18. Learning E is important because it will help me have opportunities to get a good job abroad.	4.37	0.514	High
19. Learning E is important because it will help me have a chance to study abroad.	4.41	0.523	High
20. I try my best to learn E so I can gain maximum proficiency.	5.08	0.405	High
21. I mainly focus on using E for class assignments & exams.	5.17	0.507	High
22. I am interested in reading only E-textbooks in my university study.	5.20	0.551	High
23. I am not interested in reading E-newspapers, magazines etc.	4.24	0.430	High
24. I focus more on furthering my higher education than on learning E language.	4.70	0.490	High
25. I focus more on earning a university degree than on learning E language.	5.42	0.552	High
26. I focus more on getting a good job than on learning E language.	5.42	0.577	High
27. Learning E helps me become a knowledgeable and skillful person.	5.01	0.316	High
28. Learning E helps me become an educated person.	5.08	0.280	High
29. Being proficient in E can lead to being more successful and achievable in my life.	5.13	0.335	High
30. Being proficient in E makes other people respect me more.	5.28	0.453	High
Mean of measure	**5.02**	**0.152**	**High**

(Note: E = English; S.D = Standard Deviation)

In the same pattern as integrative motivation, from Table 5, we also can see that the instrumental motivation of the participants in the study is quite high with the mean for the whole measure of 5.02. The mean for items in the measure is ranging from 4.24 to 5.49. The item 14 and 15 show the highest mean scores among the items of the measure (5.49 and 5.45, respectively), while item 23 show the lowest mean score among other items (4.24).

From Table 4 and Table 5, we can see that there is a difference between the mean of the integrative motivation and instrumental motivation. The mean score of instrumental motivation is higher than the mean score of the integrative motivation (5.02 compared to 4.79). In order to test the difference between the mean of the integrative motivation and the instrumental motivation, we used the Paired-Samples T-Test to compare the mean of two paired samples (variables: the mean of the instrumental motivation – instrmean and the mean of integrative motivation – integmean).

Table 6. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Instrmean	5.0207	371	.15246	.01809
	Integmean	4.7974	371	.22605	.02683

Table 7. Paired Samples T-Test

	Paired Differences							
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)
				Lower	Upper			
Pair 1 Instrmean - Integmean	.22331	.21994	.02610	.17125	.27537	8.555	370	.000

The Paired Samples Statistics table (Table 6) shows the mean of the instrumental motivation = 5.0207 and the mean of the integrative motivation = 4.7974. The Paired Samples Test table (Table 7) shows the mean = 0.22331, t = 8.555, df = 370 and the Sig. (2-tailed) level = 0.000 (<p=0.05). So we can conclude that there is an overall statistically significant difference between the 2 means of related variables (*the mean of the instrumental motivation – instrmean and the mean of the integrative motivation – integmean*). From the values of mean, we can conclude that the level of the instrumental motivation is higher than the level of the integrative motivation in the study. This conclusion is contradictory with the study of Alshaar organized in Kuwait where the mean score for the integrative motivation was higher than that for the instrumental motivation (Alshaar, 1997). In other words, the students' integrative motivation is significantly stronger than their instrumental motivation. However, our findings of the difference between the mean of the

instrumental motivation and the mean of integrative motivation are consistent with the findings of Ratanawalee's study about motivation in English language learning of the first-year undergraduate students at Sirindhorn International Institute of Technology, Thammasat University, Thailand. Ratanawalee also concluded that the mean score of instrumental motivation is higher than the mean score of the integrative motivation (Ratanawalee, 2012).

Some Factors that Influence the Motivation in a Foreign Language Learning

Gender

Alshaar (1997) in his study stated that female students do not have more positive attitudes towards learning English than male students. Gardner (1985) considered attitudes as components of motivation in language learning and according to him, motivation refers to the combination of effort, the desire to achieve the goal of learning the language, and favorable attitudes towards learning the language. Therefore, do female students have higher mean scores in motivation towards learning English than male students?

From the data gathered in the study, female students had higher mean scores in the integrative motivation towards learning English than male students (4.7813 versus 4.7613 respectively). In fact, the Independent–Samples T-Test indicated that the difference was not significant (t = 1.466, Sig. (2-tailed) = 0.148). Therefore, females do not have more integrative motivation towards learning English than males. Although this finding is contradictory to male students having higher mean scores in the instrumental motivation towards learning English than female students (5.0226 versus 5.0184 respectively). In fact, the Independents-Samples T-Test indicated that the difference was not significant (t = 0.115, Sig. (2-tailed) = 0.909). Therefore, males do not have more instrumental motivation towards learning English than females. We can conclude that gender has no clear effects on the motivation in English language learning.

The Different School Year

The time which the students spent at the university would be a factor that affects the students' motivation in English learning as a foreign language. In order to find the influence of the time students spent at the university on motivation, we used the Independent-Samples T-Test to test the difference in the mean score of motivation between the first year students and the second year students.

Analyzing the data gathered in the study, we could see that the second year students had higher mean scores in the integrative motivation towards learning English than the first year students (4.9099 and 4.6880 respectively). The Independent-Samples T-Test indicated that the difference was significant

(t = 0.4691, Sig. (2-tailed) = 0.000). Therefore, the second year students do have more integrative motivation towards learning English than the first year students. For the instrumental motivation, we could also see that second-year students had higher mean scores in the instrumental motivation towards learning English than the first year students (5.0807 and 4.9624) respectively. The Independent-Samples T-Test also indicated that the difference was significant (t = 0.3512, Sig. (2-tailed) = 0.001). In general, the second year students have more motivation (both integrative and instrumental) in English learning than the first year students. This difference is as a result of indirect influences on students from learning environment, teaching methodology, or the changes in attitudes toward English learning.

The Time Learning English

In order to see how the time the students have been learning English affects their motivation in English language learning, we asked the students in the study about the time they have been learning. The time was divided into 4 groups: 1-3 years, 4-6 years, 7-9 years, and 10 years or more. In the study, all the students belong to group 3 (7-9 years) and group 4 (10 years or more) respectively. This means that all the students started learning English at least since Grade 6.

From the data collected and analyzed, the students in group 4 had higher mean scores in the general motivation (combination between the integrative and instrumental motivation) towards learning English than the students in group 3 (4.9650 versus 4.9049 respectively). In fact, the Independent-Samples T-Test indicated that the difference was not significant (t = 1.358, Sig. (2-tailed) = 0.184). Therefore, the students with longer time in learning English do not have more general motivation towards learning English than the students with shorter time.

The Parental Ability in Speaking English

In this study, we wanted to know how the parental ability in speaking English influences the students' motivation in English learning. Therefore, in the questionnaire, the students had to provide information about their parents' ability in speaking English.

From data collected, in the total of 371 students that participated in the study, 61 mothers and 65 fathers can speak English. In both cases, the mother or the father who can speak English has a positive influence on the students' motivation in English learning. The students whose mothers can speak English had higher mean scores of the general motivation than students who have mothers that cannot speak English (5.0513 and 4.8245 respectively). The Independent-Samples T-Test also indicated that the difference was significant (t = 8.544, Sig. (2-tailed) = 0.000). In this case, the mother's ability in speaking

English has a positive influence on student's motivation in English learning. It is in the same pattern for students who have fathers that can speak English. The students who have fathers that can speak English had higher mean scores of the general motivation than students who have fathers that cannot speak English (5.0003 and 4.8489 respectively). The Independent-Samples T-Test also indicated that the difference was significant (t = 4.726, Sig. (2-tailed) = 0.000).

The findings of the influence of parents' ability on students' motivation in English learning are consistent with the research by Hamidah and her colleagues about parental influence on students' motivation in English learning. According to Hamidah, parents are the first teachers of a student and they take responsibility for their education. They are also role models for attitudes and behaviors that could assist in future success, as well as the development of English interests and activities. Students often learn attitudes, cultural morals, and values from their parents (Hamidah et al., 2017).

The Most Difficult Skill in English Learning

In learning English, students always try to develop all four language skills that are important for daily communication which include: listening, speaking, reading, and writing. In order to know the difficulties that the students usually face related to four different language skills during the process of learning English, we asked the students to consider which language skill is the most difficult.

Table 7. The most difficult language skill

Language skills	Frequency	Percent
Speaking	188	50.7
Listening	145	39.1
Reading	23	6.2
Writing	15	4.0
Total	371	100.0

Table 7 shows the opinions of the students about the most difficult language skill. Speaking skill was considered the most difficult language skill by the students (50.7%). Listening skill was the second most difficult language skill with 39.1% of students that participated in the study. This finding is contradictory with the study of Ratanawalee where the students considered writing as the cause of most problems (47%), and listening makes the least problems to the students (10%) (Ratanawalee, 2012).

Furthermore, knowing the problems that students would face during the learning process is very important. It would help the curriculum and instruction designers, and the teachers. It would also provide guidelines to

improve the quality of teaching and learning, and especially improve the motivation of the students in English language learning.

Discussion and Recommendation

In general, from the study, the students are highly motivated to learn English as a foreign language. This finding answered the research question about the level of the students' motivation. Within the scope of the study, it only focused on two types of motivation: integrative and instrumental. Based on the comparison and assessment, we found that the students in the study are more instrumentally motivated to learn English than integrative motivation. The students' tendency towards the instrumental motivation could be explained by the focus of the students on getting a good job that needs proficiency in English or getting a certificate of English to pass through the VNU-UET foreign language requirements.

Within the factors studied (gender, the school year, the time learning English, and the parental ability in speaking English) that might influence the students' motivation in English language learning, only the different school year and the parental ability in speaking English have significant influences on the students' motivation. Specifically, the second year students have greater motivation in English language learning than the first year students. The second-year students have spent more time in the university learning environment than the first year students. This has led to the changes in attitudes towards English learning. This is the reason for explaining the difference of motivation in English language learning. The students who have parents that can speak English also have a higher level of motivation in English language learning. The importance of parents on attitudes, motivation, and behaviors in learning, in general, is consistent with many previous studies.

Speaking and listening skills were the most troublesome to the students that participated in the study. These two language skills are very important to communicate with other people, therefore more attention should be given to building the training programs, curriculums, teaching methodology, and the study resources to improve these language skills.

Based on the findings of this study, the results are unique for only particular students that participated in the study. The students have a high level of motivation in both instrumental and integrative aspects, whereas, instrumental motivation is significantly higher than the integrative motivation. Furthermore, the study with other students in different universities with largely different education context would produce significantly different results. Therefore, future studies should include more different universities to improve the quality of the study.

The data of the study was collected from only 371 students of the first-year and the second-year within a strict time limit. It is recommended that a

larger sample size with a longer time frame should be extended to increase the degree of generalization of the study, in order to make the findings more valid and reliable. This study, however, does not examine motivation in English language learning of students in the third and fourth year. It is recommended that more variety of participants should be included.

In summary, this study was conducted to provide some insights into the level and type of motivation in English language learning with the participants of the first and second-year students at VNU-UET. The study provides useful knowledge and information about motivation and factors that influences the students' motivation in English learning. These value knowledge and information would help to improve the students' motivation, and ultimately improve the students' proficiency in English.

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Examining Gender Differences in Students' Entrance into and Persistence in STEM Programs in Swedish Higher Education

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Abstract

Encouraging students to enter and persist in science, technology, engineering and mathematics (STEM) programs in higher education has been the focus of STEM education worldwide. To promote social equality particular attention has been given to including student groups such as women, ethnic minorities, and students with low economic status that have long been underrepresented in STEM education. The aim of this research was to examine gender differences in students' entrance into and persistence in STEM programs in Swedish higher education through the lens of social cognitive career theory (SCCT). Through a quantitative secondary analysis of Interest and Recruitment in Science (IRIS) project data collected in Sweden, a total of 2372 responses were validated and analyzed, including 1530 males (65%) and 842 females (35%). The main findings showed that female students valued previous learning experiences in formal education contexts and social influences more than males, with a significant difference of (p<0.05). Male students valued informal learning experiences more and presented self-efficacy and choice goals to a higher degree, with a significant difference of (p<0.05). No significant gender differences were found with regard to appreciation of current study life. The discussions and implications of the findings and previous research are presented.

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Keywords: STEM education; Gender; Higher education; entrance; persistence.

Introduction

Combinations of attitudes, knowledge and skills in science, technology, engineering and mathematics (STEM) have been considered critical competencies in the knowledge economy. On a national scale, STEM fields have been recognized by the U.S. government as "areas of national need" that are "crucial to national innovation, competitiveness, and well-being" (Goan et al. 2006, p. 1). Similarly, the European Commission incorporated key competencies such as "mathematical competence and basic competencies in science and technology" and "digital competence" as key objectives for the reference framework for lifelong learning in European countries' national curricula (European Commission 2018). At the individual level, STEM education not only prepares individuals with competencies for problem solving and innovation in their daily lives, but also actively involves them in solving complex challenges faced by their societies with critical and creative thinking (Hazelkorn et al. 2015). The implications for STEM educational policies around the world lie not only in promoting scientific literacy among citizens, but also in attracting people to participate in STEM disciplines in secondary and higher education, and further to pursue STEM-related professions and/or research-scientific careers for international competition (Hazelkorn et al. 2015; Laugksch 2000).

Despite the fact that the numbers of students pursuing higher education degrees have been increasing, the percentage of students in STEM disciplines remains relatively low. The shortage of students pursuing STEM disciplines has been recognized globally. In Europe, it has been pointed out that one million additional researchers are needed in STEM studies by 2020 to sustain economic growth (Hazelkorn et al. 2015). On the other hand, many students view studying STEM in higher education as a pathway to careers that are not directly related to STEM disciplines. For example, many students in the U.S. view majoring in biology or chemistry as a way to become medical doctors rather than biologists or chemists. Some students see mathematics and science as their stepping-stones to the worlds of business, finance or entrepreneurship. Engineering studies sometimes provide backgrounds for students aspiring to careers as patent lawyers (Sadler et al. 2012). As a country considered being among the foremost when it comes to gender equality (UNDP 2015), Sweden has broadened the educational pathway for more students to engage in higher education. Specifically in STEM education, completing the natural science program in upper secondary school is regarded as the ideal way to prepare for a STEM field of study in higher education in Sweden (Skolverket 2000). However, despite abundant opportunities for entering STEM disciplines and

the government's flexible combination of grants and loans for financial support in Swedish higher education (Langen and Dekkers 2005), only 25% of 25-34 year-olds chose to participate in STEM disciplines in year 2016 (OECD 2017). According to OECD statistics for year 2015, only 38% of total enrollment and 22% of STEM higher education graduates are women (OECD.Stat n.d.). Although gender equality and equal treatment for men and women have been actively promoted in Sweden for decades, gender disparities in STEM course participation persist. To understand the gender gap in STEM education and careers, it is important to investigate how students' academic and career choices developed over time, and the crucial factors that have both direct and mediating effects on their decision-making. Understanding what factors drive students of both genders to step onto the STEM pathway and whether they remain on it can help educators and policy makers identify more efficient ways of encouraging students to enter the STEM domain and keep them there.

Early attitudes developed in adolescence play a fundamental role in determining students' aspirations for future careers (Ormerod and Duckworth 1975; Tai et al. 2006; Lindahl 2007; as cited in DeWitt et al. 2011). By the age of 13 or 14, most students' attitudes towards science are well established and become progressively harder to change (DeWitt et al. 2011). Thus, secondary education is regarded as a critical period in attaining and developing students' interest in STEM disciplines so that they will choose to study STEM-related majors in higher education. After students enroll in STEM majors, their interests then influence their retention. Students may subsequently drop out due to a lack of interest in STEM, concern over the occupational lifestyle, or a growing interest in other disciplines (Heilbronner 2011). On the other hand, related learning experiences in STEM are believed to contribute to the development of self-efficacy beliefs that indicate individuals' confidence in studying mathematics and science subjects. Students' self-efficacy beliefs further influence their interests, behavior, and intention to enter or persist with STEM disciplines. Bloom (1985) investigated high-achieving individuals in neuroscience to uncover factors that influenced their choice of career. He discovered that for many the learning experience of setting up their own experiments and investigations, and enjoyment of exploring what they could discover, helped them build a strong interest in science from a young age (as cited in Sosniak 1985). However, STEM-related learning experiences are influenced by many environmental factors, such as the economic, social and cultural capitals that specifically relate to science. Financial security and social prestige also influence students' choices of desirable professions (Wong 2012). DeWitt and Archer (2015) emphasize that a social connection to science, such as having family members working in science, is seen as particularly important for female students or students from ethnic minority

groups. Positive attitudes towards science and encouragement during the academic process from important social relations such as parents and peers can influence students' own attitudes and interest in science and inspire them to pursue STEM careers.

Accordingly, the aim of this research is to investigate important learning experiences, the self-efficacy beliefs and choice goals that relate male and female first-year STEM students' entrance into and persistence in STEM studies in Swedish higher education, based on a secondary analysis of an EU project, Interest and Recruitment in Science (IRIS). The specific research questions are:

- Are there any differences between male and female students relating to previous learning experiences that were important factors in choosing their current majors?
- Are there any differences between male and female students' responses regarding their current learning experiences?
- Are there any differences between male and female students' self-efficacy beliefs and choice goals?

Literature Review

Students' academic choices related to STEM education have gained increasing scholarly attention in the last decade. Numerous studies have explored critical contextual, cultural and cognitive factors influencing students' entrance into, persistence in and completion of STEM disciplines (e.g., Wang 2013; Byars-Winston et al. 2010; Lent et al. 2008). Following, in relation to the study, we explore the main factors including self-efficacy and learning experiences, as well as external social and environmental factors that are identified in previous studies as promoting or impeding students' academic choices in STEM.

Self-efficacy and Outcome expectations in STEM

Self-efficacy beliefs are considered to constitute the most central and pervasive mechanism of personal agency that helps individuals to determine their choices of activities and environments (Bandura 1986). Self-efficacy beliefs also contribute to effort expenditure, persistence, thought patterns and emotional reactions when confronted by obstacles (Lent et al. 1994). Outcome expectations are another important factor that influences individuals' behavior intentions. Studies of self-efficacy are either further specified in specific STEM subjects like math, science and engineering, or are combined as general academic self-efficacy. Lopez and Lent (1992) investigated 50 high school students' sources of math self-efficacy beliefs. They applied the sources of math efficacy scale (SMES), originally developed by Lent et al. (1991), to

capture the students' four primary sources of self-efficacy beliefs as described by Bandura (1986).

Learning Experiences Relate to STEM

Related learning experiences in STEM are believed to contribute to the development of interests in STEM disciplines. When examining students' entrance into STEM, various studies point out that high school preparation in math and science plays a critical role in developing students' interests in STEM studies (e.g., Wang 2013; Blickenstaff 2005; Maltese and Tai 2011). As Blickenstaff (2005) points out, selection and completion of math and science courses during high school were essential in developing students' predispositions toward choosing STEM studies at post-secondary level. Also, students who perceive their high school math and science courses to have adequately prepared them for college are likely to choose a STEM major (Wang 2013). A more rigorous high school program is considered significant in students' attainment of college degrees (Maltese and Tai 2011). Regarding gender differences in high school course participation, Tyson et al. (2007) found that women completed more advanced coursework than their male peers, but were less likely to complete the highest-level courses (i.e., advanced physics or calculus). However, the identification of learning experiences varies with difference approaches.

Learning experiences outside of classrooms are recognized as opportunities for young people that complement and extend beyond the resources available in school (DeWitt and Archer 2017). DeWitt and Archer (2017) identify three types of science education engagement outside of the classroom. *School-led science enrichment* includes taking science-related school trips, attending presentations about science or after-school science clubs; *'informal' science activities* concerns visiting zoos, doing experiments, and going to science centers or museums; 'everyday' science engagement includes watching science programs on TV, reading science books, or going online to find out about science. Science and math education can happen in diverse contexts - not only from pedagogical interventions in school - but also in casual, spontaneous, non-structured places in informal settings (Kim and Dopico 2016). However, it has been shown that the participation of children in informal science learning and how much they gain from it are not only driven by their own interests in the activities, but also fundamentally shaped by physical (activity location), economic (associated costs), social (support from important family members), and cultural factors as well as their science capital (DeWitt and Archer 2017). The combination of these factors can either open up or shut down children's access to and participation in science education in informal settings.

Lent et al. (1994) proposed social cognitive career theory as a sociocognitive approach to people's interests and academic/career choices. Developed from Bandura's (1986) social cognitive theory, social cognitive career theory emphasizes not only the means by which individuals exercise personal agency in the academic choice and career development process, but also the extra factors enhancing or constraining personal agency (Lent et al. 1994). In particular, learning experiences have been described by Lent et al. (1994) as directly informing and shaping academic and career-related self-efficacy. Lent and colleagues (1994, 2000) posited that learning experiences do not occur in isolation. They are under the influence of contextual variables, either distal background factors preceding learning experiences such as gender, race and socioeconomic status, or proximal factors playing a role at critical choice points such as peers and teachers (Ferry et al. 2000).

Contextual Factors Influencing Learning Experiences

Contextual factors such as one's cultural, social and economic background are considered to have direct impact on one's learning experiences. Analysis by DeWitt and Archer (2015) revealed structural factors including gender and it was discussed that ethnicity and cultural capital strongly influence students' attitudes, experience and participation of science in school and out of school. Archer et al. (2014) define science capital as a conceptual device that combines various types of economic, social and cultural capital that specifically relate to science. Wong (2015) points out that these resources related to science learning could strengthen or weaken students' interests towards, and identifications with, science and science careers. Having family members using science in their work is particularly important for students in ethnic minority groups to aspire to a science career. Results from DeWitt and Archer (2015) showed that students who have a family member working in a science-related job are 2.16 times more likely to fall into the group that strongly aspired to a science career than those who do not.

Wang (2013) identifies several aspects of a postsecondary context of supports and barriers including academic interaction, receipt of financial aid, enrollment intensity, graduate degree expectations, remediation, and external demands. Among these, academic interaction was measured by how frequently students interact with faculty about academic matters, meeting with advisors about academic plans, and studying in school libraries. Receipt of financial aid was regarded as a dichotomous variable based on students' first-year aid status. Enrollment intensity was examined by asking whether students' enrollment was full-time or part-time. In addition, students' graduate degree expectations were divided into whether students expected to earn a graduate degree or not (Wang 2013).

Theoretical Framework: Social Cognitive Career Theory

This study aims to analyze and compare learning experiences that are perceived by male and female students to be important to their entrance into and persistence in STEM programs, as well as their self-efficacy beliefs and future educational choice goals. The focus is on the complex interplay of person, environment, and behaviors leading to people's interests and academic/career choices. Social cognitive career theory (SCCT), proposed by Lent, Brown, and Hackett (1994), provides a useful theoretical framework for the study. Derived primarily from Bandura's (1986) general social cognitive theory, SCCT closely explores Bandura's (1986) concepts, including self-efficacy, outcome expectations, and goal mechanisms, and the complex interrelating systems of these concepts with other personal (e.g., gender, race), contextual (e.g., support systems), and experiential/learning factors (Lent et al. 1994). Concerning the application of SCCT Choice Model in the Study, Figure 1 shows how the choice model of SCCT is incorporated in the context of this study. Specifically, SCCT's choice model provides an explanatory theoretical framework to understand how students' academic and career related choices are developed over time. Participants in this study were students studying STEM majors at first-year university level. The first half of the theoretical framework examined students' **'pre-higher educational settings'** experiences, such as the formal and informal learning experiences and social influences, which encouraged them to choose their current majors. The second half of the framework investigated students' perceived current **'higher education'** learning experiences as well as their self-efficacy beliefs and choice goals. SCCT was applied to enable discussion about how students perceived their current learning experiences to be influenced by, for example, their social relations with peers and teachers, which further impact students' self-efficacy beliefs and intentions about persisting in STEM programs.
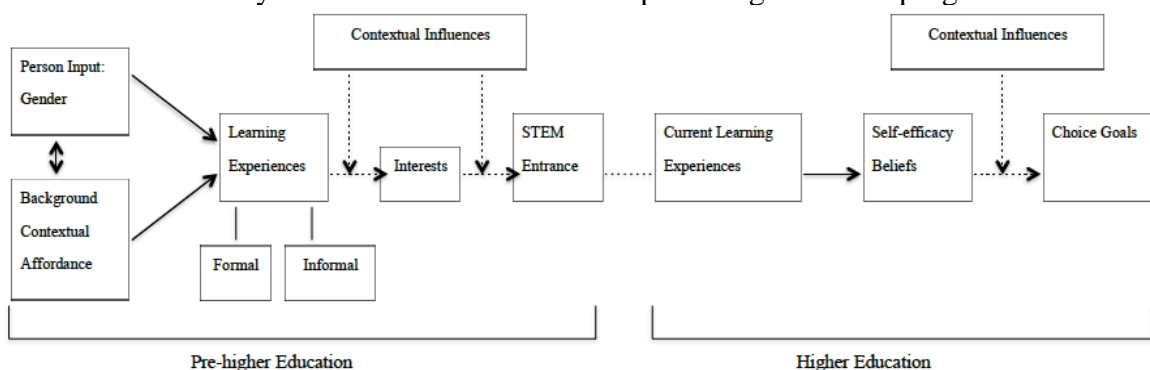

Figure 1. Application of SCCT choice model to the study

In Figure 1, solid lines indicate direct influence while dotted lines demonstrate moderate influence between two constructs. Gender is regarded

as a person input and has a reciprocal relation to background contextual affordance such as socioeconomic status. These two elements directly influence one's learning experiences during secondary education, including formal learning experiences and informal learning experiences. Learning experiences indirectly impact on one's interest in STEM disciplines through self-efficacy beliefs and outcome expectations, which further influences one's decision about entering a STEM major. At the same time, contextual factors such as the supports and barriers the student experiences have a mediating effect on his/her decision-making process. After enrolling in STEM majors, the student perceives current learning experiences (including his/her evaluation of the learning experiences), and comparison with his/her expectation, to directly influence his/her self-efficacy beliefs about their ability to study a specific subject. His/her self-efficacy beliefs, interests, and outcome expectations have an indirect impact on the choice goals about whether to engage further in the course of study.

Contextual influences mediate students' choices about enrolling in STEM programs in higher education and persisting with STEM studies. The study primarily examined students' perceived contextual influences such as the importance of learning experiences and social connections. Due to the design of the IRIS questionnaire, the study did not distinguish *distal* and *proximal* environmental factors when discussing contextual influence. Namely, this study applied the term "pre-higher education" to describe the timeline of previous learning experiences in the questionnaire. In the pre-higher education environment, contextual influences may encourage or hinder the development of students' self-efficacy beliefs and interest in science and mathematics. This includes social and family cultures regarding gender stereotypes and the culture/environment of science/math classrooms. In higher educational settings, contextual influences mediate students' persistence with chosen STEM subjects. Friendly or hostile peer/teacher environments within current programs, perceived obstacles, and external opportunities or support all influence decisions about whether to leave or stay in the program.

Methods
Research Strategy

This study applied a quantitative research strategy for a secondary analysis of collected responses to the Interest and Recruitment in Science (IRIS) questionnaire in Sweden. Bryman (2016) points out that secondary analysis entails the analysis of existing data that the researchers probably have not been involved in collecting. This secondary analysis was attempting to offer new interpretations of the Swedish IRIS data from the theoretical framework of SCCT. Specifically, this study aims to discover the significant gender differences in (1) the important previous learning experiences in pre-

higher education that affect students' entrance into STEM programs, (2) important current learning experiences while studying STEM programs in higher education, and (3) self-efficacy beliefs, positive and negative goals for persisting with STEM programs.

Research Instrument

As the content of secondary analysis, this study explored the Swedish students' responses to the questionnaire designed in the IRIS project, which has been conducted in many countries, including Sweden. Nearly 7000 first-year university students studying STEM disciplines in Norway, the United Kingdom, Slovenia, Italy, and Denmark completed the IRIS questionnaire during year 2010-2011 (IRIS 2012). Since then, the IRIS questionnaire has been administered in other countries such as Sweden to examine students' interest in and recruitment into STEM programs. The IRIS questionnaire comprises 17 questions examining previous school experiences, sources of inspiration for educational choice, current experiences as a first-year STEM student, expectations for future jobs, and attitudes to gender equity in STEM studies (IRIS 2012). Apart from the first five questions about participants' basic information, the remaining 12 questions consist of 8 Likert-scale questions comprising 65 Likert-type items and 4 open-ended questions.

Likert-scale questions in the IRIS questionnaire generally offer a five-point scale ranging from "Not important" to "Very important" and "Strongly disagree" to "Strongly agree". Only one question offered a three-point Likert scale labeled "worse than expected", "as expected" and "better than expected" (question 11). In this study, six Likert-scale questions were selected for analysis according to their relevance to the aim of the study.

Participants and Data collection

According to IRIS project working document 2.2 (2010), the target population of the IRIS project was students toward the end of their first year of study in a limited number of STEM courses at higher education level. Criteria include:

- central or typical STEM education/subject;
- general recruitment challenge;
- gender imbalance;
- easy to identify corresponding education/program across countries;
- well-defined education/program (not cross-discipline programs such as "technology, organization and learning"); and
- preferably large numbers of students in a small number of institutions/programs (to facilitate sampling and administration) (IRIS 2010).

Following the general guideline of the IRIS project, the target population for this study was first-year university students studying STEM courses in 10 different Swedish universities during the data collection period. The majority of students were born in the 1990s. Nearly one third of students had experiences of studying at other universities (Jidesjö et al. 2015). The original version of the IRIS questionnaire is in English, and it was translated into Swedish following the IRIS project back-translation procedure (IRIS 2010). The IRIS questionnaire was in electronic format and was sent out to over 10 000 students via email. After excluding invalid responses, and selecting responses based on consent and convenience, a total number of 2 372 responses were selected, with 1 530 males (65%) and 842 females (35%).

Data Analysis

Based on the comparative lens of gender perspective, "female" was coded as "0" and "male" was coded as "1" when analyzing the data. For question numbers 6, 7, 8, 10, and 12 that used a five-point Likert scale, scores 1-5 were coded to measure participants' responses from "Not important" to "Very important"; and to responses from "Strongly disagree" to "Strongly agree". For question number 11, which used a three-point Likert scale, scores 1-3 were coded to measure students' responses among "worse than expected", "as expected", and "better than expected". The item concerning "the effort you have to spend on studying" in question 11, and the item "I will probably decide to leave this course before I finish" in question 12, were both negatively worded questions compared to the other positively worded questions. Therefore, reverse scoring was applied to these two items. Descriptive analysis was conducted to demonstrate the mean scores and standard deviations of all six Likert scale questions via Statistical Program for the Social Sciences (SPSS) version 25. To compare the difference between two gender groups, a non-parametric technique was adopted for several reasons. First, samples were selected for convenience (non-random sampling) so data did not follow normal distribution. Secondly, samples obtained from populations were not of equal variance because two group sizes were not reasonably similar. The ratio of largest group size to smallest group size was larger than 1.5 and thus violated the assumption of homogeneity of variance in the parametric technique (Stevens 1996, as cited in Pallant 2016). The Mann-Whitney U test was used (Lared statistics n.d.) in this study to determine whether there were significant differences between the mean scores of formal learning experiences, social influence, informal learning experiences, current learning experiences, current learning experiences compared to expectations, self-efficacy beliefs, and choice goals. Statistically significant difference between two gender groups, if p<0.05.

Quality Criteria of the Study

Reliability, validity and replicability are viewed as three of the most critical criteria for evaluating the quality of quantitative social research (Bryman 2016). The Cronbach's alpha for internal reliability of the Swedish IRIS questionnaire response data was 0.83, which demonstrates good internal reliability. Validity is about whether a set of indicators devised from a concept really measures the concept (Bryman 2016). The IRIS questionnaire addresses important factors that influence students' educational choice making in STEM, and is based on the achievement-related choices model proposed by Eccles et al. (1999) and Bandura's theories on the role of self-efficacy beliefs (Bandura 1997; as cited in Elster 2004). The theoretical framework of the secondary analysis on the IRIS responses data was Social Cognitive Career Theory developed by Lent et al. (1994), which was derived from Bandura's (1986) theories on self-efficacy beliefs. The external validity deals with the generalization of findings, which concerns the representativeness of samples (Bryman 2016). Convenient sampling has been applied in the collection of the Swedish IRIS data though online surveys that yielded an approximately 20-25% response rate. Mandreda et al. (2008) point out that the response rate of online surveys is on average 11% lower than that of other modes of sampling such as postal questionnaire surveys (as cited in Bryman 2016). However, as Bryman (2016) states that it is the absolute size of a sample that is important relating to the degree of its precision. This study analyzed usable responses from a sufficiently representative sample of 2 372 STEM students in higher education in Sweden.

We may assume the replicability of the study, given that, as at January 2014, the IRIS questionnaire had been administered in at least 15 countries, in addition to the five comprising the IRIS consortium (Henriksen et al. 2014). In early 2010, a pilot study of the IRIS questionnaire was administered in various formats, including electronic media, pencil and paper, and focus group discussions (Henriksen et al. 2014). After finalizing the master version of the IRIS questionnaire in English, translation into other languages followed a standardized, quality-assured procedure (Henriksen et al. 2014).

Ethical Considerations

This project (IRIS project number 230043) strictly observed the ethical assurance procedures as set out in the EU FP7 Collaborative Project grant agreement. The collection of IRIS data in Sweden followed the general IRIS program framework (2008) and the ethical guidelines of the Swedish research council. Students who wished to remain anonymous did not give contact details. Personal information and responses have been kept strictly confidential; no participant will in any way be recognized in any publication through the project.

Limitations of the Study

As pointed out by Bryman (2016), one limitation of conducting secondary analysis is lack of familiarity with and control over the structure and contours of the data. In this study, the IRIS questionnaire has already been designed on the basis of the original theoretical frameworks and administered in multiple countries. Thus when attempting a secondary analysis on the original data from another theoretical perspective, some key variables may be absent. For example, the IRIS questionnaire did not include students' expected outcomes of studying STEM majors. However, this study has no intention to investigate relational or causal paths among all variables based on the applied theoretical framework. Instead, this study used the theoretical framework as a guideline and explanatory framework among all variables. Namely, variables that are missing in the theories will not have an impact on the quality or the practical implications of this study. Another limitation is the data collection period, which spanned the years 2010 through 2012, so the findings cannot mirror the current situation today. However, it may be worthwhile for researchers in higher education to consider these findings and plan for subsequent surveys in the context of a longitudinal study.

Results
Previous Learning Experiences

The first research question examined students' previous learning experiences that they perceived to be important in choosing their current STEM programs. The examination comprised three aspects of experiences, including social influences in both formal and informal educational learning settings. Both male and female students emphasized the important influence of formal learning experiences on their academic choices and played down the influence of informal learning experiences. As shown in Figure 2, a significant gender difference was found in all three aspects ($p<0.05$). Female students considered formal learning experiences and social influences more important influencers than the male students did. On the other hand, male students considered learning in informal settings more important for them than did the female students.
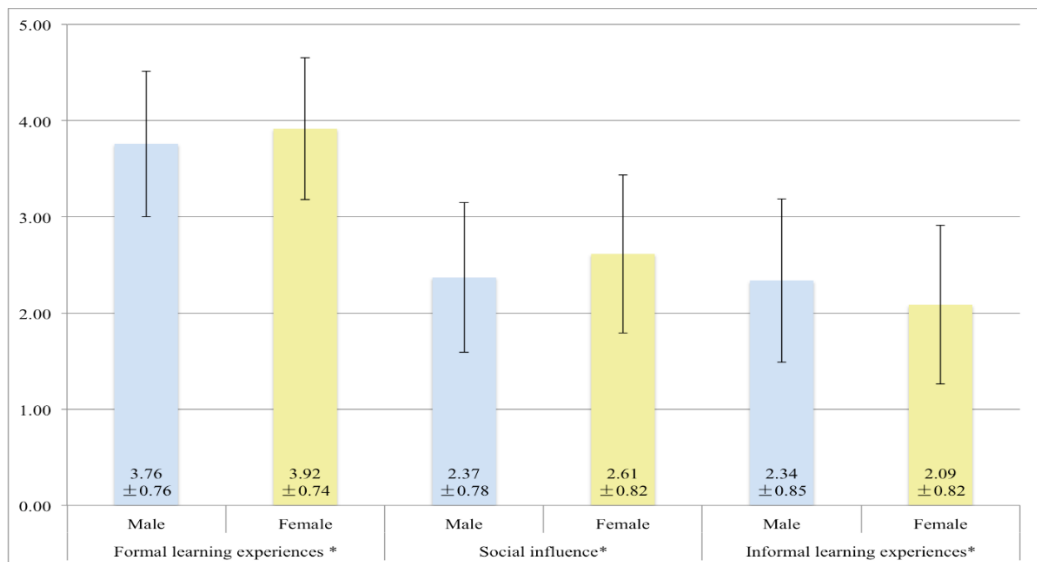
Figure 2. Results of previous learning experiences (*, *p*<0.05).

Formal learning experiences

Looking at specific experiences in formal educational settings, interests were regarded as the most important factor in choosing their current majors, while both male and female students considered fieldwork or excursions the least important. A significant gender difference was found in the perceived importance of previous attainment, fieldwork or excursions, lesson content showing the relevance of the subject to society, and receiving clear feedback when getting the right answers (*p*<0.05). As shown in Figure 3, the female students regarded previous attainment as more important than did the males. Female students regarded fieldwork or excursions as more important than did their male peers. The female students considered lesson content connecting to the relevance of the subject to society more important for them than the males did. Lastly, female students valued the importance of receiving clear feedback when getting the right answer more than the males.

Social influence

Both male and female students regarded having good teachers as the most important social influence on their academic choice. The second and third most important social connections were father/step-father and mother/step-mother, followed by the influence of friends and siblings or other relatives. The importance of career advisors at school was considered the least important for both sexes. Significant gender differences were found in the social influence of mothers or step-mothers, fathers or step-fathers, good teachers, friends, other relatives and career advisors (*p*<0.05). With mean scores and standard deviations shown in Figure 4, the female students

considered all sources of social influence more important for them than the male students.
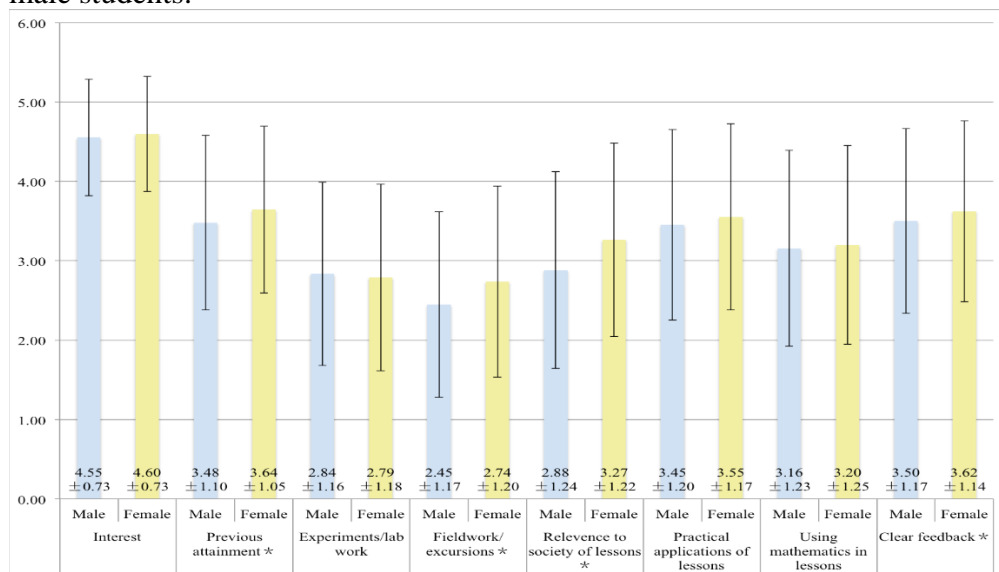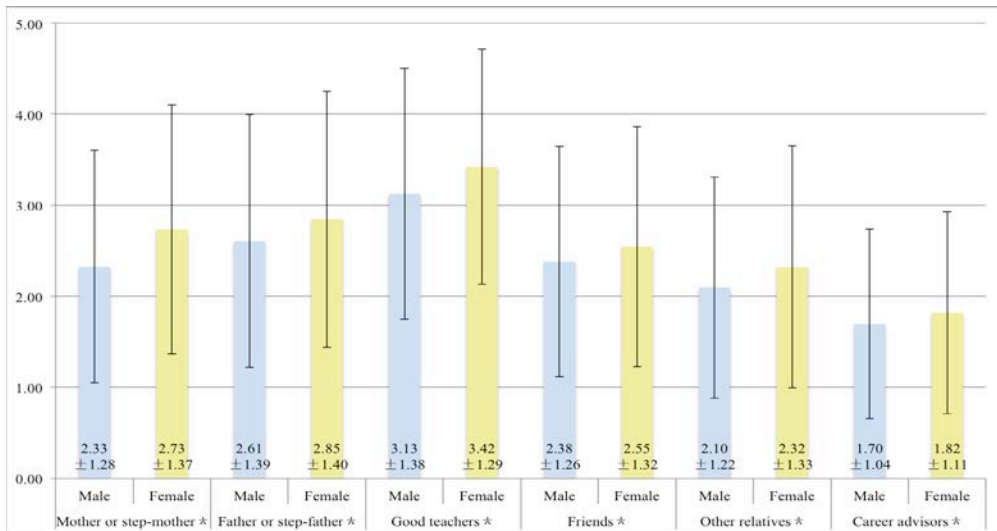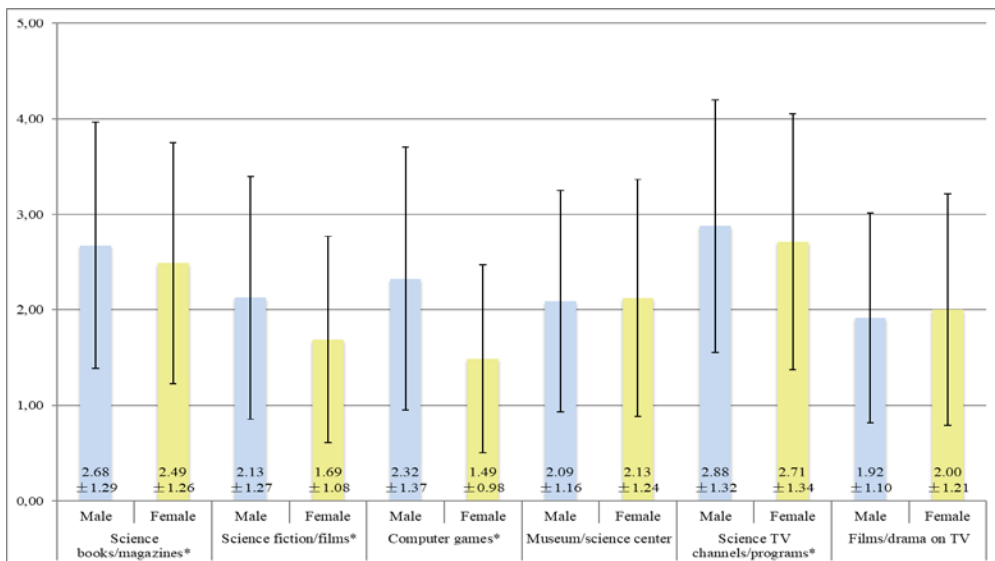

Figure 3. Results of formal learning experiences (*, $p<0.05$).

Informal learning experiences

In informal educational settings, both male and female students considered watching popular science TV channels or programs such as Discovery channel most important for them as informal learning experiences. As shown in Figure 5, male students considered watching films or TV drama series as the least important experiences, while female students considered playing computer games least important. Significant gender differences were found in informal learning experiences, including reading science books or magazines, watching science fiction/films, playing computer games, and watching science TV channels/programs ($p<0.05$). The females valued visiting museums/science centers and watching films/drama TV slightly higher than the males.

Current Learning Experiences

The second question examined students' responses to their current learning experiences, including to what degree they agreed with the statements about their current student life and how their current student life was going compared to their expectations. As shown in Figure 6 and 7, no significant gender difference was found in students' overall responses to their current learning experiences, including their current study life and study life compared to expectations.

Figure 4. Results of social influence (*, *p*<0.05).

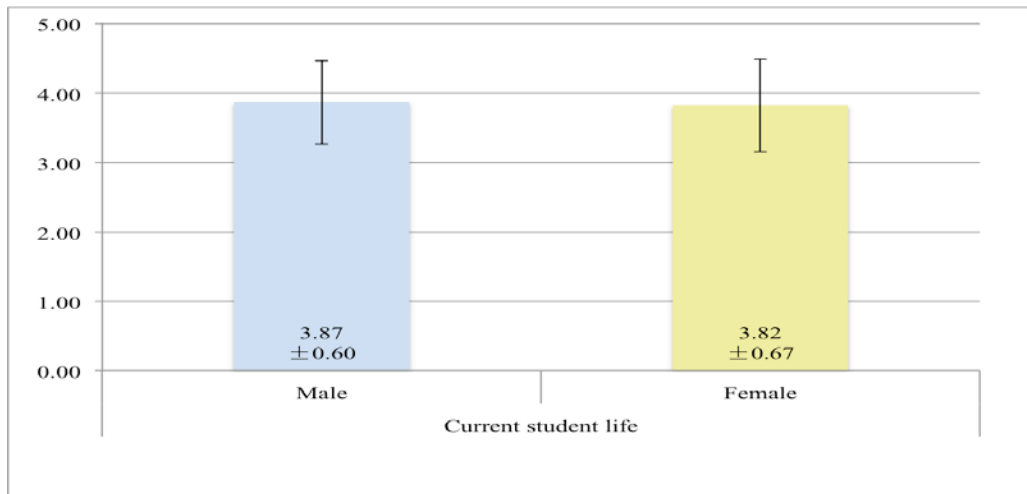Figure 5. Results of informal learning experiences (*, *p*<0.05).
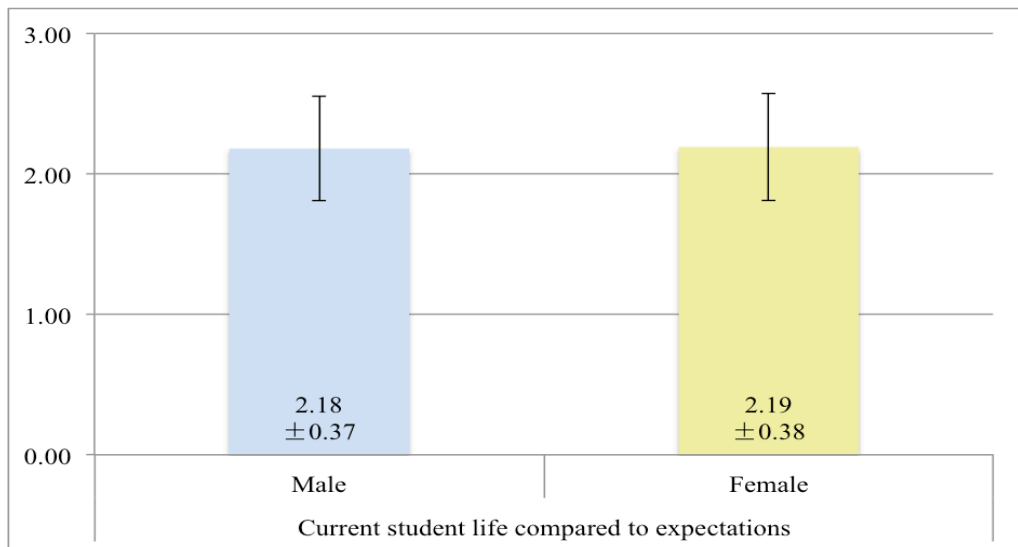
Figure6. Results of current student life.

Figure 7. Results of current student life compared to expectations.

Current student life

When examining students' responses to statements describing their current student life in STEM majors, male and female students agreed on two aspects: what they enjoyed most was the company of other students; what they enjoyed least was lack of personal feedback from lecturers and teachers when they needed it. As shown in Figure 8, significant gender differences were found in statements regarding university working condition and the relevance of learning content ($p<0.05$). The male students perceived better working conditions at universities than the females did, and the male students

considered learning content to have greater relevance than did the female students.
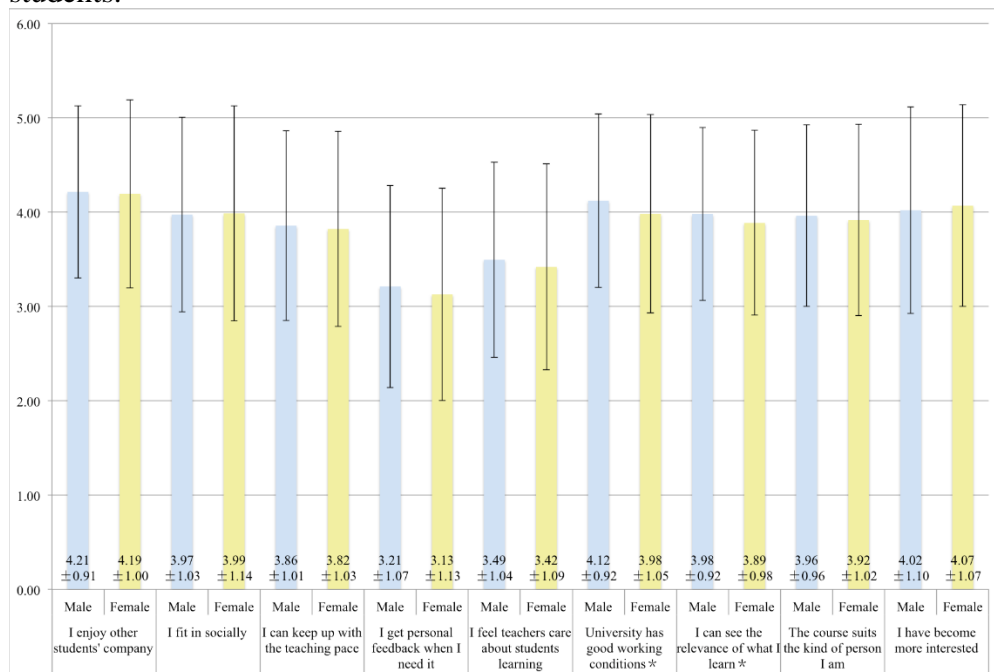

Figure 8. Results of current student life in aspects (*, *p*<0.05).

Current student life compared to expectations

Both male and female students perceived current student life to be exceeding their expectations. Figure 9 illustrates that the overall experience of being a student on the course exceeded their expectations the most, while the quality of teaching exceeded their expectations the least. It was worth noting that both male and female students considered that they had to spend more effort on studying than they had expected, while female students reported slightly higher effort than their male peers did. A significant gender difference was found in the social relationship with fellow students as female students regarded this aspect of student life more positively than the male students did (*p*<0.05).

Self-efficacy Beliefs and Choice Goals

The third research question concerned students' self-efficacy beliefs on the course and their intentions about persisting with STEM studies. As illustrated in Figure 10, a significant gender difference was found in male students expressing more confidence in their abilities and positive intentions about doing better in the future than female students did (*p*<0.05). When looking into specific statements concerning self-efficacy beliefs, Figure 11 shows that male students expressed significantly higher self-efficacy beliefs

than female students, believing themselves able to do better in the course, able to easily learn the subject matter and good enough in the course ($p<0.05$). At the same time, both male and female students expressed a relatively low intention to leave the course before they finished.
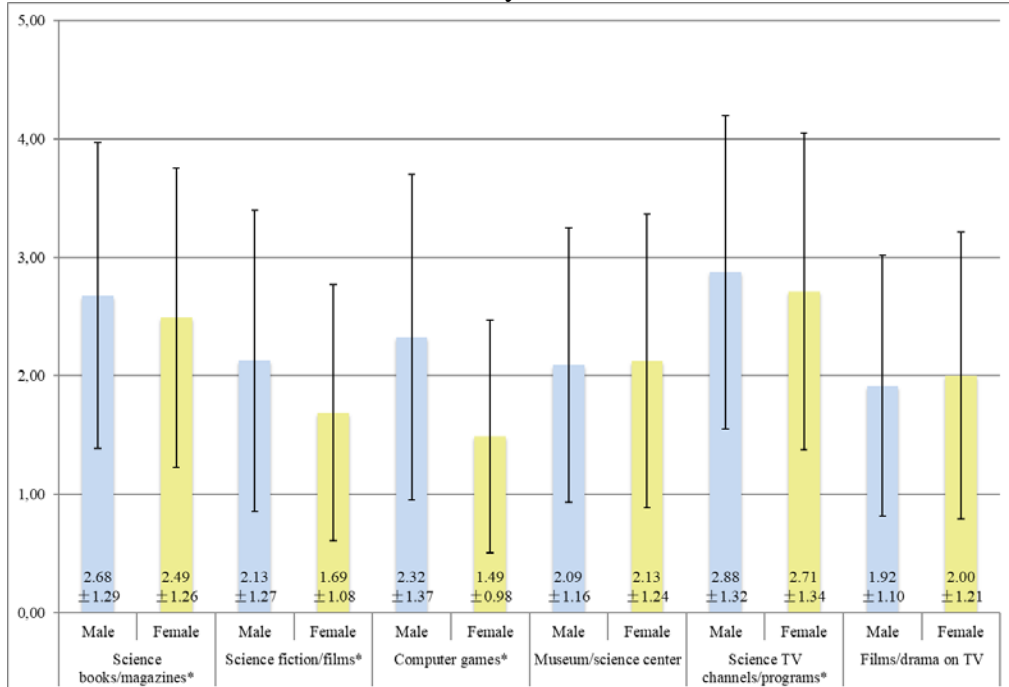

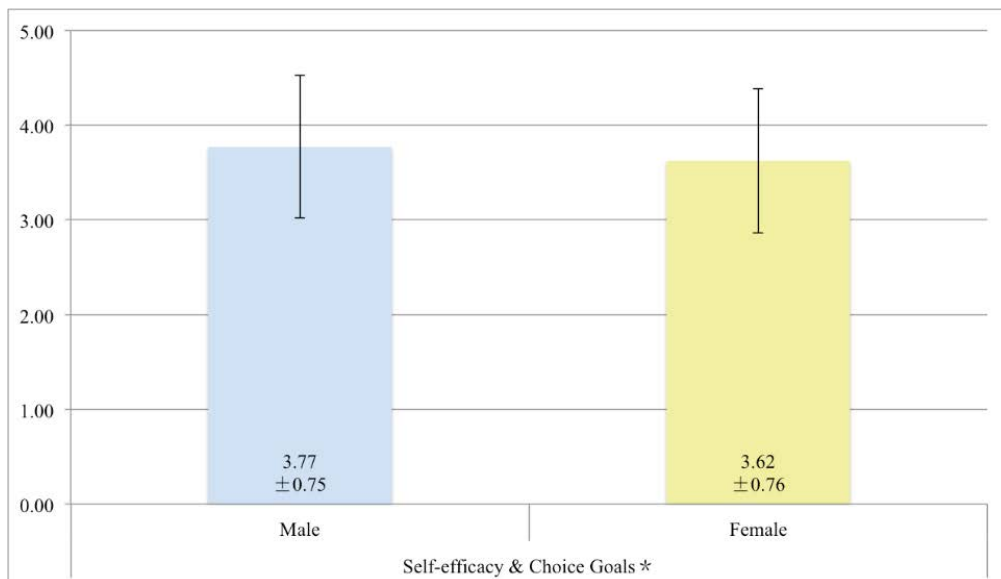Figure 9. Results of current student life compared to expectations in aspects (*, $p<0.05$).

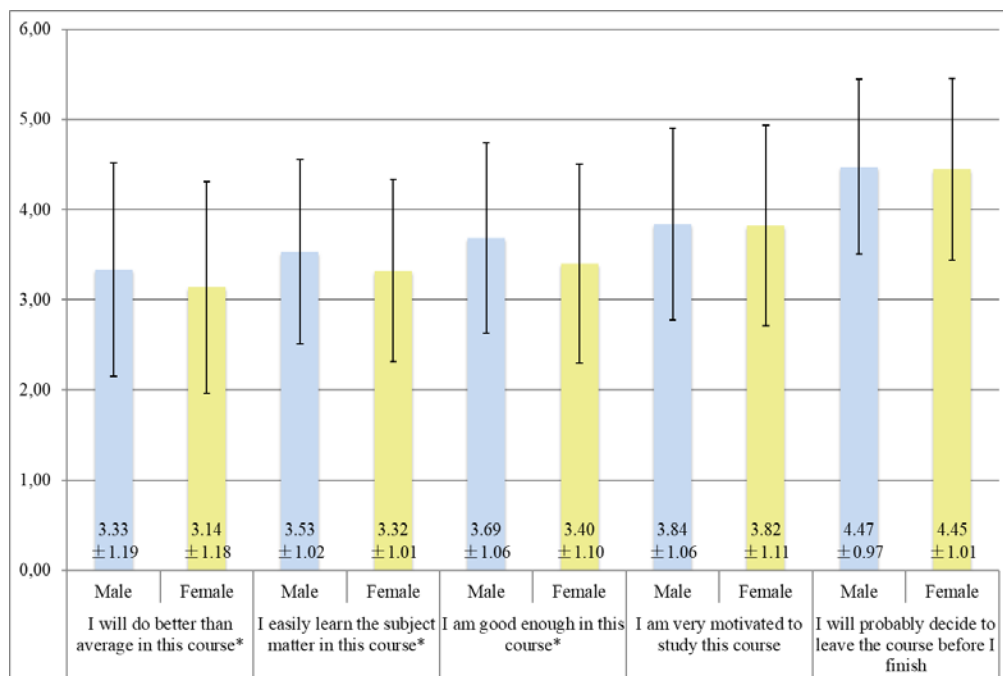Figure 10. Results of self-efficacy beliefs & choice goals (*, $p<0.05$).

Figure 11. Results of self-efficacy beliefs & choice goals in aspects (*, *p*<0.05).

Discussions

Results of this study complement various previous research studies in other geographic contexts. The following section explores different aspects of crucial learning experiences as well as important social and environmental impacts on students' academic choices that emerged from both the findings and the previous research. The discussion adopts a gender perspective as well as the application of SCCT.

Learning Experiences in STEM

This study shows that learning experiences in formal settings is pivotal to students' academic choices in STEM studies. Items examined in the IRIS questionnaire regarding formal learning experiences focused on direct engagement between students and their learning content. Formal learning experiences provided students with opportunities for developing mastery experiences in STEM related studies. Mastery experiences include math and science preparation in secondary school that play a critical role in developing students' self-efficacy beliefs and further influence their interest in pursuing STEM studies to an advanced level. Preparation includes the number of math and science courses taken, direct engagement in solving math problems or doing scientific experiments, and the attainment from these courses (Wang 2013). However, as Brandell et al. (2008) identified when examining the curriculum gap in math education during the transition from secondary

education to higher education in Sweden, certain math constructs that students were expected to be familiar with in higher education, however, remained lacking in their secondary school curriculum. At the same time, students' direct participation in solving math problems such as constructing proofs, are largely limited in secondary level math classes, while these problem-solving skills are essential in higher education math. As Brandell et al. (2008) point out, the lack of proper preparation during secondary school leads to prolonged or unsuccessful studies or even causes students to quit their mathematics studies at tertiary level. For female students, inadequate early preparation in math and science courses is problematic, particularly resulting in low math achievement and decreasing the number of math courses taken, further limiting their potential to enter advanced-level math and science courses in higher education (Shapiro and Sax 2011).

Mastery experience can also occur in informal educational settings, such as doing scientific experiments in science centers. Activities that demonstrated significant differences in this study spoke to students' indirect engagement with their learning content, such as receiving STEM-related knowledge from TV programs, science books, or playing computer games. In this case, modeling as another source of self-efficacy beliefs, plays an important role in informal learning experiences. Certain role models that students observe in science books or TV programs can build on or impede their confidence in STEM fields. Self-identification with role models helps students form a social standard to reflect their own capabilities and aspirations to the competencies displayed by the proficient models (Bandura 1994). In this study, informal learning experiences played a more important role in the study choices of male students than female students. One explanation could be that young female students have fewer role models to emulate in informal learning settings simply because the majority of scientists and engineers across countries and cultures are currently men (Blickenstaff 2005). The low proportion of women in STEM-related disciplines sends a message to girls that these studies are unattractive and discourages them from developing an interest to participate.

Self-efficacy and Interest in STEM

Self-efficacy beliefs, especially math self-efficacy beliefs developed and strengthened from learning experiences, play a significant and positive role in shaping students' interests and further intent to engage in STEM studies (Wang 2013). Although the IRIS questionnaire did not explore students' math and science self-efficacy beliefs during pre-higher education, other studies have shown that male students are more self-efficacious in math than female students despite their comparable achievements (Eccles 1994; Pajares 2005; Watt 2006; as cited in Wang 2013). Similarly, Sax (1994, 2008) states that

female students consistently express lower levels of academic and mathematical confidence than male peers even when they demonstrate equal academic and mathematical abilities (as cited in Shapiro et al. 2011). In other words, women may not enter or leave STEM disciplines because lack of academic ability, but rather because of the lack of academic self-efficacy beliefs (Brainard and Carlin 1998).

Blickenstaff (2005) points out that one of the most common reasons that girls gave to explain their interest in life sciences as opposed to physical science was their desire to care for people or animals, which was also regarded a "public relations" concern for science as a discipline. One key claim in science education, particularly in Physics and Chemistry, is that students in particular are insufficiently interested in not motivated to pursue science subjects because of the lack of perceived "relevance" of science for themselves and for the society in which they live and operate (Stuckey et al. 2013). The results of this study echoed this point that female students showed more concern about lesson content that shows the relevance of science to society. For women, having access to real-world applications of science may be particularly important in reinforcing their decision to pursue STEM disciplines (Shapiro et al. 2011). Their disregard of STEM as a vehicle for improving the human condition may discourage them from persisting with STEM. (Sax 1994, 2011; as cited in Shapiro et al. 2011). In order to keep students, especially female students, interested in and motivated to study science, it is of great importance to imbed the true importance of science in a techno-scientific world as well as its related applications with regard to ecological, economical and societal development (Stuckey et al. 2013).

Social Influence in STEM

Social influence can be regarded as comprising two sources of self-efficacy beliefs (modeling and social persuasion) and important contextual factors as supports or barriers for students' academic choices in STEM disciplines. The results of this study show that female students regarded social influences on choosing STEM studies as more important than their male peers. At the same time, after they enrolled in STEM majors, female students valued the social aspects of learning experiences such as whether they enjoyed the company of other students or fitted in socially more than male students.

Parental influence

As for important social influences on and expectations for women to enter and retain STEM majors, Shapiro et al. (2011) emphasize the role-modeling effect of parents. Having one or both parents in STEM careers increases the likelihood of both men and women pursuing STEM studies, specifically, having practical role models, and mentors are important for

women due to the under-representation of professional women in STEM. Ferry et al. (2000) states that parental encouragement in math and science significantly influences learning experiences. However, Vetter (1996) argues that parental influence is not always positive. The gendered stereotypes of parents can lower educational expectations and aspirations for daughters and negatively affect their academic achievements (as cited in Shapiro et al. 2011). Science capital is defined as a conceptual device that combines various types of economic, social and cultural capital that specifically relate to science (Archer et al. 2014). These recourses related to science learning can either strengthen or weaken students' aspirations towards, and identifications with, science and science careers (Wong 2015). Having important family members in STEM disciplines is particularly important for students from underrepresented groups to aspire to science career and receive the additional resources to guide their pathways. Results showed that students with a family member working in a science-related job are 2.16 times more likely to develop a strong interest in and aspiration to science careers than those who do not (DeWitt and Archer 2015).

Teachers and career advisors

In this study, good teachers were found to have the most important social influence on students of both genders. Shapiro et al. (2011) point out that quality of teachers and pedagogy strongly influence students' interest and retention in STEM majors, especially women students. Female faculty members perceived as role models can likewise bolster women's interest in STEM (Ibid). However, teachers with sexist predispositions can foster a "chilly climate" in classrooms that discourage female participation in science and math classes in secondary education (Blickenstaff 2005). Warrington and Younger (2000) found that some science teachers still harbor sexist attitudes and different expectations for academic achievement of male and female science students, and they tend to be overly generous in predicting boys' science achievement while underestimating that of girls (noted by Blickenstaff 2005). In the higher education context, academic interaction between students and teaching faculty may help students better integrate into the college environment and assist them in better aligning their academic aspirations with actual choices (Wang 2013). This study showed that both male and female students were most unhappy about not receiving personal feedback from faculty members when they needed it. Not being able to receive help when needed increases both stress and the possibility of dropping out. On the other hand, the "chilly climate" also exists in higher education, especially in fields that are traditionally viewed as masculine disciplines, such as science and engineering. Some interactions between students and instructors have negative ramifications for students' interest and retention in STEM majors, particularly

disadvantaging women (Hall and Sandler 1982; as cited in Shapiro et al. 2011). Poor teaching and lack of interest in the subject are often cited as reasons for leaving by female students who dropped a science or engineering track (Blickenstaff 2005).

Peer influence and social culture

Peer culture influences women's choices in and commitment to STEM disciplines both within and outside educational settings (Shapiro et al. 2011). The competitive environment fostered by STEM classroom pedagogies promotes an emphasis on individual success rather than on collaborative learning (Strenta et al. 1994; Astin and Sax 1996; Seymour and Hewitt 1997; as cited in Shapiro et al. 2011). In this study, both male and female students put high value on enjoying the company of other students in the course. Female students were more satisfied with these social relationships than their male peers were. However, Colbeck et al. (2001) suggest that peer interactions can result in greater "chilly climate" feelings for female students than they get from student-faculty interactions. Female engineering students are more likely to report different treatment from male students both in general and in collaborative learning situations. Cohoon (2001) reported that departments with a higher proportion of females such as computer science were more likely to retain those women at a rate comparable to men (as cited in Shapiro et al. 2011). Margolis et al. (2000) add that women often find the peer environment in STEM majors such as computer science unwelcoming. Interactions with male students can unravel women's confidence and make them feel that they are taken less seriously. Margolis et al. (2000) observed that male students make derogatory comments that may reinforce women's sense of not belonging, for example "You only got into computer science because you are a girl" (Ibid, p. 117). The influence of peer culture extends beyond classrooms. The friendships among high school girls influence their advanced-course-taking patterns, particularly in math and science (Riegle-Crumb et al. 2006). Specifically, a combination of female friends and performance in math and science in friendship groups facilitate women's persistence in taking advanced courses such as calculus and physics. Peer interaction provides women with the environment to exchange information, find study partners, and create informal peer role models (Hyde and GessNewsome 2000; Kahveci et al. 2007; as cited in Shapiro et al. 2011).

Conclusion

The decision to pursue a STEM major, and later a related career, is a longitudinal process that builds during secondary education and carries on into postsecondary studies (Wang 2013). Thus, appreciating the combined effects and experiences of secondary and higher education levels is crucial to better

understanding what shapes students' academic and career choices in STEM (Wang 2013). The SCCT choice model (Figure 1) shows how students' learning experiences in both formal and informal pre-higher education settings are influenced by person input (gender in this case) and background contextual affordances like science capital (socioeconomic status, social connections and cultural factors) in relation to STEM fields. Several factors and their various combinations influence the formation of interests in STEM fields through self-efficacy beliefs and outcome expectations: They include learning experiences (like science and math preparation at school) where one can acquire mastery experiences, modeling experiences (self-identification with role models in formal and informal education), and social persuasion from important social connections and anxiety. All of them encourage the student to choose STEM as subject in higher education. After entering STEM studies, students' current learning experiences, including social aspects (whether they fit into the program), teaching aspects (connection with faculty), university facilities (regarding research equipment), and stresses experienced during studies, directly impact the self-efficacy beliefs which mediate the formation of choice goals that determine whether they persist with or leave the program.

Contextual factors from the environment exert influence on the process of academic choice making. SCCT categorizes distal and proximal contextual factors according to the relative proximity of these influences on the academic/career choice making. This study has found that environmental factors such as social connections are particularly important for women. On the other hand, more proximal factors such as the competitive environment of STEM studies, the "chilly climate" female students perceive, and the stress they experience during studies are more likely to make them less confident in their STEM abilities and thus increase the potential for dropping out of STEM disciplines and careers. As was suggested earlier, a longitudinal study would update our understanding of the current situation, while more qualitative research would contribute depth to the analysis.

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Parental Prominence, Student Housing Quality and Academic Success among Public Universities Students in Southwest, Nigeria

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Abstract
       University education, if properly managed remains an appropriate mechanism through which human and nation development could be attained. In spite of numerous studies that have explored academic performance in Nigeria, the contributions of parental prominence and student housing quality on academic success are yet to be explored in the nation's public universities. This study addresses this gap by raising this question: to what extent does parental prominence and student housing predict the attainment of academic success among university undergraduates? The cross-sectional survey design, with multi-stage and purposive sampling technique was adopted. Primary information was sourced from 426 final year students of OAU, OOU and AAUA. The outcome variable of this study was academic success; and it was measured by student's attainment of outstanding or weak academic success. The key explanatory variables were parental prominence and student housing quality. Multivariate rank ordered-logistic regression and ANOVA was applied using Stata 14. Results showed that academic success was negatively associated with student housing quality. Also, results showed that parental prominence (marital status, employment status, gender preference, occupation type) were statistically associated with academic success. Results further

showed that student housing quality and financial supports contributed about 9% to academic success. The study concluded that the challenges posed by inadequate and poor student housing facilities, lack of adequate financial supports for university students, parental gender preference in meeting-up with education needs of their children must be addressed in order to stimulate the attainment of outstanding academic success among students of public universities in Southwest, Nigeria.

Keywords: Academic success, parental prominence, student housing, public university.

1.1 Introduction

The term academic success is a relative word; and its acceptable definition could be attributed to what is sought to be explained or captured. Generally, academic success entails the demonstrated capability to execute, accomplish and excel in academic activities. Meanwhile, the quality of education could be influenced by a series of factors, notable among these factors are the parental prominence of students and the quality of student housing. In Nigeria, university education is most sought-for among the tertiary education applicants. Therefore, the demand for university education in the country has relegated other forms of tertiary education to the secondary list. The precedence placed on university education ahead of other forms of tertiary education is not only conceived by young school leavers who seeking admission into higher institution of learning in the country but also by their parents or guardians. Therefore, many parents in the country preferred their children to be trained in the universities to polytechnics or colleges of education. However, as a result of the prevailing poor socioeconomic status of many parents and the exorbitant fees demanded by private universities in the country, many parents preferred their children to be educated in the country's public universities (Adama, Aghimien & Fabunmi, 2018). Consequently, the rise in the number of students that were admitted into government-owned universities on yearly basis has brought about a significant negative effect on the inadequate existing over-utilised students' hostel facilities in these institutions (Adama *et al.,* 2018; Ekundayo, 2015; Amole, 2005).

Studies exploring academic success among university students in Nigeria have largely attributed students poor academic performance to a set of complex factors, among which were parental socioeconomic condition, poor quality of teaching, environmental factors, poor attitude of students towards their academics and students engagement in risky health behaviours such as alcoholism, drug abuse and cultism (Oviawe, 2016; Ekundayo, 2015; Oluremi, 2013; Fasokun, 2010; Mutsotso & Abenga, 2010). Ekundayo (2015) argued that a significant number of students in the country's public universities would

have performed better at the completion of their studies if they had been provided with the enabling facilities, most especially, decent hostel and access to financial supports.

The impact of finance on student's academic success cannot be over disregarded. Alokan, Osakinle & Onijingin, (2013) and Fasokun (2010) maintained that students with access to adequate financial supports from their parents have little or no worries. Hence, these authors argued that students with adequate financial support were more likely to concentrate on their studies compared to students with little or no access to such financial opportunities. Similarly, it was arguably maintained by Memory & Memory (2013), Fasokun (2010) and Nwanze (2012) that sometimes the inability of students to graduate in with good grades could be attributed to the financial hardship that these students were subjected to during their studies. According to Memory & Memory (2013) the financial constraints that many students in the country's institutions were confronted with would have been reduced significantly if there had been a functional and regular financial supports in forms of scholarship, bursary or grants to university students from the government.

Also, studies on academic performance have established the existence of an inverse relationship between family size and resource allocations among household members. Explicitly, the argument was tiled towards the inability of households with larger members to meet up with the basic needs and rights (education right inclusive) of the children (Okeyim, Ejue & Ekenem, 2013; Yan, 1999). Based on this assertion, it is empirical appropriate to envisage that university students from extended families, especially those from large households and with limited carrying capacity are often deny of the needful financial and monetary supports which could enhance their study comfort. Meanwhile, the absence of these supports, many a time do affect the performance of these less privileged students in schools. Also, the impact of environmental factor cannot be left out from effective learning. Therefore, adequacy and functionality of basic student housing facilities and general learning facilities such as electricity supply, water supply, effective transportation, well–equipped public libraries, and internet facilities are less readily available to students from rural neighbourhood compared to students from the cities and big towns (Dervarics & O'Brien, 2011; Grandvaux, 2002; Yan, 1999; Lamborn, Brown, Mounts & Steinberg, 1992). The argument here is that, students from rural areas are less likely to have access to basic amenities, and these definitely would affect their studying habit during holiday or when circumstance warrants that they are kept out of school for a longer than expected period of time.

Students housing serves as ground for socialization and place of learning. Thus, students housing plays some significant roles on students'

psychosocial wellbeing, health, comfort and safety. In line with this assertion, Dervarics & O'Brien, 2011; Choi (2005) insisted that the interactional effects of all the aforementioned, in one way or the other influence students' academic success. It is therefore imperative that students, especially those studying for college degree or diploma deserve a conducive and enabling environment in order to get the best out of them, academic wise. The implications for the denial with adequate and quality hostel facilities were evident in the quality of certificate earned, and the inability of many of these fresh graduates to perform properly in their places of works (Daniel, 2016; Dervarics & O'Brien, 2011; Conley, 1999). Studies have shown that the provision of conducive, operational and a comforting living arrangement for students of higher institutions was mandatory (Ekundayo, 2015; Adunola, 2011; Kuh, Kinzie, Schuh, Whitt, 2010). These scholars maintained that the provision of adequate student hostels with functional facilities played significant contributive roles in the development of a sound state of mind in the students. It was argued by Daniel, (2016) and Kuh *et al.,*(2010) that the provision of housing for tertiary institution students should beyond just trying to meet students physical safety in a confined place; also attention should be made for the promotion of the health welling, social and behavioural steadiness of students.

According to EDUCAUSE (2009), students housing remained one of the key indicators used in the measurement of tertiary education standard. In Nigeria, the poor state of students' hostel core facilities were so pathetic that it was inhumane to have students confined in such dilapidating structures (Daniel, 2016; Okeyim *et al.,* 2013). The condition of core facilities in most of the public tertiary institutions in Nigeria remained one of the major challenges that were hindering effective learning among university students in the country (Okeyim *et al.,* 2013; Adunola, 2011). The unjustifiable state of students hostel in the country's universities were negatively heightened with the continuous increase in the number of new students that are admitted on yearly bases in the nation's public universities. Agreeably, many of the public universities in Nigeria were faced with the challenges of shortage of student housing, especially for the newly admitted students (Adunola, 2011). Also, Daniel (2016) and Ekundayo (2015) maintained that provision of adequate and an up-to-date hostels with functional core, enabling and supportive facilities (which are also affordable) would enhance effective learning thereby promoting academic excellence among university students in the country. In line with this assertion, the enhancement of qualitative university education may only be achieved if the government and other stakeholders in the educational sector put university funding on their priority list.

Therefore, adequate provision of affordable, conducive, comforting students' housing for at least three in every four university students in Nigeria is indeed an uphill task that cannot be handled by universities' administrators

in the country. More so, with the persistent but failed strikes embarked upon by the country's university academic staff union, with their agitations for more funding of the country's public universities. It is imperative that the upgrading of public universities in the county to globally competing tertiary institution might not be on the priority list of the Nigerian government. It is therefore expedient that this study investigate the contributive influence of parental prominence and student housing on academic success among final year students of selected public universities in Southwest Nigeria.

1.2 Statement of Problem

The role played by financial, monetary and parental supports could undermine the extent of achieving academic success among university students. Grave (2010) maintained that students that allotted lesser time to their studies were less likely to perform exceedingly well in their studies compared with those that had substantive time allotted to studies, especially on daily basis. In line with Grave (2010) observation, Kolawole & Boluwatife, (2016) and Nimako & Bondinuba (2013) maintained that students with poor background or those whose educational needs were less catered for, and consequently performed poorly in their studies.

According to the California State University, brochure guide on academic excellence; referenced *"the key to your future";* academic excellence goes beyond graduating with outstanding grades from college rather it is an embodiment of maximum development of student's intellectual capabilities and skills in their preparatory towards effective service delivery in their future life endeavours, especially as required of them in their field of specialization. The implications of poor academic standard as a result of financial and economic incapacitation is manifestation of the "unemployable" cry of university graduates by many employers of labour in Nigeria (Daniel, 2016; Arum & Roksa, 2011; Yilmaz-soylu & Akkoyunlu, 2009; David, 1996).

Another bottleneck to academic success in Nigeria was the inadequacy and the poor quality of student housing across public universities in the country (Adama *et al.*, 2018; Akinpelu, 2015; Ekundayo, 2015). Student housing is yet to receive adequate attention as expected of the government and other major stakeholders in the educational sector. The poor attitude of the government towards the proper funding of education in Nigeria have been attributed to prioritising of larger proportion of the country's resources to other sectors of the economy which were found more pressing (Memory & Memory, 2013). Also, the less attention given to the urgent needs of the educational sector in the country has been allied to the mismanagement of the country's scare resources (Memory & Memory, 2013).

In spite of this precarious situations, there is a dearth of studies that have explored the contributory effects of parental prominence, and the

deteriorating condition of student housing facilities in the nation's public universities. The attention of contemporary studies addressing the state of academic decadence in Nigeria has extensively been focused on effectiveness of teachers, shortage of teaching materials, use of obsolete facilities and administrative lapses (Adamu *et al.,* 2018; Oviawe, 2016; Owolabi, 2015; Ajayi, Nnwosu & Ajani, 2015). Studies addressing academic performance across universities in Nigeria although have explored student housing as a predictor of academic success, these studies have limited their studies' focus to housing shortage. Therefore, the aspect of student housing facility quality is yet to be intensively investigated. Also, these studies have not addressed the association between parental prominence and academic success. Hence, this study addresses this gap by raising the question: to what extent does parental prominence and student housing influence attainment of academic success among final year students in public universities in Southwest, Nigeria.

1.3 Objectives of the Study

The broad objective of this study is to investigate the combined significance influence of parental prominence and student housing qualities on academic success among undergraduates of selected public universities in Southwest, Nigeria.

The specific objectives of the study are to:

1. Investigative the association between parental prominence and academic success;
2. Investigate the association between student housing and academic success.
3. Assess the quality of student housing facilities.

1.4 Theoretical Focus: This study is underpinned by the *social cognitive theory* by Ludwig

Von Bertalanffy (1940's) and the *system theory* by Albert Bandura (1986)

1.4.1 The System Theory

The system theory proposed by Ludwig Von Bertalanffy (1940's) and furthered by Ross Ashby (1956) postulates higher institutions of learning as social system whereby students and workforce are identified as integrated interdependent units which consist of management of such parts as curriculum, student personnel, staff personnel, funds, school machineries and school community relations (Ndoma; Rugimbana and Nwankwo, 2003). The system theory is found to be in concomitant with the identified precepts, because it addresses student in higher institution of learning as an integral part and parcel of the learning institution; also, it identifies the provision of student

housing to university scholars as a vital capacity of universities' administration and management. Imperatively, this is an indication that dearth of student housing and poor maintenance of the existing ones may jeopardize the efficient operational of the entire system. Academic failure, as a result of inadequate provision of student housing, and poor maintenance of the available ones may also affect institution's global ranking (Hazelkorn, 2015). Hence, the system theory is relevant to this study for the reason that provision of student hostel is an integral unit of higher institutions of learning.

1.4.2 The Social Cognitive Theory

Unlike, the system theory, the social cognitive theory, propounded by Albert Bandura (1986) postulates that learning emerges in a social context with a dynamic and mutual interaction of the persons, environment, and behaviour. The social cognitive theory identifies human behavioural attitude in relation to the effects susceptible by individual factors, conservational factors, and persistent interaction among people in their community. This theory is found to be relevant to the actualisation of the objectives of this study. Thus, parental prominence plays an undeniable role in the academic success of a child (Alokan, Osakinle & Onijingin, 2013). For instance, students whose parents are not able to meet-up with their academic economic and financial needs are often forced to seek for alternative means in order to finance their education themselves. Consequently, no matter the academic quality predisposed to be offered by the institutions attended by such less privileged students, their academic success may be jeopardized due to parental incapacity in meeting-up with their academic economic and financial needs. Also, as propounded by Albert Bandura in his theory, human behaviour is assumed to be shaped as a result of interactions with people in his environment, and this begins with his immediate family members (parents inclusive). Thus, parental prominence, which expanse from economic situation to family structure goes a long way in providing for the general wellbeing of their family members – these, obviously include meeting-up with their children's schooling needs. Therefore, attainment of academic success by university students, particularly at the undergraduate level could be significantly influenced by family structure (polygamy/monogamy), household wealth, parental level of educational attainment, place of residence and family size.

Hence, this study is underpinned by the system theory and the social cognitive theory because these theories address student in higher institution of learning as an integral part and parcel of the learning institution, provision of student housing to university scholars is identified as a vital capacity of universities' administration and management; and that that learning emerges in a social context with a dynamic and mutual interaction of the persons, environment, and behaviour.
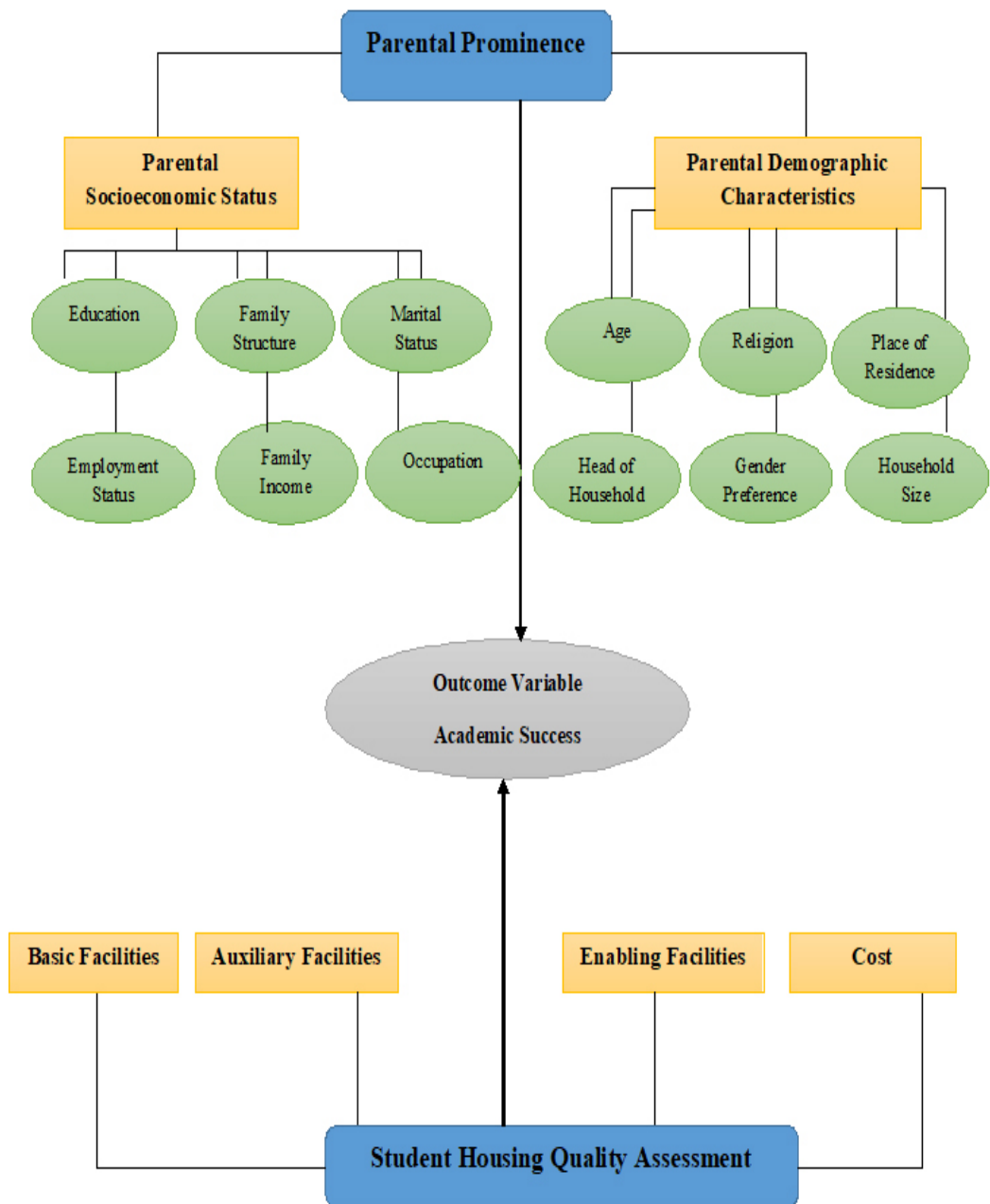
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Figure 1: Conceptual model linking parental prominence and student housing to academic success

2.1 Methods
2.2 Research Design, Data Sources and Sample Design

This study is a cross-sectional survey involving the usage of quantitative technique to investigate the influence of parental prominence and students' accommodation on academic success among students of selected public universities in Southwest Nigeria. Structured questionnaire was developed in line with the objectives of the study; and administered to final year undergraduate students of Obafemi Awolowo University, Ile-Ife, Osun State (OAU), Olabisi Onabanjo University, Ago-Iwoye, Ogun State (OOU) and Adekunle Ajasin University, Akungba, Ondo State (AAUA). The selection of respondents was purposive, and not based on age, mode of accommodation (on-campus and off-campus) or gender differentials. The total sample size was four hundred and twenty-six (426). The study adopted the multi-stage sampling method in the selection of study sample. At the first stage, the stratification of eligible population was done by the grouping of final year students into existing faculties in the study locations. The second stage followed with the grouping of final year students into various departments of learning; then followed by the purposive administering of the research instrument to identified population. One-hundred and fifty (150) copies questionnaire were administered to legible respondents in each of the three selected universities respectively. One hundred forty-eight (148) were copies of questionnaire retrieved from the OAU respondents; one hundred and forty-two (142) from OOU respondents; and one-hundred and thirty-six (136) of the administered copies of questionnaire were retrieved from AAUA respondents. Therefore, the response rates were 98.7% in OAU, 94.7% and 90.7% in AAUA.

2.3 Research Variables

The response variable is academic success. The concept "academic success" as operationalised in this study is restricted to the cumulative grade points currently amassed by students. Thus, academic success was estimated based on the ordinal categorisation of academic grade points as approved by the Nigeria Universities Commission – ranging from the lowest (1.0 – 1.49) to the highest (4.5 – 5.0) obtainable grade points. Students, with at least 3.5 cumulative grade point were considered in this study to have attained outstanding academic success; those whose cumulative grade points ranged from 2.40 to 3.49 were regarded to have only attained a satisfactory academic success; while students whose cumulative grade points ranged from 1.0 to 2.39 were regarded in this study to have attained weak academic success. Students whose academic works are not graded on grade points were excluded from this study; hence, medical students that fall into this category were not inclusive in this study. The explanatory variables are parental prominence and

student housing. Parental prominence was measured by parental socioeconomic characteristics (level of education, family structure, marital status, place of residence, family income – combined income, occupation type and employment status) and parental demographic characteristics (head of household, household size, age, religion affiliation, gender preference in relation to meeting child's education needs and place of residence).

Parental socioeconomic characteristics was further categorised into parental socioeconomic status (high socioeconomic status and low socioeconomic status) by adopting the component analysis technique. Parents (father and mother) with at least high school education, gainfully employed, living together in the same household and with at least US$2.00 per each member of their household were classified as parents with high socioeconomic status irrespective of their family structure and other wise if these criteria were not met.. Respondent's parental prominence information was captured for each parent (mother/father) separately but jointly for family structure, marital status, religion and place of residence. Student housing was captured based on the quality and availability of basic facilities (bedroom facilities, bathroom facilities, electricity supply, water supply, toilet facilities and physical environment assessment), auxiliary facilities (buttery service, garage facility, common room, storage facilities and sporting facilities), enabling facilities (access to transportation, distance to lectures, kitchenette, reading/studying room, security, level of privacy and existing rules and regulations) and cost of facilities (accommodation fees, transportation fees, cost of supporting facilities – water, electricity, security). Student housing facilities were assessed regardless of mode of accommodation (off-campus/on-campus). The overall assessment of housing facilities was carried out in order to establish the quality of student housing in the three selected institutions.

2.3 Data Analysis

Data were collected through epi-data and exported to the SPSS (SPSS version 22 for Windows, SPSS Inc., Chicago IL). The collected data were sorted, cleaned, and then exported to Stata version 14. All statistical analysis were performed with the Stata version 14. The first level of analysis was performed using the appropriate descriptive statistics (percentage distribution, and mean/standard deviation scores for count variables). The overall weighted scores for the assessed student housing facility qualities were derived by the adoption of component score analysis. The one-way anova statistic was used to explain the level of contribution by each of the explanatory variables (Adjusted-R^2) and the F-statistic was also calculated to establish the level of significance between the response and explanatory variables of the study. At the multivariate level of analysis, the rank-ordered logistic regression was employed. Thus, the rank ordered-logistic regression and ANOVA was

applied using Stata 14. Respondents' current mode of accommodation (on-campus/off-campus hostel) was used as the "group variable for the rank-ordered analysis; the unit of analysis for each of the indicators used in this study was a final year student who was living with at least one of his/her biological parent. The confidence level for this study was fixed at 95%. Therefore, the results of the study if found to be < 0.05 was considered to be significantly associated.

2.4 Results
2.4.1 Bio-data information of Respondents

The results of the study by some basic personal information of the respondents as indicated in Table 1 showed that the mean age of the respondents was 23 years (23±1.92). Also the results showed that at least two-thirds (66.9%) of the respondents were in age group 20-24 years; while nearly two-third (65.3%) of the students were living in an off-campus accommodation. The distribution of the respondents by their institutions of learning showed that one (33.3%) in every three of the respondents was a student of OOU, 34.7% were students of OAU and 31.9% were students of AAUA. The results further showed that about half (50.5%) of the students harboured at least 3 squatters in their rooms currently. More so, the results showed that on the average 3 squatters (3.21±0892) were harboured by a respondent in the current academic session. More than half (55.4%) of the respondents spent at least a year as a squatter, with an average year spent as squatters approximately put at 2 years (1.96±0.668). Results by respondents current faculty of learning showed that about a quarter (24.7%) of the respondents were students in the faculties of Sciences and Environmental Design while nearly one-fifth (19.5%) of the respondents were students in the faculties of Technology and Agriculture. Results by respondents current CGPA showed that very few of the students were in the lower (2.1%) and upper (3.3%) classifications. The results further show that about 47% of the respondents currently with a CGPA of more than 2.39 but less than 3.50 grade point. The mean grade point for the distribution was 3.34 on a scale of 5.0 (3.34±0.761). In line with the aforementioned, less than half (43.2%) of the respondents had an outstanding academic performance. The outcomes of the study also showed that more than two-third (69%) of the respondents never received any financial supports in course of their studies. On the other hand, a quarter (25.4%) of the respondents had benefited from bursaries while less than 4% had received scholarships or grants.

2.4.2. Parental Prominence Characteristics of the Respondents

The parental prominence characteristics by demographic variables as indicated in Table 2a showed that majority (82.2%) of the respondents came

from male headed households. Also, the outcomes of the study showed that more than four-fifth (82.4%) of the respondents reported that their fathers gave equal right to their educational needs irrespective of their gender or sibling gender. Similarly, the results showed that majority (84.5%) of the respondents reported that their mothers were not bias in giving educational supports to them or meeting their siblings educational needs irrespective of gender difference. Nearly three (59.6%) in every five respondents were from Christian homes. The parental prominence distribution of the respondents by age show that father's and mother's age were 55 years (55±6.712) and 52 years (52±6.552) respectively. The results of the study by household size showed that a significant number (85.7%) of the respondents were from large household with a minimum size of 5 and maximum of 9 household members. The average family size per household was 7 (7±1.802).

Also, the distribution of the respondents by their parental socioeconomic characteristics as indicated in Table 2b showed that nearly three-quarters (74.6%) of the respondents' parents were living in the urban settlements. About 40% of the respondents' fathers had no tertiary education with 6.6% having no form of formal education at all. Equally, about one-third (32.4%) of the respondents' mothers had no tertiary education, 8.9% with no formal education at all. The results revealed that more of the respondents' fathers (84.5%) were gainfully employed at the moment than their mothers (80.5%). Results by family structure and parental marital status showed that slightly more than half (52.6%) of the respondents from monogamous home, and 28.9% of the respondents were not living together with both of their parents – 8.9% from broken homes, 3.3% have lost either of their parents and about 17% were living with their parents though not divorced, nevertheless not living under the same roof. The outcomes of the study by family earned income showed that less than a quarter (22.1%) of the respondents came from a family with a monthly income of less than US$300 per month, with two-thirds (66.7%) of the respondents' family combined (father and mother) standing in the range of US$300 to US$599 on monthly basis. We observed from the findings of our study that approximately 3% of the respondents' parents earned at least US$900 on monthly basis while the average family income earned per month was put at US$440.05 (440.05±229.797). Considering the World Bank categorisation, at least one (11.7%) in every ten of the respondents was from home living in abject poverty (< US$1 per household member) while approximately 45% of the respondents were from homes living below the poverty level (< US$2 per household member). It was evident from the results of this study that the least income earned by a household was US$0.60 while the highest income earned per household member was US$11.57. Our results further show that the average income per household member was US$2.15 (2.15±1.315). It could also be deduced from

the study's findings that about 60% of the parents of the respondents were of low socioeconomic status.

2.4.3. Assessments of Students Housing Quality

The distribution of the respondents by bedroom facilities as indicated in Table 3 showed that two-thirds (66.7%) of the students reported that their bedroom facilities were functional but inadequately provided; and one-third (33.1%) lamented that their bathroom facilities were not only inadequate but also not functioning well. In terms of electricity supply, 6.8% of the students reported that they had no access to public electricity supply in their accommodation while less than 20% of the students had access to adequate and functional power supply. The results on provision of basic facilities also show that about 30% of the students had no access to adequate and functional piped-borne water in their hostels and 5.9% of the students had no access to piped-borne water supply at all. Only, 8.9% of the respondents had access to adequate and functional toilet facilities with 2.1% of the students having no access to bathroom facilities at all in their hostels. The results by the aggregate assessment of basic facilities in student hostels showed that less than one-tenth (7%) of the students were provided with adequate and functional basic facilities across the selected higher institutions of learning. Results by assessment of student housing enabling facilities showed that about 60% of the respondents had no access to functional and adequate transportation and more than half (51.9%) were not provided with adequate and functional reading room in their hostels. Furthermore, the results showed that only 2.6% of the respondents had access to kitchenette facilities in their hostels. About one-quarter (25.6%) of the students reported that they were not secured in the hostels and approximately 2% admitted that the existing rules and regulations in their hostels were adequate and functional. Results by aggregate assessment of enabling facilities showed that significant number (47.4%) of the students had no access to functional and adequate enabling housing facilities in their various hostels.

As indicated in Table 3, the distribution of the respondents by assessment of housing auxiliary facility quality showed that more than a one-quarter (27.9%) of the students were residence of accommodations with no garage facility. About half (52.8%) of the students were provided with functional but inadequate buttery facilities. The results further showed that less than 1.5% of the students had access to adequate and functional common rooms in their hostels and approximately one-quarter of the students had no access to sporting facilities in their hostels. The outcomes of the study showed that an insignificant (2.1%) proportion of the students were provided with adequate and functional storage facility in their hostels. The aggregate score by assessment of student housing auxiliary facilities shows that more than half

(52.6%) of the respondents had no access to adequate and functional auxiliary facility in their hostels. Results by assessment of cost of accommodation showed that about two-thirds (63.9%) of the students were of the opinion that the cost of student hostels was unaffordable though admitted that student accommodation was adequately provided and 6.6% of the students admitted that the cost of transportation was adequate and that transport service in their schools was adequate. The results also showed that more than one-quarter (28.2%) of the students stated that the cost of enabling facilities in their institution was affordable but insisted that enabling facilities were not adequately provided in their hostels. The outcomes of the study by the aggregate assessment of student accommodation showed that about 30% of the students could not afford the cost of accommodation. Results by overall assessment of students housing quality showed that more than half (52.6%) of the students complained of the poor quality of their hostel while less than 3% admitted that the quality of their current accommodation was good.

2.4.4. Results of Analysis of Variance showing the Relationship between Student Housing Quality and Parental Socioeconomic Status/Financial Supports Received by Students

As indicated in Table 4, the outcomes of the analysis of variance showed that there was a significant relationship between student housing auxiliary facility quality and academic success (f-test=4.33; p=0.013). Also, the results showed that academic success was significantly influenced by cost of accommodation (f-test=5.06; p=0.007). Furthermore, the results showed that the overall assessment of housing quality and academic success were significantly associated (f-test= 4.73; p=0.012). Similarly, financial supports and academic success were found to be significantly associated (f-test=9.52; p=0.000). More so, the outcomes of the study showed that student housing quality and financial supports received by students contributed about 9% to their academic success.

2.4.5. Results of Rank-Ordered Logistic Regression Showing Association between Parental Prominence/Student Housing Quality and Academic Success

As shown in Table 5 below, the results of the likelihood ratio chi-square of 62.54 with a p-value of 0.000 is an indication that our model as a whole is statistically significant as compared to the null model with no predictor. The results of the study further showed that bedroom (z=2.34; p=0.019) and bathroom (z=2.23; p=0.026) facilities were statistically significant with academic performance. Electricity supply was found to be inversely and significantly associated with academic success (z=-2.74; p=0.002). From these results, we expect a 0.43 increase in the log odds of

academic success where students were provided with adequate and functional bedroom facilities in their hostels, controlling for other variables in the model. Also, we expect a 0.37 increase in the log odds of academic success where students were provided with adequate and functional bathroom facilities in their hostels, controlling for other variables in the model. Likewise, we expect a 0.13 increase in the log odds of academic success where students were provided with constant and adequate power supply in their hostels, controlling for other variables in the model. More so, the results show that distance to lectures and academic success were significantly associated (z=-2.21; p=0.022). The results likewise showed that reading room (z=-2.42; p=0.016), garage (z=-2.68; p=0.007) and common room (z=-2.15; p=0.031) were inversely and statistically significant with academic success. It was evident from the study that sporting facilities and academic success were significantly associated (z=3.58; p=0.000); the result indicates that we expect 0.50 increase in the log odds of academic success where students were provided with adequate and functional sporting facilities in their hostels, controlling for other variables in the model. Cost of accommodation was found to be significantly associated with academic success (z=-2.61; p=0.009). Also, the results show that aggregate enabling facilities and academic success were statistically significant (z=2.55; p=0.011). Thus, we expect a 0.46 increase in the log odds of academic success where students were provided with adequate and functional basic facilities in their hostels, controlling for other variables in the model.

The results of the study by parental prominence and academic success as indicated in Table 5 showed that there was an inverse and significant association between father's gender preference towards education and academic success (z=-2.08; p=0.037). Also, mother's employment status was found to be significant associated with academic success (z=1.94; p=0.039). Mother's occupation type and academic success were found to be significantly associated (z=2.10; p=0.036). Likewise, marital status was established in this study to be inversely and statistically significant with academic success (z=-2.33; p=0.023). The results also showed that we expect a 0.46 in the log odds of academic success where a student's mother was gainfully employed controlling for other variables in the model.

Table 1: Percent Distribution of Respondents by Bio-data Profile

Variable	Students' Bio-Data Profile	
	Frequency (N=426)	%
Names of Selected Universities		
Adekunle Ajasin University (AAUA)	136	31.9
Obafemi Awolowo University (OAU)	148	34.7
Olabisi Onabanjo University (OOU)	142	33.3
Current Faculty in Institution of Learning		
Arts/Education	120	28.2

Management/Social Sciences	118	27.7
Sciences/Environmental Design	105	24.7
Technology/Agriculture	83	19.5
Age		
< 20 years	43	10.1
20-24 years	285	66.9
25-29 years	75	17.6
30 years & above	23	5.4
Mean age & SD (min=18; max=36)	*23±3.192*	
Gender		
Male	222	52.1
Female	204	47.9
Mode of Accommodation in the current Session		
School hostel (on-campus)	148	34.7
Private hostel (off-campus)	278	65.3
Number of Squatters in your Current Room		
0	10	2.4
1	103	24.2
2	98	23.0
3 or more	215	50.5
Mean & SD for squatters per room (min=0; max=4)	*3.21±0.892*	
Years spent as a Squatter		
< 1 year	103	24.2
1 years	236	55.4
2 years & more	87	20.4
Mean & SD of years spent as squatters (min=1; max=3)	*1.96±0.668*	
Current CGPA		
< 1.5	9	2.1
1.5-2.39	34	7.9
2.4-3.49	199	46.7
3.5-4.49	170	39.9
4.5 & above	14	3.3
Mean & SD scores of CGPA (min=1; max=5)	*3.34±0.761*	
Academic Success		
Outstanding	184 (43.2)	
Weak	242 (56.8)	
Financial Supports (Scholarship/Grant/ Bursary)		
Received no supports	294	69.0
Received bursary	108	25.4
Received scholarship/grants	16	3.8
Received bursary and scholarship/grant	8	1.9

Source: *Authors' Survey Report 2019;* **Note** *(CGPA= Cumulative Grade Points Average)*

Table 2a: Percent Distribution of Respondents by Parental Prominence Characteristics
(Demographic Variables)

Variable	Parental Selected Demographic Characteristics	
	Frequency (N=426)	%
Head of Household		
Male	350	82.2
female	76	17.8
Father's Gender Preference towards Child's Education		
Preference given to male child	59	13.9
Preference given to female child	16	3.8
Equal right irrespective of gender difference	351	82.4
Mother's Gender Preference towards Child's Education		
Preference given to male child	40	9.4
Preference given to female child	27	6.3
Equal right irrespective of gender difference	359	84.3
Religious Affiliation (Head of Household)		
Christianity	254	59.6
Islam	150	35.2
Traditional/Others	22	5.2
Father's Age		
36-45 years	17	4.0
46-55 years	206	48.4
56-65 years	169	39.7
> 65 years	34	8.0
Mean age of fathers & SD (min=44; max=72)	*55±6.712*	
Mother's Age		
36-45 years	95	22.3
46-55 years	212	49.8
56-65 years	114	26.8
> 65 years	5	1.2
Mean age of mothers & SD (min=37; max=68)	*52±6.552*	
Household Size		
< 5 household members	22	5.2
5-9 household members	365	85.7
10 or more	39	9.2
Mean household size & SD (min=3; max=13)	*7±1.802*	

Source: *Authors' Survey Report 2019*

Table 2b: Percent Distribution of Respondents by Parental Prominence Characteristics
(Socioeconomic Variables)

Variable	Parental Socioeconomic Characteristics	
	Frequency (N=426)	**%**
Place of Residence (Head of Household)		
Rural	108	25.4
Urban	318	74.6
Father's Level of Education		
No formal education	28	6.6
Primary	41	9.6
Secondary	189	44.4
Tertiary	168	39.4
Mother's Level of Education		
No formal education	36	8.9
Primary	8	1.9
Secondary	242	56.8
Tertiary	138	32.4
Father's Current Employment Status		
Employed	359	84.3
Unemployed	67	15.7
Mother's Current Employment Status		
Employed	343	80.5
Unemployed	83	19.5
Family Structure		
Monogamy	224	52.6
Polygamy	202	47.4
Parental Marital Status		
Married (living together)	303	71.1
Married (living separately)	71	16.7
Divorced (single parenthood)	38	8.9
At most one parent is not alive	14	3.3
Family income (monthly)		
<US$300	94	22.1
US$300-US$599	284	66.7
US$600-US$899	35	8.2
US$900 & above	13	3.1
Mean income & SD (min=US$166.67; max=US$2083.33)	***440.05±229.797***	
Income Received by each Household Member		
< US$1	50	11.7
US$1.99-US$1.99	191	44.8
US$2 or more	185	43.4
Mean income received by each household member & SD (min=US$0.60; max= US$11.57)	***2.15±1.315***	
Parental Socioeconomic Status		
Low	256	60.1
High	170	39.9

Source: *Authors' Survey Report 2019*

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Table 3: Percent Distribution of Respondents by Assessment of Students' Housing Quality

Variable	Assessment of Student Housing Basic Facility Quality (N=426)			
Basic facilities	**Adequate/ Functional (%)**	**Functional/ Inadequate (%)**	**Inadequate/ Not-functional (%)**	**Not Available (%)**
Bedroom facilities	50(11.7)	284(66.7)	90(21.1)	2(0.5)
Bathroom facilities	32(7.5)	244(57.3)	141(33.1)	9(2.1)
Electricity supply (public)	75(17.6)	196(46.0)	126(29.6)	29(6.8)
Piped borne water	27(6.4)	247(57.9)	127(29.8)	25(5.9)
Toilet facility	38(8.9)	226(53.1)	162(38.0)	0(0.0)
Physical environment	32(7.5)	235(55.2)	159(37.3)	0(0.0)
Variable	**Aggregate Assessment of Student Housing Basic Facility Quality**			
	Functional/ Adequate (%)	**Functional/ Inadequate (%)**	**Inadequate/Not Functional (%)**	
Basic facility Quality	30(7.0)	166(39.0)	230(54.0)	
Variable	**Assessment of Student Housing Enabling Facility Quality**			
Enabling Facilities	**Adequate/ Functional (%)**	**Functional/ Inadequate (%)**	**Inadequate/ Not-functional (%)**	**Not Available (%)**
Transportation (campus shuttle)	27(6.3)	253(59.39)	131(30.8)	15(3.5)
Kitchenette	11(2.6)	263(61.7)	104(24.4)	48(11.3)
Reading room	16(3.8)	221(51.9)	129(30.3)	60(14.1)
Security	27(6.3)	270(63.4)	109(25.6)	20(4.7)
Existing Rules and Regulations	9(2.1)	289(67.8)	95(22.3)	33(7.8)
Variable	**Near/Not a Problem**		**Far**	**Very far**
Distance to Lectures	19(4.5)		265(62.2)	142(33.3)
Variable	**Had Privacy**	**Had Privacy**	**Had Privacy**	
Access to Privacy in Hostel	33(7.8)	263(61.7)	130(30.5)	
Variable	**Aggregate Assessment of Student Housing Enabling Facility Quality**			
	Functional/ Adequate (%)	**Functional/ Inadequate (%)**	**Inadequate/Not Functional (%)**	
Enabling facility Quality	38(8.9)	186(43.7)	202(47.4)	
Variable	**Assessment of Student Housing Auxiliary Facility Quality**			
Housing Auxiliary Facilities	**Adequate/ Functional (%)**	**Functional/ Inadequate (%)**	**Inadequate/ Not-functional (%)**	**Not Available (%)**
Garage	5(1.2)	198(46.5)	104(24.4)	119(27.9)
Buttery	7(1.5)	225(52.8)	117(27.5)	77(18.1)
Common room	6(1.4)	180(42.3)	138(32.4)	102(23.9)
Sporting Facility	9(2.1)	165(38.7)	140(32.9)	112(26.3)
Storage facility	9(2.1)	172(40.4)	154(36.2)	91(21.4)
Variable	**Aggregate Assessment of Student Housing Auxiliary Facility Quality**			
	Functional/ Adequate (%)	**Functional/ Inadequate (%)**	**Inadequate/Not Functional (%)**	
Auxiliary Facility Quality	6(1.4)	196(46.0)	224(52.6)	
Variable	**Assessment of Cost of Student Accommodation**			
Cost	**Affordable/ Adequate (%)**	**Unaffordable/ Adequate (%)**	**Affordable/ Inadequate (%)**	**Unaffordable/ Inadequate (%)**

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Cost of Accommodation	38(8.9)	272(63.9)	105(24.7)	11(2.6)
Cost of Transportation	28(6.6)	248(58.2)	136(31.9)	14(3.3)
Cost of Enabling facilities	48(11.3)	240(56.3)	120(28.2)	18(4.2)
Variable	**Aggregate Assessment of Cost of Student Accommodation**			
	Affordable (%)		**Unaffordable (%)**	
Cost of Accommodation	302(70.9)		124(29.1)	
Variable	**Overall Assessment of Student Housing Quality**			
	Good (%)	Fair (%)	Poor (%)	
Housing Quality	12 (2.8)	190(44.6)	224(52.6)	

Source: Authors' Survey Report 2019; Physical environment (e.g. drainage & waste disposal)

Table 4: Results of the One-way ANOVA between Academic Success and Student Housing Quality/Parental Socioeconomic Status/Financial Supports Received by Students

Source	Partial SS	df	MS	F-statistic	Prob. > F
Model	28.619	15	1.908	3.60	0.000
Basic Facility	1.764	2	0.882	2.46	0.086
Enabling Facility	2.914	2	1.457	2.75	0.065
Auxiliary Facility	4.594	2	2.297	4.33	0.013*
Cost of Accommodation	5.367	2	2.684	5.06	0.007**
Overall Assessment of Housing Quality	2.434	2	1.217	4.73	0.012*
Parental Socioeconomic Status	0.131	1	0.131	0.25	0.619
Financial Supports	15.125	3	5.048	9.52	0.000***
Residual	**217.344**	**410**	**0.530**		
Total	245.962	425	0.579		
Number of Obs	426				
Adjusted -R²	**0.086**				

Note:*Significant at p<0.05, **Significant at p<0.01, ***Significant at p<0.001; Obs = observation;
df= degree of freedom; SS =sum of square; MS = mean of sums

Table 5: Rank-ordered Logistic Regression Results Showing Association between Parental Prominence/Student Housing Quality and Academic Success

Variable	Coefficient	Std. Err.	Z	P>|z|	95% C.I.
Housing Facilities					
Bedroom	0.429	0.183	2.34	0.019*	0.070 0.789
Bathroom	0.368	0.165	2.23	0.026*	0.045 0.691
Electricity supply	0.230	0.132	-2.74	0.002**	-0.030 0.489

Water supply	-0.145	0.170	-0.85	0.393	-0.478 0.187
Toilet	-0.223	0.165	-1.36	0.175	-0.546 0.099
Physical environment	-0.223	0.194	-0.61	0.542	-0.499 0.262
Transportation	0.069	0.157	0.44	0.658	-0.239 0.378
Distance to lectures	-0.298	0.171	-2.31	0.022*	-0.633 0.038
Kitchenette	-0.053	0.126	-0.42	0.673	-0.300 0.194
Reading room	-0.300	0.124	-2.42	0.016*	-0.543 - 0.570
Privacy	-0.014	0.157	-0.09	0.928	-0.322 0.294
Security	0.022	0.148	0.15	0.882	-0.268 0.311
Rules and Regulations	0.040	0.148	0.27	0.789	-0.251 0.331
Garage	-0.336	0.125	-2.68	0.007**	-0.581 - 0.090
Buttery	0.172	0.151	1.14	0.254	-0.124 0.468
Common room	-0.370	0.172	-2.15	0.031*	-0.706 - 0.033
Sporting facilities	0.495	0.138	3.58	0.000***	-0.224 0.767
Storage	0.042	0.130	0.32	0.745	-0.213 0.297
Cost of accommodation	-0.376	0.144	-2.61	0.009**	-0.658 - 0.094
Cost of transportation	0.138	0.148	0.94	0.350	-0.151 0.428
Cost of enabling facilities (water, electricity, etc.)	0.109	0.112	0.97	0.332	-0.111 0.328
Aggregate basic facilities	-0.254	0.160	-1.58	0.113	-0.569 0.060
Aggregate enabling facilities	0.176	0.168	1.05	0.295	-0.153 0.506
Aggregate auxiliary facilities	0.461	0.180	2.55	0.011*	0.107 0.814
Aggregate cost	0.020	0.144	0.14	0.892	-0.263 0.302
Overall housing quality	-0.026	0.290	-0.09	0.928	-0.595 0.542
Parental prominence					
Head of household	-0.061	0.200	-0.30	0.762	-0.452 0.331

Family structure	-0.148	0.242	-0.61	0.541	-0.623 0.327
Household size	0.002	0.066	0.03	0.975	-0.126 0.131
Father's gender preference	-0.217	0.109	-2.08	0.037*	-0.431 - 0.003
Father's educational attainment	0.121	0.117	1.03	0.301	-0.108 0.350
Mother's educational attainment	-0.062	0.115	-0.54	0.587	-0.288 0.163
Father's employment status	0.278	0.325	0.86	0.392	-0.358 0.915
Mother's employment status	0.460	0.262	1.94	0.039*	-0.053 0.973
Father's occupation type	0.029	0.068	0.43	0.671	-0.104 0.161
Mother's occupation type	0.125	0.059	2.10	0.036*	0.008 0.242
Marital status	-0.235	0.101	-2.33	0.020*	-0.433 - 0.038
Parental socioeconomic status	-0.09	0.220	-0.39	0.695	-0.518 0.346
Log Likelihood = -440.339					
LRC (Chi 2) = 62.54					
Prob. > Chi 2 =0.000					
No of Observation = 426					
No of group = 2					

Note:*Significant at p<0.05, **Significant at p<0.01, ***Significant at p<0.001

3.1 Discussion of Findings

The predictive factors of academic success, particularly among undergraduates across public universities in Nigeria range from teachers' quality, attitude towards work, student hostel, students' attitude towards their studies, extent of government funding to environmental but not limited to societal impediments. Evidence from our study clearly revealed that parental demographic and socioeconomic status have significant influence on undergraduates' academic success in southwest universities. We discovered that the extent of academic success attained by undergraduate students in southwest public universities in Nigeria to a very large extent was influenced by the employment status of their mothers. In course of this study, we also discovered that the parental marital status of undergraduate students in southwest universities did influence the level of academic success attained by these students. We also observed from the findings of our study that father's gender preference had significant influence on student academic success. Our study's findings were partially in line Alokan, Osakinle & Onijingin (2013) that identified parental educational background along with other key factors

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are certainly predictors of students' academic performance. Also, in line with our study's outcome, Olatunji *et al.,* (2016) identified parental supports in kinds and cash as one of the factors influencing undergraduate students' academic performance, though in construction related disciplines. More so, we discovered that while one (20.4%) in every five of the respondents had lived at least a year as a squatter, more than half (56.8%) of the respondents did not attain an outstanding result in their studies. Our findings here could be allied to the findings by Oyetunji & Abidoye (2016) who argued that the type of accommodation that students of tertiary institution lived in was majorly determined by how much financial supports they got, as well as the place of location of the institution and cost of acquiring such accommodation.

Our findings also established the existence of direct and significant link between academic success and financial supports that were made available to undergraduate students in the universities. Likewise, our findings were in support of Dervarics & O'Brien (2011) that maintained that the contributions of parents could not be discarded in view of how success a student could attain in his or her academic endeavour. It is evidence from our study outcomes that type and quality of student housing had influence on their attainment of academic success. We discovered that more than half of the students (54%) neither had access to functional basic student housing facility nor adequately provided with these amenities. It was also revealing that less than 9% of the respondents was adequately provided with functional housing enabling facilities across their various hostels. It was also evident from our studies that less than 2% of the respondents were provided with adequate and functional housing supportive facilities while about 30% of the students could not afford housing costs. In line with these, we discovered that attainment of academic success among undergraduate students was influenced by the extent and quality of housing auxiliary facilities that were made available to them. The findings of our study established a line of significant association between cost of accommodation and attainment of academic success by the respondents. More so, we discovered that the quality of student housing quality played a significant role in the attainment of academic success by undergraduate students in OAU, AAUA and OOU. Our findings were in affirmation with Owolabl (2015) and Oluwafemi (2015) that maintained that student housing has significant impact on academic performance among students at the University of Ibadan, Nigeria. Both studies established the existence of causality effect of the quality and adequacy of student housing on the academic performance in the university.

Consistently, it is evidence from our findings that attainment of academic success among undergraduate university students in the study area was not only influenced by the quality of housing that students are provided with but also the socioeconomic and demographic characteristics of parents.

Our findings clearly showed that the quality of facilities across student hostels was generally below the expected standard, and also inadequately provided. Thus, as identified by Matthew (2014), we also discovered that in order for us not to be biased in judging of university students by their poor academic or unsatisfactory performance, we should take time to ask ourselves a simple but convincing question of how much of the challenges faced by university students must be met before they could graduate with outstanding results? Imperatively, it is evidence from our study's findings that the quality of hostel facilities enjoyed by undergraduate students and the extent of financial supports accessed could enhance their attainment of academic success.

3.2 Conclusion

The study was a cross sectional descriptive and investigatory survey that was designed to established the link between parental prominence and academic success and to broaden the affirmation between student housing quality and academic success. Data was sourced through primary approach among final year students of OAU, OOU and AAUA. It was evidence from our study's outcomes that students' academic success in these universities were greatly influenced by how much economic and financial supports they got from their parents. Besides, we also observed that parental socio-demographic attributes, particularly, their marital status, parental gender preference towards education of their children, parent employment status played a significant role in the students' strive towards attainment of academic success. Also, the contributive roles played by quality of student housing could not be underemphasized when it comes how much success was attained by students in their academic pursuits. Therefore, the availability of improved basic housing, auxiliary, enabling housing facilities and affordable standard accommodation would go a long way in improving quality of education, and this would in the long run enhance academic excellence among the students.

3.3 Recommendation

Evidence from this study have made the following recommendations inevitable:

1. Since the contribution of financial and economic supports in academic pursuits may not be sidelined, it is imperative that students should be adequately provided with funds in form of scholarships, bursaries and granst particularly those that are from poor households or broken homes.
2. Also, parents should be enlightened more on their gender perceptions towards the education of their children/wards regardless of gender difference.

3. There is an urgent need to set aside adequate funds for the maintenance of the existing student accommodations. There is also a need to build more student hostels. Building of more hostels is necessary, since it will afford students that are living in off-campus accommodation to be relocated to on-campus accommodation where they may have access to improved housing facilities in a conducive environment.
4. In line with the third recommendation, students should not only be provided with decent accommodation but also with affordable hostels.

3.4 Acknowledgement

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Cuilture as an Antecedent to Organizational Performance: A Case of Private Universities in Kenya

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Abstract

With the recent declaration of Sustainable Development Goals to 2030 at the United Nations, all nations are focused on ensuring inclusive and equitable quality education and promote life-long learning opportunities for all. In this respect, a well-structured and holistic curriculum is an important first entry point in guiding learning processes embedded in a strong culture. The purpose of the study was to examine how sustaining culture affect organizational performance in private universities in Kenya. This was a correlational study which adopted a positivist philosophy. The study population comprised of all the 17 private universities in Kenya accredited by Commission of University Education. The unit of analysis was the board of directors, vice chancellors, heads of departments (finance, sports, human resource, research, quality assurance) and academic deans (business school) which was 136. A census technique was used in the study with frequency distributions, percentages and means for descriptive statistical analysis while correlations and regression analyses were used for inferential statistics. The study found that, organizational culture explained a significant proportion of variance in organizational performance, $R^2 = .461$. Organizational culture significantly predicted organizational performance, $\beta = .679$, $t(120) = 10.090$, $p = .000$. This finding implied rejection of the null hypothesis since the p value was less than <.05 set by the study.

Introduction

In the age of globalization, the knowledge economy discourse has become a way to characterize the new relationship between higher education,

the state and society, and the economy. Institutions of higher education core functions consist of teaching, research and community extension service (UNESCO,2010) which are grounded in very strong cultures of the founders.

Organizational culture is a multifaceted set of philosophies, symbols, and core values shared throughout the firm. Culture provides the context within which strategies are formulated and implemented. Organizational culture is concerned with decisions, actions, communication patterns, and communication networks. Because they are formed over the life of a company, culture reflects what the firm has learned across time through its responses to the continuous challenges of survival and growth. In the global economy, strategic leaders capable of learning how to shape a firm's culture in competitively relevant ways will become a valued source of competitive advantage (Ireland & Hitt, 2016).

Strategic leadership designates the use of the strategy process as a systematic method of decision making that integrates reciprocal leadership into its concepts and practices. Morrill, (2010) investigated how strategic leadership is applied in the American universities by situating the phenomenon within the dimensions of human moral agency and identity. This marks a new epoch of contemporary study on strategic leadership in higher education. In most universities and colleges, emphasis is put mainly on management but not on leadership which is understood as a process that involves setting directions, motivating others and coping with change.

When the board of directors and the leadership in the organization are involved in shaping an organization's direction, the organization generally improves its performance critical element of strategic leadership and organizational performance, and the ability of leadership to manage and utilize the organization's resource portfolio. This includes integrating resources to create capabilities and leveraging those capabilities through strategies to build competitive advantages and high performance (Ireland & Hitt, 2013). This study endeavors to examine an effective culture as a construct of strategic leadership affect organization performance in private universities in Kenya.

Research Problem

UNESCO, (2014) report, indicates that the past one decade, 57% of youthful population from developing countries pursue university education outside their home countries This implies that there is a high demand for quality university education among the youth in developing countries. The high demand for university education has presented private universities with defective organization culture leading to ineffectiveness in university systems and proseses. All these have a challenge to high performance of education outcomes as set by the Commission of University Education in Kenya (MoEST, 2015). Consequently, this attracted poor ranking in the world
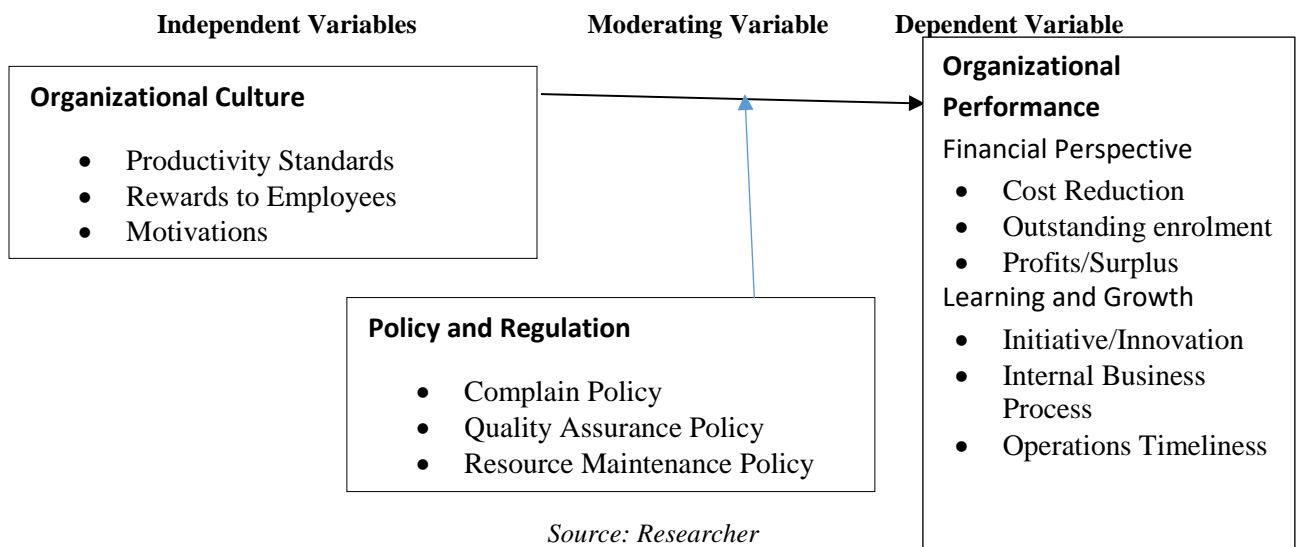
webometrics of universities (2016). Gaps have been identified in policy adherence and enforcement areas necessary, therefore sought to examine the effect of sustaining culture organizational performance with reference to private universities in Kenya.

Literature Review

The theoretical orientation for this study was anchored on the strategic leadership theory as advanced by Ireland and Hitt*,* (2013) which asserts that companies are reflections of their top managers and, the chief executive officers, and that the specific knowledge, experience, values and preferences of top managers are reflected not only in their decisions, but in their assessments of decision environments. Consequently, the significant choice options available to the CEO as the firm's key strategic leader, who often work as a 'Lone Ranger' in the organization primarily using top-down directives (Cannella & Monroe, 1997). As a principle when these choices resulted in financial success for the company, the key strategic leader was recognized widely as the "corporate Hercules" (Senge, 2014).

Conceptual Framework

The conceptual framework for this study was derived from the strategic leadership theory (Ireland & Hitt, 2013).

Independent Variables	Moderating Variable	Dependent Variable
Organizational Culture • Productivity Standards • Rewards to Employees • Motivations	**Policy and Regulation** • Complain Policy • Quality Assurance Policy • Resource Maintenance Policy	**Organizational Performance** Financial Perspective • Cost Reduction • Outstanding enrolment • Profits/Surplus Learning and Growth • Initiative/Innovation • Internal Business Process • Operations Timeliness

Source: Researcher

The study conceptualized a framework consisting of the dependent and independent variables to achieve the research objective (examining the effect of sustaining an effective cultre on organizational performance in private

universities in Kenya). The following null hypothesis derived from the research question guided the study:

H$_{01}$ *How does Sustaining an effective culture affect organizational performance in private universities in Kenya*

The designing of the universities' strategic direction assists to direct organizational processes in terms of strategy implementation and therefore serves to communicate an effective culture in strategic objectives and the formulation of the strategic plan (Ireland, *et al.,* 2016).

Organizational Culture

According to Ireland *et al.* (2016), organizational culture is a complex set of philosophies, signs and core values that are shared within the organization and that determines how its business is conducted. It is therefore critical for strategic leaders to comprehend that, whether the firm's culture is functional or dysfunctional, their effectiveness is influenced by that culture. The work of strategic leaders and organizational culture has a reciprocal relationship that culture shapes the outcomes of their leadership while their leadership helps shape an ever-evolving organizational culture (Stevens, 2008). Therefore, strategic leaders are also affected by the organizational culture and their work in the organizations.

Culture determines how the organization conducts its business and it helps regulate and control employees' behavior and perception, it is source of competitive advantage depending on its proactivity (Gupta, 2013). According to Laforet (2016), some organizational cultures operate in a heavy-handed and competitive manner with little room for deviations and little tolerance with the expression of discontent. It is critical to remember that cultural norms can transmit effective and healthy patterns of behaviour. Drucker (1997), argues that every organization has a culture that supports to profile and define the context in which an individual's behaviour is perceived and evaluated.

The prominence a leader gives is influenced by the organization's culture and the formal and informal reward systems that reinforce that culture. The most powerful factors are delicate and difficult to observe unless one is part of the system. The dominant rules that drive and enhance leader behaviour are often the unwritten and unspoken threads that are interfaced into the fabric of day-to-day life. Employees come to know these subtleties by how they are rewarded or punished. The rewards and punishments are themselves often subtle and shape the behaviour and are most powerful when they are outside the leadership's awareness (Drucker, 1997).

According to Daft (2015), organizational culture is at times referred to as corporate culture and can largely be classified into four types: adaptability, clan, mission, and bureaucratic. The adaptability culture is characterized by strategic focus on the external environment through flexibility and change to

meet customer needs. The focus of a mission culture is on outlining the organization's vision, purpose and goals. The bureaucratic culture has an internal focus and is thus best suited for stable environments. Lastly, the primary focus of the clan culture is on employee involvement and participation. Daft (2015), further submits that the appropriate type of culture for any organization embodies those characteristics which support the organization to be effective within the environment it operates. This agrees with Asby's requisite variety law which states that only variety can absorb variety (Schwaninger, 2009). Since most of today's organizations operate in fast-changing environments, organizational adaptability is considered key to high performance system design.

Laforet (2016), advances three dimensions of organizational culture to consider, that is: consumer orientation, service quality, and informality and innovation which are significantly associated with marketing effectiveness. The findings of studies by Heskett, *et.al.* (1994), are consistent with the results on successful service organizations, which established relationships between profitability, customer loyalty and employee satisfaction, loyalty, and productivity. More specifically, the study suggests that service organizations that value customer satisfaction by providing quality service and innovative ideas, and that value free communication within the organization, demonstrate more marketing effectiveness than those which do not treasure these values (Kraus, Craig, Dibrell & Stefan, 2012). These aspects are concerned with people and quality of service subsequently. Hence, top management in service companies should try to build up in their firms a team spirit characterized by a preoccupation with pride in the quality of the service provided with a focus to put heavy emphasis in motivating the individual employee to bring this into effect.

De Sivatte, Gordon, Rojo and Olmos (2015), argues that while organizations that share the three sets of values are found to have a higher level of marketing effectiveness, it was the first dimension of marketing effectiveness, marketing efficiency that is strongly associated with business profitability. It supports the assertion that service organizations that demonstrate superior profitability are also those that achieve higher marketing efficiency, and these companies are characterized by an organizational culture with identifiable corporate values that treasures consumer orientation, provision of quality services, free communication and innovation. Also, one aspect of organizational values puts emphasis on service quality which has a positive impact on profitability directly through itself and indirectly through its effect on effectiveness.

Previously, scholars have suggested that organizational culture is a determinant of private organization innovativeness. They have also claimed that private firms profit from their organizational culture, which tends to have

fewer issues with principle agent problems and reduced reliance on formal controls and coordination. These traits make private organizations a more efficient innovator taking cognizance of the effects of organizational innovation (Kraus *et al.* 2012). However, there has been little research that examines the influence of organizational culture on the innovation process of private organizations, and the issue to grapple with is which family cultures would bring about innovation and which would hinder it. The study focused on which type of organizational culture lead to high innovation performance in private enterprises.

Craig *et al.* (2014), suggests that pro-activeness influences private firms' innovation output and from the study the findings show that an externally oriented family business culture has a positive effect on private firms' innovation performance, an externally oriented organizational culture refers to market orientation, firm's adaptability and interaction with the external environment. In the case of family firms, this includes interacting with customers, competitors, suppliers, stakeholders and non-family employees. Furthermore, the findings show that an open private business culture has a positive effect on private firms' innovation performance (Laforet, 2016). In contrast, a paternalistic and a founder culture do not have a positive effect on private firms' innovation performance. This finding tends to concur with research which suggests the later-generation CEO influence higher innovation output than the founder CEO (Duran, Kammerlander, van Essen, & Zellweger, 2015). A paternalistic culture is synonymous with a closed culture, with this culture the firm is not able to foster change and generates value over time (Chirico & Nordqvist, 2010), also one of the conditions for innovation. The founder culture would increase the private firm inward focus culture (Zahra *et. al.* 2004) and impedes innovation.

The findings also show that a flexible and a long-term oriented family business culture have a positive effect on family firms' innovation performance. A flexible organizational culture emphasizes teamwork, including explicit practices, employee empowerment and change, through commitment to training and utilization of technology. Generally, literature suggests that private firms are not very flexible, as by their nature they are often very attached to tradition, culture and family values. There may be resistance to new ideas and change, and they may prefer to work within the family guidelines instead (Alderfer, 1988).

Kellermanns and Eddleston (2006), submits that private firms can increase corporate entrepreneurship, including innovation, by pursuing organizational change and exploiting opportunities as well as by recognizing technological opportunities. Although change could be a threat to private firms' status quo, it is a necessary condition for organizational innovation performance in private firms. Studies show that empowering employees and

connecting with others or involving others including, non-family employees positively affect organizational innovation performance in private SMEs. This is the same with non-family firms where past studies also show that employee empowerment increases SMEs' ability to innovate (Çakar & Ertürk, 2010).

In terms of practical implications, family organizations need to be mindful of their own cultures and practices and try to adopt or be aware of those that can contribute positively to their innovation success or performance. Similarly, this research has highlighted that SMEs are highly innovative, but more need to be done to enhance their entrepreneurial attitudes and behaviors (Laforet, 2016). Generally, it is difficult to measure organizational culture through a quantitative approach as it is instilled in individual's beliefs, values and perceptions, a qualitative research methodology would have complemented the quantitative approach used in this study. The study has not examined the artefacts and norms of organizational culture. Likewise, it did not incorporate other organizational contingencies of family firms like the role of family CEO and family chair. Thus, these will be the subject of future research. Future research could distinguish between types of innovation and types of organizational culture as well as incorporating other organizational contingencies of family firms, focusing deeply on the generational effects of organizational culture that may affect family firms and using a qualitative research methodology. Finally, this research could also be replicated in non-individualistic non-Western countries to ascertain where organizational cultural values differ especially in institutions of higher learning. Culture is a very important component in an organizational structure because it is the glue which holds the firm together.

Organizational Performance

According to Richard *et al.,* (2013) the actual outcomes and results of an organization as measured against its intended goals and objectives constitutes organizational performance. It comprises three specific areas of the firm outcomes: financial performance such as profits, return on assets, return on investment; product market performance such as sales, market share, and shareholder return such as total shareholder return, economic value added. Armstrong (2017) defines performance as the record of outcomes produced on a specified job function or activity during a specified period. Therefore, performance is measured in terms of output and outcome, profit, internal processes and procedures, organizational structures, employee attitudes, and organizational responsiveness to the environment among others (William 2002).

In recent years, many organizations have attempted to manage organizational performance using the balanced scorecard methodology (Kaplan & Norton, 2001) where performance is tracked and measured in

multiple dimensions such as: financial performance (e.g. shareholder return), customer service, social responsibility (e.g. corporate citizenship, community outreach) and employee stewardship. Balanced scorecard also identifies the measures used to monitor, review and assess performance (Armstrong, 2017). For an organization to succeed, this is contingent on the capability of its top managers, leaders and a sustainable organizational culture created by those leaders. The belief and value systems created by the leaders always influence its performance (Soebbing *et al*., 2015). According to Ssekakubo *et al.,* (2015), leadership competencies have a direct positive effect and always improves employee performance. This is further affirmed by researchers who have focused on the relationship between the competencies of leaders and how their organizations perform in the world economies.

Policy and Regulation

The Ministry of Education Science and Technology (MoEST) has developed policy and legislative framework for education and training to realign the human capital development needs of the country to the Constitution and the Kenya Vision 2030. The Commission for University Education (CUE) is the main regulator of university education in Kenya. The policy on education and training therefore envisage a curriculum that successively develops the knowledge, skills, competencies, as well as lifelong learning dispositions of its citizens to meet the human capital needs of the country. Besides ensuring that learners are getting quality education and training, the Commission will consider such issues as the effectiveness of Government education policy implementation, strategic planning, resource mobilization and the management of resources by Ministries and institutions concerned with education and their management bodies. The goal is to develop a repertoire of skills and competencies necessary to achieve the objectives and goals embodied in the Constitution, 2010 and Kenya Vision 2030. The policy framework on education and training also envisages an education curriculum with parallel and complimentary tiers: academic, vocational and technical curricular. The Government will accordingly introduce a multi-track system to take care of the learning needs of all these categories of education and provide a window for the progression to higher education through any of the three tiers (MoEST, 2008).

Methodology

Positivism research philosophy was adopted in the study premised on measurable observations that lead themselves to statistical analysis. The use of appropriate research philosophy helps researchers to eliminate unrelated factors from the research (Cooper & Schindler, 2014).

The correlational design was used for this study because it has a wide range of variables and their interrelatedness (Creswell, 2014). The design was deemed suitable because this study focused on examining the effect culture on organizational performance. The target population for this study included all the 17-chartered private universities with the Commission of University Education (CUE, 2016) particularly the board members, vice chancellors, academic deans (business schools) and heads of departments (finance, quality assurance, research, security, human resource and sports) as the unit of analysis with a total of 136 respondents.

The study adopted a census study in line with Israel (2009) and Rao (2015) recommendations that sample sizes of less than 200 are studied to cater for any non-response that may be encountered in the study. The estimated sample size of 136 respondents was distributed proportionate to the size of the population.

The questionnaire was the main tool for data collection, preferred because it possesses a high rate of response and that the respondents can respond to the questions simultaneously hence saving time. Reliability was tested using the Cronbach's alpha. This is a measure of internal consistency that is, how closely related a set of items are as a group and it is a measure of scale reliability. A reliability coefficient of at least 0.7 Cronbach Alpha was accepted in the study. In this study, the validity of the study was ascertained by the subject experts. The analysis was done by use of; descriptive statistics to present data into charts and tables with frequency distribution and percentages as well as means and standard deviations while; inferential statistics tested the hypothesised relationships between the independent and dependent variables which included correlation and regression analyses.

Normality test was done in the study to determine if the data set is well-modelled by a normal distribution. In this study, normality tests were done using kurtosis and skewness. Skewness and kurtosis values that range from +/-3 (SE) are generally considered normal (Onwuegbuzie & Daniel, 2002). Multicollinearity was done in the study using the variance inflation factors (VIF) for each variable using traditional criteria employed in the study. Linearity **-** The study conducted linearity test to determine whether the relationship between each of the independent variable and dependent variable was linear or not. The study findings had the homoscedasticity test evaluated for pairs of variables using the Levene statistic for the test of homogeneity of variances.

Findings and Results

The researcher sought to examine the effect of organization culture on performance in private universities in Kenya. Data was analyzed at two levels where the first level entailed determining organizational culture. The second

part involved analyzing results on the effect of organizational culture on organizational performance.

Factor Analysis Results on Organizational Culture

Factor analysis was conducted in the study to describe variability among items of organizational culture. Organizational culture construct was measured using ten (10) items thereby the construct was factor analyzed to come up with an appropriate measure. The study found that organizational culture had KMO value of 0.828 and Bartlett's test, $x2(45, N = 124) = 390.136$, $p = .000$. This was meritorious; therefore, the adequacy of the sample was acceptable. Therefore, sampling was adequate for organizational culture as given by the Kaiser-Meyer-Olkin Measure of Sampling Adequacy value.

KMO and Bartlett's Test for Organizational Culture

The study also carried out the Eigen values for the factors under organizational culture. According to the findings, the first factor accounts for 41.704% of the variance in organizational culture while the second factor accounts for 14.228% of the variance in organizational culture.
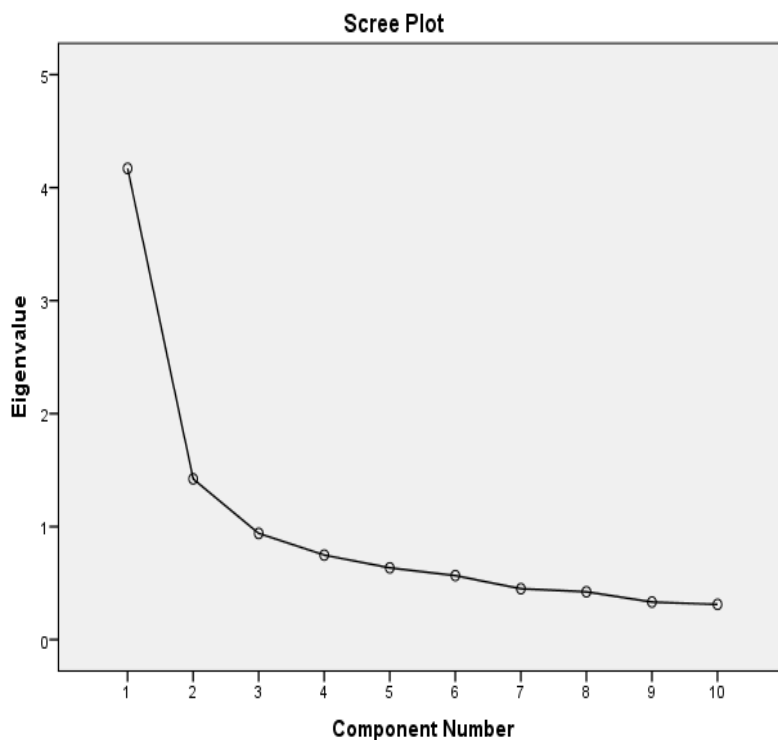
Figure 1 Scree Plot for Organizational Culture

The results for scree plot indicated that two components had Eigen value that was greater than one. This finding corroborates total variance explained results for Organizational culture.

The study sought to determine the factor loadings for organizational culture. The findings obtained indicated that "The university encourages us to be honest and have integrity as we carry out our duties" had the highest factor loading in the first component with 0.773 while "The university uses re-training to deal with employees who are no longer productive" had the highest factor loading of 0.732 in the second component.

Frequency Distribution on Organizational Culture

The findings indicated that 32.5% of the respondents agreed that the university uses re-training to deal with employees who are no longer productive, 29.2% neither agreed nor disagreed, 16.7% disagreed, 15.8% strongly disagreed and 5.8% strongly agreed. Some respondents (32.5%) neither agreed nor disagreed that the university uses demotions, early retirements, and transfer, on non-performing employees, 25.8% disagreed, 20% agreed, 15% strongly disagreed and 6.7% strongly agreed. Some respondents (33.1%) agreed that rewards such as salary increases, bonuses and promotions are pegged to targets met, which ensures consistency in the overall growth of the university, 26.4% disagreed, 19% neither agreed nor disagreed, 11.6% strongly disagreed and 9.9% strongly agreed. Some respondents (37.2%) of the respondents agreed that the leaders in the university strive to motivate the employees to give their best, hence the consistence growth over the years, 23.1% neither agreed nor disagreed, 19% disagreed, 15.9% strongly agreed while 5.8% strongly disagreed.

The findings also indicated that 38.1% of the respondents agreed that the employees in the university strive to give their best, 28.8% neither agreed nor disagreed, 24.6% strongly agreed, 7.6% disagreed and 0.8% strongly disagreed. Some respondents (48.3%) agreed that the university's culture has influenced its student numerical growth in the last 5 years, 22.5% strongly agreed, 21.7% neither agreed nor disagreed, 5.8% disagreed and 1.7% strongly disagreed. Some respondents (49.6%) agreed that the university cultivates an environment of trust and teamwork, 21.5% strongly agreed, 19.8% neither agreed nor disagreed, 7.4% disagreed and 1.7% strongly disagreed. Some respondents (37.2%) agreed that the university encourages us to be honest and have integrity as we carry out our duties, 34.7% strongly agreed, 19% neither agreed nor disagreed, 7.4% disagreed and 1.7% strongly disagreed. Further, 43.8% of the respondents strongly disagreed that the university expects me to treat organizational documents as confidential, 43% agreed, 6.6% neither agreed nor disagreed, 5% disagreed and 1.7% strongly disagreed. In addition, 47.9% of the respondents agreed that the university ensures that all rules and

policies are adhered to, 33.1% strongly agreed, 11.6% neither agreed nor disagreed, 5.8% disagreed and 1.7% strongly disagreed.

Mean and Standard Deviation for Organizational Culture

The study also sought to analyze the views of respondents on organizational culture using a table of means and standard deviations. A Likert scale data was collected rating the views in a scale. The mean results are therefore given on a scale interval where a mean value of 1 is an indication of strongly disagree; 2 is disagree; 3 is neutral, 4 is agree and a mean value of 5 is an indication of strongly agree.

According to the findings, the respondents strongly agreed to the following statements: Rewards such as salary increases, bonuses and promotions are pegged to targets met, which ensures consistency in the overall growth of the university duties ($M = 3.03$, $SD = 1.211$); the leaders in the university strive to motivate the employees to give their best, hence the consistence growth over the years duties ($M = 3.36$, $SD = 1..125$); the employees in the university strive to give their best duties ($M = 3.78$, $SD = 0.935$); the university's culture has influenced its student numerical growth in the last 5 years duties ($M = 3.84$, $SD = 0.898$); The university cultivates an environment of trust and teamwork duties ($M = 3.82$, $SD = 0.913$); and the university encourages us to be honest and have integrity as we carry out our duties ($M = 3.96$, $SD = 0.995$).

The respondents strongly agreed that the university expects me to treat organizational documents as confidential ($M = 4.22$, $SD = 0.899$) and the university ensures that all rules and policies are adhered to ($M = 4.05$, $SD = 0.912$). The respondents however neither agreed nor disagreed that the university uses re-training to deal with employees who are no longer productive ($M = 2.96$, $SD = 1.169$) and the university uses demotions, early retirements, and transfer, on non-performing employees ($M = 2.78$, $SD = 1.133$).

Correlation between Organizational Culture and Performance

The study correlated organizational culture and performance and found that all the items of organizational culture were positively and significantly related with organizational performance. The university uses re-training to deal with employees who are no longer productive and organization performance were moderately correlated, $r(120) = .361$, $p< .000$. The university uses demotions, early retirements, and transfer, on non-performing employees and organization performance were correlated, $r(120) = .231$, $p< .011$. Rewards such as salary increases, bonuses and promotions are pegged to targets met, which ensures consistency in the overall growth of the university and organization performance were moderately correlated, $r(121) = .484$, $p<$

.000. The leaders in the university strive to motivate the employees to give their best, hence the consistence growth over the years and organization performance were moderately correlated, $r(121) = .553$, $p< .000$. The employees in the university strive to give their best and organization performance were moderately correlated, $r(118) = .344$, $p< .000$. The university's culture has influenced its student numerical growth in the last 5 years and organization performance were moderately correlated, $r(120) = .534$, $p< .000$. The university cultivates an environment of trust and teamwork and organization performance were moderately correlated, $r(121) = .536$, $p< .000$. The university encourages us to be honest and have integrity as we carry out our duties and organization performance were moderately correlated, $r(121) = .447$, $p< .000$. The university expects me to treat organizational documents as confidential and organization performance were moderately correlated, $r(121) = .409$, $p< .000$. The university ensures that all rules and policies are adhered to and organization performance were moderately correlated, $r(121) = .518$, $p< .000$.

Correlation Analysis on Organizational Culture Index

The study sought to determine the relationship between organizational culture index and performance using correlation analysis and found that the two variables were moderately correlated $r(121) = .679$, $p = .000$.

Chi Square Test on Organizational Culture

Chi square test was used to test the strength of association between organizational culture and organizational performance. The study found a strong association between organizational culture

One Way ANOVA on Organizational Culture

A one-way ANOVA was carried out to establish if there was significant difference between the mean of organizational culture with number of years in leadership position at the private universities as well as the current leadership position. The tests established that the mean for organizational culture were the same for the number of years in leadership position $F (2, 108) = 0.066$, $p = 0.936$. The study also found out that the mean for organizational culture were the same for the current leadership position, $F (3, 115) = 10.976$, $p = 0.407$.

Assumptions for Regression on Organizational Culture

The study conducted the assumptions of regression to determine whether regression analysis was suitable in the study or not. The diagnostic tests conducted in the study included normality, linearity, homoscedasticity and multicollinearity tests.

Normality Test for Organizational Culture

The study checked the normality of the data set by looking at descriptive values of skewness and kurtosis. The skewness values obtained in the study indicated that the scores are skewed as many are negatively skewed and not that much closer to zero. The values range from -2 to +1 hence no skewness problems in the study. The kurtosis values also fall within the range of -2 to +3, and therefore do not display excessive kurtosis as well. These results suggested that the normality assumption is not violated in the study.

Linearity Test for Organizational Culture

The study conducted linearity test to determine whether the relationship between organizational culture and organizational performance was linear or not. According to the results shown in Table 11, the significant deviation from linearity is 0.445 which is greater than 0.05 implying than there is a linear relationship between organizational culture and organizational performance.

Homoscedascity Test for Organizational Culture

The study findings had the homoscedasticity test evaluated for pairs of variables using the Levene statistic for the test of homogeneity of variances. The results are then given as shown in Table 12. From the study findings of test for homogeneity, the probability associated with the Levene Statistic (<0.071) is more than the level of significance (0.05) testing at 1-tail test 5% significance level, the researcher concludes that the variance is homogeneous for organizational culture.

Homoscedasticity Test for Organizational Culture

Levene Statistic	df1	df2	Sig.
2.031	21	93	.071

Multicollinearity Test for Organizational Culture

Multicollinearity is a state of very high intercorrelations or inter-associations among the independent variables. Multicollinearity in the study was checked using the variance inflation factors (VIF). The VIF values of between 1 and 10 show that multicollinearity is not problematic in the study while VIF values of less than 1 and more than 10 indicate multicollinearity issues in the study. The findings obtained indicated that the VIF value for organizational culture is 3.120 which is betweeen 1 and 10 and therefore multicollinearity was not problematic in the study

Multicollinearity Test for Organizational Culture

Model		Collinearity Statistics	
		Tolerance	VIF
1	Organization's Mission or Vision	.441	2.269
	Human Capital Development	.240	4.173
	Organizational Culture	.321	3.120
	Ethical Values	.248	4.037
	Strategic and Financial Controls	.257	3.898

a. Dependent Variable: Organizational Performance

Hypothesis Testing for Organizational Culture.

Based on linear regression model, the study sought to establish the effect of organizational culture on organizational performance. The following hypothesis was therefore tested:

H_0: *Organizational culture does not affect the organizational performance in private universities in Kenya.*

H_1: *Organizational culture affects the organizational performance in private universities in Kenya.*

The study found that organizational culture explained a significant proportion of variance in organizational performance, R^2 = .461. This implies that 46.1% of the proportion in organizational performance can be explained by organizational culture in private universities in Kenya. Other factors not covered by this study therefore contribute to 53.9%.

Model Summary for Organizational Culture

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.679ᵃ	.461	.457	.54537

a. Predictors: (Constant), Organizational Culture

The findings indicated that the significance value in testing the reliability of the model for the relationship between organizational culture and organizational performance was $F(1, 119) = 101.815$, $p = 0.00$. Therefore, the model is statistically significant in predicting the relationship between organizational culture and organizational performance

ANOVA for Organizational Culture

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.282	1	30.282	101.815	.000ᵇ
	Residual	35.394	119	.297		
	Total	65.676	120			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Organizational Culture

The study found that organizational culture significantly predicted organizational performance, β = .679, $t(120)$ = 10.090, p = .000. This finding implied rejection of the null hypothesis since the p value was less than <.05 set by the study. The study therefore concluded that organizational culture significantly influences organizational performance in private universities in Kenya.

Regression Coefficients for Organizational Culture

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.115	.273		4.081	.000
	Organizational Culture	.757	.075	.679	10.090	.000

a. Dependent Variable: Organizational Performance

The findings obtained in the study implied that for every one-unit change in organizational culture, organizational performance increases by 0.757 hence implying a positive impact of organizational culture on organizational performance.

Conclusion

The study found that, organizational culture explained a significant proportion of variance in organizational performance, R^2= .461. This implies that 46.1% of the proportion in organizational performance can be explained by organizational culture in private universities in Kenya. Organizational culture significantly predicted organizational performance, β = .679, $t(120)$ = 10.090, p = .000. This finding implied rejection of the null hypothesis since the p value was less than <.05 set by the study.

The study determined that the universities did not use re-training to deal with employees who are no longer productive and did not use demotions, early retirements, and transfer, on non-performing employees. In addition, rewards such as salary increases, bonuses and promotions were not pegged to targets met, and therefore did not ensure consistency in the overall growth of the university. Therefore, the study recommends that universities need to re-train their employees who are no longer productive, give rewards to best performing employees and also can use transfers, early retirements and demotions for the under-performing employees in order to foster their performance.

Recommendations

The study recommends that the universities' budgetary and planning priorities need to be aligned to the sustaining cultures of their founders to align

itself to the emerging dynamics in higher education landscape to improve performance.

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Five Chess Positions to Learn Law and Legal Argumentation

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Abstract
        Law students should be able to fathom the application of legal rules to specific cases and develop a consistent argumentation to support this interpretation by using logic. Different skills and competencies are required for each of these processes. Therefore, effective learning of Law must complement the necessary knowledge of Positive Law with a set of teaching activities aimed at developing a well-structured legal discourse. Can chess be useful when deducing the general features of legal argumentation? Can we use certain positions or chess moves as a basis for the elaboration of didactic metaphors capable of creating dynamic learning environments? We shall present five chess positions in this paper, which we shall use as a teaching resource to extract ideas regarding how legal discourse is structured.

1. DIDACTIC CHESS AS A TEACHING TOOL FOR LEARNING LAW. PRESENTATION, DESCRIPTION AND METHODOLOGY OF THE ACTIVITY

        There is a set of cross-sectional competencies in legal learning for which our curricula are not well prepared. Few or no teaching activities aimed at acquiring the basic knowledge of legal argumentation, the capacity for critical awareness in the analysis of the legal system and legal dialectics, or the development of legal oratory have been devised. However, it is common for our curricula to underline the importance of Law students being able to express themselves appropriately in front of an audience, to solve problems and adapt to new situations, develop creativity, or being able to organise, analyse and synthesise, and transmit conclusions.

        In subjects related to Law, practical activities in which theoretical

knowledge and this set of cross-sectional competencies are applied should be considered further, so that students may learn how to solve practical cases through legal arguments. It is common for Law students to emphasise their difficulties when presenting their conclusions on a specific practical case, especially as regards how to develop an appropriate plan or strategy to defend their point of view.

Imagine we have a teaching resource at our disposal that would allow us to improve students' concentration, but at the same time, stimulate memory, logical reasoning, scientific thinking, self-criticism, personal responsibility, motivation, self-esteem, planning, forecasting of consequences, the ability to calculate, imagination, creativity, patience, discipline, tenacity, attention to several things at once, the calculation of risks, sportsmanship, cold-bloodedness, compliance with rules, respect for opponents, spatial vision and combativeness (García, L.; 2013). We would have pretty few excuses not to look for ways to integrate it into our classrooms.

There are numerous teaching experiences and studies that point to chess as a useful and cross-sectional instrument to improve memory, strategic thinking or mathematical calculation skills in school age (Fernández, 2016). Chess is known for being beneficial to develop cognitive intelligence (Gliga; Flesner, 2014), but also to develop true emotional intelligence (Aciego; et al., 2012). A sample of the importance that educational chess is acquiring nowadays can be seen in the Declaration of the European Parliament of 15 March 2012 on the introduction of the programme called *Chess in School in the educational systems of the European Union*. This programme promotes actions aimed at developing educational chess in primary education systems in the countries of the European Union.

There is no doubt about the need to incorporate chess as a complementary activity in schools in a clear and determined way, but this is not exactly what is proposed here. In this activity, students will not actually play chess games among themselves, but rather they will have to solve a set of proposed problems and draw conclusions applicable to devising legal discourse and collectively develop a metaphor of how a good legal argumentation should be. Indeed, tactical or theoretical elements of chess are not going to be explored in depth. Instead, it is expected that students will be able to devise metaphors of how a correct legal argumentation should be structured based on playing chess.

Five simple chess exercises are, therefore, proposed, which should be discussed and resolved by the students. They are presented in the form of worksheets or teaching resources and contain:

a) A short chess description of the position (positions have a variable difficulty, and some require a specific knowledge and prior analysis of the position, and others are beginner's level).

b) A small historical account that allows us to cover such prestigious events as the Enlightenment, the Great Empires of East and West, the French Revolution, the War of Independence of the United States, the philosophical movements of the 20th century, the decolonisation processes or the Cold War. There is no doubt that a universal game with at least fifteen centuries of history can serve as an ideal excuse to travel through history. Its own evolution shows us the importance of knowing the historicity of social events and the social uniqueness of each historical period.

c) An aphorism of the *Spanish golden age* author Baltasar Gracián. This allows contextualising and completing the activity and gives it a special attraction.

Didactic chess is a very interesting resource, easily adaptable to very diverse educational contexts and very simple to implement and use. The positions proposed here include a link from each item cited to a database with the diagram of the game. The singularity of this proposal is to relate chess to the creation of a dynamic learning environment, where students unquestionably take on the leading role, work on communicative skills, and encourage learning through the collective development of didactic metaphors. The intention with the use of educational metaphors is to favour the acquisition of knowledge from concepts not directly related to them (Kövecses, 2010), using knowledge of the source as a framework to give meaning to the objective question. This permits identifying the parts of the metaphor and visualise how they are interrelated. We are thus able to further understand the abstract from the concrete (Lakoff; Johnson, 1999).

Educational metaphors must be effective and to be effective, they must be able to create systematic associations between the elements of the objective and the analogous aspects of the source. The degree to which semantic or semiotic content is explicit will determine its level of effectiveness (Dunn, 2011). To reinforce their intuitive character, chess positions, which in themselves imply a high level of conceptual abstraction, will be reinforced by linguistic expressions -in the form of Gracián's aphorisms- from which the underlying conceptual meaning can be fathomed more clearly. Thus, the density of a metaphorical expression will depend on the amount of underlying metaphor that appears in the semantic or superficial semiotic structure for the particular social group.

While the understanding of metaphorical expression depends on the group's specific ontological knowledge of the essential elements of the source, the level of effectiveness of these activities cannot be determined a priori because it depends on the cultural and intellectual level of the target group.

The activities also intend to stimulate students' creativity and their ability to solve complex problems. The aim is, therefore, to encourage debate on a fairly logical principle. The clearer and more orderly the argumentation, the better the purpose of the process will be satisfied in attaining justice. In

this vein, for legal discourse to be precise, reasonable and effective, it must be based on the art of prudence, synthesis, patience, detachment and rectification.

2. THE METAPHORICAL FORCE OF CHESS AS A TEACHING TOOL FOR LEARNING LEGAL ARGUMENTATION

Chess, as a simple model of social phenomenon (Ross, 1958), shows elements common to logic and legal argumentation alike. If we start by saying that for any legal argumentation to be valid it requires sufficient normative-social grounds, such validity derives from elements extrinsic to the mere force or binding character of the norm. Therefore, the juridical problem, as a regulating element of a social body, is based on a set of normative principles of historical and social character, which allow a unique interpretation of the rules applicable to each case in question. In chess, as in legal argumentation, the connection between the movements of the chess pieces is not causal but of meaning. We do not change the positions of the pieces on the board randomly but as a result of strategic gameplay movements, which makes it a coherent plane of meaning, where movements become attack or defence actions as per the theoretical principles of the game.

At the same time, from a formal point of view, chess contains a set of imperative rules that regulate or determine the movements each piece can make. This does not prevent there being a unique space for the theoretical aspects of the game, which determine the *strategic and functional* character (Nunn, 2003) of each piece at any given time depending on a given position. Both planes establish the juridical character of chess and its relevance when devising metaphors on legal argumentation. Just as chess theory incorporates subjectivity and historicity into its normative framework, legal argumentation incorporates it into Law.

The combination of strategic and tactical chess principles prolifically defined by chess theory with elements of the judicial process is appropriate for university Law students. Strategic chess thinking allows lawyers to improve their skills in judicial processes, both in the field of interrogation and in legal psychology (Postma, 2004), and they share the principle of sufficient reasoning (Fernández, 2010).

If we take legal conflict as a reference, we can affirm that *Law is argumentation* (Atienza, 2006) and that there is no legal practice, which does not consist, substantially, of arguing. For this reason, any legal argument requires a set of *coherent* reasons, in favour or against a particular thesis that must be sustained or refuted, and interrelated in a strategic and logical way. As in a chess game, any legal agent that devises a legal argument must develop strategic thinking that structures normative interpretations in a consistent, coherent, exhaustive, teleological way, based on sufficient reasoning and the ideal knowledge about the case that is the subject matter of the argument.

Analysing the situation -knowing how a given fact has legal relevance- is one thing and another, quite different, is to give a solution -by submitting it to a process of justifying possible interpretations, weighing up arguments for and against every possible interpretation-. The interpretative and application processes of legal norms are not possible without the use of argumentation (Zapatero; Garrido, 2007) and rational justification.

3. EVALUATION OF THE ACTIVITY

The activity has been evaluated by a group of students enrolled in the Social Security Law subject (49 students in total), who were asked to evaluate different elements through a descriptive survey with eight closed questions on a scale of 1-10. Although, neither the sample nor the methodology used intends to demonstrate the effectiveness of didactic chess in learning Law, they do allow collating relevant information on students' perception of the activity. Multiple-choice questions were used given their ease of use and processing. They were prepared according to the classifications, cataloguing and methodology used to evaluate higher education students' satisfaction (Marsh, H. W., 1982) and the evaluation survey of the Department of Education of the Junta de Andalucía (Spain) on their training actions. Naturally, there are many other alternatives, often more enriching than multiple-choice questions (Angelo, T. A.; Cross, P., 1993), which should be incorporated in the future. In any case, we must not forget that this paper aims to present a set of teaching resources in the form of chess pieces, which can and must be adapted to each educational context in a flexible manner.

First, they were asked to assess their level of chess. A subjective answer was sought with this, that is, to give their perception of their level of chess. In this vein, they did not receive any indication that could influence their answer one way or another (a determined ELO, membership in a chess club, mere knowledge of the rules, etc.) and the average score they awarded themselves was 4.55.

It is worth noticing the distribution of the data according to their knowledge of chess. 28.57% of the sample showed having the lowest possible chess level (1-2), while the largest group (34.69%) stated having an intermediate level (5-6). It is also interesting to note that the group with the highest score in chess knowledge was 7-8 (24.49%) and no student selected the highest score (9-10), and only 12.24% selected between 3-4.
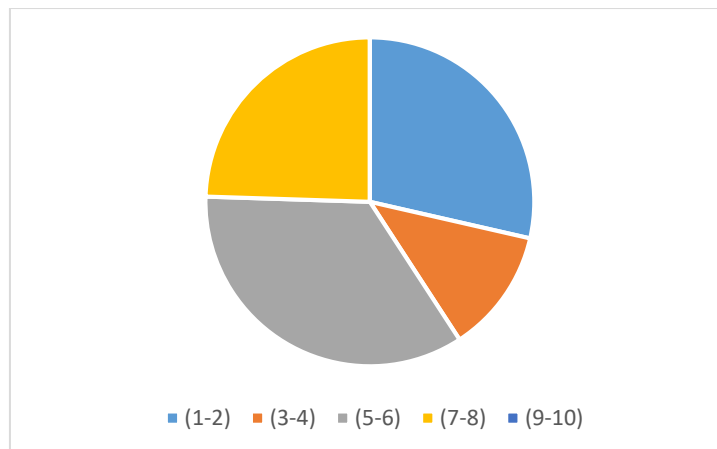
A) Overall assessment of the activity. The questionnaire contained a block of three questions about an overall assessment of the activity, the degree of understanding and the degree of difficulty. The activity was assessed globally with a mean score of 7.45. The mean score awarded to understanding was 7.67, and the mean score for difficulty was 4.63.

B) Overall assessment of chess positions. In another block, students were asked to evaluate the appropriateness of the different chess positions proposed to understand the concept to be analysed. In general, the positions received a mean score of 6.73.

We can see a certain deviation between the overall evaluation of the activity and the overall evaluation of the five positions. Both the median and the mode of the overall evaluation were 8, while for the different positions it was 7. 69.38% of students gave an overall score of between 7-9 to the activity, whereas 67.34% gave an overall score of between 6-8 to the chess positions.

C) Overall assessment of educational metaphors and didactic chess. Students were also asked to evaluate the two main teaching tools used in the activity, such as the usefulness of teaching metaphors and didactic chess for learning Law. Students evaluated the use of teaching metaphors for learning with a mean score of 6.91 and didactic chess as a suitable teaching tool for learning Law with a mean score of 6.12.

D) Overall assessment of the capacity to promote creativity in the Law Degree. Complementarily, students had to value the encouragement of creativity in the degree they were studying and yielded a mean score of 3.35.

The most significant data are deduced when discriminated against according to the level of chess the students stated having. Students who awarded themselves the lowest score in chess (1-2) are those who show: a) A lower degree of understanding of the activity (7.07), which represents 1.09 points less in understanding of the activity than the group with greater knowledge of chess, and 0.49 less than the average; b) They indicate a greater

degree of difficulty of the activity (6.64), which means a standard deviation of 2.01 from the mean score and 3.31 points compared to the group with greater knowledge of chess; c) They give a lower overall score to the activity (6.5), which is 0.95 points lower than the mean score and 1.25 points lower than the mean score of the group with greater knowledge.
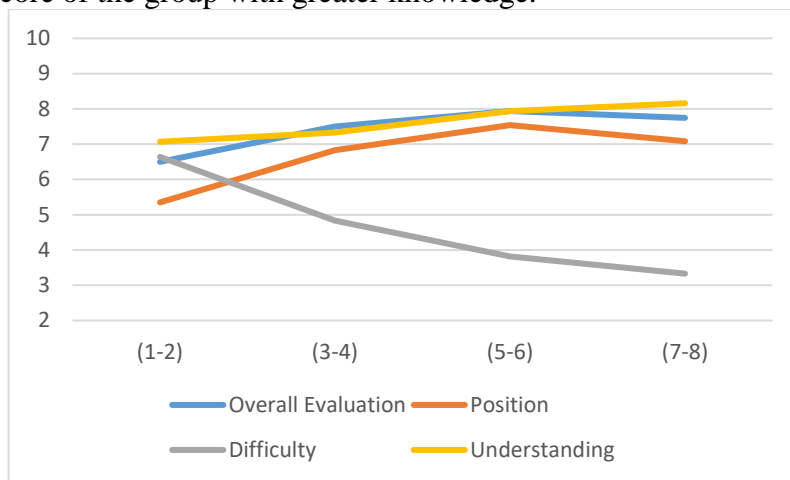

Similarly, the group of students with less chess knowledge shows deviations: a) In the overall evaluation of the positions, since they give an overall score of 5.35 to the positions, where the deviation with respect to the average is 1.38 points; b) In the evaluation of the teaching metaphor as a didactic instrument, which is valued with 6 points, resulting in a deviation of 0.91; c) In the evaluation of didactic chess as an instrument for learning Law, which is awarded a score of 4.5, leading to a deviation of 1.62.
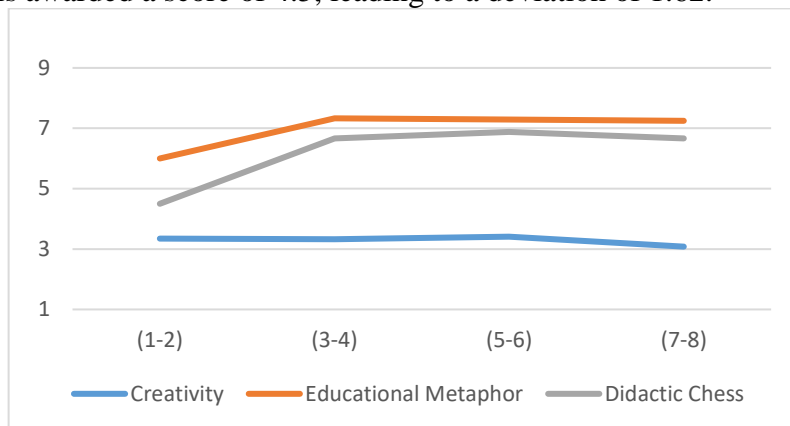
Finally, the only item where there are no deviations according to students' prior knowledge of chess is the one that refers to the existence of activities in the degree that stimulate students' creativity. Here, the group that shows the greatest deviation from the average is the one that has the highest

knowledge of chess, the one that awards themselves 0.26 points less than the mean score.

With regard to the different positions, although the tendency in the students' assessment is upward according to the increase in chess knowledge, it is true that students with the greatest chess knowledge do not represent the group that gives the highest scores to the positions, but the group of 5-6, with an average deviation between them of 0.5. Group 5-6 was the one that gave the greatest value to the activity of worksheet 1 (Münchausen), 4 (Capablanca) and 5 (Alekhine), while the group that valued activity 2 (Légal) most was group 3-4, and the group that valued activity 3 (Nimzovich) most was group 7-8.
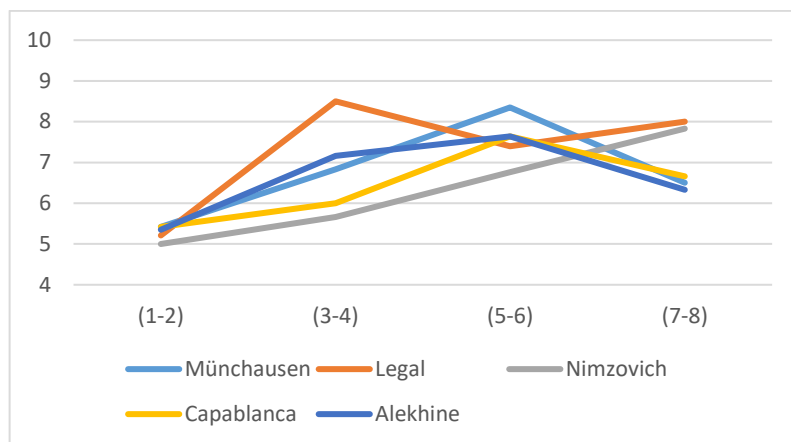

There is a positive correlation between the overall evaluation and the understanding of the activity, and a negative correlation between both items and the perception of the difficulty of the activity depending on the level of chess. This means that this activity does require a certain knowledge of chess. Significant deviations are described in the group that manifests less knowledge of chess, since the other groups have a more homogeneous behaviour - although this also shows the ascending tendency both in the evaluation and in the understanding or difficulty, depending on their level of chess-. The higher the level of chess, the greater the understanding, overall assessment and lower the perception of difficulty.

WORKSHEET I. THE ART OF SYNTHESIS
A Baltasar Gracián aphorism: *Good things, when short, are twice as good.*
Student's activity

The Baron of Münchausen met with some great chess masters in the court of Catherine II of Russia and proposed the following challenge. He would exchange one chess piece for each extra go he was granted, so the Baron would surrender the two rooks, the two bishops, the Queen and a Knight for

six goes. Notice the following image, *would you be able to checkmate with White moving six times consecutively?*
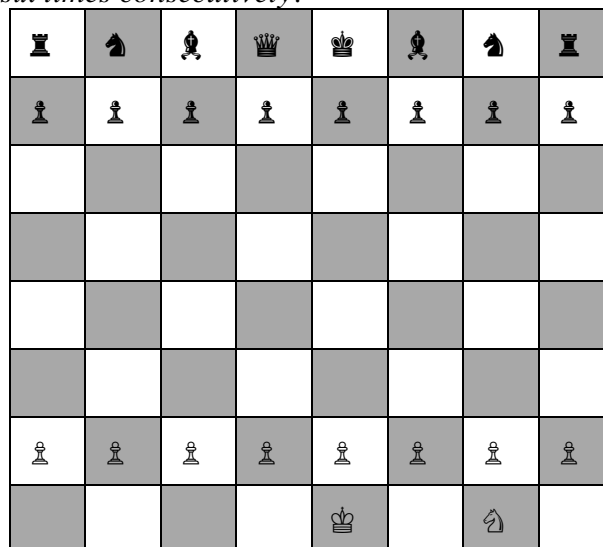
Baron of Münchausen

A brief description of the position (teaching resource):

What chess player would not dream of having more than one move per go?

A brief historical context (teaching resource):

In 1785, Rudolf Erich Raspe published *Baron Münchausen's Narrative of his Marvellous Travels and Campaigns in Russia*, a work that was later translated and versioned by Gottfried August Bürger in *Wonderful journeys by land and by sea, war and fun adventures of the Baron of Münchausen*. They were very modern stories of fantastic adventures -quite fashionable for the unbiased readers of the time- in which surprising events are told -he travels to the moon, over a canyon or to the centre of the earth-. A Baron of Münchhausen did exist. He enlisted in the Russian army and served as an inspiration for this clearly exaggerated and burlesque character. There have been several versions of this character throughout history, although this problem does not belong to the original text, other logical problems related to chess and openings have appeared. For instance, he devises a very ingenious paradox through a checkmate that is developed after Black repeats each of White's moves.

The 18th century was the century of lights and illustration, and the travels described in this book show the balance and political conflict between the great empires -Prussian, Russian and Ottoman-; a small sample of the passage from the modern to the contemporary age.

Solution:
1.Nf3 2.Ng5 3.e4 4.e5 5.e6 6.exf7++

Objectives of the reflection:

When preparing a legal discourse, it is crucial to know how to be sparing with the available resources, both in cognitive and material terms. One must be able to synthesise and prioritise ideas and make the most appropriate use of time and other resources. The principle of procedural economy is a general political-procedural principle that informs the jurisprudential activity and is characterised by the simplification and facilitation of the procedural activity in order to achieve the least possible wear and tear in the judicial process. This means that unnecessary and ancillary elements must be removed in the interests of an agile and efficient procedure.

This too is a basic principle of chess. This game teaches the importance of knowing how to take advantage of each of the moves, knowing how to select the most necessary in each moment within the general strategy. Another clearly connected idea is the principle of sobriety. In chess, it is said that there is no time for *artificial or frivolous moves* (Nimzovich, 1925). On the same lines: in a good argument, everything is superfluous except the indispensable.

WORKSHEET II. THE ART OF PRUDENCE
A Baltasar Gracián aphorism: *Think twice; reflection arrives where apprehension failed.*
Student activity:

White plays: Kxe5. Black can capture the White Queen if he wants to but, *is it the best option?*
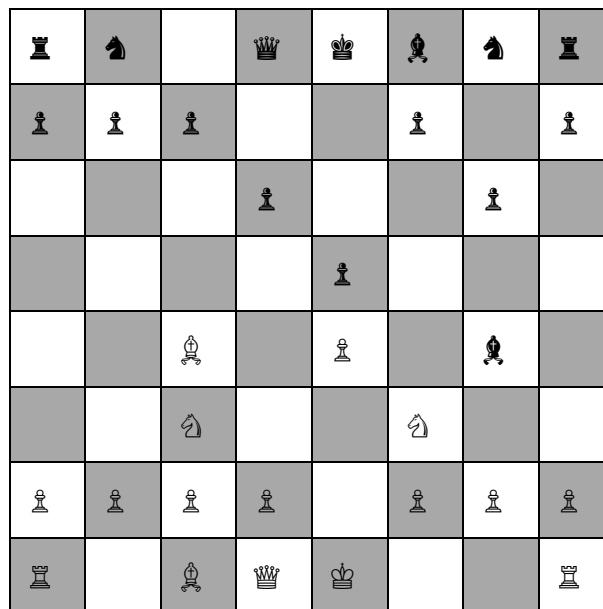
Légal - Saint Brie – Paris, 1750

A brief description of the position (teaching resource):

White has initiated an Italian opening characterised by the Pawn on e4, Bishop on c4 (developing towards the weak point f7, which can only be defended by the King) and Knight on f3 (which, in turn, puts pressure on the Pawn on e5). He also made a move with the usual development - Knight c3.

Black strategised the Philidor Defence, because, after e5, d6 aims to strengthen this position. In addition, he made two plays of a different sign, g6 -a rather doubtful move, no doubt thinking of "fianchettoing" the Bishop on f8 or perhaps preparing a possible break on f5, and Bishop on g4, with which he intends to "pin" the Knight, so that, if the Knight moves, there is a clear path to capture the Queen. Legend has it that Légal, upon discovering the combination, caressed his "pinned" Knight very slightly and carefreely, before his opponent demanded he moved the Knight by the rule of "piece touched piece moved". The outcome is well known.

A brief historical context (teaching resource):

We are in the pre-revolutionary Paris and some places that will soon revitalise the cultural, social and intellectual life of the city are beginning to appear, the so-called *cafés*. Légal's mate is one of the most beautiful and famous checkmates in the history of chess. The game was held in the great Mecca of chess of the time, café Régence in Paris. We can imagine watching the game, while betting or discussing art and politics with Robespierre, Napoleon Bonaparte, Voltaire or Diderot, regulars of this café. In this same

café Karl Marx would meet Friedrich Engels, but this time in another location and a century later.

We said that Black took the Philidorf defence, although it was not called this at that time. Bear in mind that the Grand Master Philidorf was 24 years old then and as a good disciple, he was very attentive to the moves his master Légal made in his games at café Régence. Philidorf -a close friend of Benjamin Franklin's, when he was US ambassador to Paris- was considered the world's greatest player at the time and a great game theorist.

The outcome of the game:
5... - Bxd1: Black decides to capture the White Queen. A serious mistake!
6 Bxf7+ - Ke7
7 Nd5++

Objectives of the reflection:
Légal's famous checkmate threatens the board. This position is interesting because Black -who loses the game- is so engrossed in capturing the White Queen yet fails to see the trap it involves. Black is fully convinced of the goodness of his action so much so that he is unable to shuffle the weaknesses of his position and the consequences of capturing the Queen. The principle of prophylaxis is basic in chess and helps assess the risks involved in each new position on the board, especially avoiding the opposite's development and preventing threats that this may entail. In chess, it is said that the *defencelessness of our pieces leads to the successful combination of our opponent*. This game is a good lesson for a Law student when writing an argument. Reflective thought implies this exercise of caution. A good lawyer should be aware of the convenience of assessing the pros and cons of any argument, the need to develop strategic thinking, the importance of prudence and the importance of some material detachment.
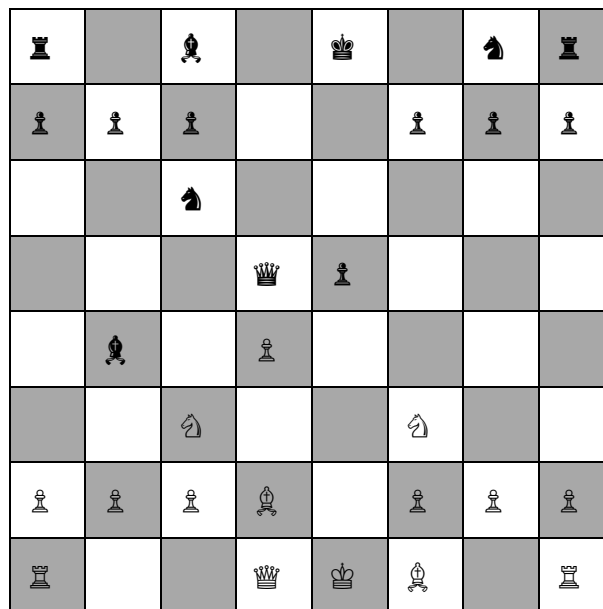
Diagram of the game:
http://www.chessgames.com/perl/chessgame?gid=1251892

WORKSHEET III. THE ART OF RECTIFICATION
A Baltasar Gracián aphorism: *Do not double the foolishness, never continue, by obstinacy, the worst game*
Student's activity:
The Black King is threatened, and it is Black's turn. *What would be the best move?*

Aarón Nimzovich, Mein System, 1925

A brief description of the position (teaching resource):

This is a theoretical position put forward by Nimzovich to explain the importance of simplifying and eliminating tension, as well as the need to know how to let go of a bad idea in time. This position highlights the Queen's centrality in the opening, an unlikely circumstance since the enemy will tend to look for moves that allow creating threats to the Queen while developing his pieces. This forces us to waste time protecting our Queen while they seek good positions for their minor pieces.

A brief historical context (teaching resource):

Nimzovich was one of the foremost promoters of the hypermodern revolution that implied a new philosophy of chess. They questioned some fundamental principles of positional theories, and beyond some conceptual excesses, their contributions to the progress of the game have been paramount. His game is based on flexibility, *a well-designed plan that may change when least expect*ed and on concepts such as prophylaxis, centralisation and blocking.

Hypermodern theories were developed in the early twentieth century together with other philosophical, political and cultural movements capable of creating a crisis around the basic notions of modernity and which have shaped the new collective subjectivities that characterise our times. The avant-garde, postmodern theories and the birth of new social concerns such as feminism and ecology are good examples.

**Solution:**
6… Bxc3 7 Bxc3

Objectives of the reflection:

"To rectify is of wise people" is a very appropriate principle to apply to any facet of our lives, and little more can be added to Gracián's wise aphorism that serves us as a title: *do not double the foolishness, never continue, by obstinacy, the worst game.* Juridically, it can be characterised by flexibility in the claims and by the ability to mediate and negotiate.

WORKSHEET IV. THE ART OF PATIENCE
A Baltasar Gracián aphorism: *Hastening the victory, knowing how to manage expectations*
Student activity:

Black has captured the White Knight on f4 but… *Should Black capture the Bishop on f4 with the Pawn?*
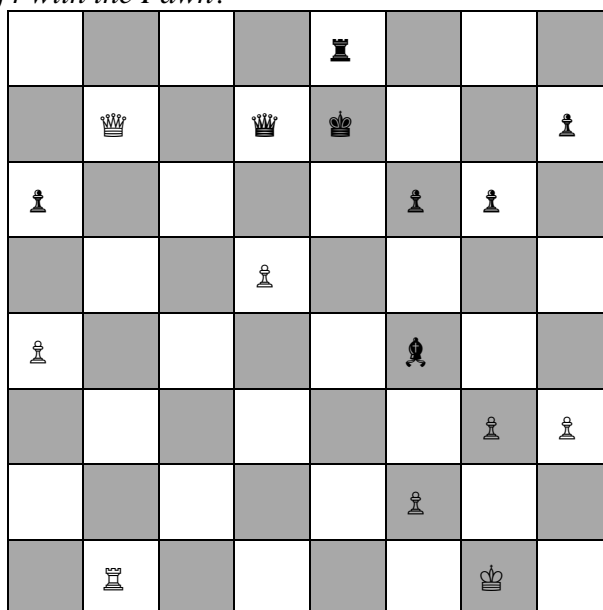
Capablanca & Zubárev – Moscow, 1925

A brief description of the position (teaching resource):

Capablanca was a great positional player. Note that while his King is perfectly sheltered on g1, the Black King is in an uncomfortable position on e7 -in an open column in front of his Rook and with his Queen "pinned" by the White Queen-. Zubérev captures f4 with the Black Bishop hoping perhaps that Capablanca will capture the g3 Pawn in return. He aims to eliminate tension through change and to achieve a much more balanced position.

For his part, José Raúl Capablanca seeks to *maintain the tension and threats* in pursuit of either leading the enemy King to a mate position (maybe with the support of the Pawn on g3) or to capture the Queen. This constitutes a decisive advantage that leads to the abandonment of his rival (which is what ends up happening), for he will look for checks consecutively -nine in total- until he succeeds in placing the Black King where he wants it, at which time it will set him off.

A brief historical context (teaching resource):

Capablanca looks like a character out of a Scott Fitzgerald novel, elegant and cultured. He was certainly an unexpected master. The great Latin American chess player, born in a small Caribbean island (Cuba), recently independent from Spain and immersed in a dictatorship under the protection of the USA. He was the son of a Spanish soldier, and his father supported the Creole rebellion against the colonising force, something that would undoubtedly influence his deep Cuban nationalist sentiment and leading him to become one of the undisputed historical figures on the island. The Cuban poet, Nicolás Guillén, wrote *Cuba flies in the afternoon like a sad dove*, after his death.

The game took place in Moscow in 1925. It was the first ever great chess championship to be held by the USSR, and the Cuban government tried to prevent Capablanca's from participating, but to no avail. Chess became an instrument with which to demonstrate the "superiority" of each side during the Cold War. The high point of this USSR-US confrontation was undoubtedly the historic Fischer-Spassky duel of 1972, considered the game of the century.

The outcome of the game:

34. Re1+-Be6 35. d6+-Ke6 36. Qb3+-Kf5 37. Qd3+-Kg5 38. Qe3+-Kf5 39. Qe4+-Ke6
40. Qc4+-Kxd6 41. Rd1+-Ke7 42. Rxd7+-Kxd7 43. Qxa6 –1-0

Objectives of the reflection:

It is just as important to have a good argument, as it is to know how to get the most out of it. In chess, advantageous positions are frequently disrupted, due to haste and the desire to capture an unimportant piece. Chess trains you to make the most of the positional advantages and to know how to bring an argument to its ultimate consequences. Managing advantages is not always easy. Certainly, a good argument requires a greater effort to know how to choose the most appropriate outcome and take all its power.
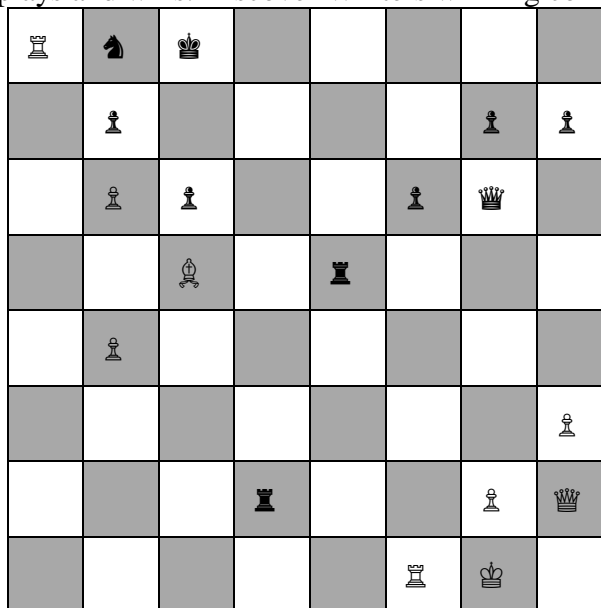
Diagram of the game:
http://www.chessgames.com/perl/chessgame?gid=1100093

WORKSHEET V. THE ART OF DETACHMENT
Ignorance does not see beyond the shell; one should not get carried away by the first impression.
Student activity:

White plays and wins. Discover White's winning combination.

Alekhine & Reshevsky, Kemeri, 1937

A brief description of the position (teaching resource):

From White's point of view, we have a powerful Rook on the eighth row, a powerful Pawn on b6 -this figure is called *Damiano's Pawn*, and it is going to be a very active piece in the combination, since it avoids key squares for a possible escape from the King-, a powerful Bishop on c5 and an active Queen on h2, controlling an important diagonal, and threatening a definitive attack -if it were not for the Rook on e5 that stands in its way-.

On the other hand, Black threatens checkmate with the Rook on e2 and the Queen of g6 on g2 as soon as the White Queen who defends that point becomes distracted, having, on the other hand, the weaknesses previously mentioned and especially the pinned Knight on b8.

A brief historical context (teaching resource):

The two protagonists of this game were exiled, marked by the European totalitarianism of the 20th century. Dr Alekhine was the fourth world champion, famous for his aggressive play. Legend has it that he earned his PhD in Law from the Sorbonne in Paris. Russian-born and from the bourgeois class, he was arrested in 1920 for supporting the White Army. In prison, he played one of the "most famous" games in history against the "village

commissioner", Leon Trotski, who visited him in his cell in Odessa. Dr Alekhine defeated him in that game and was awarded the letter of release the very next day. He later obtained a visa to leave Russia and settled in France, obtaining his nationality.

Reshevsky, for his part, was a Polish chess player of Jewish origin, who became a United States national because his parents emigrated to the United States. He also starred in big games against Bobby Fischer.

The outcome of the game:
35. Rxb8+: The Rook is surrendered to attract the King to b8.
 … Kxb8: He accepts the sacrifice.
36. Qxe5+: A new sacrifice... This time, the Queen!
... 1-0: Black abandons since, after the capture of the Queen by the Pawn on f6, the Rook f8 comes and… Checkmate!

Objectives of the reflection:
In this position, the key piece to obtain a mate will be the advanced Pawn on b6. In chess, it is very important to develop a certain detachment for the material value of the pieces, as it is more interesting to discover the functional value of each of them in each specific situation within a global strategy. The mate is obtained after a double sacrifice of the Rook and the Queen, where the combination of the Rook and the Pawn -the piece of lesser value- is what gives the checkmate.

In legal disputes, a deep understanding of the problem at stake is key. Arguments are interrelated by creating a logical reasoning aimed at obtaining a specific result. The relationship between the arguments must, therefore, be functional, in order to refute or defend a specific assumption.

Diagram of the game:
http://www.chessgames.com/perl/chessgame?gid=1013251

4. Conclusion
We can use certain positions or chess moves as a basis for the elaboration of didactic metaphors capable of creating dynamic learning environments. What is really interesting about this activity is its dynamism, its participative character, its spontaneity and its originality. The aim is not an in-depth analysis of the technical and legal elements that govern legal argumentation, but rather to point out the importance of the correct structuring of legal discourse from a strategic point of view and the importance of argumentation for Law.

Chess can be useful when deducing the general features of legal argumentation. These positions invite us to reflect on basic aspects of Law

and legal argumentation in a fun, reflective and collective way. Aristotle compared rhetoric with an art of action and said that arguments must be meditated upon, divided into distinct parts and accommodated to a certain chosen, appropriate and select eloquence. This definition is a good starting point for a reflection on how to develop a sound legal argument. From the Aristotelian rhetoric perspective, *style* defines the norms by which a discourse must be governed and taken to practice. It is equally important to have the *means of persuasion*, that is to say, having logical cognitive elements from which one can deduce the consequences or reasons to demonstrate a proposition, as well as the ability to present them in a *dignified and noble eloquent* discourse.

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