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EFL STUDENTS' CONCEPTIONS OF RESEARCH: A QUANTITATIVE ANALYSIS

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PARA OBTENER EL GRADO DE
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PRESENTA
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1. INTRODUCTION

1.1. Background

Conceptions of research have been hardly ever a subject for exploration; therefore, it is not easy to find empirical work on it (Brew, 2001). Conceptions of research might be one of the newest topics for exploration; for this reason, the lack of empirical work in some fields such as English as a Foreign Language (EFL) and specifically with undergraduate students as participants is still a fact. Questions and possible hypotheses that have been raised about conceptions, beliefs or attitudes of research, followed by investigations, come from different fields such as psychology (Love, Bahner, Jones & Nilsson, 2007), nursing and science (Halabi and Hamdan-Mansour, 2010), and education (Beycioglu, Ozer & Teyyar, 2010). In addition, it is worth noting that several terms are used to explore "conceptions of research"; however, the term will be used in this present study to refer to what undergraduate students think of research and understand by it (see Kiley & Mullins, 2007; Pitcher, 2011).

1.2. Statement of the problem

With reference to this particular issue, conceptions of research, the majority of the contributions made by the researchers have dealt with teachers (Borg, 2009; Moore, 2011; Allison & Carey, 2007; Lucas, Healey, Jenkins, & Short, 2008; Kiley & Mullins, 2007) which means that it is a greater interest on teachers' conceptions, thus students' conceptions of research are set aside, at least in the field of applied linguistics. But, looking on the bright side, having plenty information on teachers' conceptions has contributed to students' conceptions somehow. Reading and/or doing research allow teachers to understand their

own work in a better way, make them more conscious about what they do, induce them to experiment with new and more ideas, and as a result, prepare them to become more independent (Borg, 2008). The outcomes of this particular author have shown that reading and/or doing research makes teachers to be more prepared, academically speaking. Thus, if the majority of the teachers are aware of this, students might come with the idea of being well-prepared by doing and/or reading research as their supervisors/teachers do. Other authors who suggest that teacher's conceptions of research are important, in this case as they might be a factor that influences students' conceptions are Visser-Wijnveen, Van, Van der Rijst, Verloop & Visser (2009). They pointed out that:

> Students perceive a strong link between research and teaching as conducive to their learning process. When academics incorporate research into their teaching, students perceive these courses as up to date, stimulating intellectual curiosity, and giving the impression that staff are enthusiastic about what they are teaching. (p. 24)

Therefore, if teachers adopt the habit of reading or doing research, or simply incorporate research to their teaching, then students might take it as an example and as a result, they will read and/or do research as well. That is the reason why teachers' conceptions about research are crucial, as they might play an important role on their students' conceptions.

1.3. Purpose of the study and research problems

Few researchers have been concerned with students' conceptions of research as itself, which means that there is a limited number of studies about students' conceptions of research among different groups of university people such as post-doctoral, (Pitcher & Åkerlind, 2009); doctoral (Pitcher, 2011) and post-graduate (Meyer, Shanahan, and Laugksch, 2005). All of those studies used a variety of instruments and methods such as participant-observation, focus group conversations, surveys, interviews, questionnaires, and others in order to explore the participants' conceptions of research; however, none of them dealt with EFL undergraduate students. Therefore, the principal purpose of this study is to analyze the undergraduate students' conceptions of research in the applied linguistic field. In other words, to explore what conceptions or misconceptions EFL students of 2nd, 6th and 10th semester of the English language major at the University of Quintana Roo have with regard to research. Another purpose is to provide a comprehensive investigation about EFL undergraduate students' conceptions by analyzing whether variables such as the semester and the age, relate to students' conceptions of research.

In order to investigate the students' conceptions of research, the following question is addressed:

- RQ1: What are the conceptions of research of students from 2nd, 6th y 10th semesters of the English Language major at University of Quintana Roo?

As well as the following hypotheses:

- H1: There is a correlation between seniority and conceptions of research.
- H2: Age makes a difference in conceptions of research.

1.4. Significance of the study

The lack of empirical research on students' conceptions of research particularly in undergraduate students in the field of applied linguistics, mainly in EFL, make this study relevant as it is, to the best of my knowledge, a subject that has not been considered to research, making it a pioneer work at least in Mexico.

Additionally, it is a fact that many undergraduate students have trouble at doing projects or accomplishing their thesis; many factors might be the responsible for those problems, such as the lack of motivation, for example. Another factor might be that students have misconceptions about what research is or what it involves, also students might not be aware of the importance of research in the EFL field. Therefore, this study might be useful and of interest to both, students and teachers. Students might be more aware of the importance of research in this major. Moreover, teachers might realize what the students' conceptions of research are, thus giving a better synchronization between teachers and students' conceptions. It is essential that both have a clear and similar idea about conceptions of research since a possible mismatch between them might cause communication issues (Pitcher, 2011). As a result, the undergraduates might face problems with their research at doing projects or accomplishing their thesis.

Moreover, the results of this study might help to know more about what strategies should be taken in the institutions to reduce the misconceptions students have about what research is and what it involves.

2. LITERATURE REVIEW

The lack of empirical work in students' conceptions of research in EFL is evident; therefore, the literature is limited. The following review will be divided into two sections: The first one will be about teachers' conceptions of research and the relationship between research and teaching; and the second one will be about students' conceptions of research, which, precisely, has focused on graduate and postgraduate students as well as in other discipline areas (philosophy, law, ecology, anthropology, textiles, sculpture, physiology, music composition, colloid chemistry, children's literature, and public finance)whereas this present study will focus on undergraduate students in the English as a foreign language area.

According to Vermunt (2005), from all studies concerned with this particular issue, conceptions, the majority of them emerge about research and science. In this present study, the studies reported deal with conceptions of research and not only on students' conceptions but also with teachers' conceptions since it is evident that the literature on students is limited. Moreover, teachers' conceptions of research literature might support the analysis and interpretation of results. In other words, as students' conceptions of research are a subject that has few previous studies, teachers' conceptions of research will complement and give a wider view.

It is worth noting that several terms are used to explore conceptions of research. There are, for example: "perceptions", "attitudes", "beliefs", and "views", used by different authors. For that reason, in this literature review there will be taken into account those studies whose definition is equivalent to the term 'conception' regardless the term used in the report. Therefore, the term "conceptions of research" will be particularly used, in this

present study, as what undergraduate students think of research and understand by it (see Kiley & Mullins, 2007; Pitcher, 2011).

2.1. Teachers' conceptions of research

Pajares (1992) carried out a descriptive research about teachers' beliefs and educational research. In addition, this author aimed to clarify the conceptualization and understanding of the concept *belief.* In other words, the different meanings several authors have given to "beliefs" in the education field. The research was merely descriptive; a compilation of what researchers have said with regard to the meaning of *belief,* how it differs from *knowledge* and how other concepts are used to make reference to *beliefs.* Also, the author pointed out the importance of "beliefs" in the past years in other fields such as sociology, medicine, anthropology, law and others, and how that have impacted on researchers to make feasible and useful explorations in the education field. Regarding the overall reflections the author gave, he stated that it has been proved that there exists a strong relationship between teachers' beliefs and their planning, instructional decisions, classroom practices, as well as process of learning. However, because "beliefs" have been studied in several fields, now there are a variety of meanings; therefore, the educational research community cannot adopt a specific definition and as result it has created some difficulty in developing how strong may be the relationship between teachers' beliefs and their students' outcomes. Finally, Pajares suggested that researchers need agreement on the conceptualizations and meaning of *belief.* Pajares' study differs from other studies as it is exclusively descriptive and also, it is as far as I know, the only one who have discussed the issue of giving different meanings to the concept of *beliefs* and the urgency to adopt a conceptualization in the educational field as matters of better understanding.

Allison & Carey (2007) explored how language teaching colleagues in a Canadian university perceive the relationship between research and language teaching. It was an exploratory research. Several language teachers and respondents were concurrently pre-graduate students, earlier graduates (both from the same school programs) and some others were doctoral students from other universities who were invited to participate through electronic distribution lists. The instruments used were an open-ended questionnaire responses and follow-up discussions. The findings arrived into the following themes labeled as: a) Not enough time, b) Lack of encouragement, c) Lack of expertise, d) Ambivalent, e) What might teachers want to investigate, f) What can be done? As we could see, the teaching colleagues' responses were set into several themes in order to facilitate the analysis and discussion. In general, the main reasons that the participants gave were that they did not have enough time and/or energy for carrying a research project since they were very busy with the students' needs inside the classroom; the lack of external motivation did not encourage them to do research; the lack of confidence on them to manage primary research since they felt that even they as master's graduates need supervision from an expert; some of them did not see themselves as "real" researchers for using the classroom as a data source. Overall, Allison and Carey's research analyzed the relationship between research and teaching; the reasons for doing or not doing research whereas this present study aims to analyze only the ideas students have about research.

Kiley & Mullins (2007) focused on supervisors' conceptions of research since they found the environment of the university poor and with slow progress. Their study was carried out in Australia, but other countries participated as well: UK, South Africa, Australia, and New Zealand. The participants were postgraduate supervisors who were surveyed via a web-based questionnaire which was cleverly made in order to be available

for supervisors in other countries (as listed above). The results were classified into four categories which were 1) technical, 2) creative/innovative, 3) integrating complexity, and 4) new ways of seeing. The category which had the more percentage was "technical". The results showed a range of variation between "research" and "good research". For example, some participants conceived research of as only data collection; a series of steps; a way of helping others; a community development whereas other participants conceived it as a new way of seeing; it involves complexity; an "academic profession"; career development, respectively. The main reason for those researchers to work in the study was because in that country (at that moment) the percentage, not only of students but also of teachers, who enrolled on research degrees and failed to complete them, was high. Therefore, they aimed to identify the range and variety of concepts of research held by supervisors, unfortunately, the data did not allow them to establish a stable set of categories as they wished. Also, the categories they provided were compared, within the same work, to the ones who Brew (2001) had provided in previous years; but clearly the authors showed the differences between Brew's work and theirs, such as the difference on the participants, the data collection and its analysis.

Lucas, Healey, Jenkins & Short (2008) explored the experiences and perceptions of faculty by locating them in specific institutional and disciplinary culture; therefore, to explore how this might impact on their experiences and perceptions of research, teaching and the relationships among them. The project was a multi-level comparative case study of three institutions and three academic (departments) units within each location: Environmental Sciences; English; Sociology. Institutions were chosen in order to represent different types of universities with a variety of missions. The three cases included one research-intensive university, one university with a teaching focus but clear research

strengths/aspirations, and one university with a strong teaching focus. The study used a phenomenographic approach and its principal instruments were interviews. The results showed that the link between research and teaching seemed strong in those departments which had: a cohesive and collaborative culture, strong academic affiliation, a positive change orientation/flexibility, and finally, positive synergy between department and institutional goals. Additionally, despite the positive views of the senior managers for linking research and teaching, there were few explicit policies at any of the institutions. Differences were shown between disciplines —as regards what research means to construct knowledge. Their study aimed to analyze the link between research and teaching as Allison and Carey (2007) did.

Borg (2009) analyzed the conceptions of research held by English language teaching (ELT) teachers working in a range of countries. The participants were 505 teachers of English from 13 countries around the world: Australia, Mainland China, France, Hong Kong, Japan, Nigeria, Oman, Poland, Slovenia, Spain, Switzerland, Turkey, and UAE. He used a questionnaire and then, added written and interview data for analyzing the teachers' views on what they consider research is, and how frequent they read and do it. The findings showed that teachers relate their conceptions of research with conventional scientific notions of inquiry. The teachers also reported that they did not have high engagement with research; in other words, they do not read or do research very often. The factors they gave for not doing so were lack of time, knowledge, and access to material. The author pointed out that it is important to understand all these issues in order to promote teacher research engagement, but that unfortunately the lack of systematic evidence in the field of English Language Teaching (ELT) is not helping. The aim of his study, as well as this present study, is to provide relevant information to the field of applied linguistics, although he

focused on ELT faculty, and this study aims to deal with English as a Foreign Language (EFL) students.

Moore (2011) was concerned with English language teachers' conceptions of research and engagement with research in Cambodia. The participants were 40 Cambodian English teachers, who half of them were full-time and the other half was part-time. His study focused on the opinions, attitudes and beliefs of English Cambodians teachers who teach at tertiary-level institutions. The instrument used for this study was a questionnaire. The teachers' responses were divided into six sections: (1) research scenarios; (2) characteristics of good quality research; (3) research culture; (4) reading research; (5) doing research; and (6) personal data. One interesting fact was that the first section (research scenarios) provided ten different situations in which the participants had to decide if they could be considered as research or not. In that section, the author specified that there were no right or wrong answers since the purpose of the item was only to know better and deeper the participants' views of what can be considered as research. Thereafter, the responses were analyzed for frequency counts and comparisons with data from Borg's (2009) study. The findings of the study were that there was strong agreement amongst the Cambodian respondents for half of the scenarios being described as 'research', but only moderate agreement in respect of the other half. The study also found a high degree of alignment with most of the views expressed by Borg's participants in relation to descriptions of research scenarios. This researcher used the same instrument as Borg (2009); therefore, as he said, the results of his study could be compared directly to Borg's findings. In fact, the author claimed that his study is a partial replication of Borg (2009), but in a different context. He wanted to make a further investigation on teachers' conceptions but in Cambodia, which was fine since Borg did not include that country in his work. Both studies

belong to the quantitative approach. Once more, we have empirical work on teachers' conceptions of research rather than students' conceptions.

Aldana & Joya (2011) aimed to analyzed attitudes towards research among the teachers of research methodology. The participants of the study were seventeen teachers from *Fundación Universitaria del Área Andina*, in Bogota. Aldana and Joya decided to work with them as their institution included twelve undergraduate programs and had specific and integrated spaces of research training. Furthermore, they wanted to do the research as there was not such interest in research among the students at the university and there were some difficulties to achieve the institutional goals. The researchers used the census-technique and the likert-type scale. The instrument was divided into three dimensions: 1) Cognitive, 2) Affective and 3) Behavioral. The researchers expected to find positive attitudes from the teachers as they were responsible to encourage their students to be aware of the importance of research, for the fact to be in groups and research lines, for supervising research studies and for simply being teachers of research. However, the findings showed that there was a negative tendency in the three dimensions. Aldana and Joya were worried about this issue because they were in agreement with other researchers about how a negative attitude towards research on behalf of teachers can affect the students' attitudes due to the fact that they might be seen as role models. They were also interested in this topic because nowadays one of the institutional aims is to promote a culture of research. Aldana and Joya's research can be compared to Visser et. al's (2009) article as both of them are concerned about how teachers can be an influence on their students.

As we could see, the previous studies cited above have concerned with conceptions of research, some have similarities/differences among of them such as the method used, context, instruments, the approach or the participants. This present study aims to deal with students whereas prior research has focused on teachers; however, as it was explained before, teachers' conceptions complement somehow students' conceptions and provide a basis from which to depart.

It is important to mention that all the previous studies either belong to the field of applied linguistics or are concerned with the relationship between teachers and teaching/engagement with research. In contrast, the following section that will be concerned with students' conceptions of research is more limited in number and variety—in comparison with the previous section—since all of the studies have post-graduate students as participants.

2.2. Students' conceptions of research

Meyer, Shanahan, and Laugksch (2005) explored the dimensionality of students' conceptions of research from two complementary research perspectives, the qualitative and quantitative approaches. The group of participants was mixed; few of them were undergraduates while the majority was postgraduates. About their ethnicity, Australian and South African nationalities were predominant. Regarding the qualitative perspective, students —from a variety of discipline backgrounds— provided written open-ended responses. Those open-ended questions aimed at soliciting variations in conceptions of what "research is" were analyzed using a qualitative methodology in order to isolate ''categories of description''. Results turned out into eight main categories: A) information

gathering, B) discovering the truth, C) insightful exploration and discovery, D) analytic and systematic enquiry, E) incompleteness, F) re-examining existing knowledge, G) problem-based activity, and H) a set of misconceptions. The findings were useful for interpreting how students who engaged in research activity may differ from one another in terms of their conceptions. The other complementary part of the study (quantitative) explored the degree of the dimensions of variation that the qualitative study previously showed. The instrument developed, by the own researchers, and used was the Students' Conceptions of Research Inventory (SCoRI). Regarding the qualitative part, the authors faced some troubles at interpreting the dimensions in terms of the theoretical literature as they stated that there was not enough literature on student's conceptions of research. About the quantitative part, they faced some problems at analyzing the data as there were too many items (124) to give a strict eigenvalue. Therefore, the authors applied a second analysis based on a reduced item pool (69), resulting from the elimination of items with cross-factor loadings identified in the first analysis. One interesting fact is that even with the elite status that those students had (compared with undergraduates), it was quite clear that the sample they provided did not show a consistent approach to conceptualizing either research or the research process.

It must be mentioned that in fact, the instrument SCoRi used in their study will also be taken as an instrument in this present study since this particular researcher wants to make further investigations about students' conceptions of research but with undergraduate students in the English Language program at the University of Quintana Roo. It means that the present study seeks to investigate the EFL undergraduate students' conceptions of

research but only from the quantitative perspective and not from both as Meyer et al. did in their study.

Pitcher & Åkerlind (2009) used metaphors to analyze post-doctoral researchers' conceptions of research at five Australian Universities. The participants were 22 post-doctoral researchers (PDRs) who were selected by using a nation-wide survey (Thompson *et al,* 2001) to represent the demographic variation (in PDRs) with the aim of capturing variations in conceptions. The students belonged to different fields such as mathematics, physics, chemistry, earth sciences, engineering, biological sciences, agriculture, health sciences, social sciences and humanities. About the method used for the analysis, it consisted of transcripts of interviews. The author's aim was to make up a map of all the metaphors used by the students in each transcript to find the dominant metaphorical concept, in other words, the one that was referred to the most in each transcript. The analysis yielded four categories of dominant conceptions: "research is explorative", "research is spatial", "research is constructive" and "research is organic". One interesting fact is that apparently there was not any close relationship between the conceptions of research and the students' field of study. Pitcher (2011) pointed out that their findings were merely speculations and impressions resulting from reading the transcripts instead of direct outcomes of the analysis. Moreover, one of the four conceptions of Pitcher's research can be compared to other dimensions from other researches: "research is spatial" could be compared to Meyer et. al's factor "research is information gathering" as well as with Kiley and Mullin's category "new ways of seeing the world". This particular research differs from Pitcher's research as it is merely based on statistics and does not involve the researcher's attitude to analyze the data.

Pitcher (2011) analyzed the doctoral conceptions of research at an Australian university. Since he agreed that none of the studies that had been performed until then has produced any different description and category of conceptions of research, he offered a "'unique approach'" by using metaphor analysis to study the doctoral students' conceptions. The students who were from a variety of disciplines (philosophy, law, ecology, anthropology, and others), were asked to answer questions related to their conceptions of research via an on-line survey which was developed by using the university's on-line polling system, APOLLO (2008). The analysis yielded four categories labeled as "dominant metaphorical concepts": a) research is explorative b) research is constructive c) research is spatial d) research is organic. The researcher described the categories by providing examples in each one of them. In other words, each category was described with examples of the students' understandings of what research entails. For instance, the students whose conceptions were place in the category "research is explorative" found research as a field of interest and discovery; "research is constructive" as a the construction of knowledge; "research is spatial" as a field of interest and discovery; and finally, "research is organic" as the development of an organic entity. An interesting aspect of this study could be that although there were students from a variety of disciplines (as listed above); it was not reflected in the study, as regards what research means, as in Lucas, Healey, Jenkins & Short (2008). The categories of this researcher were compared, by himself, to the ones who provided Meyer et al. (2005) in their research, but as Pitcher pointed out, they were nothing but overlapped with some slightly differences.

As observed, the literature for students' conceptions of research is dramatically limited; however, this was complemented with the teachers' conceptions. The studies that were cited in this second section of the literature were concerned with students. Nevertheless, they were carried out with graduate students and not with EFL students thus, giving greater impact and relevance to this study as it aims to deal with EFL undergraduate students which is a topic that have never been explored, to best of my knowledge. Furthermore, the majority of prior research studies were carried out under the qualitative approach whereas this present study is carried out under the quantitative approach.

3. METHOD

3.1. Type of research

According to Aliaga and Gunderson (cited by Muijs, 2004, p. 1) quantitative research is 'Explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particularly statistics)'.

There might be plenty of phenomena that can be study either from the qualitative approach or the quantitative one, or in some cases from both approaches. It is a fact that many phenomena, especially in education, do not exist in a quantitative form such as attitudes and beliefs, in this particular case "conceptions". However, they can be studied from a quantitative perspective by using a specific designed instrument such a questionnaire or survey that allows to rate a number of statements so they can be further analyzed in a statistic way. Therefore, as this present study deals with EFL students conceptions of research, it is necessary to use a specific instrument capable to convert the phenomenon into quantitative data, which can be analyzed statistically (Muijs, 2004).

3.2. Research design selection

In order to answer the question and hypotheses of this study it was necessary to choose the suitable research design. Because the nature of the phenomenon to be explored is non-experimental, it was decided to choose a survey research which, according to Muijs (2004, p. 36), it is "well suited to descriptive studies, or were researchers want to look at relationships between variables occurring in particular real-life contexts". Furthermore, survey research is defined by collecting data using questionnaires forms via web-based, e-

mails, face to face, telephone, and the most common one, pencil-and-paper. Because of the resources, context and time, it was decided to use the simplest one which is the pencil-and-paper questionnaire that also is the one with which the students are more familiarized.

3.3. Data collection

The collection of the data, as it was mentioned above, was via pencil-and-paper questionnaire which consists of 33 items using a standard 5-way Likert-type response to rate the statements.

3.4. Instrument

The SCoRI is a questionnaire developed by Meyer, Shanahan, and Laugksch in 2005. Meyer et al. pointed out (2005), "It was originally made for generating alternative expressions in order to see the varying degrees of nuance that allow the possibility to select those items ultimately, exhibiting the best psychometric characteristics" (Meyer et al, 2005). The questionnaire was divided into six factors and were conceptually labeled as (F1) misconceptions about research, (F2) re-search, (F3) insightful process, (F4) finding solutions to problems, (F5) discovering the truth, and (F6) gathering information. It was of interest to apply this instrument to EFL undergraduate students at this university in order to expand the knowledge about students' conceptions of research.

3.5. Adjustments on the instrument

It is important to mention that the authors made some adjustments to their instrument. Meyer, Shanahan, and Laugksch faced some problems at analyzing the data as there were too many items to give a strict eigenvalue[1]. The number of original items in their first analysis was 124 and the instrument yielded six factors which were conceptually labeled as (F1) misconceptions about research, (F2) re-search, (F3) insightful process, (F4) finding solutions to problems, (F5) discovering the truth, and (F6) gathering information. As there was an overlapping situation –conceptual item redundancy- and it might have caused some changes to the factor structure, thus the authors applied a second analysis based on a reduced item pool of 69 items resulting from the elimination of items with cross-factor loadings identified in the first analysis. Once more six dimensions were yielded, although the last two came inverted. One interesting fact is that in the first factor analysis five of the six items that constituted the sixth factor needed to be eliminated because of conceptual overlap, in other words just one item showed a cross-loading across others factors. In the second analysis only three not connected items loaded in the sixth factor (>0.25). Despite of that, the sixth "non-overlapping", as the authors described it, factor appear by means of possible psychometrically improvement using another items.

As it was previously mentioned, there were some difficulties with the sixth factor; therefore, it was decided to not take it in consideration for this particular research on students' conceptions of research. In other words, only five factors (with a total of 33

[1] Eigenvalue: are a special set of scalars associated with a linear system of equations (i.e., a matrix equation) that are sometimes also known as characteristic roots, characteristic values (Hoffman and Kunze, 1971), proper values, or latent roots (Marcus and Minc, 1988, p. 144). They are calculated and used in deciding how many factors to extract in the overall factor analysis.

items) plus 5 demographic data items constituted the instrument used for this present study. Moreover, a translation (from English to Spanish) was needed as means of comprehension. i.e. it was taken into consideration that students might have issues to understand some of the items and as a result to interfere in their responses.

The following chart presents the factors and their respective items:

Chart 1. Content of the questionnaire

Section I. Conceptions	Number of items
Factor 1. Misconceptions about research	8
Factor 2. Research is re-search	7
Factor 3. Research is an insightful process	7
Factor 4. Research is finding the truth	6
Factor 5. Research about problem solution	5
Section II. Demographic data	5
Total of items	38

3.6. Piloting

The SCoRI was presented in printed form to a group of 4th semester students of the English Language program at the University of Quintana Roo in Spring 2013. The reason for piloting the instrument was to see how the participants felt about the structure of it such as letters' size, the translation and organization of the items, for example. As there were no comments, thus the instrument did not require any improvement. This group of a total of 11 students was selected to participate in the piloting of the instrument because fourth semester was not going to be part of the research project (as that semester was not considered as a variable to be analyzed as the other ones) as it was mentioned before. The

only groups to be considered to be part of the project was second, sixth and tenth semesters for the reasons that will be discussed in more detail in: *description of the sample*. Due to the fact that students from the fourth semester were not part of this research project, we kindly asked the students to respond the pencil-and-paper questionnaire. About the reliability that the instrument yielded, it was .89 which meets the standards.

3.7. Procedure

Once the questionnaire was administered, the next step to follow was to analyze the data obtained. In order to obtain the results, it was necessary to analyze the data using descriptive statistics to determine the type of conceptions. Cross-tabulations were necessary for the relationship between the age and conceptions, and Spearman's rho coefficient for the correlation between semesters and conceptions. The data were analyzed using the Statistical Program for Social Sciences 19 (SPSS).

3.8. Reliability analysis

According to Christensen (2004), reliability is the capacity that a questionnaire has to precisely quantify between one value and another. In addition, the author points out that the reliability of internal consistency is determined by comparing each one of the questionnaire components. Another author who gives a clear definition about reliability is Joppe (2000). This author defines reliability as:

> …The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if

the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. (p. 1)

For this study it was used the internal consistency reliability, *Cronbach's alpha.* It can vary from 0 to 1, when 0 is the lowest value and 1 is the highest. DeVellis (1991) proposed certain guidelines about the acceptable reliabilities for research using scale instruments. He pointed out that below .60 the reliability is not acceptable; between .60 and .65 inadmissible; between .65 and .70 unsatisfactory, between .70 and .80 acceptable, between .80 and .90 the reliability is good; and finally, above .90 it should be considered to reduce the scale.

The reliability that *Cronbach's alpha* yielded was .87 which according to the guidelines previously mentioned can be considered as adequate.

3.9. Description of the sample

According to Muijs (2004), a sample is a group of people that will help to generalize the population. As the aim of this present study was to provide a comprehensive investigation about EFL undergraduate students' conceptions of research; therefore, the participants were three groups of EFL students of the English Language major at the University of Quintana Roo which are the following:

- The first group were 2nd semester students of the English Language major. Those students were included because, as the curriculum map establishes, they have taken in 1st semester the subject *Metodología de la Investigación* (Methodology of Investigation) which introduces the concept of investigation.

- The second group were 6th semester students. Those students were of interest to be considered as they have taken the subject *Metodología de la Investigación* long ago in comparison to the first group, and also because they have not taken the subject *Seminario de titulación* yet, which is taught at 9th semester.
- The third group were 10th semester students. Those students have been taken both subjects *(Metodología de la Investigación and Seminario de titulación)*; therefore, they are supposedly more familiarized with the concept of research.

It is worth noting that both courses, previously mentioned, are compulsory courses in the English Language program created in 1995.

Regarding the variables, as age is considered as one in this present study, the age variety of the participants were of the utmost importance, mainly because the hypothesis (Age makes a difference in conceptions of research) was to affirm or reject if the age might be a crucial factor that relate for the better or worse to students' conceptions of research. Therefore, all students from 2nd, 6th and 10th semesters of both shifts (morning and afternoon) were invited to participate in order to have varying ages. The other variable is the semester and the reasons for taking into account three different semesters have already been explained.

Conforming to the information obtained from the platform system SAE used by the university, 67 students were registered in 2nd semester, 46 in 6th semester, and 39 in 10th semester. The aim was to carry out a census, unfortunately, not all students attended the day the questionnaire was administered; also, some students were mixed in other groups. Therefore, for convenience in terms of availability, the sample of this research was constituted by total of 108 participants of which 45 were from second semester students, 41 from sixth semester, and 22 for tenth semester. All the participants were students from the English Language major program studying at the University of Quintana Roo during Spring 2013.

3.9.1. Gender

More than a half (63.9 %) of the students were female while men were the minority (36.1 %).

3.9.2. Age

The majority of the students (48.1 %) were in the rank between 21- 23. In descending order are students from 18- 20 with 40.7 %, students from 24-26 with 8.3 % and finally students from 27 or older with only 2.8 %.

4. ANALYSIS OF RESULTS

In this section, the findings of the research are analyzed according to the research problems established: a) what the conceptions of research of students from 2nd, 6th, and 10th semesters of the English Language major at University of Quintana Roo are, b) there is a correlation between seniority and conceptions, and c) age makes a difference in conceptions of research. The factors resulted from the instrument SCoRI developed and used by Meyer et al. (2005) are compared with the ones that this same instrument yielded in this research, recognizing that the participants and context are different. The findings are presented in the same order as the variables were established.

4.1. RQ1: What are the conceptions of research of students from 2nd, 6th y 10th semesters of the English Language major at University of Quintana Roo?

Frequency distribution analyses as well as measures of central tendency were carried out with all the information emanating from the dependent variables in order to know the students' conceptions of research. As means of better organization, the findings will be presented individually. i.e. the findings will be presented separately; first, the findings of second semester (morning and afternoon shift), then sixth semester (morning and afternoon shift), and finally, tenth semester(the only one group).

It is worth noting that the concept of each factor (a total of 5 in this research) will be presented for the purpose of a better understanding. The following concepts were taken from Meyer, Shanahan, and Laugksch's research (2005).

4.1.1. Definition of each factor

"Misconceptions". Meyer et al (2005) gave some examples of misconceptions to represent this factor, which are the following ones:

> Research is about gathering data that support preconceived ideas or that will back a particular argument, that correctly followed research procedures will always yield positive results, that when qualified people do research the results are always unbiased, that it is acceptable to modify research data if it does not look exactly right, that research becomes true after it is published, that if research is properly conducted then contradictory findings will never occur, and that there is generally only one way to interpret research findings. (P. 36)

The factor **"Research is re-search"** has the following meaning:

> Research is finding out about something that is already there, an investigation to find facts left out by previous researchers, comparing new results with previous results, discovering something that exists but that is hidden, challenging previous research, identifying information not considered in the past, and using research findings to reinterpret what is already known.(P. 36)

Research is an insightful process. In this factor, research is seen as:

> **…**as providing a deeper insight and understanding of a particular topic, extending concepts, stimulating further interest or work in a particular area, creating new insights by summarizing new and previously existing knowledge, searching for

more knowledge, or adding more knowledge to existing knowledge, and the idea that even new ideas germinate in a bed of existing knowledge. (P. 36)

The factor **"Research is finding the truth"** has the following meaning:

> Research here is seen essentially in terms of the quest for truth, in terms of fundamentally finding out, uncovering, or exhuming the truth, systematically hunting for the truth about something, and as something which is done to determine the truth or validity of something. (P. 35)

"Research about problem solution" is seen as:

> …as finding solutions to problems, or to stated problems, as a tool for answering questions, collecting data to solve particular problems, and as the careful and thorough study of a problem. (P. 36)

4.1.2. Findings of second semester

Misconceptions. In this factor, the majority of the students chose the options "agree" and "strongly agree" and if those options are summed up, 73.3 % of the students were in agreement with item 1. Regarding item three, 46.6 % of the students agreed with it; although, a high percentage (31.1 %) of the students chose de option "disagree". 44.5 % of the students agreed with item 4, even though a high percentage (28.9%) of the students decided not to be in agreement with it. 70.4 % of the students agreed with item 5. On the other hand, some other students chose the options "disagree" and "strongly disagree" and if those options are added up, 68.9 % of the students were not in agreement with item 2; 46.7

% disagreed with item 6, although 31.1% of them strongly agreed. Regarding items 7 and 8, 71.1 % and 48.9 % of the students did not agree, respectively; even though 26.7 % of them chose de option "agree" in the last one. For more details see **Chart 2**.

Chart 2. Frequency distribution of second semester (factor 1)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 1. Misconceptions about research					
1. Good research specifically gathers data that will support the researcher's preconceived idea.	2.2 %	20.0 %	4.4 %	42.2 %	31.1 %
2. Research becomes true after it is published.	13.3 %	55.6 %	15.6 %	8.9 %	6.7 %
3. If followed correctly research procedures will always yield positive results.	13.3 %	31.1 %	8.9 %	22.2 %	24.4 %
4. When qualified people do research the results are always unbiased.	11.1 %	28.9 %	15.6 %	28.9 %	15.6 %
5. Research is about collecting data which back your argument.	4.5 %	6.8 %	18.2 %	38.6 %	31.8 %
6. It is quite acceptable to modify research data if it does not look exactly right.	35.6 %	11.1 %	15.6 %	6.7 %	31.1 %
7. There is generally only one way to interpret research findings.	33.3 %	37.8 %	13.3 %	6.7 %	8.9 %
8. If research is properly conducted then contradictory research findings will never occur.	22.2 %	26.7 %	17.8 %	26.7 %	6.7 %

Research is re-search. The majority of the students agreed with all the items that constituted this factor. 42.2 % of the students agreed with item 9, yet 37.8% of the students chose de option "undecided"; 70.5 % of them agreed with item 10; 57.8% agreed with item 11, although 33.3% of the students said to be undecided. 80 % of the students agreed with item 12;55.5 % of the students agreed with item 13, even though 22.2 % of them chose the "undecided" option.47.7 % of the students agreed with item 14, although 29.5 % of them said to be undecided and finally, 51.1 % of the students agreed with item 15, but still 31.1% said to be undecided. For more details see **Chart 3**.

Chart 3. Frequency distribution of second semester (factor 2)

Items	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Factor 2. Research is re-search					
9. Research is basically about comparison; new and previous results are compared.	4.4 %	15.6 %	37.8 %	28.9 %	13.3 %
10. Research means finding out more information about something that is already there.	6.8 %	6.8 %	15.9 %	36.4 %	34.1 %
11. Research is a systematic investigation to find out if there are facts that were left out by previous researchers.	4.4 %	4.4 %	33.3 %	35.6 %	22.2 %
12. Research is there to challenge research that has been done before.	2.2 %	8.9 %	8.9 %	48.9 %	31.1 %
13. Research means finding out facts left out by early researchers; information not considered in past research.	4.4 %	17.8 %	22.2 %	42.2 %	13.3 %
14. Research is essentially about discovering something that already exists, but is hidden.	6.8 %	15.9 %	29.5 %	38.6 %	9.1 %
15. Research means using findings to reinterpret what is already known.	4.4 %	13.3 %	31.1 %	40.0 %	11.1 %

Research is an insightful process. Once more, the majority of the students agreed with all the items that constituted this factor. The students agreed (84.1 %) with item 16; 79.1% of them agreed with item 17; 80 % with item 18; 73.3 % with item 19; 80 % with item 20; 68.9 % agreed with item 21, although 22.2% of the students stated to be "undecided" and finally, students agreed with item 22 with 82.2 %. For more details see **Chart 4.**

Chart 4. Frequency distribution of second semester (factor 3)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 3. Research is an insightful process					
16. Research extends current concepts to obtain a better understanding.	0%	6.8 %	9.1 %	52.3 %	31.8 %
17. Research provides a deeper insight and understanding of a particular topic.	4.7 %	7.0 %	9.3 %	46.5 %	32.6 %
18. Research stimulates further interest or work in the area.	2.2 %	2.2 %	15.6 %	51.1 %	28.9 %
19. Even the newest ideas germinate in a fertile bed of previous knowledge and ideas.	4.4 %	2.2 %	20.0 %	44.4 %	28.9 %
20. Research means searching for more knowledge in a particular field; to accumulate more knowledge.	2.2 %	11.1 %	6.7 %	44.4 %	35.6 %
21. Research summarizes existing knowledge and/or new knowledge to create previously unknown insights.	2.2 %	6.7 %	22.2 %	48.9 %	20.0 %
22. Research is defined as a mechanism to add more knowledge to existing knowledge.	2.2 %	2.2 %	13.3 %	60.0 %	22.2 %

Research is finding the truth. Again, the majority of the students were in agreement with all the items that constituted this factor. 48.9% of the students agreed with item 23; although 24.4 % of them said to be undecided. 73.3% of the participants agreed with item 24 and 65.9% with item 25. In the case of item 26, 52.3% agreed with it; however, 31.8% of the students said to be undecided. About item 27, 64.5% of the students agreed, but still 22.2 % of them stated to be undecided. Regarding item 28, 60% of the participants were in agreement with it. For more details see **Chart 5.**

Chart 5. Frequency distribution of second semester (factor 4)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 4. Research is finding the truth					
23. Research is fundamentally about finding the truth.	6.7 %	20.8 %	24.4 %	33.3 %	15.6 %
24. Research is the quest for truth.	6.7 %	6.7 %	13.3 %	51.1 %	22.2 %
25. Research is a process through which the truth is uncovered.	2.3 %	11.4 %	20.5 %	40.9 %	25.0 %
26. Research is about exhuming the truth.	9.1 %	6.8 %	31.8 %	43.2 %	9.1 %
27. Research means a systematic hunting for truths about a subject.	8.9 %	4.4 %	22.2 %	48.9 %	15.6 %
28. Research is done in order to determine the truth or validity about something.	0%	4.4 %	15.6 %	57.8 %	2.2 %

Research about problem solution. In this factor, the tendency was to agree with all the items and also almost all the items, except for one, showed a high percentage in the "undecided" liker-type option. 64.5% of the students agreed with item 29; 57.8% with item 30; 62.2% with item 31; 71.1% with item 32 and 66.7% with the last item, 33. All of the items previously analyzed in this factor except for item 29, showed a 24.4% in the "undecided" option. For more details see **Chart 6**.

Chart 6. Frequency distribution of second semester (factor 5)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 5. Research about problem solution					
29. Research is about finding solutions to problems.	6.7 %	13.3 %	15.6 %	46.7 %	17.8 %
30. Research is about finding solutions to stated problems.	4.4 %	13.3 %	24.4 %	48.9 %	8.9 %
31. Research means collecting data to solve particular problems.	6.7 %	6.7 %	24.4 %	48.9 %	13.3 %
32. Research is basically a tool for answering questions.	2.2 %	2.2 %	24.4 %	37.8 %	33.3 %
33. Research is the careful and thorough study of a problem.	0%	8.9 %	24.4 %	48.9 %	17.8 %

4.1.3. Findings of sixth semester

Misconceptions. In this first factor, the findings of sixth semester students were similar to the second semester ones. The majority of the participants chose the options "agree" and "strongly agree" and if those options are summed up, 75.6% of the students agreed with item 1. Despite of the relatively high percentage (41.4%) of the students that were in agreement with item 4, some of them stated to be "undecided" with 22.2% and some others disagreed with 22.2% too. 78.1% of the students agreed with item 5 and 53.7% with item 6. On the other hand, some other students chose the options "disagree" and "strongly disagree" and if those options are summarized, 63.4% disagreed with item 2, although 22% of the students stated to be undecided. 48.8% of the participants disagreed with item 3, even though 24.4% of them said to be undecided. 63.4% of the participants disagreed with item 7, yet 22% chose the "undecided" option. Finally, 47.5% of the students disagreed with item 8, but still 20% stated to be undecided and 22.5% agreed. For more details see **Chart 7.**

Chart 7. Frequency distribution of sixth semester (factor 1)

Items	Strongly disagree	Agree	Unde-cided	Agree	Strongly agree
Factor 1. Misconceptions about research					
1. Good research specifically gathers data that will support the researcher's preconceived idea.	0%	17.1 %	7.3 %	39.0 %	36.6 %
2. Research becomes true after it is published.	26.8 %	36.6 %	22.0 %	12.2 %	2.4 %
3. If followed correctly research procedures will always yield positive results.	19.5 %	29.3 %	24.4 %	12.2 %	14.6 %
4. When qualified people do research the results are always unbiased.	14.6 %	22.0 %	22.0 %	34.1 %	7.3 %
5. Research is about collecting data which back your argument.	0%	9.8 %	12.2 %	41.5 %	36.6 %
6. It is quite acceptable to modify research data if it does not look exactly right.	17.1 %	9.8 %	19.5 %	24.4 %	29.3 %

Chart 7. (Continued.)

7. There is generally only one way to interpret research findings.	29.3 %	34.1 %	22.0 %	12.2 %	42.4 %
8. If research is properly conducted then contradictory research findings will never occur.	17.5 %	30.0 %	20.0 %	22.5 %	10.0 %

Research is re-search. In this second factor, the majority of the participants were in agreement with all the items. Once more, if the options "strongly agree" and "agree" are summed up, thus 56.1% of the students agreed with item 9; 75.7% with item 10; 56.1% with item 11, although 24.4% of the students stated to be undecided within the same item. 73.1% were in agreement with item 12. Despite the fact that 53.6% of the students agreed with item 13, 22% of them said to be undecided and other 22% decided to be in disagreement. 46.3% agreed with item 14, even though 29.3% indicated to be undecided. Lastly, 82.9% of the participants said to be in agreement with item 15. For more details see **Chart 8.**

Chart 8. Frequency distribution of sixth semester (factor 2)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 2. Research is re-search					
9. Research is basically about comparison; new and previous results are compared.	7.3 %	19.5 %	17.1 %	48.8 %	7.3 %
10. Research means finding out more information about something that is already there.	9.8 %	7.3 %	7.3 %	53.7 %	22.0 %
11. Research is a systematic investigation to find out if there are facts that were left out by previous researchers.	2.4 %	17.1 %	24.4 %	43.9 %	12.2 %
12. Research is there to challenge research that has been done before.	4.9 %	9.8 %	12.2 %	39.0 %	34.1 %
13. Research means finding out facts left out by early researchers; information not considered in past research.	2.4 %	22.0 %	22.0 %	39.0 %	14.6 %

Chart 8. (Continued.)

14. Research is essentially about discovering something that already exists, but is hidden.	12.2 %	12.2 %	29.3 %	34.1 %	12.2 %
15. Research means using findings to reinterpret what is already known.	2.4 %	0%	14.6 %	58.5 %	24.4 %

Research is an insightful process. In this factor, the tendency was to be in agreement. 73.2% of the participants agreed with item 16; 68.3% agreed with item 17, even though 24.4% of the students said to be undecided. Despite of the 46.3% of the students who agreed with item 18, there were 31.7% who stated to be undecided and 22% who were in disagreement. 73.3% of the participants agreed with item 19, although 22% of them said to be undecided. A high percentage of the students (87.5%) were in agreement with item 20; 75.6% with item 21 and 87.5% with item 22. For more details see **Chart 9.**

Chart 9. Frequency distribution of sixth semester (factor 3)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 3. Research is an insightful process					
16. Research extends current concepts to obtain a better understanding.	0%	9.8 %	17.1 %	41.5 %	31.7 %
17. Research provides a deeper insight and understanding of a particular topic.	0%	7.3 %	24.4 %	53.7 %	14.6%
18. Research stimulates further interest or work in the area.	0%	22.0 %	31.7 %	31.7 %	14.6 %
19. Even the newest ideas germinate in a fertile bed of previous knowledge and ideas.	2.4 %	2.4 %	22.0 %	48.8 %	24.4 %
20. Research means searching for more knowledge in a particular field; to accumulate more knowledge.	0%	2.5 %	10.0 %	50.0 %	37.5 %
21. Research summarizes existing knowledge and/or new knowledge to create previously unknown insights.	0%	9.8 %	14.6 %	56.1 %	19.5 %
22. Research is defined as a mechanism to add more knowledge to existing knowledge.	0%	0%	12.5 %	55.0 %	32.5 %

Research is finding the truth. In this factor, all the items ranged in "strongly agree" and "agree" options; however, almost all of them (except for item 28) showed a high percentage in the "undecided" option. In item 23, 52.5% of the students were in agreement and 27.5% said to be undecided. In the case of item 24 and 25, 53.7% and 58.5% of the students agreed, respectively; both items got 26.8% in the "undecided" option. Regarding the percentages in item 26, 52.5% of the participants were in agreement whereas 27.5% said to be undecided. About item 27, 63.5% of the participants agreed, although 26.8% said to be undecided. Finally, a high percentage (70%) of the participants agreed with item 28. For more details see **Chart 10.**

Chart 10. Frequency distribution of sixth semester (factor 4)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 4. Research is finding the truth					
23. Research is fundamentally about finding the truth.	0%	20.0 %	27.5 %	37.5 %	15.0 %
24. Research is the quest for truth.	4.9 %	14.6 %	26.8 %	31.7 %	22.0 %
25. Research is a process through which the truth is uncovered.	2.4 %	12.2 %	26.8 %	39.0 %	19.5 %
26. Research is about exhuming the truth.	5.0 %	15.0 %	27.5 %	40.0 %	12.5 %
27. Research means a systematic hunting for truths about a subject.	2.4 %	7.3 %	26.8 %	41.5 %	22.0 %
28. Research is done in order to determine the truth or validity about something.	2.5 %	7.5 %	20.0 %	60.0 %	10.0 %

Research about problem solution. Here, the majority of the students agreed and just one item got a considerable percentage in the "undecided" option. 65.8% of the students were in agreement with item 29. In the case of item 30, 61% of the participants agreed, but still 22% said to be undecided. Regarding the items 31 and 32, both of them got the same score, 80.5%. Lastly, item 33 got 70.7%. For more details see **Chart 11.**

Chart 11. Frequency distribution of sixth semester (factor 5)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 5. Research about problem solution					
29. Research is about finding solutions to problems.	2.4 %	19.5 %	12.2 %	51.2 %	14.6 %
30. Research is about finding solutions to stated problems.	2.4 %	14.6 %	22.0 %	41.5 %	19.5 %
31. Research means collecting data to solve particular problems.	0%	12.2 %	7.3 %	58.5 %	22.0 %
32. Research is basically a tool for answering questions.	4.9 %	4.9 %	9.8 %	51.2 %	29.3 %
33. Research is the careful and thorough study of a problem.	2.4 %	12.2 %	14.6 %	39.0 %	31.7 %

4.1.4. Findings of tenth semester

Misconceptions. In this factor, the tendency was to be in disagreement; however, there were high percentages in the "undecided" range. Therefore, if the options "disagree" and "strongly disagree" are added up, thus 54.5 % of the students disagreed with item 2, yet 31.8% said to be undecided. Regarding item 4, 47.6% of the participants were in disagreement, although 23.8% said to be undecided and 28.6% agreed. In the case of item 6, 40.9% of the students did not agree, but still 22.7% were undecided. About item 7, 72.7% of the participants disagreed; 59.1% also disagreed in item 8, yet 31.8% said to be undecided within the same item. On the other hand, only two items (1 and 5) showed high percentages in the "strongly agree" and "agree" options. 54.5% and 57.1% of the students agreed, whereas 22.7% and28.6% stated to be undecided, respectively. For more details see **Chart 12.**

Chart 12. Frequency distribution of tenth semester (factor 1)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 1. Misconceptions about research					
1. Good research specifically gathers data that will support the researcher's preconceived idea.	13.6 %	9.1 %	22.7 %	31.8 %	22.7 %
2. Research becomes true after it is published.	22.7 %	31.8 %	31.8 %	9.1 %	4.5 %
3. If followed correctly research procedures will always yield positive results.	19.0 %	28.6 %	23.8 %	28.6 %	
4. When qualified people do research the results are always unbiased.	4.5 %	40.9 %	22.7 %	18.2 %	13.6 %
5. Research is about collecting data which back your argument.	9.5 %	4.8 %	28.6 %	23.8 %	33.3 %
6. It is quite acceptable to modify research data if it does not look exactly right.	31.8 %	9.1 %	22.7 %	18.2 %	18.2 %
7. There is generally only one way to interpret research findings.	18.2 %	54.5 %	18.2 %	9.1 %	0%
8. If research is properly conducted then contradictory research findings will never occur.	13.6 %	45.5 %	31.8 %	4.5 %	4.5 %

Research is re-search. In this factor, the tendency was to be in agreement. 54.6% of the students agreed with item 9; even though27.3% of them said to be undecided. 61.9% of the participants agreed with item 10; 47.6% with item 11, yet a high percentage of them said to be undecided with 33.3%. 81.8 % of the students agreed with item 12; 54.6 % with item 13, although 22.7 % of them said to be undecided. Regarding the last two items (14 and 15) of this factor, 54.6% and 47.6% of the participants agreed whereas 27.3% and 33.3% said to be undecided, respectively. For more details see **Chart 13.**

Chart 13. Frequency distribution of tenth semester (factor 2)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 2. Research is re-search					
9. Research is basically about comparison; new and previous results are compared.	0%	18.2 %	27.3 %	45.5 %	9.1 %
10. Research means finding out more information about something that is already there.	4.8 %	14.3 %	19.0 %	42.9 %	19.0 %
11. Research is a systematic investigation to find out if there are facts that were left out by previous researchers.	0%	19.0 %	33.3 %	28.6 %	19.0 %
12. Research is there to challenge research that has been done before.	0%	9.1 %	9.1 %	54.5 %	27.3 %
13. Research means finding out facts left out by early researchers; information not considered in past research.	4.5 %	18.2 %	22.7 %	45.5 %	9.1 %
14. Research is essentially about discovering something that already exists, but is hidden.	4.5 %	27.3 %	3.6 %	36.4 %	18.2 %
15. Research means using findings to reinterpret what is already known.	0%	19.0 %	33.3 %	33.3 %	14.3 %

Research is an insightful process. In this factor, the majority of the students agreed with all the items. 81.8% of the participants agreed with item 16; 95.4% with item 17; 68.2% with item 18, yet a high percentage (31.8%) of them said to be undecided within the same item. About item 19, 76.1% of the students were in agreement. Regarding the items 20 and 21, 72.7 % and 77.3 % of the students agreed, respectively; both items with 22.7% in the "undecided" option. The last item of this factor got a high score of 81.8 %. For more details see **Chart 14.**

Chart 14. Frequency distribution of tenth semester (factor 3)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 3. Research is an insightful process					
16. Research extends current concepts to obtain a better understanding.	0%	0%	18.2 %	54.5 %	27.3 %
17. Research provides a deeper insight and understanding of a particular topic.	0%	0%	4.5 %	63.6 %	31.8 %
18. Research stimulates further interest or work in the area.	0%	0%	31.8 %	31.8 %	36.4 %
19.Even the newest ideas germinate in a fertile bed of previous knowledge and ideas.	0%	4.8 %	19.0 %	57.1 %	19.0 %
20. Research means searching for more knowledge in a particular field; to accumulate more knowledge.	0%	4.5 %	22.7 %	31.8 %	40.9 %
21. Research summarizes existing knowledge and/or new knowledge to create previously unknown insights.	0%	0%	22.7 %	45.5 %	31.8 %
22. Research is defined as a mechanism to add more knowledge to existing knowledge.	0%	9.1 %	9.1 %	50.0 %	31.8 %

Research is finding the truth. Here, the tendency changed. If the options "strongly agree" an "agree" are summed up, thus high percentages appear in the "agree" range; however, there are also high percentages in the "undecided" range. 59.1 % of the students agreed with item 23, although 22.7 % of them said to be undecided. Regarding item 24, 45.4 % of the participants agreed whereas 27.3% said to be undecided and 27.3% agreed. About the items 25, 26 and 28, 54.5 %, 50% and 68.2% of the students agreed, respectively; the three of them got the same score (27.3%) in the "undecided" option. 57.1% of the participants agreed with item 27. For more details see **Chart 15.**

Chart 15. Frequency distribution of tenth semester (factor 4)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 4. Research is finding the truth					
23. Research is fundamentally about finding the truth.	4.5 %	22.7 %	13.6 %	36.4 %	22.7 %
24. Research is the quest for truth.	0%	27.3 %	27.3 %	22.7 %	22.7 %
25. Research is a process through which the truth is uncovered.	4.5 %	13.6 %	27.3 %	31.8 %	22.7 %
26. Research is about exhuming the truth.	4.5 %	18.6 %	27.3 %	22.7 %	27.3 %
27. Research means a systematic hunting for truths about a subject.	4.8 %	19.0 %	19.0 %	33.3 %	23.8 %
28. Research is done in order to determine the truth or validity about something.	0%	4.5 %	27.3 %	36.4 %	31.8 %

Research about problem solution. In this particular factor, the tendency was to be in agreement and there were not high percentages in the other ranges in none of the items. Thus, if the options "strongly agree" and "agree" are summed up, 77.3 % of the students agreed with item 29; 76.2% with item 30; 77.3% with item 31; 86.3% with item 32 and 91% with item 33. For more details see **Chart 16.**

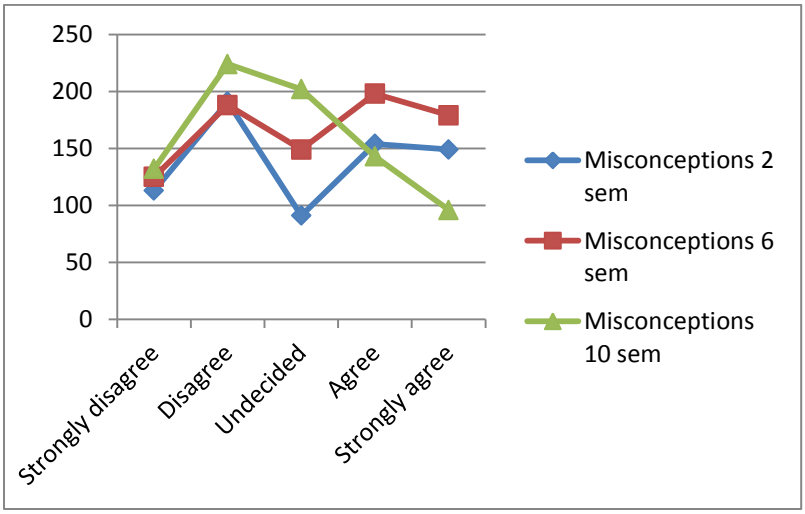
Chart 16. Frequency distribution of tenth semester (factor 5)

Items	Strongly disagree	Disagree	Unde-cided	Agree	Strongly agree
Factor 5. Research about problem solution					
29. Research is about finding solutions to problems.	0%	13.6 %	9.1 %	45.5 %	31.8 %
30. Research is about finding solutions to stated problems.	0%	14.3 %	9.5 %	38.1 %	38.1 %
31. Research means collecting data to solve particular problems.	0%	9.1 %	13.6 %	45.5 %	31.8 %
32. Research is basically a tool for answering questions.	0%	4.5 %	9.1 %	31.8 %	54.5 %
33. Research is the careful and thorough study of a problem.	4.5 %	4.5 %	0%	45.5 %	45.5 %

To sum up, the following figures show the general tendency (in percentages) of EFL undergraduate students' conceptions of research. It is worth nothing that the following percentages were obtained by the total amount of the items of each factor:

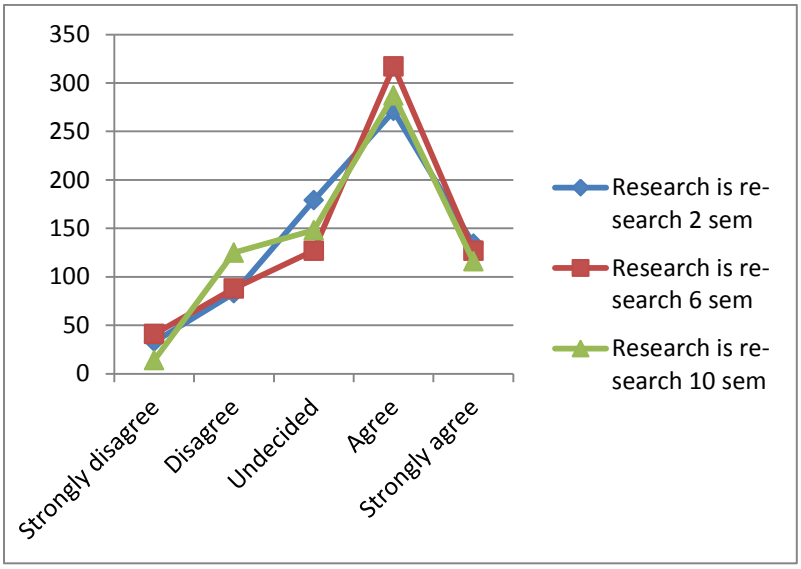
Figure 1 shows the variation on the students' conceptions of research in factor 1 "misconceptions". It is evident that sixth semester got the highest percentage in the options "agree" and "strongly agree" which means that students from 6th semester have misconceptions. In second place are students from 2nd semester, follow by students from 10th semester.

Figure 1. Tendency (in percentages) of students' conceptions of research on factor one



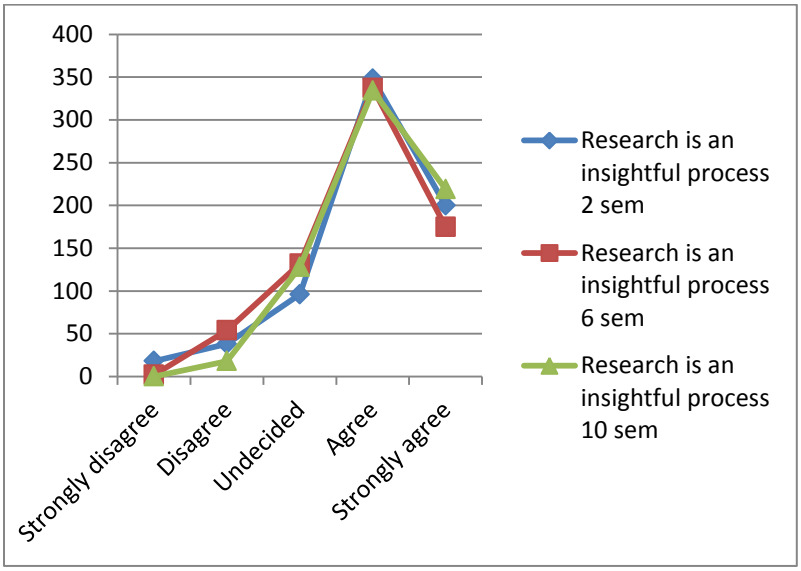
As can be seen in figure 2, there is no variation in factor 2 "research is re-search" as the three semesters got similar percentages.

Figure 2. Tendency (in percentages) of students' conceptions of research on factor two



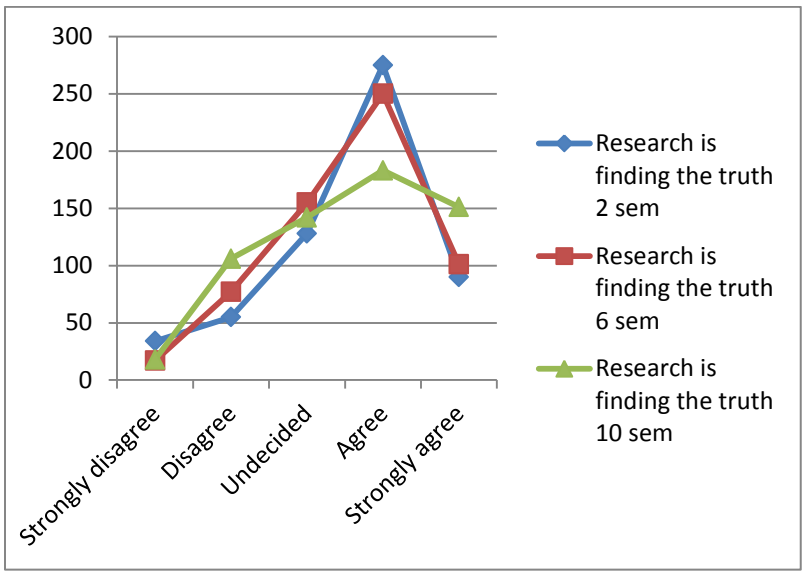
Once more, there is not variation. As shown in figure 3, the percentages of students' conceptions are very similar in factor 3 "research is an insightful process".

Figure 3. Tendency (in percentages) of students' conceptions of research on factor three



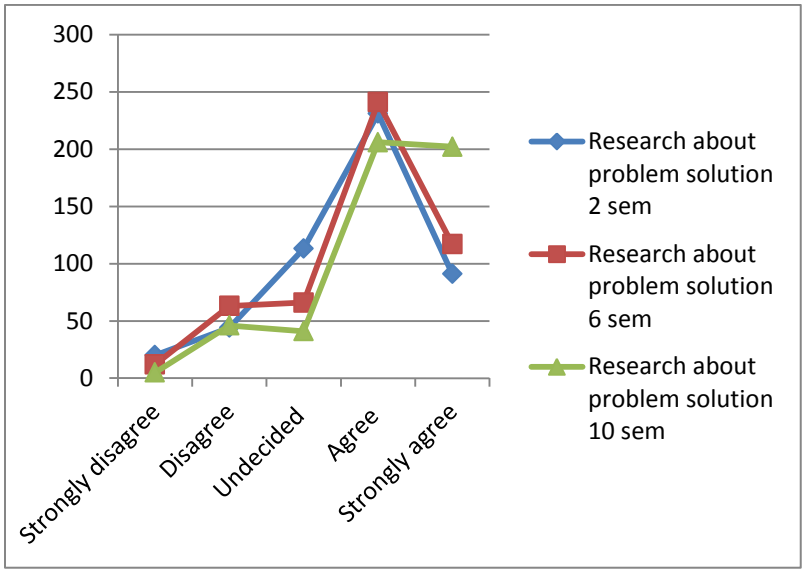
There is a variation in the option "agree" in factor 4 "research is finding the truth". Surprisingly students from 10th semester got the lowest percentage when it was expected to have the highest one as the students from that semester are the ones who have already taken two research courses. For more details see **Figure 4.**

Figure 4. Tendency (in percentages) of students' conceptions of research on factor four



As can be seen from Figure 5, the variation on the students' conceptions in factor 5 "research about problem solution", the three semesters got similar scores.

Figure 5. Tendency (in percentages) of students' conceptions of research on factor five



Overall, the students conceptions' of research showed a high variation on factor one where sixth semester students got the highest percentage in the options "agree" and "strongly agree" which means that those students have misconceptions whereas in the remaining factors variation was not as evident. On the contrary, the results were almost similar.

4.2. H1: There is a correlation between seniority and conceptions of research

Spearman's rho rank-order correlation coefficient was used for the correlation between semesters and conceptions.

From the five factors only one showed a significant correlation with the variable seniority. The fifth factor "Research about problem solution" showed a significance

($p<0.02$). According to Muijs (2004), the interpretation for Spearman's rho rank-order correlation coefficient is the following one:

> …we can calculate a p-value or significance level for the Spearman's rank order correlation using the F-test mentioned above. The interpretation of that is the same as in all the cases we have seen, the lower the p-value, the lower for us finding a relationship in our sample given the hypothesis that there is no relationship in the population. (p. 153)

Therefore, it can be stated that according to the standards the p-value is weak. For more details see chart **Chart 17.**

Chart 17. Correlation between the fifth factor "Research about problem solution" and seniority

Correlations

			Research about problem solution	Semester
Spearman's rho	Research about problem solution	Correlation Coefficient	1.000	.225*
		Sig. (2-tailed)	.	.020
		N	107	107
	Semester	Correlation Coefficient	.225*	1.000
		Sig. (2-tailed)	.020	.
		N	107	108

4.3. H2: Age makes a difference in conceptions of research

Cross-tabulations were used to look at the relationship between the conceptions and the independent variable age. Only the items that showed significance are the ones which will be presented.

A significant difference was found at the relationship between age and the item "Research is about collecting data which back your argument / La investigación consiste en reunir información que respalda tu argumento" (chi square = 23.933[a], df= 12, p = 0.021). In this item, students from 18 to 20 and years old are more likely to be in agreement with it than students from 21 to 23 and from 24 to 26 years old. The *effect size* was <0.6 which is modest according to the measure standards. For more details see **Chart 18** and **19.**

Chart 18. Research is about collecting data which back your argument * AGE Crosstabulation

			Age			
			18-20	21-23	24-26	27 or older
Research is about collecting data which back your argument	Strongly disagree	Count	1	2	0	1
		Expected Count	1.7	1.9	.3	.1
	Disagree	Count	5	0	2	1
		Expected Count	3.3	3.8	.7	.2
	Undecided	Count	5	11	3	0
		Expected Count	7.9	9.0	1.6	.5
	Agree	Count	15	20	3	1
		Expected Count	16.2	18.4	3.3	1.1

Chart 18. (Continued.)

Total	Count	44	50	9	3
	Expected Count	44.0	50.0	9.0	3.0

Chart 19. Chi- Square Test of item "research is about collecting data which back your argument"

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.933[a]	12	.021
Likelihood Ratio	23.400	12	.025
Linear-by-Linear Association	5.456	1	.019
N of Valid Cases	106		

Another item that showed a significant difference was "Research provides a deeper insight and understanding of a particular topic / La investigación provee un entendimiento profundo de un tema en particular" (chi square = 25.357[a], df = 12, p = 0.013). This time, students from 18 to 20 years old are more likely to be undecided with this item than the rest of the students. The *effect size* was <0.6 which is modest according to the measure standards. For more details see **Chart 20** and **21.**

Chart 20. Research provides a deeper insight and understanding of a particular topic * AGE Crosstabulation

			Age				Total
			18-20	21-23	24-26	27 or older	
Research provides a deeper insight and understanding of a particular topic	Strongly disagree	Count	0	1	0	1	2
		Expected Count	.8	1.0	.2	.1	2.0
	Disagree	Count	2	4	0	1	7
		Expected Count	2.8	3.4	.6	.2	7.0
	Undecided	Count	7	5	0	0	12
		Expected Count	4.8	5.9	1.0	.3	12.0
	Agree	Count	21	24	5	1	51
		Expected Count	20.2	25.0	4.3	1.4	51.0
	Strongly agree	Count	12	18	4	0	34
		Expected Count	13.5	16.7	2.9	1.0	34.0
Total		Count	42	52	9	3	106
		Expected Count	42.0	52.0	9.0	3.0	106.0

Chart 21. Chi- Square Test "research provides a deeper insight and understanding of a particular topic"

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.357[a]	12	.013
Likelihood Ratio	15.614	12	.210
Linear-by-Linear Association	.857	1	.355
N of Valid Cases	106		

Also, it was found a significant difference in the relationship between age and the item "Research means searching for more knowledge in a particular field; to accumulate more knowledge / Investigar significa buscar más conocimiento en cierto tema; acumular más conocimiento" (chi square = 44.454[a], df = 12, p = 0.000). Here, students from 18 to 20 years old are more likely to agree with this item than students from 21 to 23 and from 24 to 26 years old. The *effect size* was <0.8 which is strong according to the measure standards. For more details see **Chart 22** and **23.**

Chart 22. Research means searching for more knowledge in a particular field; to accumulate more knowledge * AGE Crosstabulation

			Age				
			18-20	21-23	24-26	27 or older	Total
Research means searching for more knowledge in a particular field; to accumulate more knowledge	Strongly disagree	Count	0	0	0	1	1
		Expected Count	.4	.5	.1	.0	1.0
	Disagree	Count	5	1	1	0	7
		Expected Count	2.8	3.4	.6	.2	7.0
	Undecided	Count	2	7	2	1	12
		Expected Count	4.8	5.8	1.0	.3	12.0
	Agree	Count	20	24	3	0	47
		Expected Count	18.9	22.8	4.0	1.3	47.0
	Strongly agree	Count	16	20	3	1	40
		Expected Count	16.1	19.4	3.4	1.1	40.0
Total		Count	43	52	9	3	107
		Expected Count	43.0	52.0	9.0	3.0	107.0

Chart 23. Chi- Square Test "research means searching for more knowledge in a particular field; to accumulate more knowledge"

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.454[a]	12	.000
Likelihood Ratio	18.540	12	.100
Linear-by-Linear Association	1.404	1	.236
N of Valid Cases	107		

Finally, the last item which yielded a significant difference in relationship with the age variable was "Research summarizes existing knowledge and/or new knowledge to create previously unknown insights / La investigación resume el conocimiento existente (o nuevo conocimiento) para crear perspectivas anteriormente desconocidas" (chi square = 53.887[a], df = 12, p = 0.000). This time, students from 21-23 years old were the ones who were more likely to agree with this item than students from 24-26 and students from 18 to 20 years old. The *effect size* was <0.8 which is strong according to the measure standards. For more details see **Chart 24** and **25.**

Chart 24. Research summarizes existing knowledge and/or new knowledge to create previously unknown insights * AGE Crosstabulation

			Age				
			18-20	21-23	24-26	27 or older	Total
Research summarizes existing knowledge and/or new knowledge to create previously unknown insights	Strongly disagree	Count	0	0	0	1	1
		Expected Count	.4	.5	.1	.0	1.0
	Disagree	Count	4	2	0	1	7
		Expected Count	2.9	3.4	.6	.2	7.0
	Undecided	Count	10	9	2	0	21
		Expected Count	8.6	10.1	1.8	.6	21.0
	Agree	Count	22	31	1	1	55
		Expected Count	22.4	26.5	4.6	1.5	55.0
	Strongly agree	Count	8	10	6	0	24
		Expected Count	9.8	11.6	2.0	.7	24.0
Total		Count	44	52	9	3	108
		Expected Count	44.0	52.0	9.0	3.0	108.0

Chart 25. Chi- Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53.887[a]	12	.000
Likelihood Ratio	24.769	12	.016
Linear-by-Linear Association	.001	1	.971
N of Valid Cases	108		

Given the attributes to the sample, it is quite evident that some students do have misconceptions, some others may not have them, yet they are not sure about their conceptualization of research, whereas the minority seems to know the conceptualization they have about research. On the other hand, with regards to the correlation between seniority and conceptions of research only one factor (research about problem solution) yielded a significance correlation, although it was weak. Finally, regarding the differences between age and conceptions of research, there were a total of four items that showed

significance of which two were modest ("research is about collecting data which back your argument" and "research provides a deeper insight and understanding of a particular topic") and the other two strong ("research means searching for more knowledge in a particular field; to accumulate more knowledge" and "research summarizes existing knowledge and/or new knowledge to create previously unknown insights"). In order to know the reasons for such analysis, it is necessary to look into the issue and revise and relate it to the literature.

5. DISCUSSION

Through this research it was possible to work with the general question: what the EFL students' conceptions of research from 2nd, 6th and 10th semesters at UQROO are; and the two hypotheses: 1) the correlation between seniority and students' conceptions of research; and 2) the relationship between age and the students' conceptions. Therefore, in this chapter, the conclusions and suggestions that were reached in this study will be presented.

The aim of this study was to explore the EFL students' conceptions of research at UQROO. In order to achieve it, the quantitative approach was used, as well as a questionnaire as a research instrument (SCoRI). It is important to mention that the interpretation of the results is tentative, and not directly related to other studies as there are not previous findings in the area and context. The basis of this research was one question and three hypotheses which will be discussed individually as means of better organization.

5.1. RQ1: What are the conceptions of research of students from 2nd, 6th y 10th semesters of the English Language major at University of Quintana Roo?

One of the objectives of this particular study was to know about the EFL students' conceptions of research of those specific three semesters (previously discussed in: description of the sample, p. 23). The results do not support previous findings about this issue due to the fact that the field and context of this particular study is different from others (Meyer et. al., 2005; Pitcher & Åkerlind, 2009; Pitcher, 2011). On the contrary, the

findings show that there is not a uniform idea of the students' conceptualization of research. The EFL students' conceptions of research at UQROO showed a variation only in the first factor "misconceptions"; the rest of the factors got almost similar scores. This finding is of the utmost importance as there are not previous findings about undergraduate students' conceptions of research, to the best of my knowledge, in the EFL area are none. Meyer et. al. (2005) carried out a study in which the majority of the participants were post-graduate students and some were undergraduates (doing an "honours" year, thus classified by the researchers as undergraduates); although none of them were from the language discipline/area. However, the findings of this research can be directly compared to the ones Meyer et. al's study reached, as both of them did not show a uniform approach to conceptualizing research (Meyer et. al., 2005).

Other results that can be related to these particular findings, although not directly as Meyer et al's findings (as they used metaphors and a qualitative approach), are the ones reported by Pitcher & Åkerlind (2009) and Pitcher (2011) as they also found varying concepts in the analysis of their studies and as a result yielded dimensions of variation.

As it was mentioned, the conceptions of research of students from 2nd, 6th, and 10th semesters showed a variation in the factor "misconceptions" whereas in the rest of the factors did not, or at least were not so evident. Therefore, this result might have contextual explanations that, although they were not the principal purpose of the research, might help to explain the finding. One aspect is the curricula design of the English Language major which takes into account only two courses of research, one in first semester (*Metodología de la investigación*) and the other one in tenth semester (*Seminario de titulación*), although in recent years the latter is given on ninth semester. There is a lot of time between the first course and the second one; four and a half years to be exactly. Therefore, in my experience

as a student from this major, there are few teachers who actually include research projects as final evaluation in their courses which leads me to think that students do not train their research skills on a long-period of time, thus they are more likely to forget what they had already learned in first semester; this might explain the reason why sixth semester students have similar conceptions as second semester students. It is true that tenth semester students' conceptions vary on the factor "misconceptions", perhaps due to the intellectual growth that students experience as they progress into higher levels in their majors (Perry, 1978). Although the differences that exist between tenth, sixth and second semester students' conceptions are worrying, such differences are more likely to hesitation which would suggest that they have not reached a uniform approach about what they conceived as "research".

Another factor to be considered is the influence of teachers in their students' conceptions. As Visser et al. (2009) mention, teachers are role models that have an important influence on students. Reyes & Hernandez (2013) carried out a study in which professors of this major were the participants. They found out that the teachers' publications, resulting from research projects, are just a few and that the publications are from a low academic rigor. Thus, one might suppose that due to the fact that the majority of the teachers from this department is starting in the rudiments of research; they have not completely adopted it in their teaching practice; and for that reason, they have not included it to their courses: reading research articles activities or the development of research projects which demand the training of research skills. Also, it might happen that they have misconceptions of research (Kiley & Mullis, 2007), they do not read very often (Borg, 2009) or teachers who teach methodology courses do not have positive attitudes towards

research (Aldana & Joya, 2011). With regards to the latter, it is worth noting that the course "Metodología de la investigación en ciencias sociales y humanidades" has a general interest and is taught by professors whose professional training is not in the EFL area. Contrary to the course "Seminario de titulación" which has a specific interest and is always taught by professors whose professional training is in the EFL area. Therefore, all that was mentioned above might be a factor in the initial students' conceptions of research and the way they evolve. For that reason, in further studies, it is suggested to take into account the factor previously mentioned in order to offer a wider explanation which it might be supported by empirical data.

Regarding the results from factor two "Research is re-search", it can be said that those findings indicate appropriate students' perceptions of research. Then, from a pragmatist approach of research, it can be stated that these students believe that research indeed involves revising the findings of other researchers who have analyzed and interpreted them, and then challenging or using them as background for the new research studies.

About factor three "Research is an insightful process", it is also considered that the students' tendency is to be in agreement with this appropriate conception due to the fact that it has been found out (although in other fields) that research definitely helps to: understand better the published studies, learn how to balance the collaborative and individual work, define an area of interest (Carrero-Martínez, 2011); communicate in a better effective way, develop critical thinking skills as well as academic writing (Russell, Hancock, & McCullough, 2007; Hunter, 2007).

The results of factor "Research is finding the truth" do not have just one explanation. Students from those three semesters were likely to be in agreement but also there were high percentages of neutral position among them mostly in students from tenth semester. On the one hand, it might be said that considering research as a pursuit of truth is a positive conception only if it is seen as a systematic scientific process to discover what is happening about a certain phenomenon and if the conclusions were reached by using procedures which ensure its validity. The latter is the way the authors of the questionnaire see and define it.

However, on the other hand, it might be that students were not sure about how to answer the items of that particular factor; perhaps they might have thought that the pursuit of truth means there is indeed only one truth and not several ways to interpret research findings. All that was mentioned above might tell us about a developing epistemological approach which would tend to be sophisticated in terms of Schommer's considerations (1994). This researcher believes that students' conceptions evolve from naïve (usually in the first semesters) to sophisticated (advanced semesters). For this reason, the tenth semester students' indecision might be considered as the demonstration of an evolution of their conceptions to higher levels of complexity. Therefore, it would be advisable to revise the items in order to, as far as possible, remove any doubt that they might cause in future research.

Finally, the results of factor five "Research about problem solution" might be considered as an appropriate conception from a pragmatist viewpoint. From this view, research is the activity whose aim is to get the necessary understanding to solve human problems as they emerge (Powell, 2001). Perhaps, due to the nature of the field: teaching

English, students associate research with solving immediate problems. Therefore, this kind of conceptions might help to improve the teaching practice; although it should not be forgotten that basic research is also important to generate new knowledge.

5.2. H1: There is a correlation between seniority and conceptions of research

The findings of this hypothesis are surprising as only one factor showed a significant correlation with the variable seniority. The factor "Research about problem solution" was the only one that showed a significant correlation of $r=.225$ $p<0.02$ with the variable seniority. The rest of the factors did not show a significant correlation. One possible answer to this finding is that the basic aim of higher education at undergraduate stage is not focused on training researchers; still it is to encourage the future professionals to have positive attitudes towards research so they can become users and even better, to adopt and see "research" as a way to face problems in the professional practice (Aldana & Joya, 2011).

Moreover, this finding can be related to a study carried out by Ruiz & Torres in 2002 (cited by Aldana & Joya, 2011) in which they dealt with students' attitudes towards research learning. Ruiz & Torres found out that 68% of the students even though after taking all the research courses, had between neutral and negative attitudes towards research.

Another researcher, Fuentealba (cited by Aldana & Joya, 2011) found out that research as a course has not contributed to training researchers and attributes it to the trends in the field of teaching and the ones who are responsible for the practice of teaching. It

seems that there was not such expected correlation, in the majority of the factors, between seniority (semester level) and the EFL student's conceptions of research perhaps due to what Ruiz & Torres and Fuentealba found out in their respective studies.

Alison & Carey (2007), in their study about the relationship between research and language teaching, found out that pre-graduate students, earlier graduates and even doctoral students had trouble to manage primary research as they considered the lack of confidence as a factor. Some of them stated that even they as master's graduates do not see themselves as "real" researchers and need supervision from an expert. This finding may support the results of this hypothesis as it is evident that the level of preparedness does not mean the students or earlier teachers will have a better engagement with research and perhaps, in this case, a better conceptualization of research.

5.3. H2: Age makes a difference in conceptions of research

The results of this hypothesis showed that there are differences between age and conceptions of research, even though there were only four items which showed a difference. One belongs to the first factor "misconceptions" while the other three to the third factor "research is an insightful process". The results do not support previous findings as there is not any study about student's conceptions of research that has taken into account the age as a variable. Therefore, there is not such reference to be compared to. However, differences did appear in those four items, which mean, there is a slightly relationship between age and the students' conceptions of research, although it is not a strong one.

Despite the fact that the results cannot be supported by previous findings, they could be related to the fact that students enter to collage with conceptions already established

which are usually formed at home and school and; those are reinforced by data from books where knowledge is seen as something fixed and given by an authority which is the book. At UQROO, the courses (at least in this major) continue to be based on books and a few on research articles which actually show the tentative character of knowledge. Therefore, the previous concepts of students and the lack of opportunity they have to read research might be factors that inhibit the development of more sophisticated conceptions of research even though there is greater age and time as a college student. This similar situation was reported by White (2000) and De Juanas & Beltrán (2011) in a research study related to epistemological beliefs, age and gender.

6. CONCLUSION

Overall, it is difficult and challenging to relate the findings of this research to other findings as the literature on students' conceptions of research is very limited. The results do not support previous findings about this issue due to the field and context of this particular study. On the contrary, the findings show that there is not a uniform idea of the students' conceptualization of research. As it was mentioned on the discussion, there are contextual explanations that might help to explain the findings such as:

- The curricula design of the English Language major only takes into account two courses of research which demonstrates the lack of research courses in the major. Moreover, one of the two courses (*Metodología de la investigación en ciencias sociales y humanidades*) has a general interest and is taught by professors whose professional training is not in the EFL area; therefore, it might be considered as an important factor.
- The influence of teachers in their students' conceptions as it has been proved that they are seen as role models (Borg, 2008; Visser et. al, 2009); therefore, they should have an appropriate conceptualization of research which might be an issue in this major as it has been found that teachers' publications, resulting from research projects, are just a few and that the publications are from a low academic rigor. (Reyes & Hernández, 2013). Thus, one might suppose that the majority of the teachers from this department have not included to their courses: reading research articles activities or the development of research projects due to they are starting in the rudiments of research. Also, it might happen that they have misconceptions of research (Kiley & Mullis, 2007), they do not read very often (Borg, 2009) or

teachers who teach methodology courses do not have positive attitudes towards research (Aldana & Joya, 2011). Moreover, some teachers state that even they as master's graduates need supervision from an expert (Alison & Carey, 2007) which demonstrates that the lack of confidence is also an important factor.

Regarding the issue that the students' conceptions of research do not have a strong correlation with the variable seniority, some of the explanations were the following:

- The basic aim of higher education at undergraduate stage is not focused on training researchers; still it is to encourage the future professionals to have positive attitudes towards research so they can become users and even better, to adopt and see "research" as a way to face problems in the professional practice (Aldana & Joya, 2011).
- Research as a course has not contributed to training researchers and it might be attributed to the trends in the field of teaching and the ones who are responsible of the practice of teaching (Fuentealba, cited by Aldana & Joya, 2011).

With regard to the relationship between age and the students' conceptions of research, despite that there is not any previous study to support the results of this hypothesis; the following explanations were given in order to have a tentative interpretation:

- Students enter college with conceptions already established which are usually formed at home and school; and those are reinforced by data from books where knowledge is seen as something fixed and given by an authority which (in this case) is the book. An issue that this major is facing as its courses continue to be based on

books and a few on research articles which actually show the tentative character of knowledge. Therefore, the previous concepts of students and the lack of opportunity they have to read research might be factors in the EFL students' conceptions of research.

6.1. Limitations

This research was limited to investigate the students' conceptions of research from this major through a survey. Although data was collected to have an idea of what these concepts are and how suitable they are, there were limitations that could have affected the results and that should be taken into account in further research. One of them is that the sample was for convenience; therefore, the results cannot be extrapolated. Another issue is that the questionnaire used was limited to ask about previously established concepts, leaving aside some others the students might have but that were not explored. Likewise, the lack of literature in the field and the lack of a specific theory which explains the findings, made the interpretation to be limited. Furthermore, there are other factors such as teachers' conceptions of research; the institutional policies about research in the major; and the research culture that prevails in this institution that without any doubt have an important influence on the students' conceptions that were not considered as variables of this research and that might help to interpret the results in a better way.

Therefore, it is necessary to conduct further work on students' conceptions of research as there is limited literature on them. It is important to come up with new ideas, new hypotheses and research questions. The following points to work with in future research would be:

- To analyze the other possible factors that might be an influence on the student's conceptions of research by using other instruments of research.
- To carry out this research from different approaches. In other words, not only from the quantitative approach but also from the qualitative one as it would be useful to complement the obtained data and see it from a different perspective. Although the survey research (the most popular quantitative design) gives relevant data, it needs to be complemented by different approaches so the issue could be seen in its all dimension.
- To analyze the EFL teachers' conceptions of research as they are an influence and also seen as a role model by their students. It is important to analyze specially those teachers who supervise research projects as it is essential that both have a clear and similar idea about conceptions of research since a possible mismatch between them might cause communication issues. As a result, the undergraduates might face problems with their research at doing projects or accomplishing their thesis. Therefore, it might be useful to explore the relationship between the conceptions of research of both and compared them, as well as the influence of the teachers' conceptions of research on their students' conceptions.
- One issue that is highly recommended to explore, as it might be another factor that influences the student's conceptions, is the design of research courses provided by the institution.

6.2. Recommendations

This present study provides data about the EFL students' conceptions of research that might be useful and of interest to students and teachers. Students might be more aware of the importance of research. Moreover, raising awareness on teachers on how important are their conceptions of research as they might be influent and what their student's conception of research are. Furthermore, the data that provides this study might be useful so the authorities of UQROO can take effective actions for the improvement of this institution; therefore, the following recommendations are:

- As a recent graduate from the major, this researcher takes the opportunity to say that the research courses design in the English Language program need to be improved as it is clearly evident (according to the data) that students from 6th semester showed the highest percentage of misconceptions as it seems that in the middle of the major there is not a research course or any other subject that involves research. Also, the 2nd semester students showed a high percentage of misconceptions. It is evident that the lack of: research courses; research projects as midterms and time spent in reading research articles in other courses that actually are not focused on research; in other words, the development of research as a skill across the curriculum has created some difficulties in the conceptualization and meaning of research, as well as to accomplishment of theses or research projects.
- Collaborative culture. The link between research and teaching seemed strong in those departments which have a cohesive and collaborative culture, strong academic affiliation, a positive change orientation and flexibility and a positive synergy between department and institutional goals.

- To redesign the curricula so that it includes the development of research skills across the curriculum and not only in just one or two courses.

REFERENCES

Aldana, G. & Joya, N. (2001). Actitudes hacia la investigación científica en docentes de metodología de la investigación. Tabula Rasa. Bogotá - Colombia, No.14: 295-309.

Allison, D. & Carey, J. (2007). What do University Language Teachers Say about Language Teaching Research? TESL Canada Journal, 24(2). Retrieved from *http://www.teslcanadajournal.ca/index.php/tesl/article/view/139*

Beycioglu, K., Ozer, N. & Teyyar, C. U. (2010). Teachers' views on educational research. Teaching and Teacher Education, 26, 1088-1093. Retrieved from *http://www.sciencedirect.com/science/article/pii/S0742051X09002509*

Borg, S. (2009). English Language Teachers' Conceptions of Research. *Applied Linguistics, 30*(3), 358–388. doi:10.1093/applin/amp007

Borg, S. 2008. English language teachers' beliefs about research: Perspectives from the Netherlands.LevendeTalen, 9(3), 3–13. Retrieved from *http://www.ltprojecten.nl/sites/default/files/20081012249254308.pdf*

Brew, A. (2001). Conceptions of research: A phenomenographic study. Studies in Higher Education, 271-285. doi:10.1080/03075070120076255

Carrero-Martinez, F. A. (2011). Rethink summer student research. Science, 334, 313. - See more at: http://dus.psu.edu/mentor/2013/05/undergraduate-research-students-perspective/#sthash.2SkQtvmB.dpuf

De-Juanas, A., Navarro, E., González-Olivares, A.L. (2011). Estudio confirmatorio de la estructura factorial del cuestionario de creencias epistemológicas con una muestra de estudiantes universitarios de la UCM. In Román, J.M., Carbonero, M.A., Valdivieso, J. (Comps.), Educación, aprendizaje y desarrollo en una sociedad multicultural. Madrid: Asociación de Psicología y Educación y Colegio Oficial de Psicólogos de Castilla y León. Pp. 5692-5700.

Halabi, J. O. & Hamdan-Mansour, A. (2010). Attitudes of Jordanian nursing students towards nursing research. Journal of Research in Nursing, 17(4), 363–373.doi:10.1177/1744987110379782

Hunter, P. (2007). Undergraduate research. Winning the battle for students' hearts and minds, EMBO Rep. 8(8): 717–719. doi: 10.1038/sj.embor.7401039

Kiley, M. & Mullins, G. (2005). Supervisors' conceptions of research: What are they? Scandinavian Journal of Educational Research, 49(3), 245-262.Retrieved from http://dx.doi.org/10.1080/00313830500109550

Love, K. M., Bahner, A. D., Jones, L. N. & Nilsson, J. E. (2007).An Investigation of Early Research Experience and Research Self-Efficacy.*Professional Psychology: Research and Practice, 38(3),* 314–320. doi: 10.1037/0735-7028.38.3.314

Lucas, L., Healey, M., Jenkins, A. & Short, C. (2008).Academics' experiences and perceptions of 'research' and 'teaching': developing the relationship between these activities to enhance student learning within different disciplines and institutions. The Higher Education Academy, 8(3), 4-54.Retrieved from*http://www.heacademy.ac.uk/assets/documents/resources/publications/Lucas_Final_Report.pdf*

Meyer, J. H. F., Shanahan, M. P. & Laugksch, R. C. (2005). Students' conceptions of research I: A qualitative and quantitative analysis. Scandinavian Journal of Educational Research, 49, 225-244. Retrieved from *http://www.nova.edu/ssss/QR/QR16-4/pitcher.pdf*

Moore, S. (2011). Cambodian English Teachers' Conceptions of and Engagement with Research.Proceedings of the International Conference: Doing Research in Applied Linguistics, 83-98.

Muijs, D. (2004). Doing Quantitative Research in Education with SPSS. [Thousand Oaks]: Sage.

Pajares, M. F. (1992). Teachers' Beliefs and Educational Research: Cleaning Up a Messy Construct. Review of Educational Research, 62(3), 307-332. doi:10.3102/00346543062003307

Pitcher, R. & Åkerlind, G. S. (2009). Postdoctoral researchers' conceptions of research: A metaphor analysis. *The International Journal for Researcher Development, 1*, 42-56.doi: *10.1108/1759751X201100009*

Pitcher, R. (2011). Doctoral students' conceptions of research.The Qualitative Report, 16(4), 971-983. Retrieved from *http://www.nova.edu/ssss/QR/QR16-4/pitcher.pdf*

Russell SH, Hancock MP, McCullough J (2007) THE PIPELINE: benefits of undergraduate research experiences. Science 316: 548–549.

Schommer, M. (1994). An Emerging Conceptualization of Epistemological Beliefs and their Role in Learning. En R. Gardner y P.A. Alexander (Editores), Beliefs about Text and Instruction with Text (pp.25-40. Hillsdale, Nueva Jersey: Lawrence Erlbaum Associates.

Vermunt, J. D. (2005). Conceptions of Research and Methodology Learning: A commentary on the special issue. *Scandinavian Journal of Educational Research, 49*(3), 329–334. doi: 10.1007/s10734-004-6664-2

Visser,G. J.,Van, J. H,Van, R. M.,Verloop N. & Visser A. (2009). The relationship between academics' conceptions of knowledge, research, and teaching – a metaphor study. Teaching in Higher Education, 14, 673-686. Retrieved from *https://openaccess.leidenuniv.nl/bitstream/handle/1887/14011/chapter2.pdf?sequence=11*

White, B. C. (2000). Pre-service teachers' epistemology viewed through perspectives on problematic classroom situations. *Journal of Education for Teaching, 26*(3), 279-305.

APPENDIX

Final version of the instrument

Students' Conceptions of Research Inventory (SCoRI)

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Instrucciones generales: Esta escala tiene como objetivo conocer las concepciones de los estudiantes hacia la investigación. Le solicitamos su cooperación respondiendo a los ítems que aparecen a continuación. Por favor, no deje preguntas sin contestar, no existen respuestas falsas o verdaderas, correctas o incorrectas. No es necesario que escriba su nombre. Gracias por su colaboración.

Sección I. Concepciones

Para cada enunciado encierre en un círculo la respuesta que mejor representa su acuerdo o desacuerdo.

1= Completamente en desacuerdo 2= En desacuerdo 3= No me puedo decidir 4= De acuerdo 5= Completamente de acuerdo

1. Un buen investigador reúne específicamente información que respaldará las ideas que ya tiene sobre un tema.	1	2	3	4	5
2. La investigación empieza a ser verdadera después de que ésta se publica.	1	2	3	4	5
3. Si los procedimientos de investigación se siguen correctamente siempre arrojarán resultados positivos.	1	2	3	4	5
4. Cuando gente calificada hace investigación los resultados son siempre de buena calidad.	1	2	3	4	5
5. La investigación consiste en reunir información que respalda tu argumento.	1	2	3	4	5
6. Es completamente aceptable modificar la información de la investigación si ésta no es correcta.	1	2	3	4	5
7. Generalmente sólo hay una manera de interpretar los resultados de investigación.	1	2	3	4	5
8. Si la investigación se conduce apropiadamente entonces nunca habrá resultados contradictorios.	1	2	3	4	5
9. La investigación se trata básicamente de comparar resultados nuevos con los previos.	1	2	3	4	5
10. Investigar significa buscar más información para añadirla a la que ya se tiene.	1	2	3	4	5
11. Investigar es una actividad sistemática para averiguar si existen factores que investigadores anteriores no tomaron en cuenta	1	2	3	4	5
12. La investigación se realiza para cuestionar las investigaciones precedentes y así mejorar el conocimiento del tema.	1	2	3	4	5

13. Investigar significa descubrir factores excluidos por investigadores anteriores; es decir, información no considerada por investigaciones pasadas.	1	2	3	4	5
14. La investigación trata esencialmente sobre descubrir algo que ya existe pero que está oculto.	1	2	3	4	5
15. Investigar significa usar los resultados para reinterpretar lo que ya se conoce.	1	2	3	4	5
16. La investigación amplía los conceptos actuales para tener una mejor comprensión de los mismos.	1	2	3	4	5
17. La investigación provee un entendimiento profundo de un tema en particular.	1	2	3	4	5
18. La investigación estimula más el interés o el trabajo en el área.	1	2	3	4	5
19. Incluso las ideas más nuevas germinan en una senda llena de ideas y conocimiento previo.	1	2	3	4	5
20. Investigar significa buscar más conocimiento en cierto tema; acumular más conocimiento.	1	2	3	4	5
21. La investigaciónresume el conocimientoexistente (onuevo conocimiento)paracrearperspectivas anteriormente desconocidas.	1	2	3	4	5
22. La investigación es un mecanismo para agregar más conocimiento al conocimiento ya existente.	1	2	3	4	5
23. Investigar es básicamente encontrar la verdad.	1	2	3	4	5
24. La investigación es la búsqueda de la verdad.	1	2	3	4	5
25. La investigación es el proceso mediante el cual la verdad se descubre.	1	2	3	4	5
26. La investigación es el proceso de desenterrar la verdad.	1	2	3	4	5
27. Investigar significa estar a la caza sistemática de verdades sobre un tema.	1	2	3	4	5
28. La investigación se realiza para determinar la verdad o la validez de algo.	1	2	3	4	5
29. Investigar es encontrar soluciones a los problemas	1	2	3	4	5
30. Investigar es encontrar solución a problemas establecidos.	1	2	3	4	5
31. Investigar significa recopilar información para resolver problemas particulares.	1	2	3	4	5
32. La investigación es una herramienta fundamental para responder preguntas.	1	2	3	4	5
33. La investigación es el cuidadoso y meticuloso estudio de un problema.	1	2	3	4	5

Sección II. Datos demográficos

34. Mi edad se ubica en los rangos:
a) 18-20 b)21-23 c)24-26 d)27 o más

35. Mi género es: a) masculino b) femenino

36. Subraye el semestre que cursa: a) segundo b) sexto c) décimo

37. Subraye la materia o materias que ha tomado (de acuerdo con el programa de licenciatura en Lengua Inglesa)

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38. ¿Alguna vez ha tomado alguna materia de otra división relacionada con la investigación? De ser así, ¿Cuál o cuáles?

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_____

¡Gracias por su colaboración!